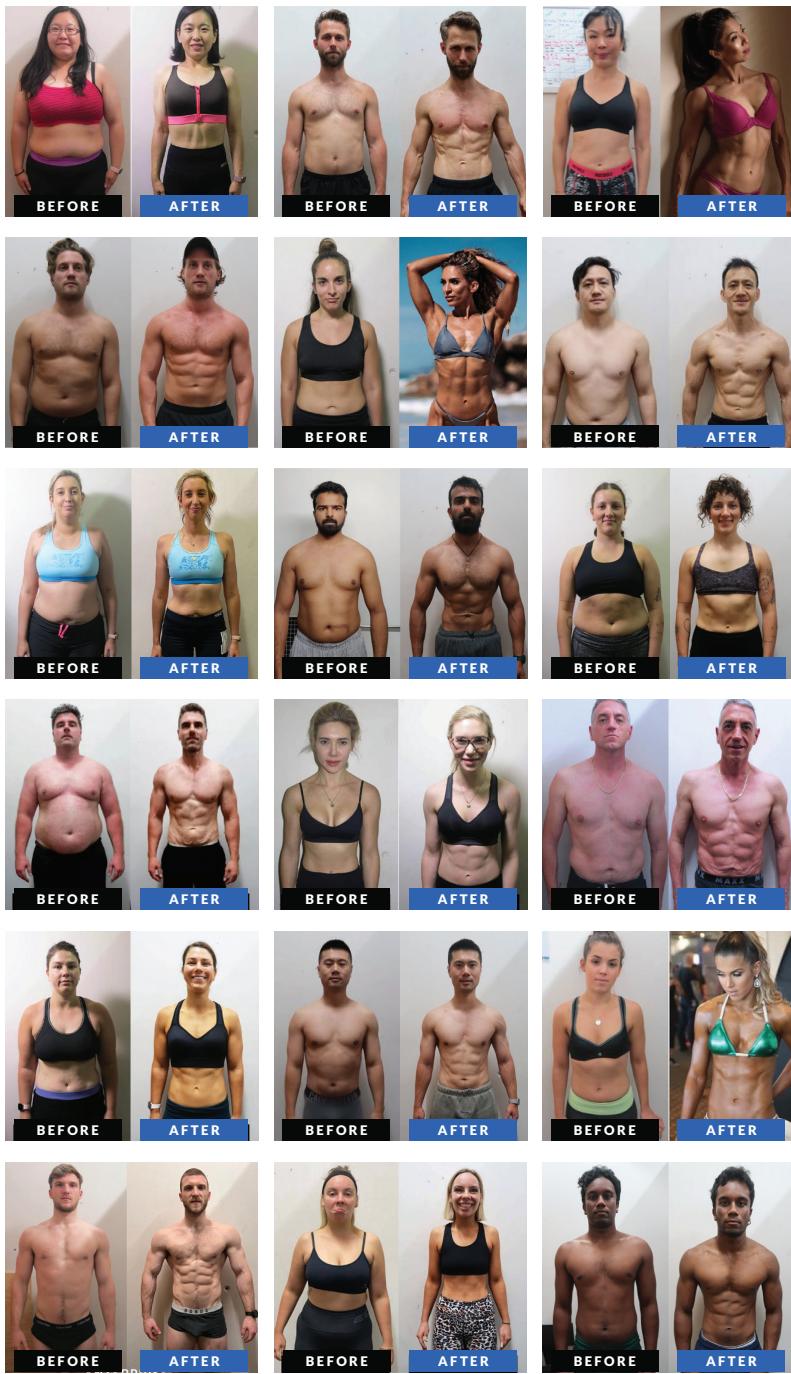


BODY TRANSFORMATIONS FUELLED BY THE ENTERPRISE DIET



THE ENTERPRISE DIET

**THE INSIDE SECRETS TO LONG-TERM
BODY TRANSFORMATION**

MARK OTTOBRE

FIRST EDITION 2023

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CONTENTS

- 15. **CHAPTER ONE**
You Don't Need a Better Diet
- 37. **CHAPTER TWO**
Where Should We Begin?
- 63. **CHAPTER THREE**
Hormones and Calories
- 89. **CHAPTER FOUR**
A Session with Ms Hungry
- 115. **CHAPTER FIVE**
Putting Your Plan Together
- 167. **CHAPTER SIX**
Foods To Eliminate, Replace Or Reduce
 - Gluten
 - Industrialised, Feedlot Dairy
 - Soy
 - Hydrogenated and Partially Hydrogenated Oils
- 243. **CHAPTER SEVEN**
Don't Blame Your Doctor
- 273. **CHAPTER EIGHT**
My Thoughts On... (Frequently Asked Questions)
- 297. Why Now!

FOREWORD

Never in my wildest dreams did I think a guy with a funny accent from Down Under would completely change the trajectory of my life.

It was 2010, and I had lost my job as a machinist a couple of years earlier due to a major layoff in our factory. I didn't realize it at the time, but this sliding doors moment conveniently acted as a catalyst for my second chance at life.

I had two options: find another job in the trades or chase my passion for health and fitness. The former would make me money faster and get me out of the house (something my parents were in favor of). Or, the latter would take longer and may or may not get me out of the house... I'll let you decide how my parents felt about that one.

I decided to give the health industry a shot, but knew it was going to take the absolute best of me to break out of the mold I'd formed around myself and start a new life. I had a passion to chase, people to prove wrong, and a student loan large enough to act as my own internal alarm clock.

My college was a 90-minute commute, so that's three hours of back-and-forth alone time every single day, guaranteed. Audio learning was still relatively new, and I read somewhere that I needed to turn my car into a "mobile university" so that I didn't waste that precious time on the road.

A quick Google search led me to a goldmine that acted as a primary staple of knowledge in my Honda Civic for years. The show was titled *Maximus Mark Radio* by Mark Ottobre.

I quickly learned that not only was his list of guests and connections exceptional, but the knowledge he shared was also at the pinnacle of the industry.

I knew at that moment “*I want to be like that guy. I want to have those conversations. I need to keep this show on a loop so I can extract everything I can from this Australian Mobile University.*”

Fast forward ten years later and I have trained professional athletes in 14 different sports and have collected many world championship wins along the way. Yet, here I am, all these years later still keeping up with Mark and what he’s creating because the guy doesn’t miss.

The book you’re about to read is a simple-to-follow format that condenses a lifetime of information from a man who has not only been in contact with the industry’s best for over a decade but has joined that list right alongside them.

I’m grateful the universe brought me to *Maximus Mark Radio* in 2010 as it allowed me to leapfrog the facts from the nonsense. Here in 2022, you get the most up-to-date version of the experience I had.

Pay close attention to the details and prepare to have more than a few of your ideas rocked, in a good way.

- *Dan Garner*

High-performance consultant to pro-athletes, Olympic medalists, PGA stars, Hollywood celebrities

PREFACE

I've always been interested in where the lines of science, art and philosophy overlap.

As a teen, I graduated from high school with top marks in art and was encouraged to pursue a career in design, but my heart and passion lay in health and fitness.

After leaving school, I became a seminar junkie. I went to all the seminars and conferences you would expect of a naive but ambitious young man eager to be at the top of his field. From dancing-on-stage self-development seminars and complex lab-interpretation courses to hardcore training camps, I was there.

After meeting many friends, colleagues and teachers, I had the chance to observe how others implemented (or didn't implement) what they learned. As a result, I was able to reflect and refine my teaching and coaching so it always results in a positive answer to the following questions:

1. *Does it help clients get better and faster results?*
2. *Does it create long-term change?*

While my peers delved deeper into research and science and split hairs on technicalities, I maintained a coach's lens. This meant always asking how I would personally and practically apply the science to the individual.

I recall learning '*advanced supplement detoxification protocols*'. Other coaches would debate the optimal dose and timing of particular supplements. For the large part, most of those conversations were null and void as the same coaches couldn't get their clients to stick to a basic plan for longer than two weeks, let alone an advanced one.

After amassing knowledge from numerous courses, seminars and mentors, my career took off as a Competition Preparation Coach. I guided bikini and fitness models to their dream bodies and showed figure competitors how to win championships. These achievements increased my reputation amongst sports professionals and trainers worldwide.

As more coaches and trainers reached out for mentoring, I began to notice a theme. The questions were centred on learning “*the science of (insert nutrition topic here)*”. While sound nutritional practices help clients get results, I realised that coaches, like clients, don’t need more complex and confusing science to explain their lack of results. They needed an overarching philosophy and a ‘*way of being*’ that tied it all together.

It goes without saying that you have to follow the right approach to fitness from a scientific standpoint. However, modern science today is often driven by agendas, which create more confusion and conflict between even the most scientific nutrition- and fitness-based communities.

Science alone doesn’t inspire personal change. If it did, smokers would stop buying cigarettes, and unhealthy people would start eating better and going to the gym. It’s not until science is married with a philosophy for ‘*why*’ that long-term, personal transformation occurs.

I’m a personal trainer, first and foremost. The trainer’s role is less about science, research and complexities, and more about using scientific-based principles to inspire change.

This brings me back to my two fundamental questions. Focusing on meeting simple criteria has allowed me to marry the art, science and philosophy of coaching personal change through body transformation. It has allowed me to build an approach to diet that has changed thousands of lives.

With this book, it's my goal to do what has previously been impossible: to marry the art, science and philosophy of coaching and present it as a solution to health, fitness and nutrition struggles that so many fail to overcome.

As a coach, my success has hinged on my ability to communicate information so clients can act with purpose. I have written this book to be to the point: to give you enough information so you can take action without being overwhelmed by scientific jargon and complexities.

Each chapter of *The Enterprise Diet* has practical action points. If you want to learn more, I've included references to quality studies, books, articles, podcasts and videos.

Every conclusion I make about a topic is based on scientific evidence and practical implementation that has worked repeatedly across thousands of clients. Whether I champion an idea or demonise it, the information I share comes from years of 'in the trenches' experience, as well as a great deal of time spent wading through science and jargon.

My goal: I don't just want you to read this book, take action for 12 weeks and chalk it up as another diet challenge. I want you to fall in love with the process and develop a *constant and never-ending* mindset.

What I teach here are daily practices, not quick fixes. Join me on a journey as I show you the methodologies, strategies and philosophies that have produced head-turning, jaw-dropping results and international fitness champions.

My aim: to help you fall in love with the process of chasing your fitness goals, so you can finally get in shape the right way and achieve all your body goals – once and for all.

**MARK OTTOBRE
ENTERPRISE FITNESS**

**ABOUT
THE
AUTHOR****MARK
OTTOBRE**

Mark Ottobre is a globally recognised body transformation expert and the founder of Melbourne-based elite training studio, Enterprise Fitness.

Enterprise Fitness brings together the best trainers in the country under the unique Enterprise philosophy of training, nutrition and supplements to deliver results clients never thought possible. How? It's simple. The training and nutrition advice they give works and they get results. End of story.

In addition to coaching more than 300 first-place winners in bikini, fitness, figure and bodybuilding competitions, Mark and his team have trained World Champions, gold medallists, Mr and Ms Australias, and thousands of everyday Janes and Joes wanting to feel confident in their own skin.

Recognised as an industry leader, Mark has had athletes and trainers travel from across Australia and over 10 different countries just to train with him,

take part in his highly sought-after seminars and learn his unique philosophy on health, fitness and business. He is the host of popular podcast series and YouTube Show *The Wolf's Den* where he talks shop with other experts and sports icons on topics ranging from powerlifting and training techniques to nutrition, science, business and more.

Mark has also had the privilege of being featured in mainstream media and trained countless celebrities, influencers, and professional athletes through his world-class coaching and unique training studio.

Mark has been featured in:

WHO Magazine Radio, T-Nation, 3AW, Max's Muscle TV, Oxygen Magazine, 9News, MuscleMag, Muscle and Health, The Herald Sun, Natural Bodz Magazine, Stellar Magazine

Mark is also a qualified Sports Nutritionist with the International Society of Sports Nutrition (ISSN), a Poliquin International Certified (PICP) Level 5 Master Strength Coach. He holds numerous certifications in Olympic lifting, nutrition, assessment and coaching.

Now, he's bringing this experience and expertise to YOU. Whether you've struggled to get the results you want, or you're ready to take your training and nutrition to a whole new level, Mark and the Enterprise Diet will unlock the secrets and strategies you need so you can finally achieve your body goals – once and for all.

From the gym novice in need of a strong foundation to elite athletes looking for the extra 1%, this book will help you eat, train and finally succeed in getting you the results you've always wanted.

To enquire about working, training or consulting with Mark and his team of industry-leading personal trainers at Enterprise Fitness, email info@enterprisefitness.com.au or visit www.melbournepersonaltrainers.com.

For links to podcasts, YouTube, Instagram and latest offerings, visit: markottobre.com

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CHAPTER ONE

YOU DON'T NEED A BETTER DIET

Discover why traditional diets don't work, set process-driven goals and learn how you can leverage your beliefs and personal values for lasting success.

The eventual moment of frustration, despair and exhaustion lurks in the shadows, hunting its victims. It waits for the perfect time to strike and... POW! Those crackers, cheese puffs and bottles of wine are gone. The moment never asked you if you were following the Keto diet, calorie counting or fasting. This beast finds you when you're at your weakest and attacks without discrimination.

When you diet, you know this day is coming. You look forward to the moment when your 12-week challenge is up or plan that one night when you will make exceptions to your painfully strict diet regime.

The very word 'diet' implies a temporary fix. So many people choose this crude tool because it addresses short-term fat-loss needs. A phase of determined dieting works if you need a short-term result like being in shape for a photoshoot, event or fitness competition. But like high-school puppy love, the results never last.

If you're like the majority of people, you don't need another diet or even a better diet to get in shape. Instead, you need to learn and develop daily practices. Those practices become habits, those habits form patterns, and

predictable patterns create long-term sustainable results. Practices, habits and patterns function seamlessly when held in place by an overarching philosophy for life. Then, if you do want to diet for an event, photoshoot or competition, doing so will help you refine your daily nutritional practices.

The detrimental impact of following a 'diet' is not to be understated. Dieting affects your physical appearance and your cognitive function. It penetrates your day-to-day life, colouring your schedule with either lacklustre energy or constant thoughts of Friday night pizzas. Any diet or dietary lifestyle choice ultimately affects how you live, positively or negatively.

The more severe the diet, the more constraints you place on yourself. The more inconsistent your diet is with your internal beliefs, the more conscious you become of your diet and the harder it is to follow.

Willpower is often thought of as an endless resource you can continuously tap into. It's not. We all have a finite number of daily willpower points. If you use yours up *just* to follow your diet, the rest of your life is placed on hold and suffers. Think of willpower like your phone battery. You can use up battery life watching entertaining videos, but if you're not careful, run out of juice when it comes time to make an important call.

I've known many fitness models and physique competitors willing to expend all their energy and concentration to look a certain way. Even they get tired and go off the rails, consuming all the foods they used willpower to avoid. They end up as fatty-puffy versions of their former selves, never being able to return to the world of physique competitions or dare to be in front of a camera without layers of clothing hiding their personal shame. It's heartbreaking but can be avoided with education and some tweaks to nutrition and health.

The fields of health, fitness and nutrition are full of sound bites from the media and know-nothing influencers who present short-term fixes to what will always be a long-term problem. No amount of quick fixes will ever be adequate to solve a problem that will be with you until the end of your days; maintaining your health and fitness.

Additionally, the world of health, fitness and nutrition is almost as divisive as the world of politics, with leaders slandering each other to get votes or followers rather than talking about real issues. This has made finding the right advice difficult. Not only is slander a problem, but many tout their point of view and stance as if it's ordained by God. If you have ever stumbled on a Keto, intermittent fasting or calorie-counting blog, you might think the writer just found the cure to cancer and the keys to turning the hydrogen bomb into sustainable energy.

On an individual level, many compartmentalise diet and nutrition from the rest of their lives. This is a mistake. Instead of '*the diet*' being the thing to follow and dictate your life, ultimate success lies in developing a philosophy paired with a set of rules and principles on how to eat and live. This set of rules should mirror the person you aspire to be and be practised daily until your aspirations are realised. In other words, the trick to staying in shape is to align your nutritional practices with your internal beliefs and values of who you are.

If you approach your food and nutrition with *just* the intention of wanting to look good and lose weight, you're setting yourself up for failure. Why? Because there will come a time when you will look good and have lost weight. But then what? Do you celebrate with cake or fries?

This is precisely what people do. The only problem is the celebration often carries on all weekend. Before you know it, it's a celebration *week* and the diet starts again next month after the kilos have rushed back on.

If you accept that maintaining health, fitness and nutrition are long-term challenges in need of a long-term solution, you can also accept that just going on a diet won't cut it.

You tried dieting, but in the end, frustration, despair and exhaustion caught up with you. You don't need a better diet. You need a better way.

DIET GOALS VS LIFESTYLE PRACTICES

Most health and fitness goals have an end date. Lose six kilos. Put on three kilos of muscle. Deadlift 200 kilos. You work and work until, hopefully, you hit the target. But then what? And what happens if you don't achieve your specific goal?

The act of goal setting is practical and sensible. It gets you focused and moving in a clear direction. However, it's not a complete solution to ongoing problems, as you either find yourself always having to set new goals or feeling like a failure for not achieving them.

If you're a compulsive goal setter, you're probably an overachiever. Overachievers think less about why they are trying to achieve something and more about how they will achieve it. As an overachiever, once you hit the goal, there's not much time to stop and smell the roses because if you did that, you would be wasting precious time towards your next goal. The problem with overachievers is that they tend to overdo things in all areas of life. As a result, burnout can be a problem. As the ancient philosopher Lao Tzu put it, "*The candle that burns twice as bright, burns half as long*". If burnout isn't the issue, time management will be.

The real question for overachievers is how long can you continue the cycle, particularly as you continue to achieve in other areas of life and take on competing responsibilities. Let's say the business or career you were desperately working on takes off and requires more of your time and focus. But so does your spouse, particularly if you plan to have children. Friendships still need to be fostered, parents still need to be loved and your physique goals still need to be attended to. What I see from overachievers is an all-or-none approach to goal setting that isn't helpful; in fact, 'all' usually gives you 'none'. Hitting your goal of losing 10 kilos doesn't mean you should stop eating well and training hard, but it also doesn't mean you should set a goal to lose 10 more.

It's not just the career- or business-focused entrepreneur this affects.

It also relates to elite athletes who feel lost after years of training hard and winning trophies. While overachievers win most battles, they lose the war because they are spread too thinly. For overachievers, health and fitness goals need to be grounded in a sensible schedule and tempered with routine.

The other group who often hit their goals are '*doers*'. If you're a doer, after hitting a major goal, you go back to what you were doing previously or find something else to do. You let go of the healthy behaviours that transformed your physique. You did the 12-week challenge, lost the weight and proved you could do it. You're not thrilled about going backwards, losing muscle and putting on fat, but ultimately you have other things to do once that challenge is achieved.

Goals and goal-setting are important. It's natural to always want to set a bigger goal. If you lose six kilos, why not lose four more? If you put on three kilos of muscle, why not add two more? You deadlift 200 kilos, why not shoot for 210? But where does the goal-setting stop and when do you become the person who can maintain it?

Fitness goals can't be endlessly scaled for a variety of reasons. If this were the case, every guy would have a 200-kilo bench press and every girl would be a pro fitness model. Eventually, setting a bigger goal becomes unfeasible. This is why I advocate, as a long-term solution, shifting your focus from mere '*goal setting*' to creating a way of *being* – a personal health and fitness code and philosophy that's interwoven with your whole life.

Consider our Enterprise Fitness client, Helen.

Helen came to us weighing 100 kilos. Her goal was to lose 40 kilos. Over 18 months, she hit her goal and completely changed her life. Now at 60 kilos, the inclination is to set another goal to lose five more kilos. But at 55 kilos, Helen would then be underweight for her height. So instead, our trainers transitioned Helen's goal, getting her to focus on building strength.

We had to make it clear that the weight loss goal was over because any more weight dropped would be counterproductive to her overall health.

With her initial goal achieved, what's far more important than how much weight Helen lifts on the bar are the daily habits for cooking, eating, training and living that are now part of her, despite the goal. The goal was a catalyst to help Helen develop a lifestyle of good food and hard training. As she progresses in her strength, we could set a goal for her to compete in a physique competition or powerlifting. However, considering Helen's other life responsibilities, these ambitions would take considerable time, focus and joy away from other areas of her life.

The incremental strength goals act only as footnotes in Helen's new overall identity of someone who loves training hard and eating well. In fact, the only reason Helen hits any new goals is because she has found a new way of being. If she hadn't changed her health and fitness meta-program, she would have gone back to being that 100-kilo person we first met. Helen successfully changed her *identity*. Herein lies the key.



Watch Helen's weight loss and transformation story:

<https://melbournepersonaltrainers.com/helen-du>

IDENTITY: I'M A HEALTHY PERSON

My personal revelation into the power of identity came when I was about twenty years young and searching for answers about life. I was fat and puffy, days after placing second in my sixth bodybuilding competition. At that time, my identity was 'bodybuilder'. The problem was, I felt like a failure, always setting my sights on the next competition and winning. Bodybuilding and physique competitions are the common next goals for anyone obsessed with training, and once you enter that world, the next comp is always around the corner.

Bodybuilding is a unique world. Once you compete, you're known to the world as a *competitor*. You change your social media profile photo to an image that represents you in all your glory on stage and your friends start introducing you as a bodybuilder or a fitness model. Of course, now you have a reputation to live up to as a bodybuilder and fitness model. You have to train hard, eat six meals a day and constantly prepare for your next comp. This identity is one you wear on your sleeve as people will judge you instantly if you don't live up to their expectations of what a bodybuilder or fitness model should look like.

People say, "*Aren't your arms a bit small for a bodybuilder?*" Words like this cut through a budding bodybuilder's core like a hot knife through butter.

Few people ever get the memo that you're allowed to compete *just once* and then be able to exist by simply looking good and training hard after that. After attending hundreds of comps over the years, I've noticed that the number-one question a competitor gets asked right after stepping off stage is, "*So when's your next comp?*" This further entrenches your identity into being a competitor and living like a competitor, worshipping how one looks over health – which many confuse.

Competing in bodybuilding, particularly as a junior, gave me a valuable glimpse of what the future could look like if I stayed on the same path. I

got to meet and observe other bodybuilders. I vividly recall eavesdropping on a conversation between two seasoned bodybuilders backstage when I was twenty. I was pumping up, ready to walk out, then it were as if God touched me on the shoulder and said, “*Shhhhhh... listen...*”

Bodybuilder 1: “You look great man....”

Bodybuilder 2: “Thanks, I’ve won five shows. I’m looking forward to today.”

Bodybuilder 1: “That’s amazing man, congrats. Are your family here today?”

Bodybuilder 2: “No, my kids... Well, we don’t have a good relationship. We haven’t been on a family holiday since I started competing. That was 13 years ago.”

Bodybuilder 1: “Sorry to hear that man. You gotta take time for you and your family.”

Bodybuilder 2: “Yeah, but I don’t want to miss a show. Bodybuilding is really important to me. I just had to compete this year as it was my 13th year”.

Bodybuilder 1: “13 years! Wow! Yeah man, I hear you, it’s important but you gotta make time for you. Bodybuilding will always be there.”

Bodybuilder 2: “I know. But I just had to compete at this show. I was supposed to take the kids to Disneyland last year but we ended up cancelling because I wanted to compete at the Country Classic. I’ve sacrificed a lot for bodybuilding.”

Bodybuilder 1: “Sorry to hear that man, how’d your wife take it?”

Bodybuilder 2: “She was pretty upset. We’ve been arguing a lot. Plus I’ve had some job issues recently. Actually, I’ve been pretty down for a while. I’ve started taking antidepressants...”

That conversation between those two bodybuilders haunted me for years. It was the cautionary tale in the back of my head whenever I thought

about competing. I knew I could easily become like the second man, losing my identity to bodybuilding, competing year after year in search of a \$50 trophy and the admiration of an audience who ultimately wouldn't remember me. What always stands out to me when I reflect on those two men chatting was how the 'champion' was proud of his sacrifices. They cost him his kids' affection, his wife's love, his career and his happiness but he wore them as a badge of honour.

In return, the man looked like a God walking the earth. But extreme results always come with a price. A price that frankly I'm unwilling to pay. Seeing into this future, I knew that was *not* how I wanted to live. But lacking the ability to comprehend the psychological grip bodybuilding had on me, I became obsessed with how I looked and what I ate.

Personal development rescued me from vanity worship. Being young and naive had its advantages, and after spending \$5,000 on a seminar, you tend to take what the seminar presenters say very seriously.

The instructor recommended we write affirmations on how we want to act in the world. It was a bit airy-fairy. However, the idea of writing yourself a set of instructions on who you want to be and how you want to act in the world stayed with me. Later that night, it came to me:

"I am a healthy person who eats healthy foods that build and nourish my body".

It wasn't a simple soundbite and label like "I'm a bodybuilder" or "I'm vegan/paleo/etc." But it was simple enough as a framework. It became my compass and guiding light. It also gave me the direction and goalpost of what I was trying to impart to clients. It wasn't 'do this' or 'do that', but rather, I gave myself three key parameters to focus on: health, healthy foods and nourishment. I'll talk more about all three in later chapters.

Just like that old cliché, "*The journey is more important than the destination*", I realised the destination for most is to 'look good'.

Often, many reach this by crash dieting. If you change tack and arrive at the destination of looking good by optimising your health, you will never have to make the journey again. In other words, healthy people look good, but there are a lot of people who look good but aren't healthy. Focus on health and vanity will follow, but focus on the reverse and it will be a health catastrophe.

THE SUBJECTIVE BEFORE THE OBJECTIVE

Objective goals are necessary and should be balanced with subjective philosophies and ways of being and living to achieve them.

Dieting purely for a result will fail you. Identity must align with your goals and actions. For this reason, a mandatory goal-setting tool I use is the *BE + DO = HAVE* (BDH). This formula addresses diet and goals on three levels:

- BE (Identity): What person do I need to be to achieve my goal/s?
- DO (Actions): What daily and/or weekly actions and practices does this person perform to achieve their goal/s?
- HAVE (Result): What will I have or happen as a result of being and doing the above?

If you set a goal to lose 10 kilos, consider the beliefs that would get you there and keep you there. They could include:

- I am a healthy person
- I enjoy choosing healthy foods
- I look to food to nourish me
- I enjoy being fit and active
- I enjoy building my vitality
- I enjoy physically testing my body's capabilities
- Physical training is a part of my life

If you were to integrate those things, how would you eat? How would you think? What daily actions would you take towards your health and fitness goals?

Notice the important part. There isn't an end date. It's a continual process. It's not about sticking to a chicken soup diet to lose seven kilos by a random date in the future. Your eating habits are formed based on *who you are*, not what you are trying to achieve.

This is a pivotal point in switching someone from being a yo-yo or seasonal dieter to having long-term success. From your identity, you align yourself with beliefs that support its construct. For example, you might identify yourself as overweight and unhealthy. To support the identity of being overweight or unhealthy, you might also believe that you're a terrible cook, that you hate exercise and that it's hard for you. These beliefs burrow in and lead you to put up blinkers around learning and implementing new skills that challenge your existing mindset.

If you don't believe you can cook, taking a cooking class isn't going to create a change in your beliefs – unless the culinary teacher makes you believe you can cook and consistently utilise those skills. This is why learning a skill is only part of the equation. You can have all the knowledge on how to be healthy, what to eat and how to train. What enables you to make it part of your daily life are the beliefs and values that shape your identity.

The great thing about abstract beliefs is that they are just ideas or ideas you have chosen to be true. They form your viewpoint about yourself and the world around you. That viewpoint isn't always necessarily accurate; it's simply how *you* see things. You can believe you are the cause of your circumstance or the consequence of it. The former gives you the position to change, the latter keeps you powerless. You have a choice.

As John Mayer sang in one of his many hit songs, *Belief: 'Belief is a beautiful armour, but makes for the heaviest sword.'* Abstract beliefs and belief systems ultimately protect you, but they can keep you stuck, making you unable to move dynamically through the world and traverse through life.

But believing in something abstract doesn't make it so (think Santa Claus). To oversimplify for health and fitness purposes, think of a belief as nothing more than how you relate to a topic or subject.

In this case, the topics focus on health, fitness, nutrition and our bodies. How do you personally relate to these things? Are they guided positively towards something, or misguided and negative, making you run away from the things you don't want? As an example, do you negatively 'punish' yourself with exercise or do you look for the enjoyment of going to the gym?

The first step is to begin questioning your beliefs. Where did they come from and when did you decide they were true? Ideas or ideals often come from media, film, TV, parents, friends and culture. Do you ever ask why you believe something to be true?

If you can accept the radical notion that humans have abstract beliefs and the power to question and change them, you can begin to break free from constraints that have seemingly ruled your life. To be unconsciously bound to the chains of beliefs that no longer serve you is to be stuck inside an invisible prison, locked into the daily processes of life that eventually kills your aspirations for the future.

A PERSONAL EXAMPLE

I struggled against my body for years. I thought that being lean enough meant being good enough. As a child, I identified as 'the fat kid'. If I forgot, the kids at school reminded me. As a fat kid, the next progression is to be a fat teenager. But that evolutionary plan was derailed when I discovered weight training and bodybuilding when I was 15.

So the fat kid loses weight. The end?

The problem was that the fat kid conditioning stuck with me into my twenties. I trained to not be fat. I would overeat and then overtrain. I wished I could change or cut off rolls of flab just to look a certain way.

Bodybuilding was ultimately a positive influence but identifying as a bodybuilder controlled my internal compass of self-worth. I only felt like I was worth something if I could train and stick to a diet, and most of the time, I would go to the extreme with the diet to validate my self-worth. It wasn't a great way to live.

Because I was the tallest and heaviest in my year, it was evidence to further entrench the belief as 'the fat kid'. In reality, I was born on the exact cut-off date for starting school, making me the oldest and the kid who hit growth milestones first.

I could never keep up when playing basketball with my brother and his friends, so I assumed I was terrible at sport. The truth was, I was a six-year-old playing with kids who were two years older.

Because I enjoyed certain foods, I thought it was a reason to be overweight. Enjoying food isn't a reason to be overweight. You should like your food. It should be delicious. It's easy to go through life accepting incomplete viewpoints as though they are biblical commandments you must live by without ever questioning them.

My process to break the concrete cinder block of belief started with questioning where my beliefs came from and what made them true. What makes an internal belief true is just as important as the belief itself. When changing a belief, it's helpful to think of it as a tabletop and the evidence and memories as the legs. The more legs and evidence, the more stable the table.

In changing beliefs about your body and health, you need to kick out the legs from under the table so it is ready to topple over. If there is trauma linked with the evidence and memories of where a belief came from, I recommend seeking out a qualified therapist or hypnotherapist who can help rewrite painful memories. Rewriting those memories is as much a part of your health and fitness plan as how many times you go to the gym in a week.

If you believe it's not normal to be in shape and healthy, you will feel like it's something outside of you. When it's outside of you, you will struggle to obtain it. And even if you do, you will have to fight to keep it. Health and fitness are much easier when you don't always have to fight for them. This is why changing your beliefs is so important.

THE SCIENCE OF CHANGE

The notion that there is an exact 'science of change' is specious. Personal change can happen in an instant or can take years of heartache and therapy.

While the two main motives for change will be to move away from pain or towards pleasure, that approach to systematic transformation is too simplistic. Being reactive to pain often puts you in painful situations before you move towards a goal, and being led by pleasure alone makes you a hedonistic beast who lives from moment to moment.

Enter the Dilts Model, initially introduced to me as *The Science of Change* by Australian speaker, coach and author, Duane Alley. The Dilts Model has enhanced the way I coach outcomes and results with clients. This takes the Be-Do-Have formula one step further and is far more eloquent than setting goals out of pain or pleasure.

Dilts outlines five specific areas that create change:

- Identity — Meta program level
- Beliefs and values — Meta program level
- Skills and skill sets — Education level
- Behaviours and actions — Action level
- Environment — Manifestation level

Life purpose sits at the top of the Dilts pyramid, above identity. For the utility of our conversation, I have excluded a discussion on life purpose. However, I wanted to note the original author's model.

An important concept to grasp is that while change can be built from the bottom of the pyramid up, permanent change will flow from the top down (from identity). Even when you do build change from the bottom up, it becomes permanent only when it permeates your identity and beliefs.



THE ENVIRONMENTAL AND MANIFESTATION LEVEL

Remember *The Biggest Loser*? It was a hit show where morbidly obese contestants duked it out to see who could lose the most weight in just a few weeks. Around the world, millions of viewers witnessed rigorous overtraining, strict dieting and mental challenges in the name of weight loss. We didn't see the number of participants who gained every kilo back after they left⁽¹⁾.

The Biggest Loser is an example of creating change on an *environmental* level. The producers took people struggling with weight loss in their normal environment and placed them in one designed for rapid transformation. They achieved short-term success but many of the participants never fully integrated a new, healthier identity.

For a change as significant as the one instigated by *The Biggest Loser* to last, mindset shifts must occur at the top two levels on the pyramid, in identity and beliefs and values. Otherwise, the contestant returns to doing what was unconsciously programmed before being in the new environment. In other words, their identity wasn't a match to sustain the transformation instigated by a superficial environmental change.

To be clear, an environmental change can lead to a permanent change, but only when the individual has fully integrated what they learned at the level of identity.

THE BEHAVIOURAL AND ACTION LEVEL

When it comes to implementing change, there are two key factors:

1. Knowing what to do (skills and skills sets)
2. Actually doing it (behaviours)

If you make only *behavioural* changes, you can fall into the trap of looking for motivation to carry on those behaviours. Be it scrolling on Instagram to find #Fitspo or *willing* yourself to change, you risk slipping back into old ways and questioning why you tried to change in the first place.

Pursuing fitness goals can feel like watching grass grow – if you're always looking for motivation to stick to the plan, it's only a matter of time before you lose it. Additionally, motivation without the right education can lead to poor choices.

Short-term weight loss challenges seldom produce sustainable change. They are forced and contrived. The focus is behaviours – the actions one must do, not the person one must become. The problem with behaviour- and action-oriented interventions is you're always trying to 'do something'. There's always a struggle, never a flow. Sure, this approach works, but it depletes your will. Health isn't a list of actions you have to take daily, it is a practice. Ideally, that practice becomes an automatic response.

An often-cited but imperfect method replaces one behaviour with another similar or loosely related behaviour. For example, instead of smoking cigarettes, you chew gum. This method is especially problematic when looking for a chemical fix like the one you get from drugs, alcohol or sugary food. It's the hit of serotonin and dopamine that's at play here, not how you get it. Commonly what unfolds is replacing one behaviour for another, slightly less damaging one. An example is when smoking gets replaced with nicotine^{(2), (3)}. No doubt, changing behaviours changes outcomes. However, what determines and sustains those behaviours is as important as the behaviours themselves. For behavioural change to stick, it needs to be congruent from the top of the pyramid down.

THE SKILLS AND EDUCATION LEVEL

Above the behavioural level are *skills and skill sets*. These include the level of education you possess on a topic. If you are misinformed but have the best intentions, you will still produce an undesirable result. As it relates to fitness, acting on the wrong information can have a negative impact on your physiology. One of the traps with motivational types in the fitness industry is to challenge mismanaged eating habits with slogans like '*How bad do you want it?*'

For most people, acquiring the *right* knowledge does lead to meaningful change. If you truly understand a topic, you know the consequences of not acting in accordance with that knowledge. As philosopher Lao Tzu put it, "*To know and not to do, is not to know.*"

Again, take smoking as an example. According to a 2014 report published by the U.S. Department of Health and Human Services, in the 1940s and 1950s, smoking was widely advertised, encouraged and endorsed by the tobacco industry's numerous marketing ploys⁽⁴⁾. When research revealed the negative effects of smoking, particularly after 1964 when a Surgeon General's report was published, cigarette sales plummeted, and the message was heard: stop smoking. However, there were still those who continued to identify as a smoker with zest, or who

didn't believe the new findings. Catchphrases like '*Everyone dies from something*' or '*Everything gives you cancer*' empowered the smokers' bias, making them reluctant to apply the new information on the topic.

The problem with learning new skills and skill sets is that you won't implement them unless they align with your beliefs and values. On one hand, you can know what you are supposed to do and consciously decide not to do it. You can accept that the effort is just not worth the reward or decide that the reward of smoking or eating a delicious gluten-filled cookie is not worth the effort to resist.

If you have to choose between accepting your shortcomings knowing you're not doing everything you can to achieve a goal, and going all out but constantly falling back into temptations, pick acceptance.

Accepting that washboard abs and/or a bikini body at this stage of life isn't worth the effort is far better than trying to stick to a diet and beating yourself up every weekend when you'd rather have a good time. Continually giving in to temptations despite setting clear boundaries weakens your discipline muscle. Discipline is the act of giving yourself a command and obeying that command. If you continue to flip back and forth on your internal decision-making, your word loses its power of command. This is why it's important to be honest with yourself. Empower your choices and develop realistic habits you can stick with. If you continue to give in to the off-plan choices, perhaps it's a good time to set smaller, more achievable goals. Guilt is not a positive emotional force and it won't help you.

THE META LEVEL: IDENTITY, BELIEFS AND VALUES

Your beliefs and values are biases for how you search and take on information, and they bleed into your skill sets. For example, you might hold beliefs that draw you towards veganism or believe that 'natural' is better than 'artificial' (or processed). This pre-existing lens affects your objectivity; after all, you see the world not as it is, but as you are.

As it relates to health and fitness, beliefs should be cross-referenced with science and outcomes, not support groups patting you on the back for being like them.

Beliefs, unless questioned, bind you to the knowledge you search for and determine your willingness to consider counterarguments. If you believe you are right about a topic, it's unlikely you will search for the opposing side of the argument. This is how you get caught in the confirmation bias loop: only looking at research, authors and content that support your pre-existing values and beliefs. Today, social media makes the confirmation bias loop far worse as it caters to everyone's political, social and consumer preferences, no matter how factually inept.

As we've already discussed beliefs and identity, I'll provide a summary:

Identity, beliefs and values form the meta program of who you are and how you act. A meta program is simply what your brain pays attention to and how you interpret information and events at a high level.

The way I like to explain this is with computers as an analogy. Computers have different codes. Unless you're a computer programmer, no one ever sees the codes (or cares about them). But these codes tell the computer how to act and what to do in every possible situation. What codes are to computers, identity, beliefs and values are to humans. They make up who we are and inform us how to act in line with a code.

Beliefs are ideas you uphold that make up your identity. Beliefs are what you believe to be true. Identity is who you believe yourself to be. This is why identity is at the top of the pyramid. Once you believe yourself to be a certain way, it's either game over or game on.

So unless you update your 'identity code' to someone who eats healthy foods and builds and nourishes your body, you will always be searching for the next fad and achieving short-lived results.

ACT AS IF...

One of my secret weapons for training champions is to treat all clients like champions. From how hard I'd train them to how seriously I took their questions on the simple things, I would always make a point to speak as if their goal were only a matter of time.

As a trainer and coach, this has always made sense. I want my clients to get results. I figure that the more seriously I take their goals, the more seriously they will too. Years into my career, I learnt that there was a psychological phenomenon for this: it's called the Pygmalion Effect.

The Pygmalion Effect refers to situations where the teacher's or coach's expectations of a student, client or athlete's performance become a self-fulfilling prophecy; students perform better or worse than other students based on the way their teacher or coach expects them to perform^{(5), (6)}.

As you have purchased (or been given) this book, I expect that you do something with it. I want you to see yourself as the person who can win and achieve your goals, because people with these beliefs are the only ones who do.

Most people play the game of life just wanting *not to lose*. If you want to be a champion in any endeavour, you need to *play to win*. Playing to win means you take responsibility, stop looking for short cuts and take on the identity of someone who can win.

Diets are temporary and short-lived – a path for those playing not to lose. As you're a winner, a healthy person, who eats healthy foods that build and nourish your body, ***you don't need a better diet.***

CHAPTER ONE EXERCISE:

Before we move on, here is a powerful exercise that uses The Science of Change Framework and The Dilts Model.

Using The Dilts Model, answer the following questions as they relate to your body, health and fitness:

BE: Identity and beliefs:

- Who do you want to be?
- What beliefs and values relating to health, nutrition and fitness does this person have?

DO: Skills and actions

- What skills does this person have around health, nutrition and fitness?
- What behaviours do they make daily towards their health nutrition and fitness?

HAVE: Environment

- From doing all of the above, what body and environment do you manifest for yourself in 12 weeks, 12 months and 12 years from today?

More links:

For more helpful resources and links on the topic,
visit www.enterprisediet.com/resources

COMING UP

Creating better nutritional habits doesn't need to be confusing. Learn how to start your day in the right way and discover sustainable eating habits to support your goals in the gym and power you through the day without cravings.

YOU DON'T NEED A BETTER DIET

CHAPTER TWO

WHERE SHOULD WE BEGIN?

“Any intelligent fool can make things bigger, more complex, and more violent. It takes a touch of genius — and a lot of courage to move in the opposite direction”.

— E. F. Schumacher

We've all been there, at least metaphorically. You're driving home from the end of a big day, going maybe just a little too fast to see the bed of nails on the road. You swerve, but 'POP!' One of your tyres goes out. As you pull over to the side of the road to survey the damage, your sanity escapes you, expelling like the air from that punctured tyre. So you do what any once-rational person would do in that situation and slash the other three. Hours later, once you have returned from the descent into madness, you finally decide to call the tow truck guy to replace not one but four flat tyres!

In coaching, this is called *flat-tyre syndrome*, commonly known as the 'What-the-hell' effect in psychology, and it's a real killer of fitness and weight loss progress.

It's not that hard to picture yourself being affected by this. You've been sticking to your diet, weighing and timing everything perfectly. Then you decide to have 'just one bite' of a restricted food, which turns into two, which quickly becomes four and then the whole packet. As the potato chip company Pringle's aptly coined catchphrase tells us, "Once you pop, you can't stop."

Flat-tyre syndrome points out how nonsensical it is to be deflated by one diet slip-up. No one in their right mind would slash an additional three tyres after puncturing one. As such, body composition progress does not need to be completely undone with a momentary deviation from your plan. So why is there a compulsion to slash the wheels of nutritional progress?

The problem is twofold: it's both a problem of physiology *and* psychology.

The harder you diet, the more of a physiological hole you create. If your meal plans are too low in calories, have the wrong ratios of macronutrients or are missing vital micronutrients, your cravings will be strong and constant. Furthermore, if you select foods that have been designed to hijack your appetite and control, you'll have a hard time with portion control. Once you give in to that soft and creamy tub of ice cream, your physiology shoots off numerous responses. Neurotransmitters dopamine and serotonin are released, soaking your brain in the reward and feel-good chemicals. Blood sugar spikes, which in turn releases insulin, which makes you feel sleepy. The hormone that tells you you're full (leptin) gets down-regulated and the hunger hormone (ghrelin) increases. It's a chemical cocktail for a good time.

This is why your nutrition plan needs to stop you from under-eating. The compulsive consumption frenzy does not exist (or at least can be limited) when you're following the right plan, even during a calorie deficit. But it's not just your physiology that you have to contend with. Once you open the floodgates of the deep-fried, salt and vinegar corn chips, it's easy for your mind to play tricks. You utter sentences like, "*It's just one*", "*The diet starts Monday*", or "*I may as well have it now and get it out of my system*".

A plan for your nutrition and training will save you from flat-tyre syndrome. Retired Navy SEAL Jocko Willink said, "*Discipline equals freedom*". In fact, discipline gives you the ultimate freedom of choice, like sticking to your plan Monday through to Friday and having that scheduled burger and chips Saturday night, actually enjoying it and waking up leaner the next day. Many would believe this to be impossible. It's not only possible; it can be

your new normal, but you have to stick to a plan for it to work. You can pay for indulgence with discipline or guilt, but you can choose only one.

This chapter will outline the steps to start your day in the right way and give you some guidelines for great eating habits that will deliver more sustainable outcomes.

STARTING YOUR PLAN

When making changes to a diet or lifestyle plan, I recommend starting from the beginning of the day. This is because each meal and food choice has a ripple effect on energy, mood and morale. When you begin well, you create momentum for more positive actions.

In recent times, there has been a disproportionate focus on morning routines. Be it yoga, meditation or going for a long walk, as a father of two, I don't recommend any of these. If your schedule allows for quiet mornings and long walks, I see no reason to interfere. However, body composition doesn't care about how much inner peace or self-care your routine brings. It cares about what you actually eat. In fact, I would go so far as to say that if the choice of time spent is between preparing and eating a proper breakfast or showering, pick preparing and eating breakfast. If people comment on your hygiene, you will quickly find time for both.

Breakfast doesn't 'stoke' the metabolism or simply regulate blood sugar. The truth is, if you eat junk for breakfast, you'll feel sluggish for the rest of the day, and it won't bring you any closer to optimal body composition. What you eat first thing in the morning sets up neurochemistry for the day. If you make poor choices when you wake up, there's a high likelihood that you will keep making them throughout the day. On the other hand, good choices in the morning result in more of the same across mid-morning, lunch and dinner. Breakfast is the one meal you have complete control over. You can't blame it on there being nothing else to eat or not having enough time. You can always wake up a little earlier or prep the night before.

THE TROUBLE WITH MODERN BREAKFAST OPTIONS

Despite what commercials and nutritional dogmas tell you, skim milk and cereal don't make a balanced breakfast. Breakfast 'foods' are nothing more than powerful advertising becoming part of the social narrative. As it turns out, the 'should' messaging comes from the companies selling us packaged breakfast propaganda, not what's best for your health or body composition. Keep in mind that the war for your breakfast menu has been fought for 100 years by powerful multinational corporations.

Nutritionally void cereals and sugar-laden breakfast bars are excellent choices to elevate blood glucose, setting you up for 'coffee o'clock' after your blood sugar has crashed. Advertisers deserve creative accolades for convincing the public that cereal, skim milk, muffins and juice are almost exclusively breakfast foods. Really, they are just foods, and very poor choices at that. Unfortunately, these foods are reinforced by cultural norms. When all you knew as a child was cereal and milk for breakfast, you don't question your choices as an adult.

There is no reason why breakfast needs to be limited to toast, cereal, oats, muffins, milk, eggs, bacon and juice. Sure, some of these foods may be in your breakfast. However, it's time to wipe the breakfast slate clean and replace it with a new perspective.

WHAT SHOULD I EAT FOR BREAKFAST?

Firstly, stop calling it 'breakfast'. Let's remove all connotations and associations with breakfast from this moment on. Let's simply refer to it as *Meal 1*.

The term breakfast comes from the etymology of breaking a fast (breakfast). As your first meal of the day, and the one that is breaking the fast from hours of hibernation, you should eat something highly nutritious that doesn't dysregulate blood glucose. This means your breakfast should be powered by protein and fat, with carbohydrate intake that is dependent

on activity level. For example, if you are training early in the morning, the first meal you consume will be different in carbohydrate content from if you were training late in the evening. While nutrient timing isn't everything, it should be observed as it can affect your performance in the gym, your recovery (in the short term) and your body composition (in the long term).

The food choices for your first meal should be the same as your other meals. Choose foods that are hunted, fished, farmed, gathered and plucked.

Meal 1 should set you up for the day. The last thing you want to do is elevate your blood glucose in an unwarranted way because you will end up with an energy crash. To understand how to set up your first meal of the day and what foods to select, you need a general understanding of blood glucose and how it coexists with energy peaks and dips.

Approximately one teaspoon of glucose circulates in your bloodstream at rest. To give nominal data on blood glucose, **optimal** sits between 3.9 and 4.8 mmol/L. To note, this is a range many functional medical practitioners and naturopaths would consider optimal. Reference lab norms and averages sit between 4 and 7.8 mmol/L, according to Diabetes Australia⁽¹⁾. Blood glucose levels from 7.8 to 11.0 mmol/L (140 to 199 mg/dL) indicate prediabetes, and more than 11.1 mmol/L (200 mg/dL) indicate diabetes⁽²⁾. I will talk about blood norms in a later chapter; however, right now, know that averages are based on a Homer Simpson level of health. There is a big difference between Homer Simpson's blood work and someone who is striving for optimal.

What do these numbers mean? Let's look at a practical example:

For your first meal of the day, you buy a wholemeal vegan apple-and-blueberry muffin⁽³⁾ from the café on the way to work. Beneath the veil of wholemeal flour, vegan, blueberries and apples that are all 'healthy' – you've just consumed 56 grams of carbohydrates, which breaks down to 25.1 grams of sugar, 15.2 grams of fat and only 8.2 grams of protein. That's 398 calories with an almost non-existent micronutrient profile.

The companies that sell foods (or better put, *food products*) like this benefit from the *Healthy Halo Effect*, which is a psychological phenomenon. This is where one views a particular food product positively because of marketing. The product might say ‘low-fat’ or ‘vegan’. Because of these labels, you generalise it to be nutritious when it contains nothing but empty calories.

WHAT'S IN A WHOLEMEAL VEGAN MUFFIN:

To give context, compare a muffin to eggs on toast. Two soft-boiled eggs have 11.9 grams of protein, are loaded with micronutrients and contain 134 calories⁽⁴⁾. Two slices of gluten-free toast have 34.8 grams of carbohydrates (three grams of which are sugar) and contain 181 calories⁽⁵⁾. The eggs and toast combo gives you 35.5 grams of carbs and 13.9 grams of protein, all for a total of 315 calories. But the reasons for selecting the eggs and toast aren't *just* about caloric or nutritional value. It's also about optimising your energy.

If your baseline of blood glucose is about a teaspoon, that muffin has immediately added five teaspoons of glucose into your bloodstream. The muffin will add another five from the more complex carbohydrates once these have broken down. This means your blood glucose is going to spike. But blood glucose can't remain chronically elevated. If it did, your blood platelets would soon become sticky, almost caramelising, severely affecting circulation, resulting in eventual death. Any excess blood glucose has to either be put to good use in physical activities or be sucked out of the bloodstream.

Enter insulin.

Insulin is the hormone secreted from your pancreas in response to elevated blood glucose levels. Once secreted, its job is to signal to the muscle, liver and fat cells to take up glucose. Preferably, the muscle cells take in glucose to be utilised or stored as muscle glycogen. Least preferably for body composition and when in excess, insulin will store glucose in your fat cells, the ultimate resting place for all excess calories.

Insulin, particularly in those with insulin resistance, will overshoot the blood glucose spike. The higher the peak of blood glucose, the higher the peak of insulin⁽⁶⁾. This causes your energy and blood sugar to drop rapidly.

An extreme example of this would be watching a diabetic inject insulin after a meal that is followed by a yawn or two and glazed eyes. Yawns, glazed eyes and a blood sugar crash are the last things you need when you need to get on with your day, especially if you work for a living.

Everything you eat has an impact on your blood glucose in some way. If you want to avoid the ‘spike and crash’ cycle, choose foods that stabilise your blood glucose levels.

Let’s be clear. The goal is to fuel your body adequately for the day ahead. That means you want to bring your blood glucose up, but not so high (and not so fast) that insulin makes it crash.

Unless you’re carb-depleted when you wake up or you’re about to do a workout, Meal 1 should be high in protein, moderate in fat and have a carbohydrate content specific to your level of activity.

THE HIGH-PROTEIN BREAKFAST

If your goal is body composition, starting your day with a high-protein meal is not only practical but beneficial. Protein foods are high in nutrient value, have minimal impact on blood glucose and keep you satisfied for longer.

Amino acids are the building blocks of protein, which in turn are the building blocks of muscle. They serve many important functions, from synthesising your hormones, assisting your liver with detoxification and building neurotransmitters to repairing your muscles after a workout.

The high-protein foods that most people start their day with are eggs and protein powder. It’s common for body-conscious individuals to cycle

between these two high-protein choices. However, there is absolutely no reason not to branch out. High-protein Meal 1 options can also include:

- **Slow-cooked meats:**

- Slow-cooked lamb
- Slow-cooked beef

- **Red meat:**

- Steak
- Mince
- Chops

- **Game meat:**

- Kangaroo
- Deer
- Goat

- **Poultry:**

- Chicken
- Chicken mince
- Turkey

- **Fish and seafood:**

- White fish
- Prawns
- Salmon
- Mussels
- Offal and organ meats
- Bone broths and soups
- And of course, eggs

Many think eating meat in the morning is weird. What I find weird is not questioning the social stigma from which this belief originates. There is nothing physiologically weird about eating meat in the morning. What is weird is consuming processed junk labelled healthy and paying a high price for it (especially from an evolutionary standpoint).

But don't fret. If you're not ready to fire up the BBQ at dawn, eggs have earned their place on your plate. You can have a different egg dish every day

of the week: omelettes, fried, sunny side up, poached, quiche, hard-boiled, soft-boiled, scrambled, frittatas and raw egg shakes are just some ideas. You can pair your eggs with different carbohydrates and fats to mix things up as well.

As for protein powders, they are often used as a crutch instead of real, nutritious food. My preference is to eat a real meal for breakfast, although a protein shake with a piece of fruit is better than a bowl of sugary cereal.

HERE'S WHEN I LIKE TO USE PROTEIN POWDERS:

1. For diets inadequate in protein food sources, such as a vegan or vegetarian diet.
2. For hard-training athletes whose training and protein levels demand supplementation.
3. As a cheap and convenient way to get protein.
4. For when you need to hit your protein macro goal but don't have the appetite to eat another piece of chicken.

When selecting a protein powder, maintain a high level of scepticism of varieties like cheesecake or peanut butter fudge flavourings due to the high level of additives. It's wise to buy powders that have as few ingredients as possible.

Protein powders are convenient as I mentioned, but it is better to consume high-protein foods, particularly for Meal 1. Real food gives you the benefit of micronutrients, improved blood glucose management and higher levels of appetite satiation. In my experience, most fitness aficionados overdo the shake. Many also have a halo atop their favourite protein brand. Protein shakes are convenient but shouldn't replace meals.

The next decision is how much to eat for your first meal of the day. This should correspond with your daily macro targets, which I discuss in chapter 5.

BUT I'M NOT HUNGRY FIRST THING IN THE MORNING... (AND LATE-NIGHT EATING)

Changing Meal 1 habits is often met with resistance. People say, “*But I'm not hungry first thing in the morning!*”

I want to know:

1. What do you mean by ‘first thing’?
2. Why aren't you hungry? There are always reasons.

‘First thing in the morning’ doesn’t mean chewing on glazed ribs as soon as you roll out of bed. A reasonable window to consume your first meal is two hours after waking. However, if you are trying to meet a calorie, protein or carbohydrate target, eating within one hour of rising allows you to space out your meals more evenly throughout the day.

After analysing thousands of diet journals, I found that a lack of hunger in the morning is usually due to three main factors: a habit of late-night eating, poor digestion or lack of physical activity. Research concurs with my experience as a trainer and coach.

Late-night snacking is a killer of dreams because it can negatively interfere with your sleep quality⁽⁷⁾. Poor sleep has multiple flow-on effects that hinder your willpower, decision-making and hormone regulation. What’s worse, most cases of late-night eating are not carefully laid-out macro-specific meals containing protein and vegetables. Instead, evening snacks are mostly high in sugar, fat and salt — the nutrient-devoid, flavoursome foods that you like to soak your brain in after a long, hard day. These foods lead to dysregulated blood glucose during your sleep, which can cause you to wake up. It can also prevent you from staying asleep or reaching the rapid eye movement (REM) phase of deep sleep. REM is the restorative stage of sleep that renews your mental and physical health, a lack of which is associated with an increased risk of obesity and diabetes⁽⁸⁾, as well as decreased reaction times and athletic performance⁽⁹⁾.

Contrary to popular belief that they eat all day, sumo wrestlers consume the majority of their calories over lunch and dinner. Both these meals are followed by sleep. Obviously, the fact that they sleep after meals is not the only factor in their excessive weight gain; such an athlete must be in an extreme calorie surplus. However, it's still worth noting that the fattest athletes on the planet skip the first meal of the day and eat right before going to bed as a means to becoming ginormously fat. I'm guessing if you're reading this book with the intent to get in shape, a sumo body shape is the last thing you'd want.

From research, epidemiological and interventional studies suggest that skipping food in the morning and eating late-night dinners are associated with a greater risk of obesity⁽¹⁰⁾, metabolic syndrome⁽¹¹⁾ (which includes insulin resistance) and cardiovascular disease⁽¹²⁾. Psychologically, late-night eating is linked to anxiety comorbidities⁽¹³⁾, distress and depression⁽¹⁴⁾, especially among those who are obese. Research has also shown that skipping breakfast and late-night eating are directly associated with one another⁽¹⁵⁾.

A study of 3,129 Japanese female workers showed that skipping an early meal and eating in an irregular way was strongly associated with poor sleep⁽¹⁶⁾. Furthermore, the study showed an independent association between a low intake of vegetables and fish, a high intake of confectionery and a high carbohydrate diet with poor sleep quality. Translation: if your diet sucks, your sleep will suck. If your sleep sucks, you will be more likely to make bad choices. Those bad choices diminish sleep quality, which affects dietary choices and energy levels. You can stop the cycle by addressing sleep and diet simultaneously.

You can overcome late-night eating and get in shape with a psychological and physiological approach.

The four psychological signs to be aware of are:

- Boredom
- Mental fatigue
- Anger
- Loneliness

If you find yourself in one of these states, eating will not solve your problem. A technique to tackle this dilemma is to have constructive options ready. I recommend creating a list of go-to options and having the list in plain sight, like on your fridge or dinner table. Of course, you should brainstorm these options when you feel positive, calm and acting as the best version of you. Combine this with the previous chapter's mindset tweaks and a proper diet (which will be outlined in subsequent chapters), and you'll have yourself a solid plan.

The physiological signs are:

- Being hungry
- Not hitting macro goals
- Not hitting meals-per-day targets
- Purposely skipping meals to burn more fat
- Sudden increases in energy expenditure
- Sudden decreases in energy intake
- Being in a calorie deficit for too long
- Macronutrient deficiencies
- Micronutrient deficiencies

All of the above can be solved by having the right nutrition plan. This book will answer many of these questions for you as you go along.

Apart from not eating late at night and finding other ways to deal with emotional situations, a helpful habit to build an early morning appetite is

to go for a walk when you get up. When clients ask me how long or what intensity this walk should be, my only specification is that you do it. It can be anywhere from 10 to 50 minutes and the pace is entirely up to you. The aim of this is to get you up, get blood circulating and help you develop an appetite for your first meal. It's also a great way to clear your head and start your day.

SHOULD I TRAIN FASTED OR FED?

Training fasted or fed won't make or break your results. Consistently training hard with a routine and a plan will.

The debate over training fasted or fed stems from bodybuilding forums where competitors either want an advantage to burn fat or don't want to burn muscle from doing cardio on an empty stomach. The topic for competitors becomes somewhat relevant in the final four weeks of a well-put-together contest preparation when someone is at their peak form.

Despite this, any slight advantage gained from training fasted or fed is not one you should turn your whole day upside-down for. It makes for good bodybuilding debates and catchy article headlines, but in context, it's as insignificant as peeing in the ocean.

Total calorie consumption, training intensity, sleep quality, gut health, toxic load, stress, lifestyle, consistency with diet and micronutrient deficiencies all trump the debate of fasted versus fed training. These are the big rocks – the things that matter that will have a direct impact on your results in a meaningful way.

On the topic of fasted vs fed for training, you also need to consider what you're training for: *Strength and performance* or *body composition and fat loss*. They are not the same thing.

If you look at the science of how things work, the energy system utilised in strength training is glycolytic (dependent on glucose), meaning it

depletes both ATP (Adenosine triphosphate) and muscle glycogen. ATP is the source of energy for use and storage at the cellular level. The preferred fuel source for ATP and muscle glycogen is carbohydrates. Because of this, it's likely you will experience a dip in performance during a strength workout if you're training fasted.

Even those who champion the benefits of a low-carb or keto approach time their daily carb intake around their strength training because of this fact. It's called cyclical keto. On a biochemistry note: one module of glucose gives 32 to 36 molecules of ATP. Your ATP energy system is the system responsible for the first 10 to 20 seconds of output. What this means is one gram of carbohydrate is far more efficient at running this system than one gram of fat or protein.

Simply put, when the first 10 to 20 seconds of performance are important, carbs pre or during training make good sense. If you're an athlete, competitor or general gym-goer who wants strength and performance, I recommend timing your carbohydrate intake around your workouts to support intensity over fasting.

Consequently, training that depends heavily on the aerobic energy system, such as going for a steady run or bike ride, relies less on *just* the glycolytic system and more of an even keel from fatty acids, carbohydrates and as a last resort, protein. If you're doing this for body composition purposes, choose either fasted or fed. How much fat or carbohydrate someone burns during a workout is greatly dependent on diet. People who eat more fat tend to burn more fat, while people who eat more carbohydrates burn more carbohydrates. This is why it's unnecessary to worry about whether to do your cardio fasted or fed. Just go with personal preference.

In summary, training fasted or fed for the overwhelming majority of people really doesn't matter. Train at a suitable time that you can stick to. If that's fasted, remember that it's not a magical key to fat loss and that avoiding food before working out might also hinder your performance.

SKIPPING BREAKFAST, INTERMITTENT FASTING (IF) AND TIME-RESTRICTED EATING (TRE) PERIODS

You've probably heard of intermittent fasting and how skipping breakfast can offer health benefits, including weight loss and improved cognitive performance. This approach is praised by the biohacker community who recommend switching breakfast for (usually) bulletproof coffee.

First off, those who preach the benefits of intermittent fasting usually have a healthy user bias. They already have healthy behaviours such as exercising regularly, minimising junk food, following a specific nutrition protocol, limiting alcohol and maintaining good sleep hygiene.

In this group of people, any credit given to fasting in my opinion is well overstated. Their success is far more attributed to forced routine meal times and implementing fasting as a strategy that both limits calorie consumption and focuses on optimising food selection.

I mean, if you want to skip breakfast, just say you're too busy to eat. Let's not pretend fasting is going to cure all diseases. As for bulletproof coffee...

This is where you add fatty acids, usually short- and medium-chain triglycerides in the form of butter, coconut oil, MCT oil or ghee to your coffee. Fat has almost zero impact on blood glucose so you get a buzz from the caffeine, and the fatty acids can sustain your energy for a few hours.

However, this is not '*fasting*'. You're manipulating blood glucose and early morning cortisol with caffeine and lipids. The reported cognitive benefits come from consuming a strong cup of coffee on an empty stomach. So again, let's not say the cognitive improvement is from fasting when you're consuming 125 milligrams of what is a powerful stimulant.

Despite the dollop of butter, bulletproof coffee is certainly not giving you a head start on the nutrients you require for optimal body composition... unless of course you fortify your coffee further with collagen, amino acids,

vitamins and minerals, which (surprise) are sold and promoted by many fasting and bio-hacking blogs and websites.

As today's modern fasting is usually attached to using supplements, the strategy is enticing, marketable and convenient for a busy corporate and business person who wants to believe they can run out the door with nothing more than a cup of their favourite brew. But don't piss on my leg and tell me it's rain. It's not 'fasting'.

If you want to optimise your body composition and train hard, eat a nutritious Meal 1.

With all that said, I'm not dismissing the benefits of actual fasting. However, as I have pointed out previously, skipping breakfast is synonymous with late-night eating, which is associated with a host of physical and physiological drawbacks, including obesity and mental health issues. While the approach may work for some, it's not something I've recommended to my tribe of body-conscious and performance-driven followers. In fact, I've never used intermittent fasting as a strategy for fat loss or performance.

The majority of health-conscious and physique enthusiasts are already malnourished and overtraining. It makes no sense to further aggravate the situation by restricting the window of when they can eat. The reason why most don't get results is not because they eat too much. It's because they don't eat enough nutrient-dense foods. And that's the thing about nutrient-dense foods. They are hard to over-consume for four reasons:

1. They fill you up, satisfying your appetite due to the higher volume of food per calorie and higher fibre content.
2. They take time to prepare (you can't just open the box) and generally take longer to eat (compare chewing steak to eating ice cream).
3. They're more expensive.
4. You don't get the same food high. As exciting as steak is, it's still not ice cream.

The other important factor to mention is that most IF advocates are keto-adapted (that is, their primary source of fuel is fat rather than carbs). I don't have a problem with the keto diet, except that it sucks for physical feats that require the alactic and lactic energy system (such as weight training, maximising muscle gains and most fast-moving sports). Bear in mind, keto does have some great applications, particularly for people with epilepsy and some endurance athletes. If I had epilepsy or didn't train, my diet would be higher in fat. So while I'm not anti high fat or even against keto, context is always king.

Most people who use IF to get in shape do so out of convenience or are chasing another fad. The ones who swear by it usually have had some or a lot of success managing their weight loss with a restricted eating strategy. But that doesn't mean that their success was exclusive to this (or any other) strategy. What it means is they found something they could stick with.

One of the most common remarks from the thousands of clients and competitors I have encountered and trained is how much more food they need to eat to transform their bodies. If you plan to improve your body composition, increase your strength and physically push yourself, you need fuel for your body, and it's almost always more food than you think you need, especially when it comes to protein.

There's an argument for fasting one day a week to promote metabolic adaptability, but unless you're measuring blood markers and body composition, you're guessing the outcome of whether or not it's working. For a lot of people, it simply just delays recovery.

My pet peeve with IF and TRE is when they are recommended as general health advice. Fasting and TRE are advanced diet strategies. They should be implemented only by advanced practitioners and tailored to specific individual needs. These strategies are oversold as a way to consume whatever you want while still losing fat. It's false advertising.

If you're going to fast, you need to pay even *closer* attention to your diet and exercise, which requires even greater willpower. In short, you have to *earn the right* to fast.

As for the weight loss effects? Multiple studies on IF point out that the mechanism is simply achieving a caloric deficit. There is nothing groundbreaking to write home about. Other studies on IF have concluded no weight loss as people simply compensate with overeating at other times of the day. Both IF and TRE, in my opinion, are best used as short-term diet tools and are rarely needed. If you're going to use them, it's important to have a specific outcome you're trying to achieve that can also be measured. Markers should include blood glucose, body fat percentage and indicator performance lifts.

RESEARCH NOTES ON IF AND TRE

Children should eat a meal in the morning. The prevalence of being overweight is significantly higher in those who skip food at this time⁽¹⁷⁾. Missing this meal also impacts cognition and academic achievement in a negative way⁽¹⁸⁾.

A randomised controlled trial compared breakfast consumption with fasting until noon, and showed no evidence that skipping the first meal of the day had any effects on body weight in 23 overweight men and women over six weeks⁽¹⁹⁾.

Late-night eating and skipping breakfast have a strong association. Late-night eating is also associated with higher risks of obesity^{(16), (20)}.

Chrono-nutrition (when you eat) affects sleep habits, which affects sleep quality, especially for those living in urban areas⁽²¹⁾.

Although limited by research, it has been indicated that fasting is not beneficial for females⁽²²⁾. One of the suggested mechanisms is that it triggers

an appetite suppression response in males. In females, the response is minimal⁽²³⁾. From a metabolic point of view, it has been found that relative lipolysis (fat-burning) is blunted in women who fast compared with men⁽²⁴⁾.

In another study looking at differences in men's and women's fasting, women's blood glucose responses post postprandial (post-meal consumption) were impaired and their insulin responses were unchanged after three weeks. Men, on the other hand, had no change in their blood glucose and a significant reduction in insulin response, increasing their insulin sensitivity⁽²⁵⁾.

Fasting and TRE are definitely not advised for pregnant women or those who suffer from reproductive issues such as amenorrhea (irregular periods).

SUMMARY OF IF AND TRE

If you're overweight or unhealthy, don't start with IF and TRE. Furthermore, IF and TRE are not advised for body composition or athletic performance. These strategies are unnecessary and offer no clear advantages in the broad context of a fitness plan, particularly for females. (Broad content includes calories, macros, sleep, training, supplementation, underlying health factors, lifestyle and stress.)

There are benefits to fasting such as increased autophagy⁽²⁶⁾ and improved insulin sensitivity in males. However, to reap the benefits, you need to have healthy blood markers long before. Additionally, it's not enough just to do a fast and think you're gaining benefits. You must have objective measures, such as body fat percentage and blood insulin levels, and before and after periods of fasting to ensure achieving the intended benefits.

So how should you begin your day?

With a high-protein meal.

MY MORNING COFFEE

As an Italian, coffee runs through my veins. Upon returning to the homeland, I was reminded of how the rest of the world has bastardised coffee. I ordered a long black. To my shock, the waitress said, “*You mean the Americano?*” In her Italian accent, it felt like she was telling me, “*You drink coffee like a tourist*”. I had let my people down. The cultural awakening prompted me to reform my coffee habits.

Big business has heavily commercialised coffee. Soy lattes, almond chai and the Grande are gimmicks to increase the average dollar sale of a daily purchase of everyone’s favourite drug. Coffee and its chemical counterpart, caffeine, need to be treated with respect. Most use it as a chemical crutch to mask their lacklustre energy and crappy diets. Relying on caffeine to get you through your day is like taking out a loan from the bank for one million dollars and then quitting your job with no way of paying it back. Sure, you can spend that money now, but one day you’re going to need to return the funds, and with interest.

In the Western world, we celebrate the drugs of productivity like Ritalin, Adderall, Modafinil and, most commonly, caffeine. We do this all in the name of achievement. Social media is filled with #hustle worship. Westerners are conditioned to #grind and to celebrate our sacrifices, which often come in the form of health and relationships.

The celebration of productivity and hustle is why coffee is universally accepted and part of our social fabric. The office coffee machine doesn’t just dispense delicious black liquid, it also hands out cups of productivity. It’s common to have several cups a day, but common is not normal.

Luckily, coffee can still have a place in your diet.

HERE ARE MY 10 HARD AND FAST COFFEE RULES FOR HEALTH, BETTER SLEEP AND BODY COMPOSITION:

1. Drink black coffee. No sugar. No milk. Nothing artificial.
2. Buy organic.
3. Never consume coffee post-workout.
4. No coffee after 1:37 pm.
5. The ideal time for coffee is after Meal 1 and pre-training (but not after 1:37 pm)
6. Don't do double shots.
7. Count long blacks as two coffees.
8. Drink short blacks
9. Limit coffee to two cups per day.
10. Respect each cup. It's a drug after all.

Some of you (including my friends and family) might hate my rules. Particularly the ‘count long blacks as two coffees’ rule. Like them, you might roll your eyes and say things like, “*It’s too weak with one*”. Despite the opinions of desensitised coffee taste buds, there is research and wisdom in each rule. Here’s the rationale behind my approach:

1. Drink black coffee. No sugar. No milk. Nothing artificial

No Sugar. Sugar is empty calories.

No Milk. This is to control calories.

Additionally, people’s tolerance for milk is wildly varied. For body composition, I like to eliminate all additives to coffee to begin with.

Nothing artificial.

Not all artificial sweeteners are created equal. My general stance on artificial sweeteners is to save them for desserts. Coffee is not a dessert; therefore, sweeteners don't belong in your cup. See chapter 8 for my thoughts on artificial sweeteners.

2. Buy organic

Coffee beans, unless organic, are heavily sprayed with pesticides. If you have one to two cups of coffee a day, that's constant exposure to potentially harmful synthetic pesticides. Instead of doing a detox, remove the exposure at the source.

Additionally, buying high-quality coffee beans will eliminate the need for milk or sugar as your coffee will taste better.

3. Never consume coffee post-workout

Caffeine delays your ability to relax and recover. This is because it increases cortisol (the stress hormone) in your body⁽²⁷⁾, which ramps up your sympathetic nervous system, causing you to enter 'fight or flight' mode. But after a workout, you want your parasympathetic nervous system (our 'rest and digest' mode) to take over as fast as possible, so you can recover.

In short, caffeine right after a workout will delay your recovery. Coaches and 'experts' who recommend caffeine to better utilise glucose post-workout miss the connection between caffeine, cortisol and the nervous system. Additionally, if glucose uptake is the goal, supplements like berberine or R-ALA are far better choices than caffeine as they can increase glucose uptake without affecting cortisol.

4. No coffee after 1:37 pm

Caffeine's main mechanism to keep you awake is to bind with your brain's adenosine receptors. Adenosine slows down neuroactivity, making you feel sleepy.

Caffeine has an average half-life of five hours to exit your system (even longer for some individuals). If you consume a short black with 63 milligrams of caffeine at 1:37 pm, you will still have 31.5 milligrams in your system at 6:37 pm. This also means that caffeine has a quarter-life of 10 to 12 hours. So that 63 milligrams at 1:37 pm is 15.75 milligrams at 11:37 pm.

If you have coffee too late in the day, the half-life and quarter-life will extend into when you're sleeping. This either impairs your ability to fall asleep or affects your body's ability to reach a deep or REM sleep. Both of these are essential to mental and physical health.

So why 1:37 pm?

Odd, obscure and novel numbers get people's attention, and now that I have your attention, you will remember: No coffee after 1:37 pm.

5. The ideal time for coffee is in the morning and/or pre-training (but not after 1:37 pm)

A coffee with or after Meal 1 gives you the certainty that the caffeine will be out of your system when it's time for bed, and won't interfere with your sleep.

A coffee before a workout gives you a boost of cortisol, which will help you train and focus. You still need to adhere to the 1:37 pm cut-off regardless of when you train.

6. Don't do double shots

A single shot of coffee has approximately 63 milligrams of caffeine.

A double has 125 milligrams.

If you accustom yourself to needing more caffeine, you will need it for the same response as your receptors lose sensitivity.

Use your double shot sparingly. Save it for when you are in the gym and going for a new personal best or when the stakes are high in competition. Good examples of when not to have a double shot include reading emails, catching up with friends and to ‘relax’. If you want your coffee to last longer, add more water, not more coffee.

7. A long black is two coffees

A long black has two shots. Therefore it's two coffees.

When counting how many coffees you're currently consuming, if you consume two long blacks a day, that's four coffees.

I do not recommend going cold turkey as you will suffer headaches or migraines. Instead, reduce your consumption slowly, one shot at a time, every three days. That means if you are drinking three long blacks a day currently, cut down to two long blacks and one short black.

8. Drink short blacks

This will control how much caffeine you're consuming in any one cup.

9. Limit coffee to two cups per day

Keep your total caffeine consumption at around 125mg to 150mg per day. There is no such thing as a caffeine deficiency.

10. Respect each cup. It's a drug after all

Caffeine is a drug and all drugs have drawbacks. Don't kid yourself because coffee is so prominent in your culture that it gets a free pass. The minimum effective dose is the optimal dose.

Respect coffee and use it wisely.

ACTION POINTS

1. Implement early morning walking to stimulate your morning appetite. Get in the habit of being hungry when you rise.
2. Eat a high-protein breakfast. To begin, it can be as simple as one boiled or fried egg.
3. Skipping breakfast has been associated with late-night eating.
4. A nutritious, high-protein breakfast will help regulate your appetite to avoid late-night eating.
5. Consume your last meal of the day two to three hours from going to bed.
6. Late-night eating affects sleep. Sleep affects fat loss. Set an alarm for when it's time to go to bed. Sleep and diet are co-dependent variables. No one did anything stupid in the wee hours of the night by going to bed early.
7. Coffee must be respected. Limit to two cups a day. Drink it black and never after 1:37 pm.

Check out the resources page for videos on:

- How to make eggs
- How to make Steak Tartare
- My thought on Intermittent Fasting
- My thoughts on Keto

Visit www.enterprisediet.com/resources

COMING UP

In chapter 3 I'm going to break down the truth and myths about hormones and calories with simple, no-nonsense advice. Learn the truth about all diets and the principles that make them work. Once you understand this, you'll never fall prey to a fad diet again.

CHAPTER THREE

HORMONES AND CALORIES

The two prominent ways to assess and explain all mechanisms of diet and nutrition are calories and hormones.

O n one side, a calorie is a calorie; weight loss or weight gain is merely a mathematical equation of calories in and calories out. On the other, hormones and biochemistry send chemical messages to store calories in fat cells and overwrite appetite control.

Depending on perspective, and to the average person, both are accurate explanations for weight loss and weight gain. An army of experts, gurus, camps and zealots have emerged from these prominent perspectives. The two sides will not concede nor admit the validity of a different approach. I'll be clear. In nutrition, there is no middle ground. You simply must pick a side, and if you don't, you will be ostracised — a fate worse than death to a social media influencer. Today, nutrition is less about science and more about selecting '*the science*' that matches your identity.

As a coach, I care less about why something works and more about what works. To state simply, my client pays me, so I don't need to pick sides. I don't need to make keto memes or shout about 'evidence-based' results in a grab for social media followers and sales. I've coached hundreds of champions and my studio has worked with thousands of clients. The two things I care about are results and client longevity. Out of necessity, I had

to adapt the viewpoints of calories and hormones and practically apply *both* theories in the real world.

Some folks like to count macros, others do better with a loose set of rules. From my observations as a coach and trainer, here's what I can tell you:

- Calories in versus calories out tells us *how* we get fat.
- Hormones and biochemistry describe *why* we get fat.
- Personality — not mechanisms or biochemistry — is the linchpin to making either approach work.

In this chapter, I'll talk you through calories, hormones and why there isn't a single 'magic bullet' for weight loss success.

THE CALORIE AND HORMONE SPECTRUM

So what's the difference between *how* and *why*?

And why does it even matter?

It matters because without understanding the difference between these two vantage points, you'll fall prey to nutritional nonsense and won't be able to see through the confusing and misleading fog of the diet industry. *How* is the world of boring science, mind-numbing research and big, fancy words like *gluconeogenesis*. *Why* is your internal world. *Why* can be more complex than the most controlled meta-analysis or as simple as telling someone not to eat bread. *Why* something works is based on the individual, and there is no foolproof formula. The gap between *how* and *why* is where the diet industry eats itself.

To simplify the discussion, you need to look at the spectrum between calories and hormones. At the most basic end, *a calorie is a calorie*. That means you can eat whatever you want, but you must remain in a calorie deficit to lose weight. The modern nutritional adaptation of calorie counting is

If It Fits Your Macros or IIFYM as an acronym. IIFYM extremists promote eating cookies, ice cream and pie, so long as it fits your macronutrient ratios. On the extreme end of the spectrum, there's no consideration for food quality as a *calorie is a calorie*, but if you want to lose weight, you'd better be in a calorie deficit. This is the primary rule.

You'll find hormones on the other end of the spectrum. Those who believe hormones are the reason for fat gain primarily identify insulin as the culprit that drives calories to be stored in fat cells. It's also insulin that can dysregulate leptin and ghrelin, the appetite control hormones that can influence you to overeat. In this camp, controlling insulin is key, and what has the biggest impact on insulin?

Carbohydrates.

This approach (mostly) demonises carbs and hails high fat and high protein as nutritional saviours. Sound bites from the extreme end of the hormone camp might say, “*Eat as much as you want*” and “*Calories don't matter*” while telling you to avoid carbs or keep your food choices clean.

If nutrition debates were reenacted like the Wild West, the mere mention of the word ‘clean’ would see the children scatter and the bystanders duck for cover.

The word ‘clean’ leads to a secondary and pertinent debate: what constitutes a ‘clean’ food and why are so-called clean foods important if a calorie is a calorie?

‘Clean’ can mean a lot of things. Macro-focused IIFYM zealots have filled the internet with memes of bleach or soap next to their favourite chocolate bar with the hashtag #cleaneating.

As the memes correctly point out, the word ‘clean’ does not simply describe macronutrients. A macronutrient is not clean or unclean. However, it can be used if chemicals and pesticides are sprayed on or in your food. Herein lies the first of many problems of adapting a calories in versus calories out

dogma – the evidence-based calorie-counters mostly do not acknowledge chemicals in food as being problematic as *a calorie is a calorie* and digestion breaks everything down to a mere chemical. This is where the calorie purists go wrong. However, if you understand the calorie enthusiasts' lens, you will know why synthetic pesticides and chemicals in food or even food quality are easy to dismiss. They mostly look at the world through the lens of body composition and weight loss, not health. They will argue that if someone loses weight, they improve their health. So from an evidence point of view, why fuss over chemicals if you can improve health by just controlling calories?

Because you can have both. Furthermore, a diet that improves health will help you lose weight, as previously discussed.

Learning how to lose weight effectively is an obvious problem, with obvious results when rectified. Low-level toxicity is attributed to disease and body composition over time. Toxicity has an acute and less noticeable effect on mood, energy and cognitive function. It's difficult to study a single variable in humans, such as a specific chemical in food, at low but ongoing doses over many years. There are just too many genetic and environmental variables at play. Additionally, you don't need a study to prove that a kick to the balls hurts or that parachutes 'work'. In short, environmental pollutants are a problem and I see no reason not to factor both calories and toxicity into your health plan. (I'll talk more about toxicity and biohacking human biology in a later chapter.)

But I digress. Can you lose weight while eating junk food if you maintain a caloric deficit? Technically, yes. However, to do so requires meticulous planning, measuring and adherence to a plan. Additionally, the people who succeed are usually engaged in intense and rigorous training. It's doable, but it's not easy, and that's another thing. Easy and difficult are relative terms.

While someone could find calorie counting a prison of spreadsheets and numbers, another could feel like giving up carbohydrates is a fate worse than death. One must also consider the compulsion most people (including myself) have to eat junk foods, turning themselves into consumption

machines. How do you control calories when your biology is telling you to eat? This situation can rapidly exhaust willpower.

Regularly including junk food in your diet is as much an issue of self-regulation as it is of controlling calories. Go ahead, lay out the plan to eat what you *think* you want. Cookies, cakes, pizzas... go nuts. Let's see if it opens the floodgates to bingeing and over-exercising. This is not a pretty scenario. The idea is we *eat to live*, not *live to eat*, a concept many calorie counters fall victim to.

To win the debate, you have to at some point acknowledge that the vantage points of hormones and calories are nutritional approaches within themselves. Both work and have legions of fans. So instead of arguing *which* way is better, I prefer to look at the *context* of which approach is appropriate. This means understanding, first and foremost, who is implementing the approach. It's understanding the difference between content and context. It's *how* and *why* finally conceding to *who*.

CONTENT VERSUS CONTEXT

Sound bites have taken over the nutritional airways, but each one has a 'what if':

“It’s bad to have carbs after 4 pm.”

- *But what if I train at 4 pm?*

“Eat raw vegetables.”

- *But I get gas every time!*

“Don’t mix fat and carbs.”

- *So you’re saying I can’t have red meat with rice?*

“Fruit makes you fat.”

- *But I’m only having 150 grams of carbs a day...*

“Just eat less.”

- *But I’m already on 900 calories and not seeing any results!*

The context is just as (or more) important than the content of what you say. For one individual, it may be appropriate not to have carbs after 4 pm, but somehow in popular nutrition, the arbitrary '*them*' gets applied to everyone.

You can't divorce content from context. Hence, the best response to the most annoying, popular and persistent sound bites is, '*it depends*'.

What are you trying to achieve? What's your starting point? Have you been successful before? Were the changes you made sustainable? These are just a few of the questions that enter my head when I'm consulting with a client who is clinging for dear life to a nutritional sound bite they believe is a universal fact.

I used to say there are universal truths in nutrition: eat enough animal protein; vegetables are good for you; select natural whole foods; drink enough water. But every one of those statements has been challenged by fringe nutrition cults.

Vegans don't want you to eat animal protein. Carnivores say vegetables aren't as good for you as you may think. Calorie counters tell you food quality doesn't matter. I even once interviewed a 'guru' who spun doubt on the consumption of water (although his argument was terrible). It's no wonder people get confused and cling to sound bites. The problem is that sound bites exist and persist without context.

Content and context should operate like Yin and Yang. They are codependent factors. A carefully laid out macro plan with a budget for chocolate each day could be the perfect approach for a 20-something-year-old female who is training hard to compete. It could also be a dreadful approach for an exhausted, 40-something-year-old mum of two who finds counting and weighing food stressful – and chocolate as a daily gateway to escape and binge.

To a person with a hammer, everything looks like a nail. The goal is not to be a master at using a single tool. It's to be a master at picking the right tool(s). This is the art of coaching.

Imagine if a builders' sect argued between using a hammer or a screwdriver. One would be quick to point out the madness and conclude that the value of each item is in its application and the context of how it's being used. Arguing between keto, calorie counting, IIFYM or a low-carb approach is like arguing over the superiority of a hammer over a screwdriver. The context and application determine the right tool for the job, not the tool itself. Nutrition theories become practices, and practices need to lead to desirable outcomes. Theories are only as good as the results they deliver.

BAKER OR COOK?

For a nutritional approach to be deemed successful, it needs to deliver two things – compliance and results – and it needs to achieve these without sacrificing one's health. Personal preference and knowing why you choose a particular methodology are as important as understanding the mechanisms behind it.

Some people like a loose set of rules. For others, it makes more sense to calculate, plan, and weigh everything. These things should not be conflated with mechanisms of how they work, which they often are, but rather, *why* they work.

All successful diets essentially work the same way. They successfully control calories, optimise hormone production and address gut health. But understanding mechanisms doesn't inspire change. This is why your approach needs to be suited to your personal preference. In terms of actual results, preference trumps mechanisms because it breeds compliance.

A helpful analogy is to categorise people and nutritional approaches into 'bakers' and 'cooks'. Credit to Dr Andy Galpin, whom I first heard coin these terms.

Bakers are detail-oriented, suited to calorie counting and calculating macros. Cooks are broad-stroke folks. They're happier when they follow a general set of rules and guidelines.

Baking requires you to follow instructions. You need the exact amount of ingredients, in the correct order, at the right temperature, to achieve the desired outcome. Take baking a cake. If you add too much flour, your cake will be dry and crumble. Not enough, and it won't rise. Baking is akin to following a carefully laid out, calorie-controlled plan. If you're a baker, you'll enjoy having the freedom and flexibility to eat what you want, so long as it aligns with the correctly allocated macronutrient breakdown and calorie targets.

Cooking isn't an exact science. You have the freedom to explore, so long as you don't break the rules. Let's say you're making a stir fry. Do you want chicken, beef or pork stir fry? Which vegetables do you like? How much do you like chilli? If it doesn't taste right, you can always add more salt. Cooks like general overarching rules and guidelines. It might sound like, '*only eat foods that come from the earth*', '*ensure there's a quality animal protein in each meal*' or, taken to an extreme, '*avoid all carbohydrates*'.

Cooking has a set of rules that allow freedom and flexibility when followed. Baking is mathematics that, if followed, allows freedom and flexibility.

Cooking can feel like a prison when you have to follow a set of rules. Nutritionally, it might sound like, '*eliminate all refined sugar*' or '*don't eat junk food*'. This can translate to always missing out on dessert or saying no to a piece of your best friend's birthday cake.

Similarly, baking can feel like a bleak existence when you have to calculate, weigh and measure every piece of food for every single meal. Nutritionally, it might sound like, '*I'm still hungry. I only have 200 calories left and it's 5:00 pm. What else can I eat?*' or '*I'm so sick of weighing everything, this diet is doing my head in*'. This can translate into calling the restaurant ahead of a romantic dinner to inquire about each menu item's macronutrient breakdown.

Both approaches have positives and drawbacks. The cooks, without

spreadsheets or calculations, often control their calories by eliminating entire food groups or numerous food items. Bakers enjoy it all but pay for it by calorie counting every bite.

Choose your hard.

With that said, generally I recommend to everyone they start off as a cook. Follow a set of rules and easy-to-digest guidelines (pun intended). Optimise your food selection. Clean up the obvious indulgences. Set regular mealtimes. The cook approach is best when skill level and understanding are low.

Once you gain some understanding and success, you can make a soft transition to baker. Start by weighing your food (not counting your calories or macros). Keep this consistent at each meal and understand what equals a serve of nutritional mainstays. For most of you, this will be enough to achieve your physique goals. It's the most user-friendly way I have found to coach clients. It puts macronutrients in the context of food servings, so you understand the practical application without calculating calories and formulas. I'll go into more detail on this system in chapter 5.

Once food selection and general rules have become second nature, for those who want to get into the delights of calculations, counting macros is the next progression, as this method allows you to measure and manipulate variables and food choices more specifically.

Picking the right nutritional approach comes down to skill level, health, understanding and personal preference. It's worth reiterating that personal preference, which includes convenience, breeds compliance. And compliance yields results. Pay attention to your personal preference and remember: you're not stuck being a *baker* or a *cook*. Phases of life might prompt you to switch back and forth between approaches. This is not an identity. It's a choice between a hammer and a screwdriver, depending on the task at hand.

A CALORIE IS NOT A CALORIE

I used to think you could gain and lose weight independent of calorie intake. Gary Taubes, author of *Good Calories, Bad Calories*, championed the idea that it's insulin, not calories, that causes weight gain and weight loss. It was indeed a convincing argument. I even used my own analogy to support the hormone-based theory. I would say: if we had two groups, both with an intake of 2200 maintenance calories a day, and gave one group anabolic steroids and the other group no hormonal invention, the group that took the steroids would burn fat and build muscle despite not being in a caloric deficit. This was to point out the impact hormones have on building muscle and burning fat. My analogy did correctly point out the impact of hormones, but the impact of hormones and exogenous drugs on metabolism also needed to be addressed.

In other words, this analogy, as beautifully crafted as it is, still adhered to calories in versus calories out. The caloric baseline of those taking the anabolic steroids will increase, so the premise of the analogy is no longer true. Taking steroids will increase metabolism, hence increasing baseline calories. Let's estimate from this intervention that baseline jumps up 300 calories from 2200 to 2500 due to an increase in non-exercise activity thermogenesis (NEAT) – and that's why they lose weight. In short, people don't gain/lose weight because of hormones, they gain and lose weight because hormones are having an impact on their energy balance.

As such, it's impossible to refute calories' prominent role in weight loss and gain. Further to the point, Kevin Hall's metabolic ward study in 2016 showed that for isocaloric diets with the same amount of protein and calories, eating high-carb or low-carb did not induce any significant change in weight loss/gain⁽¹⁾. In other words, when calories are equal, carbs (or fat) don't make you fat. This study is worth noting because it's a metabolic ward study, where all factors were measured and controlled. The fat-loving and keto-loving crew might shy away from the simple truth, but I won't; calories count, and the insulin-only theory to obesity, as far as I can tell, has been debunked. At the very least, and more practically, calories and insulin play a simultaneous role in weight gain and loss.

However, the idea that there are good calories and bad calories persists – and frankly, it's with reason. Mathematically, a calorie is a calorie. However, nutrition is more akin to economics than mathematics. In business, a dollar is not a dollar. A dollar of profit is far more valuable than a dollar before tax and expenses. The dollar of profit has been earned.

Turnover dollars, regardless of number, can still see a business fail when bills come knocking. So is true that a calorie from wild-caught salmon is far more nutritionally dense than a calorie from a doughnut, and that's not factoring in the physiological effects that sugar, salt and fat have on your brain, overwriting appetite control, triggering us to eat more.

It's simple; *what you eat matters*.

I will never tell you to focus solely on controlling calories. As a coach, not a scientist, I've always struggled with the calories in, calories out dogma as it gives me nothing beyond the advice to '*eat less*'. You tried that. It lasted until 8 pm on Friday. Now the cupboards are empty and you're no better off.

There is an unseen and unconscious battle in nutrition between scientists, researchers and coaches/practitioners. Scientists and researchers want to know why and how something works. Coaches and practitioners just want results.

If you confine yourself to researched interventions, you could be waiting 10 to 20 years to find evidence for why and how something works. If you lean too far into (just) finding what works, you open yourself up to the possibility of unintended harm or unnecessary restrictions, such as eliminating all carbohydrates. There's a middle ground, and regardless of which side you identify, you want to fight for that. The most growth in anything occurs on the border of chaos and order. In this case, chaos is represented by the coaches and practitioners and order by the scientists and researchers.

The scientists' argument towards the coach is, "*You don't really know why something works*", and to stick within the realms of the *known* science.

At worst, the scientist will call the coach or practitioner a charlatan – and don't get me wrong, there are certainly plenty of them around. The coaches' and practitioners' response to cautious researchers is: "*It doesn't matter; I'm getting results with the client.*"

It's hard for coaches to see nutrition simplified to the notion of calories in versus calories out. They want something that's sexy, usable and flashy because that's mostly what their clients want. Coaches want it to *work* more than they want to know *how* it works. The reverse is true about scientists.

While the mechanism of eating less (to lose fat) is irrefutable, it's also not relatable, and for most, it's practically unusable.

The crime that many coaches and individuals commit is implementing diets that respect and adhere to the laws of thermodynamics yet attribute the intervention's success to hormonal mechanisms. These nutritional interventions still respect calories in versus calories out. People succeed in eating less; however, for them, it was keto, fasting or time-restricted eating, or going paleo that was the key. Those things became relatable and for the first time the client understood in real terms *how to eat less*. That's *why* it worked. But that's not how it worked. It worked because it still adhered to the laws of thermodynamics while speaking to the client's *psychology* – the final frontier of body composition.

Another example of researchers and practitioners taking their best educated guess is prescriptions pertaining to the gut microbiome. The gut microbiome is made up of trillions of microorganisms and their genetic material that live in your intestinal tract. There are many hypotheses on how the microbiome functions, interactions of bacteria, and the effects it has on other systems of the body and disease; however, there is still so much we can't say for certain based on the current scientific understanding of the gut microbiome. As a coach wants to get results for their clients, they might recommend something like going gluten-free and buying only organic food. How does this affect the microbiome?

We can't say exactly; however, one could postulate with some degree of certainty that it will have a positive effect on the gut microbiome overall.

If the client gets results by going gluten-free, both the client and coach are happy. But the scientist would then point out that these results were affected by many confounding variables, such as a lower caloric intake or the introduction of different foods. The bottom line? The client got a result. The coach got paid. The scientist still has questions... and that's a good thing. Science should always be asking questions by definition, but this should not displace a client or coach with a level head or cause them to protest science.

The perspectives on calories between coaches and scientists reminds me of the parable of the three blind men and an elephant. Three blind men are asked to describe an elephant using only their touch. The first approaches and finds the elephant's trunk. He concludes, "*Elephants are like big snakes*". The second places his hands on the side of the elephant, saying, "*An elephant is like a big wall*". The third is guided to its tusk. He states, "*Elephants are hard and smooth and like a spear*". The three blind men are asked to tell each other what an elephant is, which leads to disagreement and a fight.

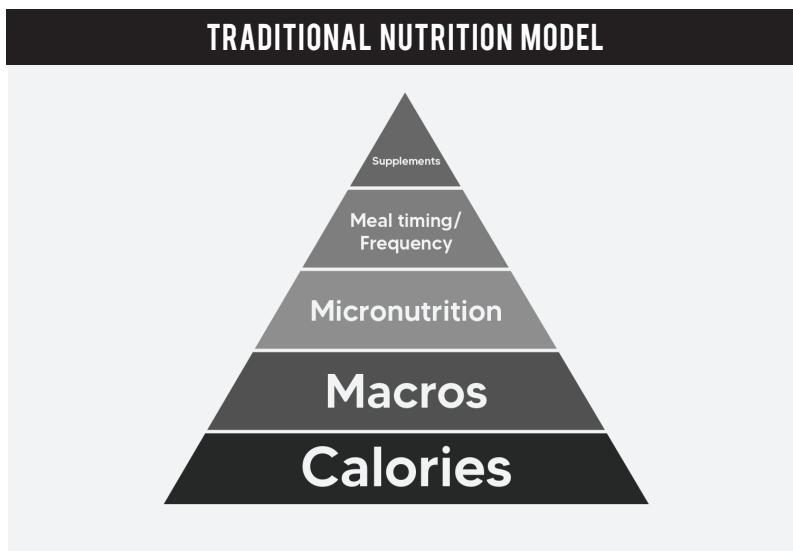
The story points out two things: 1) How people can turn on one another to defend their perspective when they think they have the answer; and 2) To see and understand the full truth of the "*elephant*", each needs to collaborate with the others. Each viewpoint is correct, depending on where you're standing or, in your case, how you're utilising nutritional information.

Calorie counters, keto fan groups, paleo advocates, vegans, zealots, meat-head carnivores and every nutritional guru promoting a singular and non-negotiable approach are standing too close to the elephant. What nutritional extremists often miss is the context in which diets and nutrients exist in someone's life.

In nutrition, people want to *be right* more than they want *what's right*. Too many

trainers, coaches and practitioners attach themselves to a diet sect, preaching their version of the gospel. If you take a step back and ask the question, “*Where am I right now, and what’s the next, simplest thing I can implement to get better results?*” the answer is usually not to join a nutritional cult.

THE ENTERPRISE FITNESS LIFESTYLE WHEEL VS THE TRADITIONAL NUTRITION MODEL



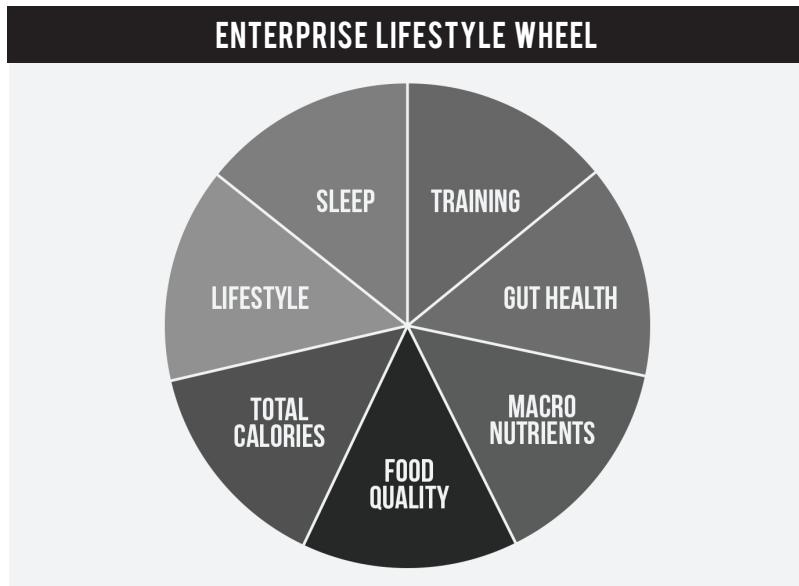
A frequently used framework used to deconstruct nutritional priorities is Eric Helms's nutritional pyramid (see figure above). At the base of the pyramid is calories. Then it's macronutrients, followed by micronutrients, meal timing and at the very top (indicating least importance), supplements. The pyramid is a good guide to ordering nutritional priorities; however as a coach I think this is the wrong model to guide clients.

Instead of focusing on a nutritional hierarchy, I developed *The Enterprise Fitness Wheel* (see figure below). It encompasses biofeedback along with key nutritional areas.

THE ENTERPRISE FITNESS WHEEL

The seven areas of focus are (in no particular order):

- Total calories
- Gut health
- Food quality
- Lifestyle (includes stress management)
- Training (and exercise)
- Macronutrients
- Sleep



Here are the key reasons I developed this model and prefer it to the pyramid:

First, it's a circle, not a hierarchical pyramid, and takes its inspiration from the story of King Arthur and the Knights of the Round Table, which symbolises how no knight is lesser or greater than another. Work on each area to make your wheel as robust as possible.

Next, each element of the wheel is interrelated and influences another. For example, if you focus on improving *food quality*, and eat wholesome, natural foods, it will be easier to reduce calorie intake while consuming enough macro and micronutrients. This will benefit your gut health. And if gut health is optimised, you will feel better and train harder.

By getting plenty of good-quality sleep, you will minimise cravings, improve insulin sensitivity, focus and find it easier to stick to your plan. You're now developing a positive feedback loop to improve lifestyle habits like avoiding alcohol and having the energy to hit the gym. Exercise and training give an outlet and an exercise 'high', helping you to deal with lifestyle stressors – which are triggers for many to overeat.

"Each area perpetuates the others' success."

Giving each area a 'little bit' simultaneously has a compounding effect that snowballs into significant behavioural changes. Contrast this with the pyramid, which focuses first on getting calories right. Calories are important to explain biochemical mechanisms. However, as diet advice, '*just eat less*' or '*it's all about calories*' leave a lot to be desired. You will reduce calories as a side effect of working on all areas of the wheel.

The Enterprise Fitness Wheel focuses on the big picture. It isn't just about losing a couple of kilos, but about developing the lifestyle and focus necessary to be healthy and keep in shape.

Think of it like this:

Imagine a bike tyre with seven separate air compartments that you have to inflate individually. If you only pump up two of the compartments to one hundred per cent, you are in for a bumpy ride.

If you pump three sections to fifty per cent, two sections to twenty per cent and one section to its maximum, it might be slightly better, but

forget about trying to go downhill safely or quickly. If you pump six out of the seven compartments to one hundred per cent, you'd probably be okay riding on a flat surface, although the bike would get damaged over time, and if you hit an obstacle where the tyre was flat, you'd crash and burn.

Metaphorically, that's how you need to look at the Enterprise Fitness Wheel. Pump up and work on each area, and you'll roll faster to your destination. The whole is greater than the sum of its parts, and if you really are going to take my advice to heart, gone are the days of thinking there is only one way to unlock energy, improve health and blast fat forever.

Health, fitness and body composition are multi-factored and should be treated as such. Work on bettering all areas. Accepting the framework of the Enterprise Fitness Wheel also means understanding that there are no magic bullets to obliterate body fat.

7 BRAKES: WHY YOU CAN'T LOSE FAT OR BUILD MUSCLE

While the Enterprise Fitness Wheel gives areas of focus, I have found it's helpful to state things negatively to get the point across. The most common question everyone has in regards to health and fitness is, "*What should I do?*" It's simpler to tell you what not to do.

Sticking with our bike analogy, let's think of the reasons you can't burn fat and build muscle as seven brakes on your wheel. If you're not paying attention to any one of these areas, they will slow down the spin of the wheel and your progress. The faster your wheel spins, the sooner you will see results.

In no particular order, here are the brakes to hindering your body composition goals:

- Calorie overconsumption
- Poor gut health and digestion
- Malnutrition and poor food choices
- Stress and inflammation
- Sedentary lifestyle/Not following a training schedule
- Acute or chronic toxicity
- Not prioritising sleep or having poor-quality sleep

7 BRAKES TO HEALTH AND PERFORMANCE



Let's look at each brake in relation to the Enterprise Fitness Wheel.

CALORIE OVERCONSUMPTION

Regardless of the diet you pick, from keto to fasting, you need to observe calories in versus calories out. This is not to say it's the only factor; however, no one who transforms their physiques gets there by overeating daily.

There's no diet in the world that allows you to simultaneously overeat

junk food *and* be healthy, lean, strong, clear-headed and full of life. The sooner you stop looking for a diet like this, the faster you'll make peace with following nutritional rules and the better off you'll be.

Rather than worrying solely about calories, look to get nutritional bang for your buck from the calories you ingest. Calories count, so make the most out of each bite with nutritious food.

POOR GUT HEALTH AND DIGESTION

If you're not pooping once to twice a day, there's something wrong. If this is you, forget about a weight loss or body composition goal until you get your bowels moving. It's not normal to be bloated and constipated or to struggle to move a stool.

The diet that works for body composition will also work for your bowels. Initial interventions here include a regimented eating schedule (eating at the same time each day), eliminating snacks and removing known inflammatory foods. It might look like an elimination diet or a FODMAP⁽²⁾ diet in conjunction with specific supplementation to heal and rebuild your gut.

As digestion and gut health are complex with many variables, I recommend working with a naturopath. The naturopaths to whom we refer clients are from Wellixa and can be contacted at www.wellixa.com.au

Also, see chapter 6 on the initial foods to eliminate, replace or reduce in your diet.

MALNUTRITION, MACRONUTRIENTS AND FOOD QUALITY

Macronutrient and micronutrient targets are your leading solutions to malnutrition. Malnutrition is as much a hindrance to results as consuming too many calories. Don't expect to starve yourself to a point where you are lean, muscular and happy. It will be more like skinny-fat and depressed.

Select high-quality food. Protein, fats and carb ratios are important. I'll teach you how to put everything together and give you macro targets to aim for in chapter 5.

As it relates to food quality, be a *nutrivore* – a term coined to mean someone who eats a diet of highly nutritious foods.

Food quality affects so many areas inside your wheel and removes many potential brakes. The best piece of advice I can offer is to eat things that are hunted, fished, gathered, plucked, and – because some smarty-pants will say that you don't hunt cows and chickens – farmed. Buy organic where possible and look for grass-fed meats and wild-caught fish if your budget allows.

LIFESTYLE, STRESS AND INFLAMMATION

People like to pin a lot on 'stress'. I bet you've heard someone say they are gaining weight thanks to stress, eating poorly because of it or not sleeping because life is so busy.

But what does stress even mean? Loose and vague titles are never helpful for solving problems. I live by an axiom: *a problem well-stated is a problem half solved*.

Aligned with how I solve problems, I've categorised *stress* into five areas. These categories allow us to identify stress and do away with vague terms. Once we have identified and given the stress a name, we are better equipped to deal with it.

The five categories are:

- 1. Foods you eat.** Think gluten, industrial grain-fed dairy – or any foods that can cause acute inflammation inside the gut. Anything that irritates your gut will cause stress.

2. **Foods you don't eat.** Think malnutrition. If you are training hard, you need adequate amounts of protein, fat and carbohydrates to fuel and recover from your workouts. Inadequate nutrition is a stress on the body. You can't starve yourself to health; it's too stressful.
3. **Toxicity.** Acute or chronic exposure to toxic chemicals can precipitate a stress response.
4. **Lifestyle.** This encompasses external life stressors such as relationships, work and finances and how you deal with them.
5. **Poor recovery and physical stress.** Hard training requires time to recover. If you chronically overtrain or don't allow ample time for recovery, you'll stress your body. Don't expect to hit personal bests in the gym day after day. The harder you train, the more you need to recover.

CHRONIC INFLAMMATION

Inflammation is the process in which a body part or organ swells or reacts to a potentially harmful internal biochemical invader or external force. It's a normal process.

For example: if you get hit in the face, you will probably end up with a swollen eye. The body sends chemical messengers to speed up the recovery from getting hit (by activating your immune system). The problem is, this process also happens inside your body, where you can't see and observe the reactions as obviously.

For this reason, chronic inflammation is known as the silent killer and can be caused and impacted by the above stressors. Dealing with chronic inflammation is done in two steps:

1. Address and remove the cause or causes of inflammation. The solution here is often to change diet and lifestyle.

While making changes and removing the culprits that cause inflammation, calm and heal the problem with non-pharmaceutical, anti-inflammatory compounds such as omega-3 fish oil and curcumin (found in turmeric). Note that pharmaceutical anti-inflammatory interventions (such as anti-inflammatory drugs) should be prescribed only by a medical doctor and taken with caution due to their impact on gut health⁽³⁾.

NOT FOLLOWING A TRAINING SCHEDULE AND HAVING A SEDENTARY LIFESTYLE

I'm going to save the topic of training for another book. However, I'll say this: proper training is key for body composition. Diet will make you look good clothed. Training will make you look good naked – and who doesn't want that?

The most important thing here is learning how to lift weights correctly. The second-most important thing is having a plan and routine.

Do not think it's ok to make friends with a sedentary lifestyle. The comfort of sleeping in or pressing snooze when you're supposed to hit the gym is the road to complacency. A complacent person is not a happy one. Instead, be active. Move. As a minimum standard, it's recommended you take at least 10,000 steps per day. This particularly applies if you sit for six or more hours a day.

If you're a chronic sitter and unable to take regular breaks, consider implementing a standing desk in your workspace. Your posture will thank you.

ACUTE OR CHRONIC TOXICITY

We live in a toxic world. Having dumped over 85,000 chemicals into our environment since World War II, there is no escaping the toxic soup that is modern life. This goes doubly for occupations and industries that work with subdued chemicals: beauticians, nail technicians, perfume retailers and other professions that all expose you to chemicals.

Monitor long-term chronic chemical exposure to ensure it's not affecting your health. If you're doing all the right things and not getting results as you should, it might be time to look underneath the hood with an environmental pollutants test.

We will look more closely at toxicity and the impact of environmental chemicals in chapter seven.

NOT PRIORITISING SLEEP OR HAVING POOR- QUALITY SLEEP

If I could design the perfect supplement to help you burn fat, build muscle, recover faster and improve brain function, I would bottle sleep. Unfortunately, I don't have those powers; no one does.

Sleep is the gift you have to give to yourself. I know it's tempting to watch just one more episode of your favourite show rather than drag yourself to bed. However, the benefits of sleep are not trivial. Inversely and perhaps better put, the repercussions of poor sleep are clear and have a direct impact on cognitive function⁽⁴⁾, training performance and recovery⁽⁵⁾, as well as appetite⁽⁶⁾ and glucose metabolism⁽⁷⁾. This can lead to weight gain and an increased risk of diabetes. So don't complain about not getting results if you're choosing to burn the candle at both ends.

Your aim is seven to eight hours a night in a pitch-black room. This means eliminating all light. My standard of a pitch-black room is: put your hand in front of your face. If you can still see your hand, your room should be darker.

If you want to go one step further and get nightly feedback on your sleep, I recommend purchasing an Oura ring to monitor your resting heart rate and heart rate variability as you sleep. I'm not affiliated with Oura ring in any way but if you know their people, tell them to call me. I'm a huge fan and the ring is something I use most nights.

There are many sleep interventions you can implement to improve your quality of sleep. Try journalling or keeping a gratitude diary before bed. You could also meditate or use specific sleep supplements (see chapter 7).

IN CONCLUSION

If you want to lose weight, be healthier and improve performance:

- Calories count
- Hormones count
- Sleep counts
- Training counts
- Food quality counts
- Lifestyle counts
- Gut health counts

There is no magic bullet. I will not tell you to do ‘one thing’, as if success were ever that simple.

Everything counts. Work on being a little better in each area each day, and not hanging your hat on a single approach like counting calories, eliminating an entire food group or overtraining. Fall in love with the process and adopt the CANEI mindset – *Constant and Never-Ending Improvement* – in all areas.

ACTION POINTS

Rate yourself in each of the seven areas of the Enterprise Fitness Wheel from one to 10, with 10 being a perfect score and one being absolutely terrible.

-If you rated a 10, ask yourself: what daily or weekly actions will maintain your 10?

-If you rated nine or below, ask: what daily or weekly actions will get you closer to achieving a 10?

Next, draw out your own wheel, visually acknowledging the bumpy or smooth ride you're in for.

If you scored four or below in any area, take a deep breath. The longest journey starts with a single step. Write just one thing to progress you from where you are now.

After that's complete, identify your brakes and list action steps to remove them.

Visit www.enterprisediet.com/resources for Enterprise Fitness Wheel worksheets. Once you've completed it, place it on your fridge as a reminder of the areas to work on.

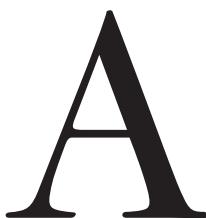
COMING UP

You get a front row ticket to consultation with Ms Hungry. In chapter 4 you will learn the common pitfalls of dieters and the principles you need to master to overcome them.

CHAPTER FOUR

A SESSION WITH MS HUNGRY

“Just tell me what to do and I’ll do it...”



s a coach, I am all about empowering my clients to make their own choices so when I hear, “*Just tell me what to do and I’ll do it*”, I tread with caution. It’s humbling when people think I can fix their problems, but we all need to learn how to dance with our demons and take responsibility for ourselves.

The problem with ‘*just tell me what to do*’ is the implication that someone else can take ownership of your problems. Good coaching leads the way to taking personal responsibility and ownership of the implementation of the solution. After all, your coach and trainer can’t be with you 24/7. The goal of coaching is not to coddle and protect. It’s to educate, empower and help confront self-imposed limitations.

MEET MS HUNGRY (MS H)

She was exhausted, annoyed and frustrated. For privacy and the fact that her story is not uncommon, let’s call her Ms Hungry, because that’s how she’s feeling after five years of diets.

Ms H could be any number of clients I've seen over the years. She was doing everything she could but always winding up with no results and no energy. She looked at me again and said: "*Could you just tell me what to do?*" I hesitated; I like to guide people to their own decisions, but I could see her intense frustration, so I said yes.

Ms H had bounced from nutritionist to trainer several times before finding me. She expressed how desperately she needed change. She brought in her previous diet, nutrition and training plans she had followed. Some of the plans were terrible while others were trying to put her on the right path. I started the same way I like to start all consults: by understanding her daily schedule, activity and meal times.

When I asked, "*How many meals a day do you currently eat?*", she replied gruffly, "*I thought you were going to tell me what to do?*"

Ms H didn't recognise her own role in solving her weight loss problem. She was searching for someone to take over. She clung to previous nutritional plans like a woman on a sinking boat holding on to the last life vest. Her problem was that once the boat hits icy waters, she still needs to know how to swim to shore.

LESSON ONE: SELF-REFLECTION IS A PART OF THE PLAN

Most of the time, the ideal diet for body composition has more food than you would expect. Instead of random snacks and treats, it's structured meals and menu items. Should you radically change your diet? It depends. Rather than radically changing your diet, I would rather change your diet relative to what you are currently doing.

Yes, you need to make changes, but you don't want them to be so radical that you become constipated, uncomfortably full or overwhelmed. These are not desirable or helpful symptoms of good health or body composition.

For this reason, the best place to start is to record your food and eating behaviours without judgement.

Author's note: If you've had a history of eating disorders and/or the thought of keeping a record brings you anxiety, this exercise may not be suitable. Consult a qualified mental health practitioner before taking on any of the ideas or advice in this book.

As the saying goes, '*What gets measured gets managed, and what gets managed gets done*'. Before you change your current plan, record what you're doing. Approach this exercise as a lesson in self-analysis, not a diet. No one wants a better diet. They want the results of better nutrition: more energy, a better body, better health, or feeling a certain way.

The idea of compartmentalising health and fitness to one variable is dead, even though diet and nutrition are big variables. Your whole day affects your diet. Hence, your *day* needs analysing, not just what you eat.

"*What time do you wake up and go to bed?*" I asked Ms H.

"*I usually wake up at 6:30 am and try to go to bed at 11:00 pm.*"

I asked what she meant by *usually and try*. As a coach, '*usually*' is one of those words I listen for. It means, 'I don't know exactly, or I am giving you the answer that I think you want me to say'.

As for *try*; '*trying*' is only fifty per cent. Right now, I want you to *try* to stand up (or if you're standing, sit). What happened? You thought about it, your muscles may have even fired in preparation, but you didn't do it. The words *usually* and *try* are cut from the same cloth. They are vague and unacceptable when it comes to recording and measuring.

"*I mean, I try to go to bed at 11:00 pm, but end up in bed at around 11:30 or midnight,*" Ms H clarified.

“Do you use an alarm to wake or the snooze function?”

“Yes,” she looked down as she answered.

I already knew the answer when I asked, “*How many times do you hit the snooze button?*”

And I was right. Her response was, “*Two or three times.*”

This told me a lot. More than just the fact that she was not getting enough sleep or that she struggles with energy first thing in the morning, it demonstrated a lack of an effective routine. There are parts of her life that weren’t organised, and she was trying to figure them out by going through the motions. It told me she never stopped to ask *why*.

The self-reflection log process starts to shine a light on the *why*. *Why* don’t you have a consistent bedtime? *Why* do you struggle with a lack of energy in the morning? By understanding the *why*, you can understand the problem you are trying to solve.

“I go to bed late because I am usually on social media or checking emails just before bed. Sometimes an important message comes through, and it keeps me up.”

I told her, “*This might not seem like a diet problem but it will affect your diet. When you go to bed late, you wake up tired. This means your willpower and focus drop. You reach for more coffee and sugar and then even worse nutritional choices.*”

My recommendation to Ms Hungry may apply to you as well: delete the email app from your phone and set restrictions and time limits for distracting apps such as social media. If you can’t do that, another method I have found particularly helpful is switching my phone’s display to greyscale. The grayscale display lowers the dopamine response from

images and videos and drastically decreases your propensity to click on things (and get emotional).

On an iPhone, visit Settings, Accessibility, Display & Text Size, Colour Filters, then select Grayscale. Google “How to turn my phone black and white” for other smartphones. Clients who implement this tip have found they dramatically decrease the time they spend on their phone.

As the above advice indicates, I’m not *just* asking you for a diet or nutrition log. I’m asking you to analyse your day objectively without judgement, including when you eat and what you eat. A diet log only supplies you with nutritional and caloric information. A self-reflection log allows you to look at this information in the context of your day.

To begin your self-reflection log, at the top of the page, write the time you wake up and at the bottom, the time you go to bed. Then draw seven columns with the headings:

- Time
- Protein
- Fats
- Vegetables
- Carbohydrates
- Liquids
- Notes (notable thoughts, emotions or feelings, hunger levels, cravings or digestive distress such as bloat or gas)

See an example below outlining meal times and loosely noting activity of the day:

A SESSION WITH MSHUNGRY

TIME	Protein	Fat	Veggies	Carbs	Liquid	Supplements	Notes
Wake up 6:00 am							
Meal 1 7:00 am							
Started work 9:00 am							
Meal 2 1:00 pm							
Meal 3 4 pm							
Finished work 5:30 pm							
Training 6:30 pm							
Meal 4 8:00 pm							
Bed 11:00 pm							

The reason I designed the nutritional aspect of the log categorising protein, fat, carbs and vegetables is so that when you analyse or create a meal, you think about the macronutrients you need to include at each meal as it relates to food values (not grams of the actual macronutrient).

For example, nuts are not a meal. They contain protein, fat and carbohydrate; however, they are mainly classified as fat. Therefore, they go in the fat column. To make a meal, we at *least* want to ensure you are eating protein and fat at each meal. Protein and fat are non-negotiable food items that should be in each meal. (You'll find a full shopping list and explanation of how to plan your food in the next chapter.)

The notes column can be as detailed or general as it needs to be to relay and reflect on meaningful data. Things to note include:

- Where you were (work, home, school, the gym, etc.)
- When you go poo. (It should be more or less like clockwork at the same time each day.)
- Triggers (positive or negative things that throw your focus).
- Notable feelings (from anger to being overjoyed).
- Cravings (*I feel like eating X*.) This can give insight into nutritional deficiencies, shortfalls or appetite triggers like being at the movies and wanting popcorn.
- Any digestive distress or abnormalities (including gas and bloat).

This exercise forces people to take ownership, and as a coach, that is always my goal. People often fail at diets and coaching because they either expect the diet to work without following it, or the coach to do it for them (or both).

Coaching nutrition is a *do with*, not a *do to* process. After a client completes this log for three days, there's usually very little I have to say. They will be the ones exclaiming, "*I can't believe I do that*" or "*I've decided, I'm going to stop doing X, Y and Z*".

If this book does anything, I hope it illuminates that you are both the problem and solution. The self-reflection process highlights your vices, triggers, optimal meal times, situations to avoid (or pre-plan), and the foods that may be a gateway to a binge. It can also tell you what's going on when you have a great day.

LESSON TWO: BE LIKE BAMBOO

"I've followed flexible diets and structured meal plans... Which do you recommend?"

A nutrition plan needs to be flexible in application yet structured in principle. The dance between flexibility and structure is what keeps you on track. Unfortunately, most diets and meal plans are either too flexible,

leading to poor choices and overeating, or too structured, leaving you pining for the day you get to eat chocolate cake.

If we are overly structured, we eat the same foods at the same time, in the same amounts each day. Yes, you'll get results but too much structure will quickly zap all the enjoyment you get from your food, not to mention affect your long-term adherence to your plan.

Too much structure leads us to stress about food. It creates anxiety when consuming anything, even healthy foods that aren't part of your plan. Metaphorically, think of an overly structured diet like Tasmanian Oak. It's a very strong material, but the oak doesn't bend. When there's enough pressure, it snaps. In this case, pressure could be the smell of fresh cookies your partner just baked or a friend's wedding with delicious food and drink. This is an issue because it makes you feel like you are always missing out.

The rebuttal to structured meal plans is flexible diets. These includes calorie and macro counting. The idea is to eat whatever you want, so as long as you maintain a calorie deficit to lose weight, or at least be at a maintenance level. Metaphorically, too much diet flexibility is like playing with play-doh. Technically, play-doh can take any shape, and at least in imagination, be anything you want it to be. The problem is it always ends up being a big blob with multiple colours mixed in.

Instead of choosing between flexibility or structure like most diets do, you want to marry the two.

Flexibility and structure are not mutually exclusive of one another. Think of bamboo. It's 122 per cent harder than Tasmanian Oak but it can bend without snapping. Houses made from bamboo have withstood 9.0 magnitude quakes⁽¹⁾. If I could craft a metaphorical structure of your diet, I would use bamboo because it's strong but flexible.

The key to long-term successful diet plans is *flexible-structure*. A nutrition plan needs to be flexible enough so there is choice, yet structured so

it does not create confusion. Increasing choice is important to appease personal preference. Minimising confusion is imperative, so you don't explore the path that leads to your undoing, or in this case, a tub of ice cream for dinner because it fits your macros.

Examples of having flexible-structure:

- Having a set time you wake up each day.
- Having set meal times, or at least, times you know you will be able to eat.
- Having a protein food source at each meal.
- Having a set bedtime.
- Having at least one meal that is the same each day that you don't 'think about'. (For me, it's Meal 1.)
- Having a list of go-to restaurants or a category of eateries that mean you can stick to your plan. To give you some ideas:
 - Steak houses (steak and vegetables).
 - Sushi cafés and eateries. (You can always get raw fish, with or without rice.)
 - Fish or seafood restaurants. (They will almost always do salmon or a piece of grilled white fish and salad, even if it's not listed on the menu.)
 - Modern Mexican restaurants that offer burrito bowls or salads. You will probably have to order it without cheese, sauces or other additional items that might not fit your plan.
- Planning what you are going to eat when you decide to indulge, because, let's face it, Christmas without plum pudding isn't as nice.
- Making a rule not to eat off-plan when you're feeling angry, lonely, upset or bored.

It's about having rules in case of '*insert scenario you struggle with*' and keeping a daily routine that is conducive to body composition goals but doesn't feel like a prison.

LESSON THREE: RELATIVE CHANGES. MEALS, NOT SNACKS.

“So aren’t you just going to tell me how many meals I am supposed to eat and when?”

“In the beginning, meals and changes are going to be relative to what you are currently doing.”

As I mentioned earlier, coaching for optimal body composition is a *do with* process, not a *do to* process. I can’t simply give a client six meals a day if they are used to eating only two or three. Coaching and advice require context.

Like in training, we gradually add weight to the bar as we get stronger. With nutrition, we gradually make changes to your plan as you adapt. Often, it’s overkill to change *everything* at once. Although this latter option is tempting, the body can only change so fast.

I guided Ms Hungry to make changes (with respect) to her routine and appetite. Over the next couple of weeks, we made a plan to reassess, increasing or decreasing total food volume, calories and activity, depending on how her body responded.

The nutrition and lifestyle plan you start today will not be the same plan you have in a month’s time. Optimising health and body composition is not a set-and-forget deal. The body is a biochemical moving target. We need to adjust your plan as your body adjusts to what we are trying to do.

Ms H said to me, “*I’ve always just followed the same plan for weeks and months at a time.*”

Looking over Ms H’s previous plan, she was eating what she thought made up three meals and two ‘healthy snacks’ a day. When I looked at the nutritional content of what she consumed, it barely constituted two proper meals. In other words, her diet had very little actual nutrition. It

was mainly sugar, carbohydrates, and food choices from the traditional food pyramid. When I quizzed her on why she snacked on items like trail mixes, granola bars, protein bars and low-fat yogurts, it was met with the answer I usually hear in these situations:

- That's what I was told to do.
- I thought I needed to eat regularly for weight loss and fitness.
- Aren't these foods healthy?

I explained to Ms Hungry that we were going to focus on meals, not snacks. When you sit down to eat anything, do so in a conscious way. If you are *too busy* to eat, then don't eat. Don't compromise with convenience to ingest easy calories. Plan your life and your feeding times. As a result, when you do eat, you'll eat better.

The easiest way I have found to create fast, relative change is to replace snacks with meals and optimise food choices. Poor food choices are often a result of the behaviour of snacking. Where people go wrong is setting out random times when they think they should eat. *When* you eat is less important than *what* you eat. Even three square meals a day is a somewhat modern paradigm from the 1850s. I encourage you to set your meals on what's practical; your lifestyle and ability to sit down and have quality, nutritious food.

Ms Hungry agreed she had time to eat four times a day, but not five. Each meal was to contain a quality protein and have a source of dietary fat. Carbohydrates were to be spread over three of the four daily meals.

We started by limiting carbohydrate choices so as to easily maintain a calorie deficit while still keeping a high volume of food. The high food volume made Ms Hungry feel like her diet was less restrictive. She had a new way to eat and live.

Most of the time, the snack components of diets are made up of highly palatable, nutritionally void and calorie-dense foods. These choices create the illusion of being fed and nourished but they leave us

unsatisfied and craving for more. Snacks make their way into meal plans for three main reasons:

1. Convenience. We're hungry and time-poor, so we trade time and optimal nutrition for easy calories.
2. The belief that small snacks are better than big meals, and that smaller snacks will help you eat less. People think eating less equates to fat loss. It's important to remember body composition is the goal, not eating less. The highly palatable nature of snack foods can throw us down the rabbit hole of checking what else is in the cupboard while offering minimal nutritional satisfaction.
3. The belief you have to eat regularly to stoke the metabolism. Dieters often believe that they have to snack at regular intervals. They end up with poor eating behaviours that don't yield desirable results.

'HEALTHY' SNACK FOODS

A snack is defined as '*a small amount of food eaten between meals*'. For most of the general population, snacking is a slippery slide to weight gain and frustration. So is there such a thing as a healthy snack?

Of course snacks can be healthy. But snacking demands context and further, more pre-planning. Snacking on jelly beans to bolster blood sugar or eating something random every couple of hours to stoke the metabolism is not helpful for lean body composition. Random snacking and heavily marketed snack foods will almost always lead to blowing out your calories. With that said, a lean bodybuilder or athlete carefully laying out their macros and consuming a measured amount of jelly beans pre-workout won't do any harm.

My advice to the general gym-goer or serious athlete looking for better body composition would be to do away with snacking and focus on nourishing, measured meals. Rather than considering this solely from a biochemical standpoint (calories and macros), I place equal importance on nutritional behaviour modifications.

Here's why I recommend you avoid unplanned snacking:

- Snack foods are easy to eat and over-consume.
- Unplanned snacking invites randomness. Nutrition for body composition should be predictable.
- Snack foods usually aren't fulfilling.
- Random snacking can lead to more snacking and overeating.
- Snack foods become interchangeable, which can very quickly change caloric intake.
- Snack foods are harder to track, particularly if you eat them at random times.
- Irregular eating patterns can contribute to gastric distress.

Snacks are usually eaten on the run, in a hurry, while watching TV, working, or *doing something*. The very nature of snacking invites a distraction from the food we are consuming. When we eat, we want our nervous system to be parasympathetic dominant; rest and digest. *Doing something* while we eat (such as watching television) is also far more likely to result in overeating⁽²⁾. Combine that with easy-to-eat foods and you have a problem.

Either slow down and eat or don't eat. When we are rushing to work or picking up our kids from school, our sympathetic nervous system is activated. Eating during this time is disruptive to our digestion.

Behaviourally, snacking is not defined by time. When you eat a meal, you sit down and eat. Once the plate is empty, you know the meal is over. Infrequent snacks, particularly when you're distracted, tend to lead to more snacks. If you want results, your eating patterns should be predictable and follow a set routine. Nutritional success isn't just about hitting macronutrient targets. It's about having behavioural context, connotations and practices that are repeatable. It should be a little bit boring.

Snacking and eating between meals invites random impulses and poorly thought-out food choices. If you want results, you must have a sustained routine. Furthermore, irregular eating patterns are associated with increased risks of developing conditions such as metabolic syndrome⁽³⁾ and stomach inflammation⁽⁴⁾.

Removing snacks forces you to think about what you consume at main meals. Knowing there's nothing in-between should make you more aware of eating enough to get you through to the next time you can sit down and eat. Once you have your meals dialled in, if you choose to include snacks, they can be planned in the context of your macros and part of your daily routine. The other option, if you just want to include a 'snack food', is to include it directly after a meal to optimise digestion. In other words, the snack then becomes part of the meal.

Popular snack foods are often calorie-dense. Take, for example, the health food aisle's favourite snack food, trail mix. Just 50 grams of a basic trail mix contains 245 calories, 8.1 grams of protein, 15.3 grams of fat, and 17.8 grams of carbohydrate⁽⁵⁾. For almost the same calories, you could consume 100 grams of lean mince (146 calories, 21 grams of protein)⁽⁶⁾, 100 grams of green beans (21 calories and 2.5 grams of dietary fibre)⁽⁷⁾ and 85 grams of boiled white rice (136 calories and 30.6 grams of carbohydrate)⁽⁸⁾. The mince and rice have far more nutrients than trail mix.

If we switch the trail mix for 50 grams of almonds, it significantly increases the caloric intake to 359 calories. (50 grams of almonds is about the size of the palm of your hand.) A small muesli bar on average has 192 calories, but let's face it, you will probably have two as those bars are tiny (even though they're marketed as calorie controlled).

Instead of focusing on calorie-controlled snacks, plan your meals for the day. By planning what you eat, you control calories and set a routine and rhythm to your nutrition.

Take a look at the comparisons below:

	Trail mix (50g)	Granola bar 42g)	Almonds (50g)	100g of lean mince (M), 100g of green beans (B) and 85g of rice (R)
Calories	245	192	359	$146 \text{ (M)} + 21 \text{ (B)} + 136 \text{ (R)} = 303$
Protein	8.1g	4.6g	11.7g	$21 \text{ (M)} + 1.5 \text{ (B)} + 2.3 \text{ (R)} = 24.8\text{g}$
Fat	15.3g	7.1g	32.8g	$6.8 \text{ (M)} + 0.2 \text{ (B)} + 0 \text{ (R)} = 7\text{g}$
Carbohydrates	17.8g	26g	2.9g	$0 \text{ (M)} + 2.2 \text{ (B)} + 30.6 \text{ (R)} = 32.8$
Sugars	12.3g	10.9g	2.9g	$0 \text{ (M)} + 1.7 \text{ (B)} + 0 \text{ (R)} = 1.7\text{g}$
<i>*All values are from CalorieKing Australia</i>				

As I explained to Ms H, there are two eating behaviours we can pick: *The Prey* or *The Predator*.

The prey is the cow that grazes all day on grass, getting slow, fat and juicy, ready to be slaughtered and consumed. The predator is the lion that doesn't think about food until it's time to eat. Which would you rather be, the moo-cow or the lion? Ms H laughed, but didn't struggle to give her answer.

TAKEAWAYS ON SNACKING

- Dial in your main meals and routine. Get this right and you won't need to snack randomly.
- If you have a problem with over-snacking, go cold turkey on snacking (and focus on your main meals).

- Eliminate traditionally marketed, highly palatable, high-calorie snack foods like muesli bars, low-fat yogurts, trail mix and pseudo-health muffins.
- Don't snack on nuts or dried fruit. If you desire to include them, find ways to add them to main meals to regulate portions and calories.
- If you must include snacks, plan them into your macros and routine (outlined in chapter five).

LESSON 4: PREPARE FOR SUCCESS

I gave Ms H a shopping list and serving size guide I wanted her to follow. I instructed her to have a protein source at each meal with a fat source. I recommended vegetables at all meals (or at least three meals out of four) and that she keep her carbohydrate food choices to pumpkin and sweet potato for the first week. The reason to limit carb selection initially to pumpkin and sweet potato is because they are nutrient-dense and allow her to eat plenty of food without consuming too many calories.

Ms H responded with, “*This is a lot of food.*” I got the hint that she was getting overwhelmed at the thought of implementing the plan. This is a common reaction from the “*Just tell me what to do*” approach. So I asked her if she ever spent time on meal prep.

The response? “*Kind of*”, she said quietly. “*Sometimes.*”

Sometimes won’t cut it, especially not for Ms H, who is desperate to get results. We began a conversation about meal prep.

Let’s start with the obvious; meal prep is a pain in the butt. No one gets in shape without prepping their meals, or at the very least paying someone to do meal prep for them.

Now that’s out of the way, you have two options for meal prep based on these parameters:

- a) You have more money than time.
- b) You have more time than money.

This is regardless of how much time and money you have. You have to pick a group. If you picked a), pay someone to do it for you. If you picked b), do it yourself.

Once you've picked which group you're in, don't bitch or moan about the price or the time it takes. It's part of the deal to get in great shape. No one gets in shape without putting in time, energy, effort or money towards meal prep.

PAY SOMEONE TO DO IT FOR YOU

There are three main options for outsourcing your meal prep:

1. Pay a friend or family member.
2. Find a food prep company.
3. Post the job on a platform like Airtasker.

I've personally had the most success with the quality and consistency of my food prep by paying a friend or family member to do it for me. I would encourage you to investigate this option first within your own social circle. When it comes to what you pay, it depends on how many meals they prepare for you and if you want them to do your shopping for you as well. It could be an hourly fee or a set weekly sum.

I've used many food prep companies. Some were good, some bad, and some went out of business. I don't have any *one* company I recommend. Not all companies deliver to all areas and food and price can vary. You will have to do some research, ask around and try it for a week to see if it's a fit. Things to watch out for include where they source their food and how they package it. Very few companies offer organic food but they do exist.

As for packaging, if this is something you plan to do long-term, ideally you want the food in biodegradable containers. I once used a company who delivered their food in aluminium trays. The thing about aluminium is that it's a soft metal and can break down into food. I tested my heavy metals six months into consuming their meals and found I had high levels of aluminium. The other food storage medium you want to avoid is vacuum-sealed plastic. Plastic, when heated, leaches into food.

I got the idea of using Airtasker from a client who found someone to shop and prepare their food for around \$150 a week. If you can't find a friend and you're not happy with the food prep companies in your area, you might try your luck on a jobs board like Airtasker. (Note: I personally haven't used Airtasker or job boards for food prep.)

DO IT YOURSELF

If you're doing it yourself, the first thing you want to do is shop and prep in bulk. You can usually haggle a deal from your butcher and it will save you time and money from not needing to endlessly prep but also from not having to make multiple visits to the store.

Things that will make food prep easier (recommended):

- **Exact figures**

If you're eating 100 grams of a protein source (weighed raw) per meal, and you have five meals a day, that's 500 grams. Over the week, that's 3.5 kilos. You could divide 3.5 kilos into thirds and buy 1.2 kilos of fish, chicken and beef for the week to ensure variety. Or divide by two and buy 1.75 kilos of chicken and beef. The point is, before you go shopping, you want to know how much you need and how long it will last. This will greatly increase the probability of you sticking to your plan.

- **Freezer space**

A stand-up freezer comes in handy when buying in bulk. It allows you to bulk order meat, chicken and other goods directly from a farmer and at a better price.

- **Glass food storage containers**

I would recommend buying three different-sized containers: travel size for meals, medium for storage of meats and fish, and large for storage of vegetables and rice. The best types of containers are glass or ceramic. Avoid plastic.

- **Bulk shop**

Rice can be ordered in 10-kilo bags from a supplier but you may need a few friends to chip in and buy a few bags to hit a minimum order.

Eggs are another item you can save a lot of money on when ordering in bulk. I order 30 cartons at a time with friends and we distribute them accordingly. The organic eggs I usually buy for \$12 in a store, I can get for close to a 50 per cent discount ordering wholesale. Ordering in bulk cuts my annual egg bill in half.

Make friends with your butcher; if you order large volumes, it's likely you'll get a better deal. The only caveat is you will need a freezer to store and preserve your meat.

- **Don't make one meal**

Figuring out how much food you need per meal, per day or per week, makes this process much easier. A simple way to plan is to figure out how much food you need per meal. Let's say you have 100 grams of chicken (weighed raw) per meal, and you want to prep for 10 meals. This means you will need to cook one kilo of chicken.

When prepping meat, chicken or fish, I recommend you weigh it raw. Cut it into serving sizes before cooking so you can keep amounts exact.

As for vegetables, there are two ways to purchase:

Like a bachelor, frozen.

Or like a yoga teacher, fresh.

Frozen is super convenient. If you're new to eating healthily and preparing food, I recommend the frozen vegetables aisle as a starting point. Frozen obviously lends itself well to buying in bulk. As for fresh, buy only what you need as vegetables only last so long.

You don't need to worry about measuring and weighing vegetables. My recommendation when serving vegetables is to eat with your eyes. In terms of how much to prepare, it really depends on how much you like vegetables. Personally, I keep things pretty simple. Green beans and salads are my go-to choices.

As for rice, approximately one raw cup of rice makes three cooked cups. One cooked cup is approximately 180 grams of rice. So if you're planning to have 10 meals with 100 grams of cooked rice, cook two cups of raw rice.

When it comes to meal prep, you don't need to be fancy unless you want to. Simple herbs, spices and Celtic sea salt go a long way.

For more tips on meal prep, head over to our [Enterprise Fitness](#) YouTube channel and search for the series, *Enterprise Kitchen*.

LESSON 5: PERSPECTIVE

The consultation was almost over. Ms H. was about to leave when she said, “*Can you tell me what I have to do again? I feel like there's so many foods I'm missing out on with this plan...*”

As a coach, there are six phrases of negation I listen out for:

- I have to...
- I ought to...
- I am supposed to...
- I need to...
- I must...
- I'm missing out on...

Ms H signalled two major red flags.

- 1) She felt it was something she *had to* do.
- 2) She felt like she was missing out.

Note the six phrases above: If you hear yourself (or others) saying one of the six, it's usually an indicator that you are trying to live from a higher perceived authority's values system.

In Ms H's case, the authority was me. The goal of coaching is not to be the unquestioned authority, but rather, to encourage a goal within a person – and keep them accountable. The goal should be something they find worthy but challenging to pursue. Visit www.enterprisediet.com/resources for a fun infographic showing the difference between subordinating to advice compared to coaching and encouragement.

I didn't want Ms H to just 'follow' my plan. I wanted her to be invested in the process. So I asked her why she should follow my plan. She replied, "*Because that's what you told me to do.*"

"That isn't a reason." I could see Ms H was puzzled by my response, so I added, "*What's your reason for following my plan?*"

Our conversation went something like this:

Ms H: "I want to lose weight."

Me: "Do you think my plan will help you do that?"

Ms H: "Yes, but it just doesn't seem.... normal."

Bingo! Ms H had an objection and sticking point to following any nutrition plan that wasn't in line with what she deemed *normal*. But I had the response I needed to help move Ms H forward.

"You're 100 per cent absolutely correct and incorrect, depending on how you define normal."

I went on, "We live in a society where it's normal to wake up tired, go to bed wired, be obese and unhealthy, do little to no exercise and consume 90 per cent of our daily calories from prepackaged junk that contains little to no nutrition. I would argue that this is common, but not normal."

What's normal is having energy when you wake up, getting a great night's rest as your body rebuilds and regenerates, exercising and being physical, and eating whole foods containing vitamins, minerals and actual nutrition. That to me is normal but unfortunately, in today's society, it's not common.

So do you want what's normal by society's standards or normal by health standards? They are not the same thing. After-work drinks and bad food are a hell of a lot more normal than doing a session with your personal trainer after work and eating chicken salad for dinner.

Something I said must have clicked with Ms H. For the first time in our 90-minute consultation, she gave me a genuine smile, sighed with relief and said, "You're right!"

"I need to stop giving into peer pressure and doing what my friends and family consider normal. To them, I'm already healthy so they don't understand it. But I want to be better, so I guess there's nothing normal about what I'm trying to do, and it's time I embraced that."

To make sure she had shifted her perspective, I asked about the second red flag: “*What exactly do you feel you’re missing out on?*”

She laughed, “*Oh nothing...*”

“*Oh, come on, tell me...*”

“*Ok, well, I was going to say milk and sugar in my coffee. I mean, black coffee just seems weird. I don’t know if I can drink black coffee.*”

I laughed. Out of everything I said during the consult, Ms H’s biggest hang-up was about drinking black coffee!

I explained that humans have been on this earth for around 300,000 years. For 99 per cent of that time, we ate things that were hunted, fished, gathered or plucked. In the last 100 or so years, food went from something grown and fostered from the earth to something we research, manufacture and design in a lab... then put in a bright box to make sure people buy it. It’s *food* versus *food products*.

It’s what’s common and normal by society’s standards versus what’s normal or even optimal physiologically. Don’t get me wrong. I’m glad we are no longer living as hunter-gathers. I like indoor plumbing, indoor heating and going to my butcher – not having to hunt, slaughter and carve up my dinner every night. Modern life brings an abundance of convenience that enables a better life.

The problem is that we are still genetically the same humans as we were 300,000 years ago, with the same impulses to eat. But we’ve gone from an environment where food was scarce to one where it’s summer 52 weeks a year and everything is in season.

If our goal is body composition and performance, we have to implement and follow a different set of rules – rules that aren’t ‘normal’ to most. We simply cannot have what everyone else is having.

As we finished up the consult, I reminded Ms Hungry:

- **Self-reflection is a part of the plan**

Keep a log. Reflect on what's working and what's not so you own the process and the outcome.

- **Be like bamboo**

If you want results, make friends with routine and structure; but keep in mind, your nutrition plan is not a prison and can allow flexibility.

- **Relative changes: meals, not snacks**

Eat like the lion, not the cow. Eat to live. Don't live to eat. When you sit down and eat anything, relax and be conscious.

- **Prepare for success**

The hardest thing for most people is prepping food. So choose. Do you have more money than time or more time than money? Either you take responsibility for prepping your food or delegate the task.

- **Perspective**

What's normal and common are not the same thing. What's common nutritionally isn't what's normal physiologically. You're reading this book because you want better. Be comfortable shooting for optimal and being "that person" in your social circle.

COMING UP

We'll move beyond theory and learn to put your plan together, so you're in control and know exactly what to eat (and when) for your body composition goals.

BUILDING A TRIBE

The internet has no shortage of nutrition tribes and fitness cults. Unfortunately, it's the loudest voices, not the wisest, that often get heard.

There is so much confusion regarding health, fitness and nutrition. My goal is to demystify the nonsense and equip people with the right tools to conquer their health and body composition goals. But the truth is, I can't do it on my own.

I need your help.

There are so many people crying out for this information in a practical and easy-to-understand format, without the internet baiting and extremism prevalent in fitness and nutrition.

So I have a favour to ask...

The only way I can help more people is by reaching them, and the fact is, most people do judge a book by its cover and reviews. If you have found this book valuable thus far, would you please take a brief moment right now to leave an honest review? It will take less than 60 seconds.

Your review could make a difference so people hear about this book and buy it – and finally get the answers they have been looking for.

You'll probably never meet the next person to read this book, but if you did, I'm sure they would want to give you a high-five and a hug. It also won't cost you a dime to spread the word and you will have my enormous thanks.

Your review will help:

- One more person off the merry-go-round of yo-yo dieting.

- One more struggling fitness buff to develop a healthy relationship with food that allows them to achieve the transformation they only dreamed of.
- One more trainer guiding their clients closer to their ideal outcomes.

To make that happen, all you have to do is leave a review.

I want to share the gift of good food, training and personal development with all who need it, as it completely changed my life and has done the same for so many others.

How to leave a review:

If you are on Audible:

Hit the three dots in the top right of your device, click Rate & Review, then leave a few sentences about the book with a star rating.

If you are reading on a Kindle or e-reader:

Scroll to the bottom of the book, then swipe up and it will automatically prompt a review.

If functionality changes on either platform:

Go to the book page on Amazon (or wherever you have purchased this), log into your account and leave a review.

If you feel good about helping others just *because you can*, then you're my kind of person. I'm really looking forward to seeing your results.

PS. Do you know someone who has been struggling with their fitness and nutrition? Often when you share, recommend or introduce something valuable to someone, they associate that value with you. If you would like the goodwill from other fitness folks – send this book their way.

Thank you for being awesome. Now let's get back to it!

– Mark

CHAPTER FIVE

PUTTING YOUR PLAN TOGETHER

This instructional chapter puts together the theories and philosophy I have discussed into a workable plan. You'll find out what to do and how to do it.

Before we begin, I want to point out that I wrote this for anyone who wants to improve or optimise body composition and is training to achieve this goal. This book is not for the couch potato. It's not a diet you do to lose nine kilos in nine days or some other quick gimmick. This is for people who take their results seriously and want to train, plan and track.

It bears mentioning, my audience ranges from 16-year-olds who want to pack on muscle to 55-year-old clients looking to burn body fat. So instead of using absolutes, I will give you principles and tools that have worked for my clients time and time again. Advice is always context-dependent, and it's virtually impossible to consider everyone's unique and personal context. It's a dance between avoiding a dogmatic, know-it-all system and giving you parameters to stick within and tools you can implement.

One of the truths I want to reveal in this chapter is that there are absolutely no secrets or special ways to 'hack' weight loss and muscle building. This truth will both terrify you and bring a deep sense of relief. Anyone looking for a better diet or a 'secret' always thinks there's something they're missing. Most of the time, success comes from adopting a set of disciplines

and sticking to them. The relief comes when you realise you're not actually missing anything. Achieving optimal body composition is simple, but not always easy.

As you may want to refer to this chapter frequently to tweak and design your plan, I've laid this chapter out in the following categories and sub-categories:

Getting started:

1. Self-reflection log
2. Enterprise nutrition principles
3. Meal plan, food systems or macros?

Putting it together:

1. Pick a protein
2. Pick a fat
3. Carbohydrates (starchy carbs)
4. Vegetables (fibrous carbs)

Because I know you'll ask for them:

1. Extra meal rules (my take on the *cheat meal*)
2. Printable shopping list
3. Tweaks, measurements and photos

GETTING STARTED

1. SELF-REFLECTION LOG

With weight training, it's obvious that you don't simply load up the bar to 200 kilos in a client's first session at the gym and hope for the best. Yet, for some reason, this is what people do metaphorically when it comes to nutrition. They go from white belt beginner to black belt diet strategies overnight, then wonder why they feel overwhelmed and break their diet.

You need to track and review your nutrition if you want high-level results. The first step in putting your plan together is to record and measure what you're *currently* doing. When you measure, you can manage and make objective changes. As a coach, one of my main functions is to hold up the figurative mirror to my clients. This helps them realise that all their problems start and end within their reflection.

My first nutritional intervention is to get clients to keep a *self-reflection log*. The self-reflection log is a part of the process and if the log is the only thing you implement from this chapter, you'll already be halfway to mastering your own nutrition. A problem well-stated is a problem half solved, and the self-reflection log helps you state your problem/s clearly.

A self-reflection log is as much about the tangible writing down what's happening day to day as it is about using a diary or journal to help you take ownership of an area of your life you want to improve on but are currently neglecting.

The main powers of a self-reflection log are as follows:

1. It puts you in the driver's seat of change. It makes you take ownership of the process and while you might employ a coach, it makes it a '*do with*' process, not a '*do to*' process.
2. It helps you objectively observe your day and routine, including productivity pitfalls and spikes.
3. From these observations, your self-reflection log aids in setting and optimising a routine.
4. It helps you identify triggers or patterns that are positive or negative towards your goals. Once you've identified those triggers, you can create a routine to avoid or manage them.

I used to call this a diet log, but then I realised the connotations; I didn't want clients to focus solely on noting their diet, but rather, on their entire day, putting their diet in context: how they felt, what they ate, their energy,

mood, triggers, if they felt off, and why. The switch helped them create an optimal daily routine, rather than just helping them with a diet.

A self-reflection log is a simple yet profound exercise in self-awareness. It helps optimise and organise your life, and anyone can do it.

SELF-REFLECTION LOG INSTRUCTIONS

- Set yourself an initial period of three days to analyse. You can do more but three days is a good starting point. However, at no point should the log become an obsession.
- Use either a pen and pad or take notes on your smartphone. Either is fine but don't forget to include the time of day.
- The best practice is to make notes as you go throughout your day. Note the exact times you wake up, eat, work, rest, get distracted, get triggered to eat, etc. If you forget to make notes, set reminder alarms on your phone or smartwatch every two hours to prompt you to review. Keeping this in real time will improve your compliance.
- Weigh food where possible. This is needed later when you're figuring out macros and calories.
- Keep track of all supplements or medications taken.
- Include any noteworthy feelings, thoughts or triggers that throw you off mentally, particularly those that trigger you to overeat/undereat.
- Include whether/when you feel bloated, gassy, hungry, or mentally off your game. Note the exact times and whether food is associated.
- Once you have done the initial three days, you can make diet modifications and track another three days to review the impact of the modifications on your day, paying particular attention to energy, bathroom habits and cravings.

The main goal with all of this is to bring awareness and ownership of what you're currently doing and not doing.

An example of what your self-reflection log may look like:

6:45 am: Alarm

6:50 am: Rise – stayed in bed for five minutes checking Oura ring stats and social media.

Morning note: Slept well, Oura ring sleep score was 82. Could be improved by going to bed earlier.

7:00 am: 5 eggs and 180 grams of rice scrambled.

7:30 am: Strong coffee, plunger. 15g of ground coffee beans.

7:45 am: Bathroom. Number 2.

8:00 am: Start work.

Notes: Concentration good for the first 90 minutes. Felt a dip at 10 am.

10:45 am: 180g of rice, 180g of cooked beef mince, 10g of butter (to cook with).

Notes: Looking forward to training today.

Noon: Weak coffee.

12:01 pm: – 1:00 pm: Meeting.

1:00 pm: Train – Arms

Intra workout shake: 35g of UCAN carb powder, one scoop of Amino Complex (Thorne), 4g of creatine, four scoops of KTS Solutions electrolytes.

Notes: Workout was an 8 out of 10. Could have been better if I had someone to push me.

3:00 pm: 250g of rice, 25g of maple syrup, 200g of cooked chicken thigh, 10g of butter (to cook with).

3:10 pm: Meetings, emails, phone calls, day-to-day management.

Notes: Could be more productive here.

6:05 pm: Home.

6:30 pm: 200g of chicken thigh and green beans, 10g of butter (to cook with).

Notes: Cleaning up, cooking, household responsibilities.

8:10 pm: 180g blueberries, one tablespoon of ABC spread, two pieces of 80 per cent dark chocolate.

After the kids fell asleep, I ate some blueberries and watched TV. At 8:45 pm, I got back on the computer to plan the day for tomorrow and caught up on emails.

10:45 pm: Magnesium (Designs for Health), Amino Complex (Thorne), Collagen (Designs for Health), Glycine.

11:00 pm: Bed.

The above is only an example of what a self-reflection log may look like.

When you set your day, start with your wake-up time and bedtime. Schedule this so you can get seven to eight hours of sleep per night. You will be healthier and more productive.

Second, schedule your meal times. Don't let food be random or an afterthought because if it is, you dramatically increase the chances of poor nutritional choices in exchange for convenience. Once rise/rest times and meal times are set, use the self-reflection log process to review the energy and focus you have for high-priority actions in your life.

Example: When 90 per cent of my working time was spent coaching others, I scheduled my own training from 8 am to 10 am. For years, this made me more productive. As my business grew and I took on more responsibilities, I tried to keep the same schedule thinking, "*I've always done it this way.*" After training in my gym with a team of staff and clients, I began to notice that I ended up doing a whole lot of nothing for several hours. I would get distracted by staff, talk to clients and tidy up the place. I would just find things to keep me occupied instead of completing tasks that made a difference. After I kept a self-reflection log, I noticed I was unproductive from 11 am until 4 pm. So I switched it by making my work time 8 am to 3 pm and my workout time 3 pm to 5 pm.

The self-reflection log process isn't just about noting your diet. It's about improving your day-to-day life. If you approach it as such, it will make the food component far less of a chore and more about how to live your best life.

2. ENTERPRISE NUTRITION PRINCIPLES

Good principles are the backbone and foundation of learning and mastering any skill. If you want to see permanent changes in your physique, you need to adopt a set of principles to live by.

The Enterprise Nutrition Principles I'm about to share are the building blocks and fundamentals that should be met before you start tracking food targets or macros – and even if you are tracking macros, you should still respect and adhere to these principles.

Here are *The Enterprise Fitness Nutrition Principles*:

- 1. Never force-feed.** Eat until 80 per cent to 90 per cent full. Overeating can cause gastric distress.
- 2. Don't eat anything (or in amounts) that makes you feel uncomfortable.** Have you ever heard you're 'supposed to' eat certain foods? Be it chicken, tuna or rice, if you're following a nutrition plan or eating foods (in any amount) that make you feel uncomfortable, stop and seek further assistance. It's not a good thing when you dread your next meal.
- 3. Plan and set your meal times.** Don't wait until your blood sugar drops to eat; you will be far more likely to make bad choices.
- 4. Develop a food routine.** The fewer decisions you need to make daily about your food, the less likely you'll be to make poor choices.
- 5. Don't snack. Eat proper meals.** Proper meals have a protein source and are consumed when you're sitting down and able to properly chew your food. (Don't eat on the run, while driving or while distracted.)

6. **Remember you always have four choices:** This one. That one. Both. Or neither. Sometimes, the best choice is neither.
7. **Cook with fats.** Your top four go-tos are butter, ghee, lard and coconut oil.
8. **You should be pooping.** If you're not passing a bowel movement at least once to twice a day, there's something wrong with your diet.
9. **Eat foods that are hunted, fished, gathered, plucked and farmed.** If you limit food choices to these five options, you will have a diverse and nutrient-dense diet.
10. **Act like the healthiest version of you.** Instead of asking, “*Can I have that?*”, ask, “*What would the best version of me do /choose?*” Sometimes the healthiest thing you can do is share a pizza with friends.

3. MEAL PLAN, FOOD SYSTEM OR MACROS?

I've never understood why people pay for meal plans. The idea that you're fixed into certain foods each day or that there is a magical combination of foods that unlock muscle and burn body fat is silly to me.

It goes without saying that you should eat highly nutritious foods. However, the way you build a meal is straightforward:

- Step 1: Pick a protein.
- Step 2: Pick a fat.
- Step 3: Consume vegetables with most meals.
- Step 4: Choose and manage your carbohydrate intake.

**I'll provide you with a shopping list at the end of this chapter to give you the ideal options to choose from.*

Using an interchangeable meal plan template gives you endless options and flexibility without any complexities. There are no *magical* combinations of food required!

The next logical question is how much to eat. But before we dive into the meat and potatoes of putting it all together, there are three systems we use at Enterprise Fitness, depending on the client's level of understanding and commitment:

1. Food goals.
2. Macronutrient goals.
3. If not weighing and measuring food intake, then use the **Enterprise Nutrition Principles**.

Macronutrients are protein (four calories per gram), fat (nine calories per gram), carbohydrate (four calories per gram) – and technically fibre (two calories per gram) and alcohol (seven calories per gram). I'm going to cover the main three – protein, fat and carbohydrates – in more depth in this chapter.

When we talk about hitting a **macro goal**, it pertains to consuming the number of that macronutrient needed to reach your target. For instance, your macro goal might be 25 grams of protein per meal; you could reach this goal by consuming 137 grams of chicken thigh or 124 grams of rump steak. A **food goal**, on the other hand, relates to how much to eat of a certain food in grams. For example: eat 100 grams of a protein food source. (Select from the list.)

Another approach to simplify food consumption is to figure out the macronutrient goal, then translate that into a food goal so it's relatable and easy to implement. I'll give examples in the protein, fat and carbohydrate sections and a serving size cheat sheet at the end of this chapter.

The choice between setting food targets and macronutrient numbers depends on your personal preference and how numerically inclined you are. Tracking food will help you limit options and confine you to simple nutritional choices. Tracking macronutrients gives more choice, but is more work to calculate if you're mixing up food choices daily. Counting macros allows more diet flexibility in terms of food choices; however,

flexibility isn't always a good thing if you haven't mastered the basics. It also isn't a licence to eat low-nutrient foods in the name of making them fit your macros.

The main difference; tracking macros requires an extra step to translate macro amounts into food volumes. When you set food or macro goals, you need to weigh and measure your food. This isn't just about not eating 'too much' as most people think of it, it's also about ensuring each meal has *enough* to reach baseline nutrition, particularly in meeting a daily protein goal.

Whichever approach you implement, I encourage variety and a practical mindset when it comes to food selection. There have been many diet regimes that promoted rotating your protein and other food sources at each meal. In a perfect world, this can work; I don't disagree with the sentiments to rotate food and eat as wide a variety as possible. However, in practicality, I have seen folks come close to ripping out their hair in frustration because the protocol was too difficult to follow. So if I round numbers up or down and it appears as though I don't sweat the small stuff, it's because I don't, and neither should you.

One more word on the topic of practicality: batch cook your meals. Example: you might cook and prepare 1.2 kilos of chicken. If you're having 200-gram serves, this would cover six meals. Breakfast might be eggs and dinner a freshly cooked meal. Therefore, this cook-up would last you six days if you ate three meals of chicken a day. Alternatively, it could last you a day and a half if you ate nothing but chicken for the next six meals. The point: find a routine and a prep schedule that works. Whatever system you choose, it will be easier to implement if it is practical.

PUTTING IT TOGETHER

4. PICK A PROTEIN

Protein is vital for numerous biochemical functions in the body. Often people just think it is important for growing and maintaining muscle (which it certainly is) but it's also essential for a strong immune system, detoxification and neurotransmitters. Proteins are made from amino acids, which have diverse roles in the body.

For example, glycine, cysteine and methionine, all sulphur-based amino acids, are needed for phase two liver detoxification. The amino acid leucine is critical for protein synthesis. Tyrosine impacts the neurotransmitter dopamine. Additionally, amino acids have precursor roles to other metabolic processes, which would take a biochemistry encyclopaedia to articulate.

If you don't get enough protein, the body breaks down muscle to fuel other more important metabolic processes. This is why it's vital we eat enough of this macronutrient.

Protein comes from the Greek word '*proteios*', which translates to 'prime importance'. As protein is of prime importance, it's *step one* when making a meal. Evidence suggests that when calories equate and protein intake remains constant, the difference between following a low-carb and high-fat, or a high-carb and low-fat diet is negligible in terms of weight/fat loss⁽¹⁾.

Additionally, numerous studies have shown that a high protein intake (of more than 2.0g of protein per kg of body weight) does not lead to fat gain, even when the diet is hypercaloric⁽²⁾. It instead leads to better body composition, if combined with resistance training⁽³⁾ – all the more reason to set protein first.

The best protein sources are animal proteins. At this point, you may have figured out that I am not an advocate of the vegan or vegetarian diet.

Plant-based protein options are limited and a vegan or vegetarian diet puts you at a great disadvantage when it comes to body composition and health. If you choose to be a vegan, I'm okay with that (I'm not a zealot) and you can still implement much of my advice. However, meeting your protein targets will be more challenging, and you will need to supplement. For more about a vegan and vegetarian diet, check out the FAQ in chapter eight.

SOURCES OF PROTEIN

The table below lists optimal protein sources:

Protein Sources	
Chicken	Whole chicken, breast, thigh, skin on or off. Not rotisserie chicken, nuggets, kiev or crumbed. Avoid most marinades — most marinades are very high in calories.
Fish	Avoid canned fish and don't consume too much tuna. Avoid fish from Asia, particularly Basa fillets and Catfish (also labelled as Pacific Dory).
Red meat	Grass-fed and organic is always preferable. The extra cost is worth it.
Game meat	Kangaroo, goat, bison, venison, buffalo, camel, wallaby, emu, rabbit.
White meat	Turkey, chicken, fish.
Eggs	Free range, free-roaming is preferable. Don't avoid yolks.
Pork	Always free range
High-protein vegan options	Pea and rice protein powders Lupin flake Amino acids
Whey Protein	Protein shakes can help you hit your protein macro target. A word of caution: shakes are great to supplement your protein needs but they shouldn't be a complete replacement for real food.

HOW MUCH PROTEIN DO I EAT?

There are two ways to calculate how much protein to eat.

1. Use a food system.
2. Calculate it based on macronutrient and calorie targets.

A food system is the most user-friendly way and is something you can implement right away. It's not exact, but it does give you ballpark figures and ease of implementation. For calculating macros, there is a formula that depends on what you're trying to do (cut down, maintain or build) and how many carbohydrates will comprise the rest of your diet.

PROTEIN CALCULATIONS USING A FOOD SYSTEM:

Using a food system requires you to weigh your food. Weigh your protein raw, as cooking duration, temperature and technique (i.e. grilled versus boiled) affect the end cooked weight. We want consistency when weighing food, and the most consistent way to measure protein is raw.

For females, I have found that the protein food goal is usually somewhere between 75 grams and 125 grams of a protein food weighed raw per meal (meats) or up to three full eggs per meal. This is based on a female consuming approximately four meals a day and who trains reasonably hard four times a week (not an elite athlete training multiple times a day).

For males, I have found that the protein food goal is usually somewhere between 150 grams and 200 grams of a protein food weighed raw per meal (meats) or up to six full eggs per meal. This is based on a male consuming approximately four meals a day, who trains reasonably hard four times a week (not an elite athlete training multiple times a day).

Note: Male or female, factors that affect protein intake include training volume, meals per day, lean body mass, carbohydrate intake and fat intake.

Also note, there is no actual difference in protein requirements for men and women. The difference is based on body weight and lean muscle mass.

As the food system is designed to be user-friendly, you can pick any protein source from the list above and simply adhere to recommended reference ranges of protein intake. The list of proteins is interchangeable and you can select based on personal preference. Obviously, there is going to be a difference in caloric and protein intake from selecting different sources (i.e. red meat versus fish). However, the goal here is not perfection, it's to start with a working plan.

I have helped many competitors get to insane levels of shreddedness and even compete using just this system. It's all about practicality and removing barriers to implementation.

PROTEIN CALCULATIONS USING A MACRO SYSTEM:

From a macro perspective, we aim for anywhere from 1.6 grams to 3 grams of protein per kilo of body weight⁽⁴⁾. Vegan, vegetarian or carnivore, these numbers don't change. However, it is significantly harder to hit the top end of this range as a vegan. The ranges are based on your specific goals (e.g. lose fat, gain muscle), as well as activity levels, training volume, age, body fat, appetite, lean body mass, total calories and starting point⁽⁵⁾.

RESEARCH NOTES ON PROTEIN CONSUMPTION:

- The consensus for protein intake to optimise body composition and gain muscle is to aim for 1.6 to 2.4g/kg body weight^{(6), (7), (8)}
- During a calorie deficit, research suggests you aim for 2.3 to 3.1g/kg body weight to maintain lean muscle mass when resistance training during a calorie deficit (closer towards the higher end if you are leaner or in a larger caloric deficit). This range is also approved by the International Society of Sports Nutrition (ISSN)⁽⁹⁾.

- Up to 3.3g/kg body weight may be beneficial for body composition if you want to build muscle while preventing fat gain during a calorie surplus (bulk)⁽⁴⁾.
- High protein intake of over 4.0g/kg body weight has been studied and shows no positive or negative effect in healthy individuals⁽²⁾.

FROM ALL OF THIS, HERE'S HOW I BREAK IT DOWN FOR PRACTICAL USE:

- 1.6 to 1.9 grams per kg/body weight can be used if in caloric surplus when carbohydrates are high. Carbs are protein sparing, so you can consume less overall protein.
- 2 to 2.5 grams per kg/body weight can be used in a general maintenance, hypertrophy or fat loss phase – depending on how you manage fat and carbs. This range is the most common starting place for optimising body composition.
- 2.6 to 3.5 grams per kg/body weight if in a caloric deficit or more intense dieting phase. In a fat loss phase, protein gets adjusted higher and carbohydrate gets calculated lower. This is to preserve lean muscle mass and prevent muscle breakdown during a calorie deficit. This is usually given towards the tail end of a contest prep or in very overweight individuals where you need to minimise carb intake. Again, there is research that supports going as high as 3.5 to 4.4 grams of protein per kg/body weight⁽²⁾; however, the implementation would be a rare instance for most and is not something I've ever used.

CALCULATING MACROS; PROTEIN EXAMPLE:

If you weigh 60 kilos and want a general target of how much protein in a day you need to consume, you would figure it out like this:

60 (body weight in kilos) x 2.2 grams = 132 macro grams of protein per day.

If you were to have five meals a day, you would take 132 and divide it by 5, giving you a target of 26.4 grams of protein per meal.

If we were to set this as a **food goal**, it would be around 100 grams of a protein source (see the protein list) at each of the five meals.

Examples of food measurements to hit 26.4 grams of macro protein per serve, per meal include:

- 85 grams of chicken breast
- 130 grams of rump steak, beef
- 128 grams of salmon
- 122 grams of turkey breast
- 4 to 5 eggs

If I were to give this as food goal instructions, it would be translated as ‘eat between 85g and 130g of a protein food, weighed raw’. This allows you to temper amounts based on appetite and food choice or to round off all protein food sources to the same number. It becomes easier to implement and action, and implementation is always more important than perfection. If you’re progressing, we don’t need to sweat the small stuff.

Note: Some of these choices have higher fat content than others. For most starting out, we don’t attribute the fat in chicken or beef to people’s fat intake. We do for protein sources such as eggs and salmon because the fat content is a lot higher.

Below is the protein serving size cheat sheet for those who want to be more exact about serving sizes.

Protein Source	Grams of Macro Protein					
	25g	30g	35g	50g	65g	75g
Chicken breast	81g	97g	113g	162g	210g	242g
Chicken thigh: (baked)	102g	123g	143g	204g	266g	306g
Eggs: whole (59g egg, large)	5 eggs	6 eggs	7 eggs	8 eggs	10 eggs	11-12 eggs
Salmon	121g	145g	169g	242g	314g	314g
Fish: barramundi	129g	155g	181g	258g	335g	387g
Kangaroo	117g	140g	164g	234g	304g	351g
Beef mince, 95% lean	119g	143g	167g	238g	310g	357g
Beef: rump steak	124g	149g	174g	248g	322g	372g
Pork loin	104g	125g	146g	208g	270g	311g
Lamb shoulder	143g	172g	200g	286g	372g	400g
Lupin flakes	63g	75g	88g	125g	162g	187g
Whey protein: average	32g	39g	45g	64g	83g	96g
1 scoop of pea protein: average	29g	35g	41g	58g	76g	87g
Turkey breast: no skin	116g	139g	162g	232g	301g	347g
<i>Reference: *All values are from CalorieKing Australia</i>						
<i>Reference: Lupin flakes reference: MyFitnessPal</i>						

A FINAL WORD ON PROTEIN

From this list, you pick a protein and adhere to suggested servings. You'll notice the servings are pretty broad. If you're not used to eating a lot of protein, start with the lowest end of the range. More is not better. You need to develop your appetite.

Eating too much protein too quickly will make you feel bloated or even constipated. You're better off starting with less and increasing over time.

For this reason, using this approach, you may still not hit macro targets if your appetite is low to begin with. With this said, the idea here is that your protein intake can increase over time.

5. PICK A FAT

First, let's get two things out of the way:

1. Dietary fat is NOT the same as body fat.
2. Dietary fat does not automatically turn into body fat.

Healthy dietary fat is vital. From cellular function and mental cognition to hormone production, your body requires fatty acids and dietary fat. When you remove essential fats from your diet or aggressively reduce fat intake, ramifications can include dry skin, poor mental cognition and a damped libido.

Dietary fat and cholesterol, although demonised, are vital building blocks for our hormones. High cholesterol is often an indicator of inflammation, and inflammation usually coincides with poor dietary choices, accompanied by chronically elevated blood glucose and insulin.

The old-school way of thinking was to lower cholesterol by avoiding meat, butter, eggs and other foods that contain saturated fat. The thought was that cholesterol causes heart disease. I'll unpack that in more depth in Chapter 6.

A common problem in the bodybuilding and fitness communities is folks overly glorifying lean proteins. There's nothing wrong with lean proteins; however, they don't carry as much nutrition as fattier cuts, and if you have them all the time, you're missing out on nutrition and flavour.

The fat-soluble vitamins are vitamins A, D, K and E. These are all necessary for health⁽¹⁰⁾. Furthermore, high-protein diets (like the one we're suggesting

for body composition) that don't contain enough vitamin A will deplete vitamin A because it is necessary to assimilate protein.

Likewise, vitamins D, K and E play vital roles in the body, supporting the immune system (vitamin D), skin (vitamin E) and K with its ability to better utilise all the other fat-soluble vitamins. Nature didn't get it wrong; that's why the egg has the yolk, so when you get your serving of protein, you're also getting important nutrients and cofactors to support protein's utilisation in the body.

In paleo communities, they call it *nose to tail nutrition* and it is a good practice... if you can stomach organ meats.

DIETARY FAT

There are three main types of dietary fat:

- Saturated
- Monounsaturated
- Polyunsaturated

Saturated fats are solid at room temperature. Examples include butter, ghee, lard, palm oil and coconut oil.

Monounsaturated fats tend to be liquid at room temperature but can become solid if refrigerated. Examples include olive oil, peanut oil and canola oil.

Polyunsaturated oils are liquid even when they are refrigerated. Examples include corn oil, soybean oil, safflower oil and sunflower oil.

FAT INTAKE

The simplest way to include fat in your diet is by cooking with fats and mixing up lean and fattier protein sources. However, we need to discuss portions and how much to cook with as some folks are far too liberal in their cooking, while others are far too conservative, wiping the pan after they use a fraction of butter.

If you eat sensibly, fat will take care of itself for the most part. This means using enough fat to cook with, eating a variety of lean and fatty meats, and including other fat sources like avocados and olive oil in salads.

As a general guideline, each meal you consume should have a fat source present. The fat source should be mixed and matched to complement the meal.

Take a look at some examples:

- In the morning, you have a five-egg omelette. In this case, use just enough fat to cook with as the fat source here is the yolks in the eggs.
- You're making salmon, potatoes and salad. The fat source here is the salmon. Instead of adding additional butter to the potatoes, cook with enough fat and lightly dress the salad with olive oil.
- You're baking chicken. When baking chicken, you don't need to use any fat; instead, leave the chicken skin on and add a fat source to the vegetables or carbs you're having with the meal.
- You're having BBQ kangaroo and potatoes. As there's almost zero fat in kangaroo meat, add a serving of butter to your potatoes.

From the above examples, the questions that often arise are: '*Am I only allowed one fat source at each meal?*' and '*If I cook with fat, does that mean I'm not allowed to add additional fat?*' The answer to both is generally no. A guideline to solve this is the *+2 rule*, which I made up one day when I was coaching a client to give them a workable framework to implement.

The +2 rule is having a serving of fat at each meal, and two additional servings of fat at two of your daily meals. That means you might use 15 grams of butter to cook all your meals, and your +2 could be the full eggs you have in the morning and the additional butter you add to your potatoes for dinner. It's not perfect; however, it's easy to implement and allows a lot of workable flexibility without having to figure out exact macros.

Of course, you can be scrupulous with numbers and measurements, weighing everything to the milligram. However, personally and when coaching and consulting with clients, I prefer to use a loose set of rules that complement food selection and client preference due to the nature of using fats, both as a source of nutrition and as a cofactor in cooking. The take-home point: don't be scared of fats, and for most, a little more fat in your diet is a good thing.

Ideal cooking fats are:

- Organic butter
- Ghee
- Coconut oil
- Lard

These stay stable at high temperatures and don't go rancid. Olive oil is a great fat but I avoid cooking with it. Some olive oils have a higher smoke point (around 210 degrees Celsius) and are better for cooking with. With that said, my personal preference is to use one of the above.

Other nutritious fat sources are:

- Olive oil
- Avocado
- Whole eggs (yolk)
- Fatty fish (e.g. wild salmon)
- Chicken skin
- Fattier cuts of meat (e.g. lamb, chicken thigh, ribeye steak)
- Offal (organ meats)

WHAT ABOUT NUTS?

You're probably thinking, what about nuts?

Aren't they a good fat source?

Yes and no.

Yes, they are a good fat source. But in my years of coaching clients and athletes, the most people struggle with portion control when it comes to nuts. In short, they are a terrible snack food for the same reason they are a terrific snack food: they are very easy to over-consume. It's easy to inhale an additional 200-300 calories from nuts that can push you out of being in a caloric deficit and halt fat loss, leaving you frustrated as it's 'only nuts'.

Nuts also have a more-ish quality; not great for good eating habits. Over-consume mid-afternoon and you'll find you're not hungry for dinner, which throws out your routine and digestion.

My recommendation with nuts is to use them as a condiment with meals, but don't eat them as a snack. For example, make chicken with stir fry vegetables and add cashew nuts for flavour and texture. The beauty of doing it this way is that you can still enjoy nuts but the portion size is controlled.

Nuts are high in calories so you need to practise strict portion control. This means setting amounts, using food scales and weighing out your portions before sitting down to watch your favourite TV series while you eat some cashews.

Generally, a good serve of nuts is 20 to 25 grams, which isn't very much. You'll understand why when you look at the numbers:

25 grams of cashew nuts	146 calories
25 grams of macadamia nuts	183 calories
25 grams of almonds	150 calories

25 grams of walnuts	174 calories
25 grams of hazelnuts	161 calories
25 grams of pistachios	142 calories
25 grams of peanuts	142 calories
25 grams of brazil nuts	172 calories
25 grams of pecans	178 calories

*Numbers from *CalorieKing Australia*.

It's just as easy to eat 25 grams of nuts as it is to eat 50 grams, hence you can easily double your calorie intake from nuts without realising.

HOW TO MEET A FAT GOAL

On a macro level, a general recommendation is you aim for 0.8g to 1.3g of fat per kilo of body weight. This is because a fat intake of 0.8g/kg body weight roughly equals 20 per cent of an individual's maintenance calories. Anything below 20 per cent of a person's daily calorie intake is classified as low fat, which can have negative implications on health⁽¹¹⁾. One study showed that lowering fat intake to 15 per cent of total daily calorie intake had a negative impact on androgens. The 0.8g to 1.3g per kilo of body weight recommendation is a rough guideline that usually gets people to fall between 20 per cent and 45 per cent of their daily calorie intake coming from fats. For body composition purposes, this is a good guideline. To give a further example, an 80-kilo person consuming 2000 calories a day would consume 28.8 per cent (576 calories of 2000) of their calories from fat on the low end of the scale. On the high end of the recommendation, they'd get 46.8 per cent (936 calories of 2000) calories from fat.

To simplify using your body weight by the factor of one: if you weigh 60 kilos, multiply 60 (your body weight) by 1.0. This gives you 60 grams of dietary fat to consume as an approximate daily macro target (or 540 calories of fats as a calorie target). If you eat five meals a day, you take 60 and divide it by five, leaving you with 12 grams of fat per meal.

Note: If someone weighs below 55 kilos, I would recommend calculating on the higher end as fat intake can be too low.

Here are food measurement examples to help you understand what a general serving of fat would look like in real food terms per serve, per meal:

Grams of Macro Fat			
Fat Source	10g	15g	20g
Butter	8.2g	12.3g	16.4g
Olive oil	9.2g	13.8g	18.4g
Coconut oil	10g	15g	20g
Ghee	10g	15g	20g
Lard	10g	15g	20g
Avocado	47g	71g	95g
<i>Avocado notes: Small avocado: 110g, medium 160g, large 200g (no skin)</i>			
Eggs: whole (59g egg, large)	2	3	4
<i>Reference: *Values are from CalorieKing Australia</i>			

As a general food goal, a good range for **females** is 10 to 15 grams of a fat source. For **males**, 15 to 20 grams per serve, per meal works well. This is based on average body weight, not gender.

SUMMARY:

- Use enough fat to cook with.
- Have a fat source present at each meal.
- Cooking with and adding additional fat to meals is often needed.
- Include fattier proteins in your diet: fattier cuts of meat, chicken skin, etc.
- Be sensible.

Fat Sources	
Organic butter	High in vitamins A, D, E and K
Ghee	Clarified butter
Coconut oil	A stable fat, good for cooking
Avocado	Organic where possible
Olive oil	Most are not suitable for cooking. If you do cook with olive oil, find one with a high smoke point.
Nuts	Be scrupulous with serving sizes and portion control
Fatty cuts of meat and fish	Generally, not something that needs to be strictly avoided – although fat content may matter more if progress stalls

6. PICK A CARBOHYDRATE (STARCHY CARBOHYDRATES)

The notion that '*carbs make you fat*' persists as we often associate sugar and junk foods with carbohydrates. If we take a step back, sugar and junk food are refined carbohydrates. They are nutritionally void.

Eliminating junk from your diet isn't the same as eliminating carbs. The problem is when carbs get reduced to the argument, *a calorie is a calorie*, or in this case, *a carb is a carb*.

From a purely biochemically standpoint, you can't argue. However, any coach worth their salt will tell you there's a difference between eating 100 grams of carbs from sweet potato and consuming 100 grams of carbs from soft drinks and lollies. An obvious difference is the food volume it takes to eat 100 grams of carbs from whole food sources like sweet potatoes. Other differences can be found in the clients' mood, body composition, health, compliance and overall attitude towards their plan – and that's not even getting the differences in physiological impacts such as effects on blood glucose, insulin and leptin.

So yes, moderate and limit refined carbohydrates. However, eliminating all carbohydrates is unnecessary, unhealthy and potentially detrimental to your progress. Many low-carb advocates will promote the notion that there is '*no such thing as an essential carbohydrate*'. While that's true, it also bears mentioning that one molecule of glucose creates 32 to 36 units of ATP. So while there's no such thing as an 'essential carbohydrate', carbohydrate is the optimal fuel source for activities that rely on the ATP energy system such as weight training, powerlifting and bodybuilding – which are the training methods required to transform your body composition.

CARBOHYDRATES AND THE GYM-GOER

The filter I use to collect and sort through nutrition is body composition and performance. As such, I didn't write this book for readers who want to walk a couple of times a week and do yoga as their exercise routine. If that's you, these recommendations are probably not relevant. This is for those chasing optimal body composition through training as well as diet. The fact is, you need to fuel your performance.

Carbohydrates are universally misunderstood by the average gym-goer because very few books, gurus and experts agree on anything. Most of the time they just confuse people.

Let me break down the two opposing approaches to carbohydrates:

The low-carb approach: Generally, this approach is to keep carbohydrates to a minimum and remove all grains and sugar from the diet. Translated to the world of body composition, this is often implemented as a two-week *diet bootcamp* where the individual completely eliminates all carbohydrates (except fibrous carbs). After the initial two weeks, carbs are generally kept between 100 and 150 grams per day. For folks who train hard to perform and progress, this can hurt performance.

The calorie deficit approach: Generally, this approach designs your calories into a 10 per cent to 20 per cent deficit – and may or may not

have any regard to the type of carbohydrates you consume. Although a reasonable thought process, this too has its woes, as the majority of clients beginning a weight loss or fitness journey are malnourished and undereating. For these individuals, focusing on a calorie deficit is not a good place to start.

The happy medium: Start by optimising all carb choices. Let's say you're not paying much attention to what type of carbs you're eating. Often, when folks flip their carb sources to whole foods, this is enough to put them in a slight calorie deficit or at least at maintenance, helping them burn body fat and keeping their appetite in check. Unless there is a severe gut issue, I have never found any need to eliminate all carbohydrates, particularly when training.

How much carbohydrate do I eat?

So where do we begin with carbohydrate consumption? Here are popular helicopter guidelines for carbohydrate consumption for body composition:

- The higher your body fat percentage, the lower your carbohydrate intake.
- The leaner you are and the lower your body fat percentage, the higher your carbohydrate intake.
- For performance and maintenance, eat enough so your performance never drops, but not so much that your body fat increases.

The problem with the above is that we need a universally accepted definition of what is high and low body fat, and we need to equate those numbers to carb intake. And we can't have that conversation without talking about the three body types/somatotypes: ectomorph, endomorph and mesomorph.

Ectomorph body types have a thin frame. They generally find it harder to gain weight, both muscle and body fat, so their body fat tends to sit lower.

Mesomorphic body types are relatively lean and muscular.

Endomorphs have a higher body fat percentage relative to muscle mass.

*Visit www.enterprisediet.com/resources for my infographic on somatotypes.

So with this said, one could assume ectomorphs should eat high carbs, mesomorphs moderate carbs and endomorphs move to low carbs. While I certainly agree genetics play a role in your ability to metabolise and utilise carbohydrates, this approach can become too simplistic. Simply recommending carb intake based on body fat or somatotype guidelines leaves room for error and personal interpretation.

The other glaring problem; research points out you lose weight based on a calorie deficit, not based on how you split your macros.^{(12) (13) (14)} However, your method for splitting macros affects body composition, performance and how you feel while working towards your goal. So there does need to be some consideration for body type, at least initially, while understanding it's not a one-size-fits-all formula.

With this said, the best test I've come across for genetic carbohydrate tolerance is Charles Poliquin's BioSignature Test, or more specifically, the upper back fat fold. If someone's upper back fat is low relative to their body fat, they would be a carb type. If it's high relative to their body fat, they would be a fat type. Generally, anything 8mm or below on a BioSignature subscapular site is considered low. After utilising this test personally with thousands of clients over the years, I can attest to its accuracy. Giving people the right macro ratios helps improve mood, body composition and performance. Poliquin theorised that this test was an insight into slow and faster oxidisers.

To summarise, there is a link between body types and carb sensitivity; however, that relationship isn't clear-cut by just categorising with somatotypes. To remain objective, you need to test blood markers for insulin sensitivity or body fat percentage with callipers and skin folds. For our purposes, and to start our plan, I'm not going to propose a universally accepted body fat range that equates to a recommended carb intake.

The best way to start is to make relative changes to someone's already existing plan.

One size doesn't fit all, but we all need to start somewhere. Here are two workable models to begin with:

1. Using a food system
2. Calculating based on macronutrients and caloric targets

CARB CALCULATIONS USING A FOOD SYSTEM:

A food system approximates recommended serving sizes of actual food. Note that these are not in proportion to macro amounts. Instead, they relate to general portion sizes of actual food.

A 300-gram serve of pumpkin only has 14.7 grams of carbs, whereas 125 grams of rice has 35.2 grams of carbs. We could equate carbs; however, a 300-gram serving of pumpkin is already very generous in terms of food volume, hence why pumpkin is a great fat-loss carb because you have to eat an awful lot of it to get even a 30-gram serve.

Here are approximate amounts to work with when using a food system:

For females, per serve, per meal:

- Sweet potato/potato (cooked): 150 to 250 grams
- Pumpkin (cooked): 200 to 300 grams
- Rice (cooked): 100 to 125 grams
- Quinoa (cooked): 100 to 125 grams

For males, per serve, per meal:

- Sweet potato/potato (cooked): 200 to 250 grams
- Pumpkin (cooked): 250 to 350 grams
- Rice (cooked): 180 to 220 grams
- Quinoa (cooked): 180 to 220 grams

CARB CALCULATIONS USING A MACRO SYSTEM:

To figure out your macro carbohydrate intake, you need to figure out caloric intake. There are many systems you could use to calculate calories. The two most common are:

- Harris-Benedict formula
- Katch-McArdle formula

The Katch-McArdle is the most accurate method as it's based on lean body mass. However, you also need to know your lean body mass and have access to body composition testing; this is where the calculation errors can occur as many tests over- or underestimate lean body mass.

This formula is also more complex to calculate. As I use calorie formulas as estimations and approximate starting points, for our purposes we will use a more straightforward but lesser-known method based on one metabolic equivalent of task (1 MET).⁽¹⁵⁾ MET is a measure of how much energy you expend during physical activity, compared to your resting metabolism, with 1 MET being the amount of energy expended while sedentary. As a general rule of thumb, basal metabolic rate (BMR) is equal to one calorie per kilo per hour. So to figure out your baseline calories without activity, it's 24 (24 hours in a day) multiplied by your body weight in kilos.

Then we add a multiplication factor for activity:

- 1.3 to 1.5 for low activity
- 1.6 to 1.8 for moderate activity
- 1.9 to 2.2 for very active

My friend and nutrition educator Stefan Ianev is well-versed in mathematical equations relating to nutrition. He suggests using a multiplier of 1.6 for someone averaging eight to 10,000 steps a day and 1.4 for low activity. 1.3 is used when people do very little activity and have an efficient metabolism.

HOW TO FIGURE OUT CARB INTAKE USING THE FORMULA:

Start by calculating *protein*, then *fat*, then *calories*. Carbs equate to what's left. Here's an example:

- Client weighs 60 kilos.
- We set their protein macro goal at 2.5 grams of protein per body weight (per day).
- This equates to 150 macro grams of protein per day.
- We then set their fat target: $60 \text{ kgs} \times 1.0 \text{ gram of fat} = 60 \text{ macro grams of dietary fat per day}$.

Now we need to determine our calories to determine carbohydrate intake:

- $60 \text{ kilos} \times 24 \text{ hours} = 1440 \text{ calories}$.
- Select multiplication factor. For this example, we will use 1.6.
- $1440 \times 1.6 = 2304 \text{ total daily calories}$.

2304 is the baseline with activity. As the goal is to lose weight, we will set in a 20 per cent calorie deficit:

$2304 \text{ minus } 460.8 \text{ (calorie deficit)} = 1843.2$.

Then, we figure out the caloric values from protein and fat intake:

- One gram of protein is four calories. So $4 \text{ calories} \times 150 \text{ grams of protein} = 600 \text{ calories per day from protein}$.
- One gram of fat is nine calories. So $9 \text{ calories} \times 60 \text{ grams of fat} = 540 \text{ calories per day from fat}$.

$1843.2 \text{ (total daily calories with a 20 per cent deficit)} - 600 \text{ (calories from protein)} - 540 \text{ (calories from fat)}$ gives us a remainder of 703.2 calories from carbohydrates.

If we divide 703.2 by 4 (four calories per gram of carbs), it gives us 175.8 macro grams of carbohydrate per day as our **macro target**.

Therefore, this person's macro targets would be:

- 150 grams of protein
- 60 grams of fat
- 175.8 grams of carbohydrate

To break it down in terms of percentage, the above example would be approximately 32 per cent protein, 30 per cent fat and 38 per cent carbohydrate. This is a moderately higher carb split.

With this said, this formula for newbies and chronic undereaters will generally over-calculate total daily energy expenditure (TDEE) and BMR. If that's you, start by calculating activity on the low end (1.3) and with a 10 per cent to 20 per cent deficit.

AN EXAMPLE OF WORKING WITH AN ENTERPRISE FITNESS TRAINER:

At Enterprise Fitness, we first ascertain a client's body fat percentage using skinfold measurements. We then calculate LBM (lean body mass) from this figure, which allows more accuracy when using the Katch-McArdle formula. The Katch-McArdle formula is $370 + (\text{LBM} \times 21.6) = \text{BMR}$.

In this example, the client weighs 60 kilos and is 29 per cent body fat. 29 per cent body fat would give us 17.4 kilos of fat ($0.29 \times 60 = 17.4$). We then subtract the body fat from body weight to get lean body mass ($60 - 17.4 = 42.4$ LBM).

Using the Katch-McArdle formula:

$$370 + (42.6 \text{ LBM} \times 21.6) = 1290 \text{ as BMR.}$$

We then calculate calorie intake based on training versus non-training days. This would be done using the multiplication factor. Example:

Baseline calories on rest day = BMR x 1.4 = 1806

Baseline calories on training days = BMR x 1.6 = 2064

For a beginner client with a lot of body fat to lose who is undereating, we may start them in a 20 per cent to 30 per cent deficit, with the intent to bring them back up to baseline over four weeks (or faster if progress allows), then work them back down again. In this example, their training calories would be 1444 and rest day calories 1265. Again, this is why it's always best to start with relative changes, as discussed in previous chapters.

MACRO PERCENTAGES

An alternative to calculating exact macros using formulas is to allocate percentages to each macronutrient based on caloric intake. Below are common splits, based on body composition:

Body type	Protein	Fat	Carbohydrates
Ectomorph	30%	20%	50%
Mesomorph	33%	33%	33%
Endomorph	40%	40%	20%

Again, I will be the first to point out that these calculations are not exact. There are many other methods; however, this book is not dedicated to discussing mathematical nutritional formulas. This is where the value of a good coach or trainer becomes invaluable to set, monitor and manage both caloric intake and expenditure.

WHEN SHOULD I EAT MY CARBS?

There are two approaches to carb intake: steady and timed.

- Steady is to distribute carbs evenly over the number of meals you have in a day and over the week.
- Timed is to distribute your carbs towards your training days and around the training window; pre, during and post-workout. On non-training days, carb intake is lowered.

Using the *steady approach*, you would divide your carbohydrate macro number by the number of meals you wish to consume in a day. For example, if you eat five meals a day: 278.4g (carb macro) divided by five meals gives you 55.68 macro grams of carbs per meal. I like this approach for weight loss newbies but seldom use it for anyone who's intermediate or advanced.

For body composition and performance, I prefer a timed approach. A sneaky way to get folks into a calorie deficit is to lower carb intake on non-training days. Generally, even when using this approach for weight loss newbies, I'll lower carbohydrate intake on non-training days to between 20 per cent and 50 per cent.

It can be as straightforward as removing carbs from one to three meals on non-training days. This is a simple strategy to incorporate a weekly calorie deficit (provided you keep everything else in check). Below is an example of how you might split 278.4 grams of carbs using a steady approach:

Steady Approach to Carbohydrates: Example			
278.4g of macro carbs	Steady approach 1	Steady approach 2	Non-Training Days
Meal 1	55.68g	69.6g	55.68g
Meal 2	55.68g	69.6g	X
Meal 3	55.68g	69.6g	X
Meal 4	55.68g	69.6g	55.68g
Meal 5	55.68g	X	X

How you set up the *timed approach* to carbohydrates is largely dependent on personal preference and appetite. Some can't eat a big meal before training, while others need to eat a big meal to feel fuelled. Some individuals can't stomach intra-workout carbs, while others find that it improves their training. Generally, the easiest way to do it is to divide your carb macro target by three or four meals. Conceptually, you can think about your pre- and post-workout meals as being approximately a serve and a half to a double serve of carbohydrates.

Below are four ways you could map out a timed approach to carbs, based on the intake of 278.4 macro grams of carbohydrate per day:

Timed Approach to Carbohydrates: Example				
278.4g of macro carbs	Timed approach 1	Timed approach 2	Timed approach 3	Timed approach 4
Pre	92.8g	92.8g	92.8g	92.8g
Intra	X	46.4g	92.8g	X
Post	92.8g	92.8g	92.8g	92.8g
Add carbs to meal of preference	92.8g	46.4g	X	46.4g
Add carbs to 2nd meal of preference	X	X	X	46.4g

SO WHAT DOES A SERVING OF CARBS LOOK LIKE?

To make macro servings meaningful, below is a table of what macro serves look like as they relate to primary carbohydrate choices for body composition and performance:

Grams of Macro Carbohydrate					
Carb Source	25g	35g	50g	60g	75g
White rice cooked	70g	98g	140g	167g	209g
Brown rice cooked	79g	110g	158g	189g	220g
Sweet potato cooked	165g	198g	329g	395g	494g
White potato cooked, with skin	177g	211g	353g	423g	529g
Rice cakes: thick	32g	45g	64g	77g	96g
<i>Rice cake notes: 1 thick rice cake is approx 12.5 g</i>					
Quinoa cooked	118g	165g	235g	282g	352g
Pumpkin	313g	438g	625g	750g	938g
Maple syrup	32g	45g	63g	76g	95g
Gummy Worms (lollies)	33g	46g	66g	79g	99g
<i>Reference: *All values are from CalorieKing Australia</i>					

Note: Maple syrup is often included when macro targets exceed an individual's appetite to consume primary carb sources like rice and potatoes.

Below is the reference table for fruit:

Grams of Macro Carbohydrate (Fruit)			
Carb Source	25g	50g	75g
Banana	127g	253g	379g
<i>Banana notes: small 85g, medium 170g, large 210g</i>			
Blueberries	221g	443g	664g
Oranges	312g	625g	937g
<i>Oranges notes: small 150g, medium 230g, large 300g</i>			
Apples	236g	472g	708g
<i>Apple notes: small 92g, medium 150g, large 235g</i>			
Kiwi fruit	275g	549g	824g
<i>Kiwi notes: Medium 100g with skin, 75g without</i>			
Pineapple	305g	610g	915g
<i>Pineapple notes: Mini pineapple cut: 250g, medium 500g, large 700g</i>			
Mango	216g	431g	647g
<i>Mango notes Small mango cut: 136g, medium 204g, large 340g</i>			
<i>Reference: *All values are from CalorieKing Australia</i>			

Your carbohydrate intake is not ‘set and forget’. For more information on how to tweak your plan, see section **10. Tweaking, Measurements and Photos**.

Carbohydrate Sources	
Pumpkin	Very low glycemic load (GL). Good choice for fat loss and food volume
Sweet potato	Very low GI. Good choice for fat loss and food volume
White potato	High GI. Recommended post-workout
Red rice	Low GI. Good choice for fat loss
Black rice	Very low GI
Brown rice	Very low GI
Basmati rice	Moderate GI. Recommended post-workout
White rice	High GI. Recommended post-workout
Quinoa	Low GI. Good choice for fat loss and food volume
Gluten-free cereal	Very high GI
Maple syrup	Very high GI. Useful when carb intake exceeds appetite
Fruit	Varies

7. PICK A VEGETABLE (FIBROUS CARBOHYDRATES)

Botanically speaking, a vegetable is a plant or a part of a plant – roots, leaves and stems – and a fruit is a seed-bearing structure that develops from a plant. If you’re a chef, you define fruits and vegetables by taste. However, when it comes to body composition, we distinguish between fruits and vegetables by their nutritional value; more specifically, starch, sugar and carbohydrate content.

My definition of a vegetable is *any vegetable that doesn't contain significant amounts of starch or sugar*. In our case, it's easier to say what it's not. It's not pumpkin, potatoes, corn or fruit. Those items fall into the category of carbohydrates. When stating this definition to clients, the next question is always; *can I eat carrots?*

Carrots technically contain both starch and sugar, but neither is in significant amounts – so yes, carrots, capsicums, and all coloured vegetables are included when selecting for our body composition purposes.

HOW MANY VEGETABLES DO I NEED TO EAT?

I'm not a believer in the need to weigh fibrous vegetables or that they need to be attributed towards total daily caloric intake. The one rare exception is when you're weeks out from a physique contest, doing everything right and not dropping body fat as planned. For everyone else, the best advice for vegetable consumption is to *eat enough*.

To eat enough means you're not hungry, nor are you bloated, constipated or full. It would be an extraordinary feat to put on body fat from eating green beans and salad. However, you can have gas by overdoing it, and there's always someone who turns my advice of *eat enough* into an all-out binge on broccoli.

From my personal observations, the issue of vegetable binges is due to not meeting protein, fat and carbohydrate requirements, not because you just couldn't get enough broccoli. As many reading this book at some point will find themselves in a calorie deficit, it warrants reiterating; vegetables are a great way to fill up your plate and acquire adequate nutrition. As always, strict calorie deficits should be managed, not adapted to lifestyles. If you find yourself compelled to binge on vegetables, it's likely your macronutrient targets are too low.

**NEW FAD: VEGETABLES ARE NOW BAD FOR YOU

Everyone used to agree that vegetables are an essential part of a healthy diet. Then came along the carnivore diet, where you consume nothing but meat. Its claim: vegetables aren't actually healthy and should be avoided.

From what I can tell, vegetables are healthy unless you have a valid reason for them not to be. For a relatively small percentage of the population,

vegetables can cause issues – but that's not new and we have the science to quantify why: poor digestion, acute or chronic food sensitivity (which can be tested for). The once universally agreed health rule that vegetables *are healthy* only needs to be bent, not completely broken.

For those with a history of gut issues such as bloating, gas, constipation or dysbiosis, a reasonable initial intervention would be to follow a FODMAPs diet. FODMAPs stands for Fermentable, Oligosaccharides, Disaccharides, Monosaccharides And Polyols. FODMAPs are a group of sugars that are not completely digested or absorbed in your intestines — and sticking to this diet includes eliminating gluten, caffeine and dairy containing lactose. But let's be clear, the goal is to heal the gut, not eliminate all vegetables. Starting out with a FODMAPs approach to vegetable selection will limit choices but alleviate gastric symptoms like bloating, flatulence or poor digestion. It allows healing to take place when combined with a supplementation and nutritional protocol.

Once your gut has healed, many of the foods should be reintroduced. For some folks, traditionally healthy vegetables such as eggplant or tomatoes (nightshades) will trigger ongoing gut issues. But that should not be taken as 'nightshades are bad' then translated to the masses as 'vegetables are bad'. All it means is for some folks, nightshades are hard to digest and should be excluded from their plan (not translated to public health advice).

In any case: gut issues are multifactorial. The FODMAPs diet is a good place to start but if your issues are chronic or persistent, you will need to work with a clinical naturopath who can pinpoint the primary issues with proper lab testing and intervene with specific nutrition and supplementation.

If you need a naturopath, my recommendation is Kristine from Wellixa. Visit www.wellixa.com.au

THE 80/20 GREEN-TO-COLOUR RULE

I used to tell clients to *eat enough* vegetables. Then I had a client who showed up weeks later with orange hands after eating only carrots. So I added a caveat to the advice: vegetable servings should be 80 per cent green vegetables and 20 per cent coloured vegetables.

Why? Because 80/20 is an easy principle to remember. The point: eat a mixture of both green and coloured vegetables. When it comes to vegetable selection, I encourage as much variety as possible. Green vegetables generally contain more fibre than coloured vegetables; coloured vegetables (depending on colour) contain a diverse array of nutrients. Eat both. Consuming only one vegetable may be convenient to shop for and prepare but can increase the probability of developing a sensitivity to that food.

In summary:

- Eat enough vegetables.
- 80/20 your plate, 80% and 20% coloured vegetables.
- If you have gut issues, adopt a FODMAPs approach to begin with.
- Get professional guidance and testing if your gut issues are chronic or unresolved.

Fibrous Carbs – Vegetables and Salads
Anything that's green.
Any vegetable that doesn't contain starch.
Easier to say what it's not. It's not pumpkin, potatoes or corn (which fall into the category of carbohydrates).
Includes (but is not limited to): salad, green leafy vegetables, carrot, alfalfa, asparagus, broccoli, cabbage, celery, eggplant, green beans, kale, mushrooms, onion, parsley, radishes, spinach, zucchini, tomatoes, turnips.
Frozen or fresh. If buying frozen mixed vegetables, opt for varieties without starchy vegetables.
Implement the 80/20 rule: 80% of your vegetables green, 20% of your vegetables coloured.

BECAUSE I KNOW YOU'LL ASK:**8. CHEAT EXTRA MEAL RULES**

Over the years, many diet programs have championed the idea of a ‘cheat’ meal or a day. This is a meal or entire day where you eat like a pig to *jack up* your metabolism. It’s terrible advice.

Let’s start linguistically. In what realm do we feel good about cheating? In sports? Relationships? At school? In our careers?

Cheating has associated guilt, and that guilt is there for a good reason. You screwed up, and you know it. I am not going to tell you to nail your health and fitness plan, only to blow it on the weekend. I will not reward or encourage your hard work with a day of endless hedonism, even if you could, let’s say, *get away with it* without getting ‘fat’.

There’s far more here than just calories. It’s about identity, beliefs and understanding when you’ve had enough: the difference between being able to eat a slice of cake for your birthday, not the whole cake because you’ve been ‘good’.

My extra meal rules and guidelines are designed to enable you to enjoy something ‘extra’ once a week without undoing your progress, or worse, putting you in a mental hole because you just ate three days’ worth of calories in one sitting. The focus of these rules is on good nutritional behaviours, not calories.

HERE ARE MY EXTRA MEAL RULES:

Rule 1: There is no such thing as a ‘cheat day’ or a ‘cheat meal’.

It’s an extra meal, and it would be wise if you pre-planned exactly when you’re going to have it, what you were going to consume and with whom. That way, you can feel good about eating something delicious, not just in the moment, but for hours afterwards.

Rule 2: Eat bad foods in good company.

This rule refers to some foods as being *bad*. Food police will tell you there are no bad foods, just foods we eat too much of; however, there are certainly bad eating behaviours, and this is what this rule seeks to address.

Food is about more than just calories. For centuries, humans have shared food as a way to connect and show appreciation, respect and love. If you're going to enjoy a big meal or indulge, make sure you do it in good company.

Rule 3: Before eating dessert, have a proper meal.

This will help stabilise blood sugar and ensure you are adequately nourished, to safeguard you from overindulging on empty calories. It's a behavioural habit that prevents you from sitting down to a tub of ice cream for dinner then ordering cookies for dessert because it's a cheat day. This also helps maintain a true lens through which to view sugary treats: as desserts.

Rule 4: Extras are always the last meal of the day.

This rule should come as no surprise if you recall our conversation about flat-tire syndrome and the 'what-the-hell' effect in chapter two. When people have their extra meal at the start of the day, it creates an '*I already blew it, so might as well eat the whole bag*' effect. Having it at the end of the day means you eat your meal, have a great night's sleep and start the day afresh. It tightens the window for overconsumption and bad choices.

Rule 5: Implement the one-sitting rule.

Eating an indulgence food often opens hell's gates to dessert-sin-city. You might start with a cookie, then check the freezer for ice cream. Once that's consumed, you'll search the pantry for chips, and if nothing's there, you'll jump in the car to go for a look-see at the local supermarket.

I learned the one-sitting rule from the late Charles Poliquin. The idea of the one-sitting rule is simple. Once your bum leaves the seat, the meal is over. At the time of your extra meal, select whatever you want, but it has to be on the table. This is a marvellous behavioural intervention as it forces you to think about what you're going to consume. It also puts your indulgence into a time window with an objective: leaving the table.

Rule 6: Don't eat less or skip meals as a substitute for an extra meal.

For newbies: On the day you're planning to eat your extra meal, don't eat less or purposely skip a meal. That will just make you hungrier and increase the likelihood of overeating junk. Eat as you would, and enjoy your extra meal or dinner out. The idea of 'saving' or 'trading' your calories for junk is not a good behaviour or habit you want to fall into.

For more advanced planners: You can factor your macros and calories around the food you choose to indulge with. This will help you with your body composition.

9. SHOPPING LIST

Because I didn't want you to have to rip out this page and stick it on your fridge, I've created a printable and shareable shopping list and macro servings cheat sheet available on this book's resources page. Visit www.enterprisediet.com/resources to download the list.

10. MEASUREMENTS, TRACKING AND TWEAKS

You're reading this book because you want results. To shoot for that, you need an objective starting point and the ability to track and measure progress. Tracking gives you important biofeedback on how to manage and manipulate the plan in order to hit your given objectives. As Zig Ziglar once said, "*If you aim at nothing, you will hit it every time.*"

When I work with a client, I assess and track body fat using a 12-site calliper test known as the BioSignature test. The BioSignature, developed by Charles Poliquin, collects body composition data on 12 specific sites. The drawback of this kind of testing is that you need a skilled practitioner for accuracy; someone who has been assessed and tested over 150 subjects. The BioSignature can measure early drops in body fat and give a complete picture of body composition changes. For example, someone's body weight may stay the same but their lean muscle mass could increase while their body fat is coming down, resulting in no change in weight on the scales. Not testing body fat would make you think you're not progressing or the plan isn't working when it is.

Understandably, you may not have a skilled BioSignature practitioner in your local area. In this case, I would use:

- Early morning body weight (weighing in at the same time each day or week) OR
- Photos (same time, wall and lighting each week) OR
- Measurements: waist, chest, thigh and arm circumference.

BODY WEIGHT

It's normal for your weight to fluctuate. I chuckle when people say, *'I weighed myself in the morning and I'm always two kilos heavier at night!'* Of course you're going to be heavier at night; hopefully you've drunk enough water, eaten and worked hard throughout the day. Jumping on the scales is only a snapshot. For our purposes, we only need a snapshot once a week to give feedback on the plan. If someone is trying to get super lean (comp prep), daily early morning weight checks will be helpful.

Sometimes weight doesn't change, and that's perfectly okay. It's one of several metrics. For those who obsess about scale weight, hire a coach who can guide you – for these clients at Enterprise Fitness we implement blind weigh-ins. This allows my team to collect and track the data and tweak the plan without clients being attached to a number on the scales. Weigh-ins

should never be seen as judgement day; rather, they are simply feedback in context with other data collected.

PHOTOS

The number of clients we've had who have completely changed their body composition with small changes in their actual body weight is staggering. This is why I recommend tracking your progress with photos. Rules on photos: they should always be in front of a white wall. Take three photos each week: front, side and back. It should be at the same time each week and under the same lighting conditions. Stand straight, no posing. Photos should be from mid-thigh to head or above the waist. Ensure your belly button is visible.



See example above. The before photo: Enterprise Fitness client Vince weighs 72 kilos and has a lean body mass of 57 kilos. The after photo: Vince weighs 70 kilos and has a lean body mass of 60.8 kilos. Body weight-wise, there is only a 2 kg difference. In terms of body composition, there's a huge difference between the photos.

MEASUREMENTS:

My gold standard of weekly measurements is the BioSignature 12-site body fat test by a skilled practitioner. However, using a MyoTape (that you can buy on Amazon), here are four measurements to track if you don't have access:

1. Waist circumference:

For consistency, take the measurement in line with the belly button.

2. Chest circumference:

For consistency, align the MyoTape with the nipples.

3. Thigh circumference:

Take the measurement from mid-thigh, or for consistency, point hands straight down and take from where the index finger is.

4. Arm circumference:

Take the measurement from mid arm or widest point. You only need to measure one arm, but make sure it is the same arm each time.

The pattern of what to look for really depends on the starting point. If you want to lose body fat, waist circumference is a good metric to pay attention to. For males, if your arm, thigh and leg measurements increase while the waist measurement decreases, you're on the right track to building muscle and burning fat. For females, generally you will find reductions from all four sites unless you are already lean and of an athletic body type. For this body type, you could add a fifth measurement: hips, measuring from the widest part of the glutes.

BASELINE, PEAKING AND DEFICIT

The body is always searching for homeostasis. If you bring calories too low, the body will adapt by slowing down mechanisms such as your basal metabolic rate (BMR) and non-exercise activity thermogenesis (NEAT). BMR will adjust down, meaning the more aggressively you lower your calories, the more you need to lower calories to get a result.

This is where you want to be careful. Sure, by lowering your calories to 1000 a day you will lose weight; however, there will come a point where your progress will stop. At that point, are you going to lower them to 800?

Good luck training hard and having laser focus throughout your day on 800 calories! This is why you need to stagger your nutritional approach factoring in biofeedback.

Before starting to reduce calories to burn body fat, start with a calorie baseline (or even slightly above baseline). You don't want to begin in a calorie deficit if you have been eating below your calorie maintenance for a prolonged period. Additionally, mood, energy and sex drive are good biofeedback markers. If your mood, energy or sex drive tank, it's probably because your body is starting to adapt to lower calories. If this is you before beginning a calorie deficit, you are setting yourself up for a hard rebound, meaning it's only a matter of time before you put the weight back on.

The take-home point: start a calorie deficit from a position of good health. Many are malnourished and chronically eating below the baseline to begin with, which is usually compounded by bad sleep, poor digestion and stress. This is a recipe for poor health and slow progress. Before getting lean, get healthy.

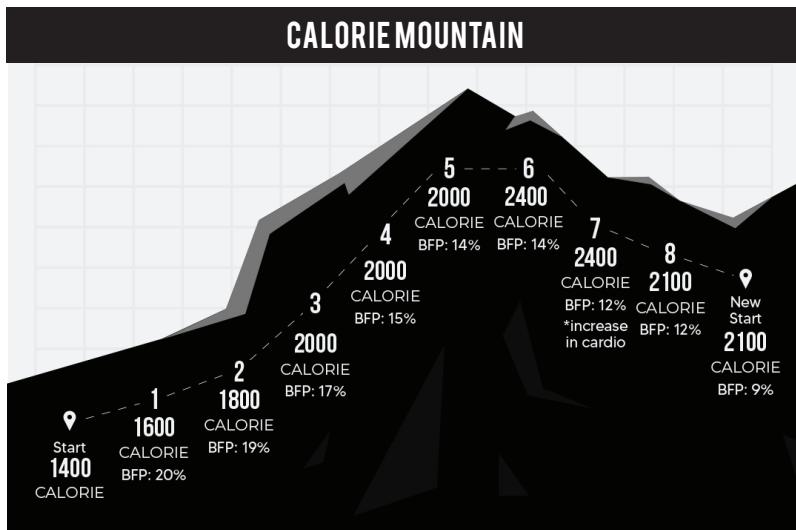
Our first goal is to bring you up to a caloric baseline. For those of you who are chronic undereaters, if you achieve baseline without putting on any body fat, consider it a win. Many times, getting your training plan and diet in order will see progress week to week and changes in body composition – all while steadily increasing calories. Following this process, you'll eventually hit a calorie peak – a point at which you start putting on body fat. In an ideal world, that's where you start your dieting phasing/calorie deficit from. Peaking is done over several weeks, sometimes months. Peaking calories allows you to reestablish a higher baseline of caloric intake.

The good news is; many will lose body fat and improve their body composition during the unofficial dieting phase. Usually, this is due to an increase in protein as many find they have been underestimating their protein needs. Combine that with better sleep, digestion and a solid training plan – you are *ready* to transform your body composition.

PUTTING YOUR PLAN TOGETHER

From that starting point, as we begin to introduce a calorie deficit, dieting becomes much easier. As a result, people get much leaner whilst having enough energy to train hard.

I don't like making drastic changes to someone's plan once they've achieved their peak caloric intake. I want to maximise each gradual change for as long as possible. However, there is an argument that our BMR doesn't adjust up – NEAT simply compensates for the additional calories (by moving more/less throughout the day to expend/conserve energy). Even with that said, it's a better experience for most making gradual changes rather than drastic ones.



You want to think of this process like climbing a *calorie mountain* (see image above). You might be starting your plan consuming below your calculated calorie maintenance; think of maintenance as your starting point and base camp to the mountain. For many, their first goal is to reach maintenance (base camp).

From there, we steadily progress up the mountain until we hit the peak.

There are two ways down, depending on how much time you have. If you want the best experience, you will take your time traversing down the mountain week by week. If you have a photoshoot date or comp and want to do things aggressively, you will traverse from your peak back to baseline or to a deficit to burn body fat. My preference is to traverse slowly to minimise rebounding and fat gain.

TWEAKING YOUR TRAINING

Besides manipulating diet, the most obvious factor to manipulate is activity. You can increase volume in your workouts (number of sets and reps), add additional cardio sessions or simply increase your step count. I approach manipulating activity with a *minimum effective dose* mindset. Many comp prep coaches and trainers will start clients off with an hour of cardio a day or by drastically increasing their step count (or both). I start by just making changes to a nutrition and lifestyle plan. When progress halts, I use cardio as my ace cardio — starting with a dedicated cardio session with a time limit of 20 to 30 minutes, two to three times a week or by increasing a daily step count. If needed, I can increase frequency or duration in the coming weeks. This is how I've trained many competitors doing very little to no additional cardio to get stage- or photoshoot-ready lean.

The body will only change so fast, and if it does, it will rebound. In manipulating activity for body composition, rid yourself of the mindset of *more is better*. If you approach body composition with that mindset, you may as well take up marathon running – and that is not the way you train for body composition.

TWEAKING YOUR NUTRITION

When it comes to tweaking the plan, the two main macros to manipulate are carbs and protein. I like to keep fats as constant as possible and never drop them below 20 per cent of total calorie intake. Usually you will increase protein consumption while lowering carbohydrate intake.

However, this does not mean eliminating all carbohydrates, but rather, adjusting them relative to your intake.

Energy and sex drive are usually the first two causalities of a prolonged calorie deficit. When this happens, it's usually a sign that it's time to bring calories back up to baseline for a week before resuming a calorie deficit regime. Remember, a calorie deficit should be viewed as temporary, not a permanent, fix. As such, you want to approach a diet with the understanding you are going to adapt your plan as your body does. Progress is not a straight line, particularly the more advanced you are.

There is no such thing as a 'set-and-forget' plan. Initial plans need to be progressed and changed over time. We check in with Enterprise Fitness clients each week to modify and progress their plan. If you don't want to do it alone and want coaching from our team, reach out to us by visiting our website: <https://melbournepersonaltrainers.com>

A SIMPLE WAY TO START

Truth be told, for many years I was against counting calories. I counted food volume (food goals) and never fussed about figuring out a calorie baseline. Instead, I made relative changes to someone's current day-to-day nutrition. I trained many competitors to win shows just by factoring in food volume and not counting calories or macros. With that said, the benefit of tracking and understanding macros gives you precision and allows for more flexibility in food choices.

So if you're reading this chapter, thinking, '*How do I start?*', start where you are, and set the goal to improve one meal at a time.

Furthermore, implement a self-reflection log. Assess your current day and nutrition. You have the formulas and guidelines outlined in this chapter to give you a starting point. Figure out your daily protein, fat and carb intake, and at the very least, set a plan to hit your protein and fat numbers while the rest is a work in progress. Another easy win is to optimise food choices using the shopping list I have provided.

Take a photo to capture your starting point and have a weekly check-in process. Assess body composition using the process as a check-in point, not a judgement day. Start by adding calories, aiming to peak calories and food intake without putting on body fat. When things slow down, look to slowly decreasing calories.

As much as I would love to give you the perfect plan, the truth is, the perfect plan is a moving target. The plan evolves as you lose weight, get leaner and become stronger.

Finally, focus on the process, not the outcome, and success will be a matter of time.

ACTION POINTS:

- Download the shopping list at <http://www.enterprisediet.com/resources> to stick on your fridge.
- Implement the Enterprise Nutrition Principles.
- Tweak your plan as needed.
- Track your progress with photos and/or measurements.
- Focus on the process – not the outcome.
- If all else fails, improve one meal at a time.
- Decide your approach. Food goals or macro goals.

COMING UP

Find out which foods are making you feel fat, bloated and tired (you might be surprised). Plus, learn which foods to eliminate, reduce or replace (and why) to help you get results and improve your health.

PUTTING YOUR PLAN TOGETHER

CHAPTER SIX

FOODS TO ELIMINATE **REPLACE OR REDUCE**

*The following chapter is made up of four sub chapters;
gluten, dairy, soy and hydrogenated oils.*

The subject of which foods to avoid or eliminate is riddled with controversy. As such, this was a difficult chapter to write as it's not as simple as just saying eliminate, replace or reduce these foods without a proper, research-based explanation.

For some, I may go into more science, research and detail than needed. However, I felt compelled and responsible to flesh out my conclusions. There are many misconceptions surrounding these foods and I felt it absolutely necessary to address key arguments in detail.

With that said, this chapter is written in a way so that you can skip ahead to the foods that interest you most. Additionally, at the end of each sub chapter I have provided a summary and take-home points.

Now let's get into it!

On the one hand, avoiding or eliminating certain foods can help you get results and improve your health. On the other, telling you to avoid or eliminate foods puts you in the category of the 'food police'. A common claim of the mainstream nutrition community is, "*Everything is healthy in moderation*". Many people become angry when you demonise a particular food. But here's the thing: you're reading this because you want to achieve more than the everyday person.

You can eat everything in moderation and be like the vast majority of people: unhealthy, overweight or obese and nowhere near having optimal body composition. Or you can draw a line in the sand and strive for best practice and better choices. If this is what you really want, you need to embrace the power of *no*, which sometimes looks like limiting or eliminating foods that don't serve you.

The problem with the 'everything in moderation' message is three-fold:

- a) What is your acceptable minimum standard of health?
- b) Define moderation
- c) The word *everything*

Everything is vague. It's a mental short cut that leads to confusion when clarity is what you need.

There are many instances where elimination (not moderation) is the best option. You can't give alcohol to an alcoholic. There is no moderate amount they can drink. As clinical psychology has pointed out, a portion of the population is more affected by alcohol than others. For them, the answer is clear: they don't get a cheat day where they can drink what they like. For them, wisdom is elimination and moderation can't be achieved. Although not exactly the same, those with food sensitivities or autoimmune diseases also do better when they rule out certain foods.

To just focus on calories is as silly as saying they don't matter. What you consume can affect your immune system, gut and overall health, despite the amount you eat. This is not a revolutionary or novel concept, although it is not universally accepted. The human body is not merely a simple caloric oven combusting food into energy. For example, a compromised gut is a feeding ground for disease and the wrong foods feed bad bacteria, which only makes matters worse.

Additionally, you should be aware of where your food comes from. The curtain covering the daily injustices of industrial farming, and for the most

part, big agribusiness writing its own rules, is dark, covered in blood and carries the stench of corporate greed. Factory-farmed meat, monocrops, industrial seed oils and genetically modified foods may be the same as their counterparts in terms of calories. However, ecologically, economically, morally and environmentally, they're damaging. In the case of factory-farmed meat and genetically modified foods, they are disturbing. I do not support these systems nor the food that's produced by them. Therefore, these items are on my 'foods to avoid' list.

The four main foods I focus on in this book are:

GLUTEN

For some folks, eliminating gluten is life-changing. This section will examine how the immune system and gut work together to optimise health and body composition.

INDUSTRIALISED, FEEDLOT DAIRY

Here, I explain how corporate greed puts profits first and animals' health (and your health) last. This section is also about how to navigate alternatives and not accept the status quo.

SOY

Explaining the problems with soy allows me to divulge the issues with monocrops, genetically modified foods and the impact certain foods can have on your hormones.

HYDROGENATED AND PARTIALLY HYDROGENATED OILS

I felt this was important to cover in detail as many of the myths surrounding fat stem from the marketing of these oils. In this section, I'll discuss the history of hydrogenated oils, dispel myths about cholesterol and put your mind at ease as you make the switch to butter, coconut oil, lard and animal fats.

HOW TO USE THIS INFORMATION:

As the title suggests, there are three categories of people reading this chapter:

- Those who need to eliminate
- Those who need to replace
- Those who need to reduce

All three can apply to one person with different foods.

Eliminate:

If you have a diagnosed health condition, autoimmune disease, allergy or elevated blood markers suggesting an autoimmune disease, I would suggest you eliminate the foods I mention in this chapter. The category of elimination will relate mainly to gluten and soy, but may also relate to industrialised dairy, depending on the individual. Additionally, if you are highly inflamed, overweight or obese, you should also consider eliminating hydrogenated or partially hydrogenated oils.

Replace:

Replacing foods is the easiest category to work from. Instead of using hydrogenated or partially hydrogenated oils, you'll use butter, coconut oil, ghee, etc. Instead of buying industrially raised, feedlot dairy, you'll buy pasture-fed dairy. Instead of buying wheat-based products, you'll buy gluten-free products and instead of consuming industrially farmed and grown soy, you'll buy food from your local farmer or organic.

Reduce:

Reduce is about making sensible choices and giving yourself room to move without blowing your plan. Because of that, *reduce* is the hardest category to define as it requires a guideline of how to reduce and needs to consider context.

Let's say you're happy with your body composition and eat according to plan 95 per cent of the time. Every now and then you love having a chocolate doughnut that contains gluten, hydrogenated oils, industrialised dairy and soy. While it's not optimal, it doesn't seem to affect you. If anything, it makes you train harder and increases your compliance with your plan. In other words, it's not a problem for you, so let's not make it one. On the other hand, if that chocolate doughnut bloats you and after it, you look six months pregnant, something in it (it could be gluten, soy or dairy) needs to be eliminated.

The food items discussed here that relate best to *reduce* are hydrogenated or partially hydrogenated oils. Generally, these are not healthy and should be avoided. However, if you're doing most things right and have a burger and chips for your extra meal (most takeaway and restaurant food is cooked in industrialised oils), then in this instance, it's unlikely the meal will do any real harm.

As certain foods offend the gut more than others, and as with alcoholics, certain people and genotypes are more susceptible to the side effects of certain foods, it's not a radical notion to eliminate something if it causes you grief. From my experience, the moderation police are always quick to shout "food Nazi!", a term coined to denote and demean someone as being too strict and rigid about food. But optimising and having a plan (as for anything) is as much about the things you say yes to as the things you say no to. When you eliminate, replace or reduce, you're allowing more space in your diet for better choices.

So my question to the food police is: why not eliminate nutritionally void, genetically modified, immune-triggering, bastardised food products? They don't serve you or your goals – or the person you want to be. At the very least, why not avoid them?

"*Because they taste good*", says the bartender, pouring another drink for the alcoholic. Or, it's "*Only one*," says the friend who yo-yo diets and is chronically depressed. To those chasing *optimal* and *better*, I say: draw a

line in the sand and say, “No, I don’t eat that,” or at the very least, “I don’t want to eat that today”.

A NOTE ON WHAT WILL HAPPEN SOCIALLY

Australians have a catch-all phrase to wash away our worries. We say, “She’ll be right”.

If you’re not familiar with this, it means that whatever is wrong will right itself or that what’s wrong doesn’t matter. Unfortunately, many Australians also take this approach to their nutrition. According to statistics from the Australian Institute of Health and Welfare, a whopping two-thirds (67 per cent) of Australian adults above 18 years of age were overweight (36 per cent) or obese (31 per cent) in 2017-18⁽¹⁾. That’s around 12.5 million adults.

Modern society has brought us a plethora of tasty options that are available in minutes, if not seconds. The main criteria we base choices on are taste, cost, convenience and nutrition. Foods that score high on taste and convenience but low in nutrition are praised and advertised. This is also because foods high in taste and low in nutrition are the same foods that are easy to scale, distribute and profit from. Combine that with the hard-wired fear of missing out and it can seem like the whole world is against you when you are trying to eat well and get in shape. I mean, everyone else in the office is having a sugar-crusted doughnut; why not you?

It’s simple. You want to be better, and no one becomes the best version of themselves by snacking on doughnuts every time the opportunity arises.

Just don’t be surprised at the reactions when you refuse the fluffy spongy gluten circle. You’ll get labelled as ‘obsessive’, ‘the healthy one’ (said with derogative intent) or ‘orthorexic’. It’s more socially acceptable to be overweight and unhealthy, eating what our collective society has deemed as normal than it is to eat what’s nutritious or in line with our goals of being fit and healthy.

In fact, when you refuse a doughnut, it's not a statement about what you eat, it's a statement about who you are. Your rejection will challenge people to their core. You are striving for optimal, maybe even greatness, while they are content with their current situation of mediocrity or worse.

Being actively engaged in wanting to avoid disease, prolong health and achieve longevity is sensible, not obsessive. Furthermore, there's nothing wrong with being motivated by making better choices in the name of vanity. For many of us, training and nutrition are expressions of our desire wanting to be more than we were yesterday. It's also for these reasons that lazy and insecure people will try and tear you down. You would think there'd be more discrimination against smokers for actively destroying their health. But that's the tall poppy attitude: tear down those trying for a better life and give hall passes to those wasting money and resources to continue the status quo of the time-honoured Australian tradition of *The Little Aussie Battler*.

It's no wonder Australia ranks 93rd in the world for economic complexity and was labelled the "Rich but dumb economy" by *The Australian Financial Review*. It's time we stopped saying, "She'll be right" and allow our poppies to grow tall and strong.

WHAT ABOUT SUGAR?

I didn't want to focus on sugar because frankly, I don't think it's as insidious as the others (so long as you control calories). With that said, yes, sugar is empty calories, but it's not like you need to read a book to know that eating too much sugar is bad. I mean, it's obvious sugar has no nutrients. However, if you're lean, training hard, doing all the right things and controlling your calories, switching out your macro carbs to include a little sugar in your diet a couple of times a week shouldn't have much (if any) impact on body composition.

A working example of this is my secret love for Cola Bottle Lollies. Maybe once a month (if that), I'll switch out my post-workout carb macros for

lollies. I'm not saying that this practice is optimal or even sensible, but it has little effect on my body composition.

To be clear, this is certainly not a licence to replace all carbs with refined sugar (please don't do that). I would strongly suggest minimising refined sugar from your diet, particularly if your goal is fat loss. If you have problems with portion control or feel addicted to sugar, I would advise elimination. In short, for most, sugar belongs on the 'reduce' list, unless you're obese, have insulin resistance or have intense cravings, in which case you should eliminate it until you improve your health and body composition.

BUT ISN'T IT JUST ABOUT CALORIES?

The most common thing I hear when the elimination discussion comes up is "*Isn't it just about calories?*"

Not when it affects your immune system, gut, recovery, body composition and wellbeing. Calories are important, but so are optimising your hormones, immune system and digestion. I'll expand on how these foods affect us specifically in the subsections of this chapter relating to specific foods.

A COMMON ARGUMENT

"But if I avoid or eliminate those foods, won't I build up intolerances?"

By the same logic, one could argue that they will become better at detoxifying and eliminating toxins if they expose themselves to mild poisons. To this, I say it's a thin line between a hermetic adaptation and destroying your health.

Additionally, the dose makes the poison.

Take for example mercury, a heavy metal that does not belong in the human body. In the 1800s, hat makers would use a small amount of mercury nitrate to make top hats, which regularly exposed them to mercury. For the sake of the argument, let's say this constant exposure did ramp up their body's

ability to detoxify the metal; however, in the end, hat makers still had a condition named after them: Mad Hatter's disease (aka mercury poisoning).

You might say mercury does not belong in the body or that soy, gluten and partially hydrogenated oils aren't the same. The point here is this: unlike mercury, which has an obvious threshold, foods that inflame, cause an immune response or interfere with digestion are not making you healthier. While poisons like mercury have an obvious tipping point that can be measured, systemic inflammation is difficult to trace back to a single factor.

We must factor into nutrition that there are poisons, deficiencies, underlying issues, dose-dependent and genetic factors. For example, a zinc deficiency can result in low hydrochloric acid (HCL) production. Vegans often have low zinc, which results in low HCL being produced in the body. HCL in the stomach is responsible for breaking down proteins and is needed to digest meat. So if a vegan reintroduces meat into their diet, they can feel nauseous, thinking their body is rejecting the meat. Eliminating meat did not make them 'intolerant' to meat, it's simply low HCL caused by a zinc deficiency.

If food exposure granted better health, there would be fewer people with chronic disease, and by and large, people would be healthy. But that just isn't so, with 67 per cent of Aussies being obese and 50 per cent of Australians having at least one chronic disease⁽²⁾. People in general do not watch what they eat and if anything, they wait for the next flavour of corn chips to be released. So next time someone tries to tell you you'll develop a sensitivity from eliminating a food that is doing you no favours to begin with, you can always hit back with, "She'll be right".

THE FOODS TO ELIMINATE, REPLACE OR REDUCE:

To recap, here are the foods (in no particular order) to eliminate, replace or reduce:

1. Gluten (found in wheat, rye and barley).

2. Industrialised, feedlot dairy (replace with organic, pasture-fed dairy).
3. Soy (and other genetically modified monocrops).
4. Hydrogenated and partially hydrogenated oils (examples: vegetable oils, margarine and seed oils).

Also included on this list but not discussed in this book:

- Factory-farmed meat (replace with organic, free-roaming).
- Genetically modified foods (replace with vegetables from local providers or organically grown).
- Refined sugar and processed foods (reduce and moderate).

My goal with each section of this chapter is to give you a clear understanding of the problems with these foods and food groups. Some are easy summarise while gluten and hydrogenated oils require more detail.

I've written each segment in a way that if a friend asks you why you don't eat something, you can say something other than "*I'm on a diet*".

Now, let's take a bite out of these individually.

GLUTEN

When you hear the word *gluten*, what do you think of? Perhaps it's the soft crust of freshly baked bread or the spongy centre in a delicious choc-chip cookie. Gluten, a peptide found in wheat, rye and barley, has certainly got a lot of flak in recent times as the potential fuel for many health problems. Even the satirical animation, *South Park*, dedicated a full episode to gluten – so why the fuss?

WHAT IS GLUTEN?

As a food, gluten is found in wheat-based products such as bread, cereal, pasta, pizza and pastry. As a food additive, gluten can be found everywhere. It helps to thicken sauces and marinades and is used to manufacture most processed foods. Current research points out five major illnesses associated with gluten⁽³⁾:

- **Coeliac disease (CD)**

An autoimmune disease in which the small intestine is hypersensitive to gluten, leading to difficulty digesting food

- **Non-coeliac gluten sensitivity (NCGS)**

A condition where intestinal and extraintestinal symptoms are triggered by gluten

- **Wheat allergy**

A condition where intestinal and extraintestinal symptoms are triggered by wheat

- **Gluten ataxia**

An autoimmune disorder in which the antibodies that are released when digesting gluten attack the brain

- **Dermatitis herpetiformis**

A skin condition caused by a gluten sensitivity

In the 1980s, the journal of gastroenterology coined the term “non-coeliac

gluten sensitivity” (NCGS)⁽³⁾, which is a sensitivity to gluten irrespective of whether the individual has coeliac disease (or wheat allergy). However, even 30 years later in 2010, when I first podcasted about gluten sensitivities, the term was not widely used or accepted.

Today, more than 245 papers cite NCGS, just on PubMed. The prevalence of NCGS is unknown; however, it is suspected to be much higher than coeliac disease. It turns out coeliac disease is only a small slice of the gluten-filled pie, just one manifestation of gluten sensitivity. The caveat here is that there isn’t a universally agreed method for testing NCGS and most of the tests are relatively new, so scientific data on NCGS is limited. Furthermore, NCGS is hard to distinguish from conditions like irritable bowel syndrome (IBS), not to mention the fact that many of the studies on NCGS rely on self-reported sensitivities⁽⁴⁾. The challenge becomes pinpointing if it’s *exactly* gluten or another mechanism. In short, NCGS prevalence is unknown due to a lack of diagnostic markers. It’s estimated to affect anywhere from 0.6 per cent to 13 per cent of the population, but based on the inconsistency of the data, no one knows for sure.

As new research on gluten emerges, one can think this is a relatively new discovery in the world of food sensitivities. However, there have been many papers published highlighting potential health effects that have been in circulation for decades, yet were widely unknown or ignored. In 1966, *The Lancet Neurology* journal published a paper discussing the effects of gluten sensitivity as a range of neurological manifestations – 30 years later, it was shown to manifest solely as neurological dysfunction⁽⁵⁾. In short, the consequences of neurological dysfunction include migraines, loss of coordination and lowered ability of cognitive response.

Although gluten’s *direct* involvement in other neurological issues is scientifically unproven at this point of time, it’s highly suspected. Similarly, the diagnosis of *gluten ataxia*, a condition that affects the nervous system and causes clumsiness, loss of coordination or even brain fog, is a relatively new finding and one that also hasn’t been widely accepted by the mainstream General Practitioner. In 2012, *The New England Journal of Medicine* published a paper referring to over 55 diseases linked to coeliac disease⁽⁶⁾.

To many, it was interpreted as 55 diseases being linked to gluten sensitivity. The diseases were in fact flow-on symptoms from having coeliac disease, but not diseases in and of themselves from NCGS. This misinterpretation created much conjecture about gluten. However, it is known that gluten can trigger and make worse an autoimmune disease and its symptoms.

The question is, is gluten harmful? If so, to whom and to what degree?

One study identified at least 60 putative peptides similar to gluten proteins. The finding implies that there are multiple variants of the gluten peptide to which those who have coeliac disease could find themselves susceptible, with the most common being gliadin and glutenin⁽⁷⁾. As the study focused on coeliac disease, it's unknown if the same is true for those with NCGS. As far as I can tell, I think it would be reasonable to assume novel peptides of gluten would be immune-system triggers for coeliac sufferers and NCGS alike; however, more research is needed.

WHY IS GLUTEN SUCH A PROBLEM?

If you have a wheat allergy, an IgE antibody response to gluten or high tissue transglutaminase antibodies, chances are you have already figured out that gluten is a problem for you. In other words, you eat it and feel terrible almost immediately, or in the case of an IgE antibody response, you may even break out in skin rashes or hives.

For others, gluten on its *own* isn't the problem. The problem will be when gluten forms part of the perfect storm. Once that happens, ingesting gluten is like pouring petrol on a fire you're trying to put out. For gluten to wreak havoc in this instance, three things are necessary:

1. A genetic predisposition (*which dictates how your immune system responds*).
2. Intestinal permeability, otherwise known as leaky gut (*the health of your gut and if it's able to keep up its defences*).
3. A trigger and/or environmental factor that lights the match (*the external stress you place upon the above two*).

To put it more practically, you need the unhealthy triad of:

- a) more stress than you can bear
- b) gut issues
- c) a chronically elevated immune system.

You should also note a large overlap of gluten being an offending food, and poor gut health. This is where it becomes difficult to ascertain if it's gluten specifically or an underlying gut health issue. In the case of an underlying gut issue, research would also support a FODMAPs diet (which includes the elimination of gluten), as part of a gut treatment protocol⁽⁸⁾. But again, this begs the question: Is it simply the gluten?

THE STRESS-GUT-IMMUNE TRIAD



Diagram above: The triad between the gut, immune system and the stress you place upon it. They are interconnected and can sometimes be a little bit of a 'chicken or the egg' scenario.

Questions to consider using the gut, immune, stress triad:

- Did your immune system get triggered, which aggravated your gut and caused continual stress?

- Was it overwhelming stress that compromised your gut and led to your immune system being triggered?
- Or was it poor diet choices that compromised your gut, then created both a stress and an immune response?

The problem with my triad diagram is that it doesn't single out gluten – or anything exactly. Rather, it's an attempt to acknowledge that there's more at play than one variable. It's hard to isolate, so a wise approach is to support all three areas.

Additionally, gluten can affect the triad on all points: it can be a trigger and a stress to the body, and it can trigger leaky gut. Once those two things are in motion, the immune system can view gluten as a foreign invader, making matters worse. With that said, I want to be clear: this is not necessarily the experience of everyone who eats gluten.

I would, however, eliminate gluten if you're having a hard time getting your health on track and staying lean. After years of working with thousands of clients, I have noticed health, energy, body composition, mental clarity and mood improve on a gluten-free diet. Eliminating gluten is an easy win considering the complexity and discomfort associated with the treatment of gut issues.

GENETIC PREDISPOSITION: LOOK TO YOUR FAMILY TREE

One way to identify potential genetic predispositions is to look at your family tree. What disease, illness or health issues do your parents, siblings, aunts, uncles or grandparents have? It could be either on your mother's or father's side and can skip a generation.

Granted, many family members won't be taking care of themselves as well as you are, and if that is the case, it can be a valuable insight into your biology of how it would perform if your genetics were exposed to a different life – a caution sign for the road ahead. Think of your genetic code as a

chain. Every chain has its weakest link, the one that's first to break. If you were to put the chain under as much pressure and force as it could handle, what would be the weakest link?

Depending on your genetics, it could be your liver, heart, lungs, intestines, or any system or organ in the body. Gluten can be a potential trigger to genetically predisposed immune systems for autoimmune diseases.

Here are some examples of how the implementation of a gluten-free diet might help unsuspecting and undiagnosed health problems:

- A 12-month study on 62 women with chronic autoimmune thyroid disease showed a significant reduction in the hormone thyrotropin when they followed a gluten-free diet. This is not to suggest that a gluten-free diet on its own will cure thyroid disease; however, proper nutrition education and a gluten-free diet may form part of a treatment plan⁽⁹⁾.
- A gluten-free diet may be an effective treatment strategy for mood disorders in people with gluten-related disorders, or at the very least, should be considered as part of the treatment plan⁽¹⁰⁾.
- There is a link (although not completely understood) between the two gluten-related diseases, coeliac disease and NCGS, and cognitive impairments such as memory disorders and Alzheimer's. Although research still deems it controversial, a gluten-free diet should be introduced as early as possible for a potential protective effect against cognitive impairments⁽¹¹⁾.
- Gluten sensitivity may be linked to a large number of idiopathic axonal neuropathies (damage to the axons of neurons outside the brain)⁽¹²⁾.
- A gluten-free diet may improve symptoms of rheumatoid arthritis, an inflammatory autoimmune disorder that affects many joints in the body, even in individuals resistant to conventional drug therapies⁽¹³⁾.
- For gluten-sensitive individuals with psoriasis, a chronic inflammatory skin disease, introducing a gluten-free diet is recommended to be part of the treatment plan, along with adequate amounts of vitamin D and maintaining a healthy weight⁽¹⁴⁾.

From the research published, gluten has been linked to many diseases, even though much of that research also points out overlapping factors. The classic scientists' axiom bears mentioning: *correlation is not causation*. With that said, my conclusion as a coach is: gluten is a factor, and one that is easy enough to remove for most body-conscious folks.

Additionally, gluten has been linked to many autoimmune issues as most (if not all) autoimmune diseases also have an underlying connection to the gut. Practically, that makes sense as approximately 70 per cent of your immune system is housed in your gut, hence the triad: gut, immune and stress.

THE GUT AND INTESTINAL PERMEABILITY

Intestinal permeability is the degree to which digested particles pass from inside the gut wall into the rest of the body. In simple terms, it's the passing of digested food particles into our bloodstream.

The reason this becomes significant with gluten is that, regardless of whether or not someone has an autoimmune disease, gluten triggers zonulin, a protein that regulates intestinal permeability and tells the tight junctions to open⁽¹⁵⁾. Think of tight junctions as the gatekeepers in your gut, letting the good stuff in and keeping the bad stuff out.

Gluten, or more specifically gliadin, increases zonulin⁽¹⁶⁾, which tells the tight junctions to open. This is not a problem unless you continue to let the bad stuff in. Once the bad stuff is in, it becomes your immune system's responsibility to deal with the macromolecule invaders.

Previous studies have shown that gliadin, even in healthy subjects, can determine a prompt and transient increase in gut permeability. This is related to the amount of the peptide ingested with the diet. Once the immune system is triggered, it takes on a life of its own. This is a good reminder of why it's not just about calories.

The mainstream medical community at the time of publishing does not

recognise leaky gut or intestinal permeability as a medical condition or disorder. In part, this is because it's hard to diagnose. Yes, you can get a stool test and test for zonulin; however, some argue about its validity. It's suggested that everyone has a little intestinal permeability, but as with most systems in the human body, it exists on a spectrum, not as an absolute. It is, however, accepted that macromolecules can make their way into the bloodstream and cause immune reactions.

Again, the problem with defining leaky gut is there isn't an exact diagnostic test, and it all happens on a spectrum, not as an absolute. But how much damage is enough to diagnose a problem? And if there is no intervention, will it get worse or flatline at sub-optimal? That is a question that research and science is still trying to answer.

However, as one of my coaches used to say, "*You don't need a study to prove that a kick to the balls hurts*". At this point, maybe gluten is only part of the problem, and it is a correlation, not cause. With that said, there is good evidence to suggest that gluten is a problem for those with autoimmune conditions and that it compromises the gut. So regardless of whether you recognise leaky gut as a medical condition or not, it is attributed to immune function, and research still suggests a gluten-free diet as part of a treatment plan (although it should not be overblown as the whole solution).

STRESS, TRIGGERS AND ENVIRONMENTAL FACTORS

An old saying in functional medicine and science circles is: *Genetics load the gun, but the environment pulls the trigger*. So even if you have the gene and intestinal permeability, without a trigger, nothing happens.

There are many triggers in today's environment, and gluten increases permeability and triggers the immune system. It can open the gate by increasing zonulin, then raise antibodies. It's kind of like a Trojan horse for susceptible folk. But gluten certainly isn't the only 'trigger' to consider.

When it comes to the gut, we also have to think about the following:

- Stress
- Food sensitivities
- Poor food choices
- Drugs
- Stimulants
- Non-steroidal anti-inflammatory drugs (NSAIDs) such as Ibuprofen
- Heavy metal toxicity
- Frequent alcohol use
- Long-term and overuse of antibiotics
- Dysbiosis (imbalanced gut bacteria or maladaptation)
- Other lifestyle factors

HOW GLUTEN BECOMES AN ISSUE

If you don't have a wheat allergy or autoimmune disease, do you still need to avoid gluten?

Autoimmune diseases are multifaceted, take time (if not decades) to develop and don't always follow a cause-and-effect relationship. Think of it as death by one hundred poisons rather than death by one; which of the hundred poisons was at fault? It's hard to say. There has to be enough damage to an organ or system, and blood markers need to be elevated enough, to diagnose autoimmune diseases. This is where gluten can be insidious; in many cases, we don't know it's a problem until it's a problem.

Take coeliac disease: let's say the client comes back negative on coeliac blood markers, deamidated gliadin IgG and tissue transglutaminase IgA, yet still has symptoms when they eat gluten. The next step would be to assess the villi in the small intestine with a small surgical camera. To officially diagnose, it's 95 per cent villous atrophy of the small intestine (the eroding of the intestinal lining). In my opinion, it is a barbaric way to diagnose the condition, particularly as the patient is instructed to eat a high-gluten diet

for several weeks before the test! But those who scream '*evidence-based*' have to be sure at the expense of your health. My question is; how at 50 per cent or even 65 per cent is that not enough evidence to be sure? There are enough data and cases now for diagnoses to be made much quicker and with less pain and suffering from the individual. Why not be cautious?

This is why it's common for a diagnosis of coeliac disease (or an auto-immune disease) to occur in the fourth, fifth or sixth decades of life, according to the GI Society of Canada⁽¹⁸⁾. The reason why there is a broad diagnosed age is the tipping point of 'diagnosis' has to be reached, and depends on genetic factors to withstand the stress. This will differ from person to person.

Another factor not to be underestimated is people's tolerance to withstand poor lifestyle and dietary habits, which leads to no diagnosis for many years. As it's gradual, it becomes the 'new normal'. It feels normal because it didn't happen all of a sudden. The truth is, most people put up with symptoms like gas, bloating, flatulence and discomfort for many years until it gets bad enough to seek help.

THE LOW-GLUTEN MYTH AND ELIMINATION

If you are following a gluten-free diet to see improvements in a health condition, it needs to be a 100 per cent gluten-free diet. This is because one tiny bite can trigger an immune response and elevate antibodies for 60 to 90 days.

Gluten, even at a tiny level, can be problematic for susceptible folks. In fact, the U.S Food and Drug Administration (FDA) determined that for a food to be gluten-free, it needs to have less than 20 parts per million of gluten⁽¹⁹⁾. That means out of a million parts, 20 can be gluten. That's a microscopic amount.

Labelling laws in Australia and New Zealand enforce that foods labelled gluten-free need to be tested with no detectable amount⁽²⁰⁾.

A study showed that as little as a milligram of gluten a day can prevent the villi from completely healing in a coeliac patient⁽²¹⁾. What this means is there is no such thing as a '*low-gluten diet*', as a micro amount can trigger the immune system. So even for extra meals, keep them gluten-free: you will feel better and avoid inflammation. If the goal is improving ill-health symptoms, eliminate gluten completely, not "*just one*", once a week or once a month – it needs to be zero⁽²²⁾.

What this means practically: when purchasing food products it's always best to check the label for ingredients. If it contains wheat, rye or barley, it contains gluten. Warnings such as '*may contain traces of gluten*' are not required by law and according to the Healthy Eating Advisory Service (HEAS) of Victoria, a product can only be labelled as gluten-free when the detectable gluten is less than 0.003 per cent⁽²³⁾.

Food items such as oats are technically gluten-free when grown; however, due to many companies manufacturing oats with other wheat products, cross-contamination occurs. This is where a food becomes contaminated with gluten during manufacturing and processing.

Think of cross-contamination like putting gluten-free bread in the toaster of a friend who always eats wheat-containing bread. The crumbs that inevitably fall off while toasting will come into contact with the gluten-free bread. It's very likely that in the process of cross-contamination, foods are no longer in the safe range. The food label will either state that it '*contains gluten*', '*contains traces of gluten*' or make a statement about cross-contamination; for example, '*manufactured with gluten-containing products*'.

Of course, you can buy products like gluten-free oats; those are products/oats processed without the presence of wheat or other gluten-containing sources that can cross-contaminate.

BUT IN EUROPE...

A common line uttered whenever gluten is brought up is: “*But in Europe, they eat pizza and pasta... and they seem to be doing just fine*”. People even tell me that they ate pizza and pasta all over Europe and felt healthier and even lost a few kilos during their travels.

European wheat is different for two reasons:

1. It is not genetically modified.
2. It’s a different species of wheat (that also contains less gluten).

It’s also been postulated that it’s not the *gluten*, but rather, what Monsanto did to US wheat: genetically engineer and modify it for bigger yields and to be more resistant to modern farming chemicals. Could this be why so many Australians and Americans report being symptom-free when they eat pizza in Europe?

On the topic of Europe, there’s also a third reason why a holiday in pizza and pastry land doesn’t seem to offend the gut, and it goes back to the triad: stress.

When Aussies and Americans travel to Europe, they are usually on holiday, and they eat better (thanks to the European food culture), walk everywhere and get plenty of sunlight and vitamin D. Anecdotally, this is a good example of how it’s difficult to say for sure if it’s *just* the gluten or if it’s a combination of factors.

AN OUNCE OF PREVENTION

Over the years, I’ve seen many people with a laundry list of unexplained health issues, desperate for results and answers, and I’ve also seen a lot of very fit and very healthy athletes. Regardless, as part of an initial protocol, I always recommend a gluten-free diet. Personally, I always work towards the ideal. When clients eliminate gluten, I continually see health and body composition, performance and overall wellbeing improve.

I'm partial to a gluten-free diet, even if gluten isn't an *apparent* issue for you. I err on the side of caution, particularly when I'm paid for a result and need to achieve an outcome in a given timeline. At best, this approach means I avoid and perhaps even alleviate a health issue. At worst, the client's carbohydrate sources are limited and most prepackaged foods are off the menu.

"An ounce of prevention is worth a pound of the cure". Perhaps for you, at this point, the suggestion to eliminate gluten entirely is too hard. Additionally, it might never present a problem for you – but then again, one day it might.

I should also point out the argument that avoiding or eliminating gluten in and of itself poses a risk when you are not intolerant. As such, I bring to your attention the study that showed that non-coeliacs who actively avoided gluten had a higher risk of heart disease⁽²⁴⁾. This is the kind of study the media reads and sensationalises with headlines like "*Gluten-free causes heart disease*". The conclusion was that gluten and avoiding gluten are not associated with a risk of coronary heart disease. However, the authors did say, "*The avoidance of gluten may result in reduced consumption of beneficial whole grains, which may affect cardiovascular risk*".

I disagree with the sentiments that whole grains as a sole factor will impact cardiovascular risk factors. Carbohydrates and grains need to be calorie-controlled; an excess of grains or carbs is not heart-healthy, and you can get adequate carbohydrates and nutrition by going grain-free.

At best, the study points out correlation, not cause. Like how in New York City, increased murder rates correlate with ice cream sales. The reason why ice cream sales have a positive statistical correlation with murders is because both tend to increase in summer. However, obviously, eating ice cream does not cause the murder rates in New York City to spike. Likewise, eliminating gluten while eating a diet to optimise body composition is nothing to worry about.

You might analyse your decision to eliminate gluten from a risk versus benefit framework. The benefits of eating gluten are convenience and taste. Risks are gluten's many potential drawbacks and lack of unique or

inherited nutritional benefits. Often when eliminated from a diet, gluten gets replaced with foods that are more nutrient-dense and lower in caloric value too, aiding body composition goals and health.

If you have a family history of autoimmune disease, skin or digestive issues, eliminating gluten to me is a no-brainer, and if it's really bad, perhaps even consider implementing a FODMAPs diet. Additionally, if you have questions about your health and can't seem to solve them, gluten is an obvious thing you can eliminate.

Perhaps I'm just overly cautious. But even if I am, going gluten-free will make you more conscious about what you eat, and as a result, you will search for and consume more nutritious food. Not the worst thing when you want to improve body composition and health.

MAKING IT PRACTICAL

A gluten-free diet doesn't mean eliminating all carbohydrates and processed foods and hoping for the best. You need to replace wheat, rye and barley with gluten-free alternatives while ensuring you're eating enough protein, fat, and carbohydrates. For a full list of gluten-free options, visit www.enterprisediet.com/resources for a helpful cheat sheet to help you select gluten-free alternatives.

PRACTICAL TAKEAWAYS:

- For some people, following a gluten-free diet can have a positive impact on health. For others, it may just make carb selection harder, although still help them be more conscious of their food choices.
- Take the gluten challenge and go strictly gluten-free for four weeks. See how it feels for you. Reintroduce gluten after four weeks. If symptoms return or become noticeable, consider removing gluten from your diet.
- If you have chronic gut issues, you might need to consider following a FODMAPs diet in addition to going gluten-free.
- If you have a chronic gut issue, see a qualified practitioner.
- If you want to see the benefits of a gluten-free diet, it needs to be all in. This means you can't include it once a week, once a month or have just *one*.
- A gluten-free diet is not a panacea for every disease and gut issue, but it can work in conjunction with a holistic treatment plan.
- To optimise carbohydrate selection and stay gluten-free, see the shopping list in chapter five.

INDUSTRIALISED, FEEDLOT DAIRY

When we are born, our first meal is milk.

From a very young age, milk is linked to health and nutrition. This is why people get angry when you demonise it. But not all milk is created equal. Breast milk, plant-based milk, goat milk, cow milk, organic grass-fed milk and store-bought, conventional milk are all worlds apart – and it's from milk that we get so many different delicious dairy products. Milk gets churned into butter and whipped into cream. It's also the base ingredient for everyone's favourite treat, ice cream.

Before I began writing this section on dairy, I thought I was going to tell the story of how organic raw milk from grass-fed animals was '*good*' and grain-fed skim milk was nutrient deficient and lifeless, making it '*bad*'. I, like many, fell for the halo that is bestowed on milk, with its promise of 'pure' and 'natural'. That was destroyed once I started sorting through the data, evidence and research. To be clear, the coach and trainer in me will tell you to limit dairy – but that's to ensure you stick to a calorie-controlled plan. Dairy is not inherently bad; the goal of this section is to debunk common dairy myths and ultimately help you make better choices.

In the health and fitness space, dairy is polarising. Natural health diehards will tell you dairy has been bastardised, comes from sick animals and causes allergies because it gets zapped of nutrients. Conversely, conventional nutritionists will tell you dairy is a superfood. They'll say it's a great source of calcium and eliminating it will put you in peril for osteoporosis. As with most things in life, the devil is in the details.

I'll give you the background and truth behind each standpoint. I'll explain what dairy I think is optimal and why it's also okay if you choose to avoid it. Before we go further, let's get clear on the terms used in this section and in dairy farming.

TERMS AND DEFINITIONS:

- **Industrialised, feedlot dairy/ Industrial dairy/ Grain-fed dairy:** Dairy from a cow that is predominantly fed grain, soy, and/or canola for the purposes of increasing the volume of dairy (or beef) produced. This cow will usually also have restricted roaming space.
Note: Within the dairy industry, there has been much debate on the definition of 'feedlot dairy'.
- **Grass-fed dairy:** Milk from a cow that eats grass predominantly and is free to roam the field.
- **Organic dairy:** Organic dairy is also *usually* grass-fed dairy; however, cows may also eat organic grain. The term *organic* in Australia is loose unless it's *certified organic*.
In dairy, organic means farmers adhere to guidelines concerning things like pesticides, herbicides, confinement and the use of antibiotics⁽²⁶⁾. When it comes to dairy (and beef), it's more important you shop for grass-fed or grass-finished than 'organic'. Grass-fed organic would be the gold standard.
- **CAFOs:** Stands for 'concentrated animal feeding operations'. These are best described as concentration camps for cows. All the cows in a CAFO are sick and heavily medicated. This is commonplace in the US. We will not be discussing CAFOs in this section. For the record, I think CAFOs are an abomination.

THE PROBLEMS WITH INDUSTRIALISED DAIRY:

1. The first problem with industrialised dairy is inherent in capitalism. It's pushing cows to produce 'more' for higher profit. The embodiment of this is CAFOs, where cows are treated as nothing more than a means to an end. Cows in Australia are not subjected to the same factory farming methods as in the US, although it's something to be aware of the next time you see a price war on milk. In the quest for *more*, cows can be mistreated, becoming sick and unhealthy, which produces inferior milk.

This is problematic for the animal, our environment, the nutritional value of the dairy product produced, and therefore the consumer.

2. A large percentage of the population is lactose-intolerant. Under no conditions is lactose-containing dairy a healthy food for them. This problem is not exclusive to industrialised dairy, but all dairy that contains lactose.
3. It's calorie-dense. If you're looking to put on weight, great. If not, your dairy must be calorie-controlled, and if you're not willing to take this step, dairy is probably going to be a problematic choice for you. (This is not exclusive to industrialised dairy, but all dairy.)
4. Industrialised, grain-fed, low-fat dairy is more likely to induce allergies.

STARTING WITH THE 'MOO'

To understand the dairy debacle, we need to start with the cow.

The primary and optimal fuel sources for cows are grass and hay. Grains and heaven forbid, *organic* grains are fed to cows to boost milk yields or fatten them up for consumption. The idea of feeding organic grain to cows is laughable as it's the grain itself that starts to change things for the cow.

In farming, the utility of a cow is a) to produce milk, or b) to be slaughtered and sold as beef. Both these commodities are big businesses. Farmers either make money from selling high-quality and more expensive grass-fed products or by producing much lower-quality and higher volumes of grain-fed dairy and beef. For the farmer, the commoditisation of dairy has proven to be a race to the bottom. As a consumer, you need to decide which market you're in and which farmer you're going to support.

Some farmers feed grass, hay, grain, soy and canola on rotation. This kind of feed combination is used to boost milk yield. Dairy cows used for conventional dairy are fed a mixture of forage, grain, soy and canola meal. When canola meal is added to a cow's diet, it can boost yields by as much as five litres more milk per day⁽³²⁾, and that's not to mention the effects of soy feed.

This formula boosts larger milk yields but decreases the quality of the dairy produced. Grass-fed milk has a better fatty-acid profile; it has double the omega-3 fat content as conventional milk, and contains higher amounts of other beneficial fatty acids like conjugated linoleic acid (CLA)^{(27) (28)}.

When a cow is ‘grain-fed’, the truth is it could be grain, soy and canola meal fed as the industry does not distinguish this for the consumer. It’s all labelled under the one banner: *grain-fed*.

I must point out that feeding a cow a small amount of grain isn’t all ‘bad’ and we shouldn’t condemn as soon as we hear the word ‘grain’. As I didn’t want this section to be perceived as an insult or attack on local farmers who use a little grain, I felt compelled to point out some untold truths in raising healthy cows.

It’s quite common that pasture-fed cows are given a top-up with grain. The top-up amount is considered necessary by many experts on the topic as it helps to maintain a cow’s body mass. I reached out to one local farmer to define how much grain constituted a ‘top-up’, and his answer was: “*One 500-gram grain pellet a day.*”

According to Agriculture Victoria, the maximum grain you can feed a cow is 0.5 to 2.5 per cent of its body weight each day⁽³³⁾. As cows are big, heavy beasts, this range is significant. Additionally, the range is based on three situations: 1) drought ration, 2) as a supplement to grazing, or 3) in lot feeding. The highest percentages are allocated to cattle that are confined in lot feeding, consuming around two per cent of their weight each day as grain. For a 400-kilo cow, that’s eight kilos of grain – a big difference from a 500-gram top-up.

If you feed a cow too much grain, it can develop acidosis. This is a potentially deadly condition where the cow’s rumen pH is too acidic. In short, the volume of grain matters more than just being grain-fed.

In practical terms, I suggest avoiding feedlot and grain-fed dairy and replacing it with grass-fed or grass-finished. Feedlot cows are those who

have had their diets pushed to a higher intake of grain, an intake that is not without its consequences. Sure, more milk is produced, the cost of production is cheaper, cows get fatter and marbling in beef increases. But it's the old story of trading quality for quantity.

The milk produced from a feedlot cow has fewer nutrients. Standard grain-fed milk has a ratio of around 10:1 omega-6s (pro-inflammatory) to omega-3s (anti-inflammatory). Organic, pasture-fed dairy has ratios of 3:1 omega-6s to omega-3s. Levels can be affected by seasons. In summer, during the grazing months, the ratios can be as close as 2:1⁽³⁴⁾. Pasture-fed cows receiving no supplemental feed have also been shown to have 500 per cent more conjugated linoleic acid (CLA) in their milk fat than cows fed a typical diet that includes grain and corn⁽³⁵⁾.

Grain, soy and canola also alter the bacteria in the milk. A 10-year study showed that the intestinal bacteria E. coli were higher in grain-fed cattle than grass-fed⁽³⁶⁾. When cattle switched from a high-grain diet to an all-hay diet, total E. coli populations in the cows' stomachs declined 1000-fold within five days and reduced the ability of the remaining E. coli to survive an acid shock test (akin to human digestion).

This is why milk that comes from grain-fed dairy cattle must be pasteurised. The aim of pasteurisation is to kill all bacteria: the good, bad and ugly, like E. coli.

Raw, unpasteurised milk has been promoted by paleo and natural health experts for many years. As such, I thought it would be vital to include information on the history of pasteurisation and the potential benefits and risks raw milk offers so you can make an informed judgement as a consumer.

HISTORY OF PASTEURISATION: PASTEUR VS BECHAMP

Pasteurisation is named after Louis Pasteur, as most people know. But what most people don't know is Louis had a rival called Antoine Bechamp. Bechamp was the antithesis of Pasteur. Where Pasteur promoted the notion

of germs as the cause of disease, Bechamp advocated the cellular theory of disease, also known as the terrain theory. The terrain theory basically says harmful germs and bacteria flourish in weakened terrains. Strengthening the terrain should be the focus, not the removal of bad bacteria.

Pasteur's germ theory became the basis on which the mainstream medical model was built. Doctors adopted a drug-centred, 'germs are the enemy' approach, while the terrain theory has been very much forgotten by the medical mainstream.

One hundred years later, there is still debate over who was right with arguments and evidence for both sides. Today, Bechamp's theory of disease attracts a lot of alternative natural health followers who look to raw milk as a means to champion his idea.

To weigh in on this topic, I believe it's a case of context versus content. For example, you wouldn't drink a cup of E. coli-infected milk thinking you're immune because the 'terrain' is strong. But to think you need to completely sterilise and destroy all living organisms in food is equally idiotic, considering humans carry more bacteria than cells. As with most things in our modern world, nuance has been lost, and this is what has led us to the highly contested topic of pasteurised versus raw milk and dairy.

PASTEURISED VS RAW MILK

In simple terms, pasteurisation is the sterilisation of a food product to make it safe for consumption and minimise the risk of food poisoning. Pasteurisation has been widely used since the 1920s to increase food safety and extend shelf life. Heat removes around 99 per cent of bacteria and makes it safe for consumption.

There are two ways to pasteurise milk:

- High temperature, short time (HTST) pasteurisation (or flash pasteurisation) This is where milk is heated to 71.67 degrees Celsius and held for 15 seconds before being cooled.

- Ultra-high temperature (UHT) pasteurisation.

This is where milk is heated to 137.77 degrees Celsius and held for two seconds before being cooled rapidly. This method greatly extends the shelf life of milk, by as much as nine months, even without refrigeration⁽³⁷⁾. Milk that has undergone this process may be labelled as ultra-pasteurised or long-life milk. This is the milk that is usually sold in cartons without being refrigerated.

Raw milk is not pasteurised or comes straight from the cow. It sounds like the way nature intended and for this reason, when I was younger (and more naive), I *used to be* a raw milk purist. When I was training for a strongman competition, my post-workout shake was made with raw milk. I, like many, got suckered into the warm fuzzies of sipping a nice, cold glass of raw milk, bottled from the animal's teat.

However, when it comes to supplying the daily national demand for milk, it makes sense to pasteurise. Dairy production is big business, and with scale comes margin for error. The 'error' in mass-producing milk is a food-borne illness that could result in someone getting seriously sick or even dying. It's understandable why the sale of raw milk in some states in Australia now mandates deterrents like adding bittering agents to make it unpalatable for human consumption. Other precautionary methods could have been implemented such as limiting the size of the farm, limiting distribution reach of products and encouraging consumers to self-pasteurise by heating raw milk in a pot at home.

If I were to consume raw milk again, I would do it under strict conditions, the first being I would want to know my farmer and ensure the cow was grass-fed, as this greatly decreases the likelihood of active E.coli⁽³⁶⁾. Then, I would still pasteurise it myself by lightly heating it in a pot before consumption. The risk of nasty bacteria like E.coli outweighs the potential nutritional benefit of raw milk. If you looked at it from a risk versus benefit framework, the said benefit of raw milk is that it *could* be more nutritious.

The risk is food-borne illness. As much as I would love to remain its advocate, there are too many variables.

For that reason, I don't recommend raw milk. Upon digging into the research, I think raw milk advocates have it wrong, and all you need is one bad cup to get really, really sick... or worse. One of the big things conflated in the raw milk debate is the difference between raw milk and farm milk. Raw milk is unpasteurised and non-homogenised, sold to consumers. Farm milk is fresh off the farm but is usually boiled by the farmer before consumption. Simply put, you can't control the health of the cow or the quality of the milk it produces, but you can control the pasteurisation process.

WHAT ABOUT HOMOGENISATION?

Homogenisation isn't for food safety. It's meant for consistency and taste. Without homogenisation, fat molecules in milk rise to the top, forming a layer of nutritious and delicious cream, and that's the thing: a lot of the nutrition in milk is in the fat. In simple terms, homogenisation makes the fat globules in milk smaller and gives the end product a consistent taste and texture. This is achieved by spraying the milk with pressure through a cheese-grater-like machine. It's suggested that this process can make the milk less nutritious⁽³⁹⁾; and because homogenisation makes the particles of the milk smaller, it also makes the milk more likely to cause allergies⁽³⁸⁾. Homogenisation also makes it easier to filter out fat to create skim milk and other low-fat dairy products.

When it comes to the business of processing milk and dairy, homogenisation has four functions:

1. It gives a guaranteed consistency, texture and taste to each bottle.
2. It increases the efficiency and ease of producing skim milk and low-fat dairy products.
3. It aids the creation of flavoured dairy products like yoghurt⁽⁴⁰⁾.
4. It allows milk from different herds to be mixed.

Herd mixing is a standard process where milk from dozens, if not hundreds, of cows gets mixed and processed as one. The impression of the neatly packed supermarket shelf, with wholesome labels featuring a single happy cow, can give consumers the impression that each bottle contains the milk from a single cow. Nothing could be further from reality. Dairy cows are mostly machine milked. That milk all goes to the one tank, which then gets pasteurised (and/or homogenised). That one litre of milk sitting on the shelf is a product of hundreds of cows, not a single animal. I say this not to deter, but rather, to bring to light the reality of dairy. Upon dairy sits a halo – a halo, the consumer needs to be aware, that is not justified.

To that end, don't believe the unfounded claims that homogenisation is "*rocket fuel for cancer*"⁽⁴¹⁾ as some natural health extremists promote. Studies do support that homogenisation increases the likelihood of milk and dairy triggering an allergic reaction (as previously mentioned). This is believed to be because homogenisation alters the molecular structure of milk fat and whey protein and serves them as allergens to the immune system of allergic individuals⁽⁴²⁾.

Throughout the years of dietary fat scaremongering, skim and low-fat milk have become the average consumer's preference. It warrants mentioning, as it's sometimes confused; homogenised milk is not the same as low-fat or skim/fat-free milk. I used to tell people to pick full-fat milk over skim or low-fat milk, but in writing this book and really digging into the research, there isn't much weight to that recommendation other than falling for the *natural* fallacy. However, here are some things you should consider when choosing milk and other dairy products:

- Skim or low-fat/fat-free milk has fewer calories per serve; however, full-fat milk has been shown to have higher satiety levels⁽⁴³⁾. With either choice, it's best to control your calorie intake.
- Whole-fat milk is less allergenic than skim milk, as there is more fat per glass, less lactose and fewer milk proteins. It's the lactose and/or milk proteins that trigger immune responses. This is why fewer symptoms are reported with full-fat milk. If you experience symptoms

with skim milk but not full fat, that's why; you're getting fewer milk proteins and lactose per millilitre.

- Studies have linked low-fat dairy with reduced total and heart-related mortality⁽⁴⁴⁾. However, randomised controlled studies show no difference between the consumption of full-fat and low-fat milk on blood pressure⁽⁴⁵⁾, pointing out that there are other key factors (like controlling for calories) over simply fat content.
- There is no clear relationship between breast cancer and milk consumption (low, reduced or whole)⁽⁴⁶⁾, as some have claimed.
- If acne is a problem for you, chances are you should remove all dairy, but particularly all forms of milk (whole, reduced and skim). Natural health gurus sometimes champion the idea that raw, organic whole milk doesn't have the same effect but scientific literature points out that all milk has a strong relationship with acne⁽⁴⁷⁾.

From what I can tell, regardless of whether it's skim, reduced-fat or whole-fat milk, the biggest factor to consider is if your milk and dairy are grass-fed organic. Opting for grass-fed organic limits consuming pesticides, consuming dairy from sick cows and an excess of omega-6. These are the factors that seem to do more harm than if your milk is skim, reduced or whole.

One more note on skim and reduced-fat milk: when fat content is lowered, fat-soluble vitamins are also reduced. To make up the difference, manufacturers may add synthetic, but often poorly absorbed, vitamins and minerals back to the bottle, and at feeble amounts. This isn't a huge deal breaker but if you drink milk for fat-soluble nutrients, whole fat is superior. Additionally, reduced-fat milk is higher in protein than full-fat milk by percentage.

In conclusion, ensure your milk is grass-fed organic. The rest (*homogenised vs non-homogenised, reduced, skim or whole*) should be based on personal preference, and if you feel good after consuming dairy (i.e. you're not allergic or intolerant to lactose).

In non-homogenised and whole milk the creamy layer rises to the top, whereas homogenised, fat-reduced and skim milk will have a more consistent taste.

Of course, with either option, calorie control if you want to optimise body composition.

LACTOSE INTOLERANCE

It's estimated that 75 per cent of the world's population loses their ability to digest lactose at some point ⁽⁴⁸⁾. To quote the *Essentials of Sports Nutrition and Supplements, The International Society of Sports Nutrition (ISSN) textbook*; “*lactose intolerance is considered to be a normal physiological occurrence.*”⁽⁴⁹⁾

At that point, it's more likely you have an intolerance, but might be tolerating a mild discomfort, as dairy (and more often milk) gets a free pass as the ‘wonder food’ for all. Having lactose intolerance means that grass-fed, raw, or industrialised, dairy containing lactose is not for you.

The ISSN textbook groups lactose intolerance risk prevalence by ethnicity:

- *Northern Europeans (2% to 15%)*
- *Central Europeans (9% to 23%)*
- *White Americans (6% to 22%)*
- *Hispanics (50% to 80%)*
- *Africans, and African Americans (60% to 80%)*
- *Asians (95% to 100%)*

Out of all the foods I suggest that clients eliminate or replace, dairy is always the one that has the biggest resistance. Given the numbers above, statistically speaking, it's also the most common one you need to eliminate or replace.

BUT DON'T YOU RECOMMEND BUTTER AND GHEE?

When someone has an intolerance to a food, it is either a protein peptide (think gluten or milk proteins) or a sugar (think lactose or fructose) that causes the immune reaction. As butter and ghee are made up almost entirely of fat, they contain only trace amounts of lactose. This means butter and ghee are still on the menu for those with a lactose intolerance. They do contain milk proteins, to which some people are sensitive, although this is less common than lactose intolerance.

Anyone who has had their gallbladder removed should be cautious when it comes to butter and ghee. The gallbladder releases bile to emulsify fats. Once your gall bladder is removed, you would need to pay particular attention to the amount of fat you consume. In my opinion, gallbladder removal is over-prescribed and alternatives like diet, exercise and the use of supplements could help many people avoid this procedure. But that's another topic. If you've already had it removed, you'll need to watch your fat intake.

WHAT ABOUT LACTOSE-FREE MILK?

Lactose-free milk is made by adding lactase to regular milk. Lactase is the enzyme that breaks down lactose, so by adding it to regular milk, it breaks down the sugar into two simple sugars, glucose and galactose.

Lactose-free milk is known to taste sweeter than ordinary milk. If you have a sensitivity to milk proteins, you will still need to eliminate or choose select dairy (like butter) or choose plant-based milks like almond or coconut milk.

DAIRY AND BODY COMPOSITION

There are many who tout the inclusion of dairy aids for developing muscle mass, improving body composition and health. However,

there are also meta-analyses that show dairy has little impact on body composition when you control protein and calories^{(50) (51)}. The question about dairy and body composition can be summed up into three parts:

1. Can you tolerate dairy?
2. How much do you like dairy?
3. Can you calorie- and portion-control your dairy?

For body composition, I usually recommend that the regular source of dairy in your diet comes from butter and/or ghee. Butter and ghee are highly nutritious, and it's generally easy to account for and moderate calories by following general guidelines. For example, cook with a tablespoon of butter.

Other than that, unless you are going to specifically calculate your macros, and weigh and measure your dairy, I'm not an advocate for dairy while you're trying to burn fat and improve body composition. The reason is that dairy is calorically dense, and fairly easy to consume. It's easy enough to turn what was supposed to be a 200-calorie deficit into a 200-calorie surplus by eating yoghurt, by having a little more milk in your coffee, or even an extra cappuccino.

As with all things, there are people who can calorie control and don't have any dairy allergies. In this case, there's no reason to exclude it (unless you don't enjoy it). Regardless of which camp you fall in, if you consume all the dairy, no dairy, or limited dairy choices like I do, I advocate grass-fed organic dairy and recommend you steer clear of all grain-fed dairy products.

THE CALCIUM LIE

But where are you going to get your calcium?

This is the first question that clients ask when I mention eliminating dairy. Some milk (mainly skim and reduced) gets fortified to bolster health

claims, mainly about bone health. It's true that calcium and vitamin D are important for bone health, but milk isn't the only source, particularly when the vitamin D has been added in negligible amounts.

There are many misconceptions about bone health and calcium, one of the main ones being that dairy is the only viable source of calcium and that it's solely responsible for our bone health. Associating brittle bones with calcium is like associating car crashes with brakes. Sure, brakes play a role in car crashes, but if you were driving too fast or drunk behind the wheel, having the best brakes in the world isn't going to help. Calcium is also the most abundant mineral in the body. Usually when there's a problem with calcium, it's not because there's not enough, but rather, because it's in the wrong spot (think atherosclerosis) or it's not being absorbed (think coeliac disease).

Bone health is multifaceted. Contributing factors such as vitamin D status, hormones, gut health and lifestyle factors such as smoking and strength training play a huge role in bone health and calcium absorption. For example, vitamin D helps the absorption of calcium and helps you store it in your bones⁽⁵²⁾.

Gut health is mission-critical to absorbing minerals. It's common knowledge that coeliac disease is linked with osteoporosis if left untreated⁽⁵³⁾. This is because the intestinal villi aren't able to absorb minerals. Likewise, if you have low stomach acid, reflux, dysbiosis, or a condition that causes gastric upset, your ability to absorb nutrients can be compromised.

It is also worth mentioning that bones aren't just calcium. They're made up of collagen, calcium, phosphate, magnesium, zinc, sodium and bicarbonate. By volume, bone is approximately 50 per cent mineral (of that, 64 per cent is calcium). The other 50 per cent is made up of protein and collagen. In fact, 99 per cent of our calcium is stored in our bones and teeth⁽⁵⁴⁾. When calcium leaches from bones, it can cause osteoporosis. If it winds up in our arteries, it can cause atherosclerosis.

Another lifestyle factor to consider is smoking and exercise.

Smoking to bone health is what drinking is to driving – very, very dangerous and downright stupid. The data on smoking and its effects on bone health are clear. Smoking reduces blood supply to bones, slows down the production of bone-forming cells (osteoblasts) and decreases calcium absorption, all of which greatly increase incidents of breaks and fractures⁽⁵⁵⁾⁽⁵⁶⁾.

And as for strength training?

The earlier in life (15 years onwards) you start training, the higher the peak of bone density you reach once bone fully matures in your thirties. Starting young ‘peaks’ bone density at higher levels. Strength training after 30 gives incremental benefits to bone density, and plays a significant role in maintaining bone density as you age⁽⁵⁷⁾. Just ensure it’s proper strength training and not ‘group-fit classes’ with pink dumbbells and weights that offer no resistance. (Note: cycling, swimming, group fitness dance classes or resistance workouts in water are not strength training. If you need more information on training or would like some help, reach out to my team at Enterprise Fitness.)

When you train for strength or muscle mass, bones are under load, and that load is an important stimulus. When muscles pull from the origin to the insertion point for a muscular contraction, the load plays a significant role, causing bones to adapt to the stress. Obviously you don’t want such a heavy load where the bone or muscle snaps. It simply needs to follow the rules of progressive overload. As 99 per cent of calcium is stored in bones, strength training creates a stimulus for calcium to ‘stay put’ in the bone.

Calcium in your diet is important but while dairy is a good source, it’s not the only source. Here’s a summary of high-calcium-containing foods. I’ve compared them as per 100g and as 200-calorie serves. Some foods work better as indications of calories per serve, others per 100g:

Source	Calcium per 100g	Calcium per 200-calorie serve
Milk	113mg	371mg
Butter (use 200 cal)	24mg	6.7mg
Cheese (feta)	493mg	372mg
Yogurt	121mg	397mg
Spinach (use 100g)	99mg	861mg
Sardines (canned)	382mg	367mg
Dark leafy greens (use 100g)	99mg	792mg
Almonds (use 200 cal)	269mg	93mg
Sesame seeds, whole dried (use 200 cal)	975mg	340mg

Source: MyFoodData: www.myfooddata.com

OTHER FACTORS FOR STRONG HEALTHY BONES (SUMMARY):

- Vitamin D status
- Gut health
- Being a non-smoker
- Engaging in regular strength training
- Collagen intake
- Overall quality of diet
- Hormones

Instead of asking where you are going to get your calcium from, people should be asking: “*Do you lift?*”

ACTION STEPS FOR DAIRY

1. Identify if lactose is a problem for you. If so, limit your dairy consumption to butter or ghee.
2. If the goal is to reduce body fat, calorie control dairy intake. If you're not willing to do that, restrict dairy.
3. Buy grass-fed, organic dairy. It's better for you and the cow.
4. Low- or reduced-fat dairy products are higher in protein per serve but contain fewer fat-soluble vitamins A, D, E and K.
5. Skim and reduced-fat dairy have fewer calories per serve and a higher protein-to-fat ratio. However, they are more likely to cause allergies due to higher amounts of lactose and milk proteins.
6. Full-fat dairy is higher in calories per serve, has higher fat-soluble vitamin content, is more satiating and less likely to cause allergic reactions.
7. Use organic butter or ghee as a cooking fat. Grass-fed butter and ghee are relatively easy to find in supermarkets. Butter is high in fat-soluble vitamins A, D, E and K.
8. If bone health is a concern, strength train, check your vitamin D and ensure you don't have underlying gut issues. You can reach out to our recommended naturopaths who understand the multiple pathways of health (and strong bones) at www.wellixa.com.au.
9. If you're going to jump on the raw milk bandwagon, remember there's a risk. You need to know what the cow is consuming as it makes a huge difference in nutrition and bacteria in the milk. Regardless, self-pasteurising raw milk before consumption is a sensible thing to do.

SOY

Soy is the poster child of pseudo health foods. It is high in protein, low in saturated fat, and supposedly able to feed the world. What health-conscious eco-activist wouldn't want soy on their plate?

On the surface, soy sounds like a wonder food. However, when you begin to peel back the veil that covers most of soy's superficial claims, you begin to see the vast ethical and health problems.

WHAT IS SOY?

Soy is a crop with many uses, from soy flour, tofu, soy milk and soy yogurt to alternative meat products, oils, animal feed, protein bars, protein powders and other health products. In short, there's a lot of money to be made in packaging up industrial-mass-grown and commoditised soy as high-protein and nutritious health food.

In 2020, 4.14 billion bushels, the equivalent of 112.67 billion kg of soybean, were harvested in the US⁽⁵⁸⁾, and \$25.7 billion worth of US soy was exported to the world⁽⁵⁹⁾, according to the American Soybean Association and the United States Department of Agriculture (USDA) respectively.

Shockingly, Latin America, more specifically Brazil, is set to overtake those numbers in the next decade. The Amazon rainforest had an area the size of New South Wales cleared to produce soy and other monocrops. Soy comes at a huge expense to our environment, so I always find it ironic when it's touted as better for the planet.

A significant amount of the soy produced (in the vicinity of half) gets crushed to produce oil and protein meal. Reports from the UK estimated that at least 90 per cent of the soy produced is fed to animals, with less

than 10 per cent consumed by humans as food. A report from the USDA Economic Research Service indicated that only two per cent of soy meal is used for human consumption, while the rest is used for animal feed.⁽⁶⁰⁾

This is something to think about next time an activist vegan claims soy (or corn for that matter) can feed the world, or it's better for the environment. What's worse, the animals who are fed soy (and corn) are taken away from their natural diet, and end up in feedlots, sick and unhealthy. Soy production supports a 'lose-lose-lose' for the environment, animal welfare and consumer health.

WHY IS SOY A PROBLEM?

Traditionally, soy was fermented and eaten in small quantities, more akin to a condiment. People cite Japan as a healthy, soy-loving country whose morbidity and mortalities trump Western counterparts and wonder how bad it can be.

But differences in Western and Eastern soy consumption couldn't be any more obvious. In Japan, daily consumption ranges from 6 grams to 11 grams of fermented soy, while the Western world takes that as the tick to substitute whole foods with processed soy food products.

So let's look at the main reasons why soy belongs on the *eliminate, replace or reduce* list. I refer to these reasons as **The Soy Six:**

1. High phytoestrogens.
2. High phytic acid (which affects mineral absorption).
3. Mould (and the herbicides used to control it).
4. The genetic modification of the soy crop (and its associated problems).
5. The use of glyphosate and other pesticides (environmental and health implications).
6. Industrially grown/farmed soy and the associated negative impacts on the environment.

Let's look at each of these in more detail.

1. PHYTOESTROGENS

My eyes roll every time I hear someone say, “*But I eat organic soy.*”

The soybean is naturally high in plant oestrogens. Organic or non-organic, you can't get rid of the phytoestrogen in soy. Phytoestrogens, found in certain plants, can mimic the effect of the hormone oestrogen in the body. In soy, phytoestrogens exist naturally as one of the plant's defence mechanisms against pests. This fact remains consistent without other factors like genetic modification, poor processing methods and improper fermentation.

You can have a pristine organic farm, doing everything right growing soy. Regardless, the bean will be tremendously high in plant oestrogens as that's one of the soy plant's defence mechanisms to survive pests and insects.

Although not formally studied or researched, soy in Japan was historically known as an *anaphrodisiac* (the opposite of an aphrodisiac), meaning that it can reduce an individual's libido. Wives suspecting husbands of infidelity would add soy to their husband's meals⁽⁶¹⁾. Science and research now confirm what cultural wisdom suggested; soy is naturally high in phytoestrogens.

Others who understand the anti-aphrodisiac powers of soy are Buddhist monks. Traditionally, they view sexual desire as a distraction to enlightenment. As such, soy has become a staple in their diet as a way to nutritionally dampen desire, along with a vegan diet.⁽⁶¹⁾

With that said, both of these cited examples are anecdotal. Despite all the digging through research to find a study to substantiate the claims, all I could find were two books, *History of the Soyfoods Movement Worldwide* (1960s to 2019) by Akiko Aoyagi and William Shurtleff and *The Whole Soy Story* by Kaayla Daniel.

What I can say with certainty is a study analysing phytoestrogen content in 121 different foods found that soybeans had a score of 103,920.0

phytoestrogen (PE) per 100 grams. To give this context, chickpeas scored 4.7 PE, lentils 36.5 PE and black beans 9.7 PE per 100 grams⁽⁶⁵⁾. Soy was by far the highest-scoring food containing plant oestrogens.

There is conflicting evidence on soy's impact on sex hormones like testosterone and oestrogen in the body. The book that popularised this line of thought was *The Whole Soy Story* by Kaayla Daniels, whom I've also interviewed on my podcast. Furthermore, there is much debate on phytoestrogen's role in humans. There are studies that show phytoestrogens have little to no impact, and also those who use them as interventions in menopause⁽⁶³⁾ and prostate cancer⁽⁶⁴⁾.

A meta-study published in 2021 showed that soy did not affect male reproductive hormones⁽⁶⁵⁾. However, that paper was completed by researchers who consult for companies that manufacture and sell soy products. In fact, one researcher sits on the scientific advisory board of the Soy Nutrition Institute, with many of their board members representing the interests of corporate food and big industrialised agriculture.

As far as I can tell, plant oestrogens have the ability to block testosterone in males and disrupt oestrogen and pregnenolone balance in females⁽⁶⁶⁾; otherwise, the claims of studies showing the benefits of phytoestrogens in menopause would also need to be retracted. Papers showing it has no impact on testosterone and oestrogen then showing it positively affects hormone balance are not proportional. Obviously, both those claims can't be true. However, the positive benefits (without negative consequences) are conveniently demonstrated when the paper is funded by the industry.

I think the truth is somewhere in between; a little soy in your diet, under the right conditions (organic, non-food product) probably won't cause any significant drop or change in hormone levels. However, when consumed as a food replacement multiple times a day, it probably will⁽⁶⁷⁾.

Those who promote soy for its oestrogenic properties believe that the phytoestrogens can balance oestrogen and bind with specific receptors.

To get this kind of benefit from soy, you would need to consume a significant amount, which could have a detrimental nutritional impact.

Eating soy is not the same as dosing controlled amounts of phytoestrogens for specific health reasons. Some studies have linked phytoestrogens to be utilised in the treatment of prostate cancer⁽⁶⁸⁾, whereas others suggest the mechanisms of prostate cancer are misunderstood and phytoestrogens/oestrogen does more harm than good. Again, there is much debate.

From my coaching experience, when clients eliminate or replace soy, they see a marked improvement in mood, libido and body composition. This is particularly the case for vegans whose diet can comprise a large amount of soy.

As I don't care for soy or phytoestrogens, I've eliminated this ingredient from my diet (almost) entirely. The exception: dinner at a nice Japanese restaurant might include a slight pour of gluten-free soy sauce mixed in with wasabi to give my sushi an extra 'pow'.

2. PHYTIC ACID AND PHYTATES

I included phytic acid and phytates in the Soy Six. These are often touted as one of the problems with soy, so I thought they warranted addressing.

Phytic acid is an antioxidant but it can affect mineral absorption. Thus, it earned the alias of '*The Anti-Nutrient*'. Kind of like how the popular comic book character Deadpool is the anti-hero who always ends up causing more harm than good, leaving a trail of destruction in his wake as he (eventually) saves the day.

Everyone who eats plants (particularly grains, nuts, legumes and seed oils) consumes some phytic acid. The question is, to what degree? In small amounts, it presents no harm, but as with everything in nutrition, when consumption increases past a certain point, it begins to present problems.

The soybean has a makeup of 2.3 per cent of its dry weight in phytic acid – which isn't abnormally high compared to other plant foods like nuts, whole grains or legumes. However, the problem with phytic acid is one that vegans and vegetarians need to be more aware of as their diet is mostly, if not all, plants, seeds and grains.

As it relates to soy, phytate acid becomes problematic because soy is often used as an alternative to or a food substitute for meat, dairy, oil and flour. Replacing animal products with soy-based foods like soy flour, soybean oils or soy protein powders can drastically increase phytate consumption, which can present a problem. If you're a super soy consumer, it could be in everything you eat.

Excessive consumption of phytic acid can bind minerals in the gut before they are absorbed. It can also affect the digestibility of starches, proteins and fats. In fact, consuming 5 to 10 mg of phytic acid can reduce non-heme iron absorption by as much as 50 per cent⁽⁷¹⁾.

Phytic acid is probably not an issue for most people. But again, when it's preventing the absorption of zinc, calcium and other essential minerals⁽⁷²⁾, you should keep the amount you consume in check.

The confusion around phytic acid and phytate is in the dose. A little bit presents no danger and *may* have some beneficial antioxidant properties. Consume too much and risk binding minerals.

You don't need to go overboard trying to avoid or manage phytate acid intake, (as long as you're not a vegan or vegetarian and you're eating as outlined in this book), but also don't think of it as a powerful antioxidant. I mean, if you're reliant on the phytates in your diet as a source of antioxidants, you're doing it wrong. In my opinion, phytates in soy are not a reason on their own to avoid soy. However, they are a reason to moderate intake, particularly if you're a vegan.

3. MOULD (AND HERBICIDES AND FUNGICIDES THAT CONTROL IT)

It's common, particularly in the colder seasons, for soy crops to grow and develop white mould. Farmers refer to this as *field fungi*. It's a serious problem, as the mould can substantially affect the farmers' yield by weakening and killing crops⁽⁷²⁾. This is usually managed with herbicides and fungicides, which are used to counteract its growth. While this is a necessary step for the farmer, the consumer needs to remember that herbicides and fungicides don't just 'wash off'; the residue becomes a permanent stain on the crop at the end of the harvest.

The second mould problem is in storage. To the farming industry, this is known as *storage fungi*. To combat this, right before harvest, the crop is further doused with herbicides. If the farmer harvests the crop before full seed maturity, often a chemical desiccant (drying) spray will be used⁽⁷³⁾. Desiccants can kill the plant too, so it's used sparingly before harvest⁽⁷⁴⁾.

Chemicals used for drying include sodium chlorate, and a herbicide called paraquat. Think of sodium chlorate as bleach for plants. Sodium chlorate is allowed for use in Australia in mining, metal treatment, paper production, food chemical, laboratory and diagnostic reagent⁽⁷⁵⁾. It's considered a phytotoxin (toxic to plants) and was banned in Europe in 2009. Paraquat is also banned in Europe, and according to the U.S. Environmental Protection Agency, is highly toxic to humans⁽⁷⁶⁾. However, paraquat is allowed for use in agriculture settings in Australia⁽⁷⁵⁾.

Once soy is in storage, farmers need to prevent mould, manage rodents and stop insects from spoiling the harvest. Fungi from mould can also produce poisonous mycotoxins. Soy must be kept super dry as it absorbs moisture rapidly.

If left unattended, rot can follow, making it go putrid. Once in storage, it's kept at a carefully controlled temperature to avoid moisture and mould.

As exporting and selling soy is big business, many big farms wait for soy prices to increase on the stock market before they sell. This means waiting

for crop prices to increase before exporting internationally, leading to soy being stored for extended periods. The increased length of storage increases the potential for mould⁽⁴¹⁾.

This has probably left you wondering; can't we just avoid the pesticides and herbicides by consuming organic soy? And if so, how is the mould managed in organic soy crops?

Organic soy is a big step up, but there are still things to be aware of. Generally, organic farmers take better care of their soil, which helps crops grow strong but, all the same, they are still susceptible to the same pests, diseases and mould as non-organic soy. In Australia, farmers can control pests using three non-toxic insecticides: neem oil, natural pyrethrum and *Bacillus thuringiensis*, or Bt⁽⁷⁶⁾.

Likewise, after harvest, the soy crop still needs to be stored. Most organic soybean growers use on-farm aerated silos for storage. This means controlling the air and temperature to kill bugs. They also may inject silos with carbon dioxide or nitrogen gas combined with a surface application of the Dryacide⁽⁷⁸⁾, which is amorphous silica, a sprayable silicon dioxide.

If I were to eat soy, I would at least ensure it's organic.

4. GENETICALLY MODIFIED SOY

Genetically modified (GM) food is a huge topic. From ethical, environmental, moral, political and health standpoints, there are numerous factors that raise more questions than they do answers.

The first and most obvious question is; what is GM soy?

Genetic selection or modification has been done naturally for centuries. Farmers have altered food crops and animals through crossbreeding programs over generations. Farmers would attempt to cross-pollinate with the intent that the strongest and best traits would live on. This included

selecting plants and crops that were disease-resistant, drought-resistant and had the highest yields.

Then along came biotech companies, applying technology in a lab, fast-forwarding genetic modification. It seems simple; they isolate the desirable gene from one animal, plant or microbe and insert it into another to give it the same characteristics. This is how they brought you products like:

- *Flavr savr tomato (PG antisense gene + Tomato)*
- *AquAdvantage Salmon (eel-like species called ocean pout + Atlantic salmon)*
- *Golden Rice (daffodil + bacteria + rice)*
- *Enviropig (bacteria + mouse + pig)*

Gene splicing and bio-designing of our food make me nervous. In truth, all of the above-mentioned GM products have had numerous concerns, problems and implications. Most of the GM plants in the market today are changed at the production level, usually to make them resistant to pests and herbicides.

The good news is very few GM crops are grown in Australia. The bad news is, the sale of GM food products grown in other countries is permitted in Australia, many of which can be found on Australian supermarket shelves in processed food products.

Genetically modified food has been positioned to the West as a potential solution to world hunger. The important part to note about world hunger is that it's not because there's not enough *food*; it's that many in poverty-stricken countries are too poor to afford the food available or in times of war when people don't have the means to import food into the city or are blocked from doing so. Genetically modified (GM) food doesn't solve this.

GM soybean was genetically modified to resist herbicides. This means farmers can kill weeds without killing crops. This also means the crop is left with a much higher residue of herbicide, not to mention the environmental impact.

An estimated 94 per cent of all soybeans grown in the US are genetically modified⁽⁷⁹⁾. Soy is the number one genetically modified crop in the world, with an 82 per cent adoption rate amongst farmers worldwide and a whopping 94 per cent adoption rate in the United States, according to Non-GMO Project, a North American non-profit organisation and market leader for GMO avoidance⁽⁸⁰⁾.

As for GMs presenting a problem on their own (without the residue pesticide), there is much debate, including their impact and role in creating new viruses and new allergies. As it relates to soy, you want to ensure it's GM-free and organic at the very least.

For more information on genetically modified foods in Australia, visit:

- *Gene Ethics: <https://www.geneethics.org/>*
- *GM Free Australia: <https://www.gmfreeaustralia.org.au/>*

For more information on genetically modified food in the US and Europe, visit: <https://www.responsibletechnology.org/>

I did a deep dive on the topic with Bob Phelps from Gene Ethics on my podcast. It's available from the Enterprise Fitness iTunes, SoundCloud or by visiting the resources page: www.enterprisediet.com/resources

5. GLYPHOSATE

Glyphosate, a herbicide more commonly known by the product name Roundup, was brought to market in 1974.

Monsanto, both an agrichemical and agricultural biotechnology corporation, engineered glyphosate-resistant, Roundup-ready soy crops that enabled farmers to kill weeds without killing crops. In other words, Monsanto genetically modified its soy crops to be resistant to their herbicide, glyphosate.

It would be genius... if it weren't harmful to the consumer and bad for the environment.

This did wonders for the sale of both Roundup and Monsanto's genetically modified crops. From this, a modern problem has emerged: glyphosate-resistant weeds. Much to the delight of Monsanto's shareholders, this led to an increase in the application of glyphosate-based herbicides by approximately 100-fold⁽⁸¹⁾!

THE BACKGROUND ON GLYPHOSATE

The first thing I should point out is that regulatory bodies have disagreed about the potential harm of glyphosate. Why? Because of the multi-million-dollar implications, politics and lawsuits slowing down any firm conclusion. While some regulatory bodies have more than enough evidence, others need to dot their i's and cross their t's.

Monsanto has been known to make powerful political plays that work in its favour. One outstanding example was the revolving employment of Michael Taylor, who circled between government agency and Monsanto. An example of a fox guarding the henhouse if ever you saw one⁽⁸²⁾.

The International Agency for Research on Cancer (IARC, a division of the World Health Organisation, WHO) in March 2015 labelled glyphosate a group 2a carcinogen: "*a substance that probably causes cancer in people*".

The IARC's conclusion was not confirmed by the European Union's assessment. This was due to the use of different data sets, particularly on long-term exposure and differences in the evaluation of evidence⁽⁸³⁾.

However, now several countries have banned or restricted the use and sale of glyphosate, including countries within the European Union.

The IARC's conclusion helped to lift the lid on misleading science from Monsanto. In 2018, a landmark trial in California ordered Monsanto to pay out \$289 million in damages to a groundskeeper who determined it was

the Roundup that caused his non-Hodgkin lymphoma⁽⁸⁴⁾ ⁽⁸⁵⁾ ⁽⁸⁶⁾. The jury determined that Monsanto “acted with malice or oppression”.

Notably, the case exposed secret, internal Monsanto documents proving that Monsanto had known for decades that Roundup/glyphosate could cause cancer.

Internal emails from Monsanto’s executives were used as evidence to show how the company repeatedly ignored expert warnings, sought and paid for favourable scientific analyses and helped ghostwrite research to encourage continued use.

Shortly after, Bayer, now the Roundup manufacturer, was ordered to pay \$2.9 billion in damages to a couple in California who claimed they got cancer as a result of using Roundup for 30 years⁽⁸⁷⁾. Australia took notice of the US court hearing, with eight Sydney councils banning Roundup due to the cancer link⁽⁸⁸⁾⁽⁸⁹⁾.

HOW GLYPHOSATE IS A PROBLEM

Glyphosate blocks what’s known as the shikimate pathway in plants and bacteria. Humans do not have a shikimate pathway; hence this is the premise and reasoning that glyphosate is safe.

However – and this is a big “however” – we humans have millions of bacteria inside our gut. In fact, we have ten times more bacteria than we have human cells, and guess what? Those bacteria do have the shikimate pathway. This is the suggested mechanism of how glyphosate affects human health.

The shikimate pathway is essential for the creation of amino acids. As glyphosate blocks the pathway, this is the mechanism of how it’s effective against weeds and also why crops sprayed need to be genetically modified to resist glyphosate.

As you may have noted from the section on gluten, your gut and immune system are interconnected. When you start killing off good bacteria in your gut, it has a flow-on effect on your immune system, making it weaker.

This is one of the mechanisms that is included in theories as to why glyphosate has been linked to numerous types of cancers⁽⁹⁰⁾, autoimmune diseases⁽⁹¹⁾, kidney diseases and liver issues⁽⁹²⁾ and is suspected of being an endocrine disruptor⁽⁹³⁾.

It's nasty on every level, from health to environmental impact. Glyphosate alone should make you rethink the amount of tofu you eat.

6. INDUSTRIAL FARMING AND ENVIRONMENTAL IMPACTS

The soy available for consumption in the modern world is grown as a monocrop. A monocrop is a singular crop, grown on a farm with the assistance of human technologies. The industrial farm depletes the soil and takes a toll on the land, the animals that occupy the land and the environment. As such, fertilisers derived from fossil fuels, such as NPK (nitrogen, phosphate and potassium) are needed to keep the soil fertile. It's been estimated that this process can cost ten calories of fossil fuels to produce one calorie of food; and ten times more when you factor in international transport and shipping.

To put this into a useable and comparable context, Michael Pollan, author of *The Omnivore's Dilemma*, explains it as four food chain categories:

- Industrial farming
- Organic industrial farming
- Pastoral, local farms
- Hunter-gatherer (food we hunt or gather ourselves)

For most, aside from maybe a small veggie patch and maybe a hunting or fishing trip once or twice a year, foods we hunt and gather ourselves are probably not a regular menu item, nor a viable one.

This leaves us with three options. If you're concerned about the quality of food you're consuming and its impact on the environment, you should source food from a pastoral, local farm in your area of service. The celebrity for this type of farm is Joel Salatin, who has written many books on the topic. The criticism of this type of farming is usually summarised as "*not everyone can do it*" – which is a silly argument. Of course not everyone will do it; it's simply how you, as an individual, can support sustainable, local, nutritious food that's good for you and the environment. The other argument is price.

In short, buy what you can afford, and where possible make better choices – and if you are in a position where you can afford quality, consider that there are always two price components of food: the one you pay upfront and the one you pay later. The one you pay later comprises taxes, government subsidies, health implications, the mistreatment of livestock and the disregard for the environment. While a monocrop farm doesn't directly slaughter animals, it wipes out billions of insects, bugs and other small rodents, while polluting the environment with chemicals derived from a depleting pool of fossil fuels.

In summary, this point isn't about how soy is going to make you unhealthy, pack on pounds or make you cry in the shower due to phytoestrogens. It's about understanding the environmental impacts and becoming aware of a sustainable food network that is probably already available to you. Where possible, buy food from a pastoral, local farm in harmony with the land.

For more on this topic, I suggest you check out Michael Pollan's book, *The Omnivore's Dilemma*.

SOY SUMMARY:

- Soy is naturally high in phytoestrogens. Limit intake and avoid food substitutes using soy flour or soy protein for this reason.
- If you regularly consume soy and soy substitute food products as a replacement for animal proteins and carbohydrates, phytates may present a problem. If you're only consuming soy here and there, it's unlikely phytates will do you any harm.

- Organic or non-organic, the soy crop is subject to mould and other diseases, which the farmer has to manage. This is usually done with the use of herbicides, pesticides and other chemicals.
- Over 80% of the world's soy crop is genetically modified, with that number only set to grow.
- Glyphosate is a water-based herbicide; as such, it can run into and pollute waterways and surrounding areas.
- Glyphosate is commonly sprayed on soy crops, and the jury is in; glyphosate has been linked to certain types of cancers.
- Soy is farmed as a monocrop; it's hugely costly to the environment.
- The majority of soy is fed to animals. This is not their natural diet and affects the quality of our meat and the animal's health.
- Soy is neither eco-friendly nor self-sustaining. Once the soy crop is harvested, fossil fuels are used in the form of the fertiliser NPK and the cycle repeats.

SIMPLE ACTIONS:

1. Eliminate or reduce soy intake.
2. If you opt to reduce your intake, ensure it's organic and non-GM soy.
3. Consume small amounts – regardless of being organic, it still contains plant oestrogens.
4. Eliminate pseudo or soy-replacement products like soy milk, yogurt, cheese or meats.

HYDROGENATED AND PARTIALLY HYDROGENATED OILS

Hydrogenated and partially hydrogenated oils are insidious. Found in the overwhelming majority of prepackaged and fast foods, these highly versatile oils extend shelf life and are inexpensive to produce⁽⁹⁴⁾. Despite the food industry's big-budget marketing campaigns that ran over decades to position these oils as 'healthy' or 'healthier than', these oils remain cheap, nasty and something to be eliminated or minimised in the pursuit of optimal health and body composition.

Partially hydrogenated and hydrogenated oils include:

- Vegetable oils
- Canola oil
- Crisco (crystallised cottonseed oils)
- Soybean oil
- Shortening
- Margarine

To understand hydrogenated oil, we need to delve into its origin story and look at how chemical advancements shaped fat and cooking.

Before 1909, the world had never seen a 'hydrogenated oil'. In fact, lard, butter and tallow were all the rage and even used for candles and soaps.

The company that changed all that was Procter & Gamble (P&G).

The company, founded in 1837, has quite an enchanting backstory. Two men, William Procter and James Gamble, met serendipitously by marrying sisters. Procter, an established candle maker, and Gamble, a soap maker, found themselves competing for the same raw materials, lard and beef tallow.

The hydrogenation process was unknown to Procter & Gamble until 1907, when Edwin Kayser, a chemist for the company that owned the rights to the process of hydrogenating oil, approached the duo with a revolutionary idea... *Why not use hydrogenated oils to make candles and soaps?*

What they created was equivalent to turning fat into gold, and by 1908, P&G owned eight cottonseed mills where they extracted fat on demand and turned it into soaps and candles.

But business wasn't all sunshine and roses, despite stumbling upon fatty alchemy. After P&G invested heavily into hydrogenation, there was a potential business threat looming in plain sight: the light bulb becoming affordable to the commoner. Even though it would be a few years until the whole country would embrace the light switch, candle sales were already plummeting. The duo knew that if they wanted to thrive, they needed to do something outlandish. They needed to enter the kitchen.

And in 1911, Crisco made its debut, selling 2.5 million pounds of the product within 12 months. By 1916, they had sold sixty million pounds of Crisco⁽⁹⁵⁾. The name Crisco is short for crystallised cotton oil.

So how did Procter & Gamble turn cottonseed oil, an agricultural waste, into Crisco, a product passionately loved and considered healthy?

It was a mixture of perfect timing, great marketing and numerous endorsements by sponsored and misled (or perhaps purposely ignorant) governing bodies.

FATTY TERMINOLOGY

Saturated fat, monounsaturated fat, polyunsaturated fat and trans-fat are terms that get thrown around and are usually labelled either 'good' or 'bad'. I find this approach too simplistic as most foods contain a mixture of fats but are higher in one or the other.

Vegetable oils are higher in polyunsaturated fat, the fat most government health authorities label as 'good'. Rather than looking at this from a chemical/lipid breakdown perspective, it's far easier to identify the foods to replace and reduce.

Here's a no-fluff summary of fatty terms:

- **Monounsaturated fat:** A fat found mostly in plants. Think olive oil. Liquid at room temperature.
- **Saturated fat:** A very stable cooking fat. Think butter. Solid at room temperature.
- **Polyunsaturated fat:** Found in both foods from nature and in high amounts from hydrogenated, human-made oils. Usually liquid at room temperature. (Exceptions include margarine.)

Don't think of polyunsaturated fat as good or bad. Think about the food source it comes from. Most fat sources contain a mixture of all three. Look at how you're consuming your fats and what foods you're actually eating, rather than prioritising one type of fat over another.

- **Trans fats:** Universally regarded as the 'bad' fat to eliminate or greatly reduce. They can be found in seed and vegetable-made oils, but due to labelling laws, most consumers are unaware of trans fat content. Trans fat can also be found in some animal products in traceable and insignificant amounts.
- **Cholesterol:** Needed to make hormones. Total cholesterol was incorrectly blamed for heart disease. Particle size and particle number, along with triglycerides, homocysteine, insulin and fasted blood glucose, are far better blood markers for predicting heart disease.
- **Hydrogenated oil:** The chemical process of saturating a fat with hydrogen to make it more stable. These oils and fats are not healthy.
- **Partially hydrogenated oil:** The chemical process of partially saturating a fat with hydrogen to make it more stable. These oils and fats are not healthy. (In fact, partially hydrogenated oils are worse than hydrogenated oil.)

- **Vegetable oils:** Vegetable oils are seed oils. Examples include canola oil, Crisco, soybean oil, shortening and margarine.
- **Fruit and nut oils:** Most of these oils have health benefits. Examples include coconut oil, olive oil, avocado oil, macadamia oil.

SATURATED FAT, HYDROGENATED OILS AND CHOLESTEROL

Before I begin to unpack what's wrong with hydrogenated oils, we need to have a quick discussion on the demonisation of saturated fat along with cholesterol. Both were pivotal in the wide acceptance of polyunsaturated fats, hydrogenated oils and partially hydrogenated oils.

It started in the 1950s and '60s – the era that brought us orgies, acid, hippies and some wacky science to match.

Enter saturated fat.

Even cigarette smoking had a better reputation than egg yolks and pork chops at the time. It all started with the research of Ancel Keys.

In 1956, Keys took two hundred thousand dollars of taxpayers' money (equivalent to about \$2 million today) to investigate his hypothesis: that saturated fat causes high cholesterol, and high cholesterol causes cardiovascular disease⁽⁹⁶⁾.

Before beginning his landmark *Seven Countries Study*. See <https://www.sevencountriesstudy.com/about-the-study/investigators/ancel-keys/>, Keys collected data on 22 countries, many of which had no statistical correlation with cholesterol and heart disease. In the Seven Countries Study, Keys omitted the data he had collected from 15 of the other countries. No one knows with absolute certainty why he chose the countries he did, but one can speculate within reason that he chose those countries to best prove his hypothesis and to topple John Yudkin, his scientific adversary. Yudkin diametrically opposed Keys's hypothesis, connecting heart disease to sugar and high insulin, not saturated fat. Some say that Keys cherry-picked his own data to best match his hypothesis.

Keys's hypothesis on cardiovascular disease, supported by his expensive Seven Countries Study (riddled with scientific flaws), created a fire-pit that melted saturated fats' popularity and placed it in the depths of barbecue hell for decades to come. What took its place were low-cholesterol and hydrogenated fatty alternatives in all forms like canola oil, vegetable oil and margarine. His flawed study was hailed by experts as the leading science at the time. It opened the gates for the chemically fatty food demon to stomp its way into government and public health recommendations. All the while, hydrogenated and partially hydrogenated food manufacturers cashed in.

If Keys published the data collected from Israel, Austria, Switzerland, Germany, Netherlands and Norway, the opposite would have been found to be true, showing that a high-fat diet actually reduces heart disease⁽⁹⁷⁾.

Keys's work laid the foundation for the expansion of the *Lipid hypothesis* to the *Diet-heart hypothesis*. To simplify:

- **The Lipid hypothesis:** The hypothesis that high cholesterol in the blood causes heart disease.
- **The Diet-Heart hypothesis:** The hypothesis that high saturated fat intake causes high cholesterol in the blood, which causes heart disease.

The hypothesis laid aim to and demonised saturated fat. There is a hypocritical paradox of nutritionists today who tout not to demonise any one food or molecule, yet continue to endorse the message that saturated fat causes heart disease, despite the lack of evidence linking just one single variable.

Both hypotheses are woeful simplifications of a multi-faceted disease. Cholesterol and other lipids in the blood can cause heart disease without the presence of saturated fat. What we know for sure is that smoking⁽⁹⁸⁾, heavy drinking⁽⁹⁹⁾ and lack of physical activity⁽¹⁰⁰⁾ are all far better correlated to heart disease than 'total cholesterol', something that wasn't properly accounted for in the study⁽¹⁰¹⁾.

Keys's study outlined correlating factors. But correlation is not causation, particularly when the opposite is proven to be true. Another surprising correlation from Keys's work was that those with lower cholesterol had a greater risk of cancer mortality and those with higher cholesterol levels had lower death rates from all causes⁽¹⁰²⁾.

In other words, instead of the study's headline being 'Saturated fat is linked to heart disease', one could also equally tout that the study's conclusion was that 'low cholesterol increases your risk of dying from cancer'. But that side note never got the same public attention.

It's also worth mentioning that the study was conducted by looking at agricultural reports of how much food was available in a country, not a diet analysis of how people *actually* ate. The problems with studying food availability are:

1. It's not what people actually eat.
2. It makes no consideration for socioeconomic differences in eating behaviours within a country.
3. It correlates only generally to the wealth of a country. A country's general wealth affects factors and behaviours such as smoking, drinking, overeating and physical inactivity.

WHAT IS HYDROGENATION?

Hydrogenation is the process of making an unsaturated fat stable by saturating the fatty-acid carbon chain with hydrogen.

In simple terms, it means changing the behaviour of unsaturated fat to act more like saturated fat. Saturated fat is far more stable when exposed to heat and comes with a much higher oxidation point. This is why hydrogenated oils are used to extend the shelf life of many processed foods. I like to think of it as a pseudo-saturated fat.

Partial hydrogenation (PH) is much the same process; however, by only partially hydrogenating, far more trans fatty acids are left behind. As it relates to the outcome of fats being created, the main difference is that PH results in fats being semi-solid at room temperature and full hydrogenation makes oil solid at room temperature. This is why PH is often preferred by food manufacturers; PH makes things more spreadable and creamy (think margarine).

The consumer benefits of hydrogenated and partially hydrogenated products (margarine, vegetable oils, etc.) were built on misinformation from governing bodies and lies spun by big food corporations with clever marketing. It was the false demonisation of saturated fat that led to unsaturated fat taking favour. So instead of butter and lard, the ‘choice’ alternatives became hydrogenated margarine and vegetable oil. The irony of the situation is that hydrogenation makes an unsaturated fat act like a saturated fat; the very kind of fat that governing bodies demonised. The three clear advantages of hydrogenation and PH to food manufacturers are:

1. It protects against oxidation, thereby prolonging shelf life of food products.
2. It alters the texture of food products. From frozen pizzas and pies to coffee creamers and prepackaged cakes, hydrogenated and PH oils keep these food products soft and moist upon opening the packet.
3. They can be produced at scale, making them cheap and economical.

THE PROBLEMS WITH HYDROGENATED AND PARTIALLY HYDROGENATED (PH) OILS

Hydrogenated and partially hydrogenated are not terms to be used interchangeably. Partially hydrogenated is worse from a health standpoint. Don’t get me wrong; fully hydrogenated isn’t much better.

The main two problems with hydrogenated and PH oils are:

1. Trans fatty acids (trans fats, or TFAs)
2. High amounts of omega-6 (with the exception of canola)

PH oils are on everyone's hit list to eliminate; even the most conservative governing bodies have issued strong statements. In 2015, the American Food and Drug Administration (FDA) determined that 'partially hydrogenated oils' are 'not generally recognised as safe'⁽¹⁰⁴⁾. More notably, New York City issued a complete ban on all foods containing and manufactured with PH oils.

The reason for such a strong stance against partially hydrogenated oils is because they contain high amounts of trans fats, whereas fully or 'complete' hydrogenated oils contain less. Trans fats have been empirically linked to cardiovascular disease. They have also been declassified on the GRAS (Generally Recognised as Safe) list by the FDA; this means they are *not safe for human consumption*⁽¹⁰⁵⁾.

Food Standards Australia and New Zealand (FSANZ) are laxer on the issue, recognising that trans fats are an issue for our health; however, they concluded that "Australians obtain an average 0.5 per cent of their daily energy intake from TFAs and New Zealanders on average 0.6 per cent. This is well below the WHO recommendation of no more than 1 per cent. It is also below the levels in many other countries."⁽¹⁰⁶⁾.

More importantly, manufacturers within Australia and New Zealand are not required to declare TFAs on the label; however, they may do so voluntarily. The only exception to this is when manufacturers make nutritional claims about cholesterol, saturated fat, trans, polyunsaturated, monounsaturated, omega-3, -6 or -9 fatty acids⁽¹⁰⁷⁾.

In America, the FDA's rule on labelling trans fats states: "Trans fat content must be expressed as grams per serving to the nearest 0.5-gram increment below 5 grams and to the nearest gram above 5 grams. If a serving contains less than 0.5 grams, the content, when declared, must be expressed as "0 g"⁽¹⁰⁷⁾.

What this means is if a food has less than 0.5 grams of trans fat per recommended serve, food manufacturers can label trans fat as 0 or even make claims such as 'trans fat free'⁽¹⁰⁸⁾. The problem with that is few people

ever adhere to a recommended serve, particularly when the oils are being used in cooking or in a deep frier. Additionally, high heats make fats go rancid and create higher amounts of trans fats. So as soon as that oil hits the fryer, you can bet you're eating more TFAs than you bargained for.

This is also where canola oil becomes a problem. Canola contains omega-3, which is traditionally labelled as good. However, omega-3 can quickly oxidise into omega-6 when exposed to heat. This is why it's still relevant to include canola oil in the discussion of trans fats as it's commonly used as cooking oil, not as a cold press (like fish oil).

Before someone points out that trans fats are found in some meat and dairy products, they are found in *very* low amounts and have not shown to present the same issues as their chemically processed alternatives. Trans fats in vegetable oils and margarine present a two-fold issue. One, they already exist in the food product. Two, these food products are commonly used with high heat that cause the fat to oxidise and create even more trans fat.

In nutrition, one of the few things that everyone agrees on is: trans fats are bad for you.

TABLE OUTLINING TRANS FAT PERCENTAGES IN OILS:

Oil	Trans Fat Content (%)
Soybean	0.4 - 2.1%
Walnut	2.0 - 3.9%
Sunflower	1.1%
Canola*	1.9 - 3.6%
Olive	0.5%
PH Soybean oil**	43.6 - 50.2%

*Results of multiple samples of commercial oil

**Partially hydrogenated soybean oils for comparison

Reference: Harvard Health⁽¹⁰⁹⁾.

EVIDENCE ON TRANS FATTY ACIDS (TFA)

As it relates specifically to trans fat, here's what the research has linked them to:

- Associated increased risk of non-fatal acute myocardial infarction⁽¹¹²⁾.
- Breast cancer⁽¹¹³⁾.
- Inflammation and calcification of arterial cells – a known risk factor for coronary heart disease⁽¹¹⁴⁾.
- Decreases in trans fats linked to improvements in metabolic syndrome⁽¹¹⁵⁾.
- Coronary diseases, obesity and type 2 diabetes⁽¹¹⁶⁾.

This does not mean you should become obsessed with trans fat and try to eliminate *all* trans fat that occurs naturally in meat, dairy and nuts. Instead, it does mean you should limit junk foods and replace seed oils with healthier alternatives when cooking for yourself. (*See shopping list for optimal cooking fats.*)

Want more evidence on trans fatty acids and poly-unsaturated fatty acids? Visit The Enterprise Diet resources page: www.enterprisediet.com/resources

THE SECRET TO SPREADABLE HYDROGENATED OILS

It's clear: PH products contain high amounts of trans fat and omega-6, and even the FDA and New York City have called them out. But what about fully hydrogenated oils?

If they get frowned upon in the media, it's usually due to the saturated fat content, but it goes far deeper than just saturated fat. The processing, testing and eventual use of these oils leave a lot in question. PH is/was the preference for food manufacturers due to the spreadable, light and fluffy properties it gives the food product. But now that partial hydrogenation has lost favour with many governing bodies, and as the public move to healthier options, food manufacturers have turned to complete or full hydrogenation.

The problem with full hydrogenation is that the end product isn't so light and fluffy. So manufacturers came up with a solution to make full hydrogenation behave the same way as its 'partial' counterpart. That solution was *Interestesterification*.

Interestesterification is the process of moving one triglyceride molecule to another. In simple terms, a chemical catalyst is used to neutralise the fatty acids to act in a way that makes margarine spreadable and oils pourable, or what manufacturers refer to as 'light and fluffy'.

After interestesterification, the oil must be deodorised to get rid of any impurities from the interestesterification and chemical catalyst added. Without it, the oil would be inedible, because it would still contain the chemical catalyst (essentially poisonous) and because it wouldn't smell like food you would want to eat.

The deodorisation phase is the process in which a stripping agent, usually steam at approximately 200 degrees Celsius, is applied to the oil in a vacuum. Deodorisation creates a bland taste that is desirable for consumer and manufacturer use^(117, 118).

Here's where it gets interesting and equally messy. What makes oils and fats go rancid?

High heat.

It's also known that temperatures above 200 degrees Celsius cause the formation of trans fatty acids. For example, one study looked at soybean oil and trans fat, attributing the trans fats to the high heat in the deodorisation phase⁽¹¹⁹⁾. Another study on rapeseed oil showed that deodorised temperatures at 250 to 270 degrees Celsius significantly increased the percentage of trans fats compared to temperatures between 190 and 230 degrees⁽¹¹⁸⁾. Visit www.enterprisediet.com/resources for figures and photos from the study on deodorised temperatures and their impact on the formation of trans fats⁽¹¹⁸⁾:

Now let's turn to the second major issue with hydrogenated and PH oils: omega-6 to omega-3 ratios.

OMEGA-6

Omega-6 sounds like some sort of weird villain out of a Superhero movie.

Omega-6 is not inherently bad or good. It's the balance between omega-3 and omega-6 that's important. Omega-3 is an anti-inflammatory fatty acid, while omega-6 is pro-inflammatory. For day-to-day regular life, your body doesn't need high amounts of omega-6. But let's say you fall over, scrape your knee and a scab forms to allow healing; as part of that initial inflammation process, omega-6 is needed. Inflammation is a normal process in the body, as a mechanism to fight against things like infection, injuries and toxins in an attempt to heal and repair. What's important is getting the nutritional balance right between an inflammatory response versus an anti-inflammatory one.

Your diet should be higher in omega-3 than omega-6; an excess of omega-6 can lead to chronic inflammation.

A conservative suggested ratio of omega-6 to omega-3 is 4:1. The average person following a Western diet is up at around 15:1 or 16:1. For this reason, a Western diet can be considered deficient in omega-3 with an excess of omega-6. One particular study showed that a ratio of 4:1 has been associated with a 70 per cent decrease in total mortality⁽¹²⁰⁾. The same study also pointed out that depending on the chronic condition, stage of life or amount of physical training, ratios should be altered. For example, a ratio of 2:1 has been recommended for patients with rheumatoid arthritis.

On a personal note, I lean on the side of how hunter-gatherers ate; that is, between a 1:1 and a 2:1 ratio.

A diet high in omega-6 has been linked with various chronic inflammatory diseases⁽¹²¹⁾, including:

- Non-alcoholic fatty liver disease (NAFLA)
- Cardiovascular disease
- Obesity
- Inflammatory bowel disease
- Rheumatoid arthritis
- Alzheimer's disease.

More subtle and acute signs of inflammation are hardened body fat, puffiness and fluid retention.

After reading this list, you can see why supplementing with omega-3 fish oils has become so popular. Rather than popularising a supplement as a magical cure-all, I would push for reducing dietary intake of omega-6 sources and optimising dietary intake of omega-3 sources by including food sources like wild-caught salmon and grass-fed meat. Supplementing with fish oil can be beneficial, but one needs to keep in mind that popping a few fish-oil caps doesn't give you a licence to eat more omega-6.

OMEGA-6 IN OILS

Now we understand that too much omega-6 will create inflammation and has been linked to numerous diseases, and a diet higher in omega-3 (anti-inflammatory) is preferable, let's look at the ratios of omega-6 to omega-3 in hydrogenated and vegetable oils.

Oil	Omega-6 to Omega-3 Ratio
Grapeseed oil	696 : 1
Cottonseed oil	257.5 : 1
Corn oil	46.09 : 1
Rice bran oil	20.88 : 1
Soybean oil	7.51 : 1
Canola oil	2.08 : 1

*Ratios provided by MyFoodData www.myfooddata.com

Note: Margarine can vary greatly with many companies also 'adding' omega-3 to margarine to make ratios appear more favourable.

As you can see from the table above, with ratios like 696 to 1 or even 20.88 to 1, it's not hard to see why the average Western diet contains far too much omega-6 and why it's a huge problem.

An important note: the ratios above of omega-6 to -3 are before cooking. These ratios would be *considerably* higher if the oil were being used for cooking, particularly deep frying where temperatures can reach an average of 177 to 191 degrees Celsius.

Oils high in omega-3 should be consumed as a cold press. Heat denatures omega-3, oxidising and damaging it, making the oil go rancid.

In commercial use of hydrogenated and PH oils, whether it be that burger from your favourite fast-food outlet or the side of chips you ordered, it's reasonable to conclude that you are consuming more omega-6s than you bargained for as the average temperature of a deep fryer is 191 degrees Celsius. That's hot enough to denature the omega-3 and turn it into omega-6.

KEY POINTS ON TRANS FAT AND OMEGA-6:

- In the US, despite labels claiming 'trans fat free', the oils can still contain trans fat if under the 0.5g serving size.
- In Australia and New Zealand, companies do not need to label trans fats unless directly making claims.
- Heat oxidises omega-3 and converts it to omega-6.
- Most people are already consuming too much omega-6.
- High heat increases the omega-6 content of any hydrogenated or partially hydrogenated oil.
- Almost all fast food is cooked in hydrogenated or partially hydrogenated oil.
- Avoid regularly consuming hydrogenated or partially hydrogenated oil.

SO WHAT DO I COOK WITH? THE FATTY ALTERNATIVE

You might be thinking, “*If saturated fat is more stable to cook with, why not just eat and cook with natural saturated fats rather than relying on chemically processed oils that have been hydrogenated?*”

This needs to be answered in two parts:

1. As a consumer, and in your own cooking, this is a correct summation.

Using Saturated fats like butter, lard and coconut oil are far better options, both for flavour and for health.

2. For a food manufacturer, natural saturated fat options like butter, lard or coconut oil are expensive, spoil easily and are also far less versatile.

The shelf life certainly doesn't suit a global distribution model, particularly when considering how long food items sit in transport, and then on the supermarket shelf waiting to be purchased. For a global business, selling millions of products every year, it's simply not a viable option. These oils, while it may seem like I am demonising them from a health perspective, have given many foods an important shelf life to reach the masses.

The impressive and fresh-upon-opening quality of pre-packaged goods is an extraordinary feat in food technology. It just comes with a trade-off of being not so good for your health.

SO DO SATURATED FATS AND CHOLESTEROL HAVE A CORRELATION WITH HEART DISEASE?

To state it simply, yes there are correlations but they are certainly not the whole picture. If people drink, smoke, are physically inactive and consume mostly fast foods, eating more saturated fat is not going to help their situation.

Likewise, if you don't smoke, seldom drink, exercise regularly, eat a mostly hunted, fished, gathered and plucked diet and control calories, saturated fat is not only nothing to stress about, it can also be a beneficial source of nutrients, provided you select the right sources.

People often equate saturated fat with cholesterol and cholesterol is often believed to cause heart disease, leading the general public to avoid both.

Cholesterol is a crucial building block of hormones. Without it, many functions in the body would be severely compromised. Nowadays, cholesterol gets put into two categories: the ‘good’, high-density lipoprotein (HDL), and the ‘bad’, low-density lipoprotein (LDL) cholesterol. But HDL and LDL cholesterol are merely delivery mechanisms to and from the liver, akin to transporters in the body. It’s not as simple as saying one is good and one is bad.

When talking about LDL, HDL, high or low cholesterol, it also warrants reminding that the only objective measurement we have is blood testing, and when talking about blood work, one must consider the whole picture, not just a single blood marker.

Blood work, particularly as it relates to heart disease, has numerous indicative factors: Triglycerides, homocysteine, blood glucose, fasted insulin and C-Reactive Protein. The latest evidence strongly suggests that the most accurate way to identify if cholesterol is a problem for you is the particle number and particle size test. (Refer to Jonny Bowden’s *The Great Cholesterol Myth* for a comprehensive analysis of cholesterol and testing.)

As for saturated fat, in a large cohort study looking at numerous associations of saturated fat, the conclusion was “saturated fats are not associated with all cause mortality, cardiovascular disease, coronary heart disease, stroke, or type 2 diabetes”. What they did find was that “trans fats are associated with all cause mortality, total coronary heart disease (CHD) and CHD mortality”⁽¹²⁴⁾.

STABILITY OF FATS AND COOKING: A PRACTICAL GUIDE

The more saturated a fat is, the more stable it is when exposed to heat. All fats spoil when exposed to oxygen. Polyunsaturated fats spoil most readily, while monounsaturated fats are slightly less susceptible. Saturated fats are

the most resistant to oxidation and the least likely to become rancid⁽¹²⁵⁾, thus they are the best for cooking.

*Visit www.enterprisediet.com/resources for a chart comparing the saturated fat, monounsaturated fat, omega-3 and omega-6 contents from different oils and fat sources.

Sources of saturated fat like butter, coconut oil, beef tallow and lard have the highest saturated fat content, making them the most stable, least likely to oxidise and resistant to the formation of trans fatty acids while exposed to heat and cooking.

The hydrogenated and partially hydrogenated oils have the highest amounts of omega-6 for which, at most, we want to maintain a diet of 4 to 1 omega-6 to omega-3. The only vegetable oil that may look 'okay' is canola oil. Canola is still a hydrogenated oil, and carries all the problems discussed in this chapter, oxidising its omega-3 when exposed to heat.

Additionally, it offers no superior benefit other than shelf life when compared with olive oil or other saturated fats.

TAKE-HOME POINTS:

- Throw out all hydrogenated oils, partially hydrogenated oils and margarine. Replace them with organic butter from grass-fed cows, coconut oil, lard, beef tallow or chicken fat.
- Total cholesterol needs to be interpreted with other blood markers. Simply removing all saturated fat and eliminating cholesterol from your diet is not a silver bullet to curing heart disease.
- Heart disease is reported as being the leading cause of death worldwide (sometimes without justification) despite governments demonising saturated fat and linking it to heart disease.
- The championed alternatives, hydrogenated and PH oils, increase the risk factors of heart disease and cancer.

- The average diet today is too high in omega-6, the pro-inflammatory fat linked to numerous risk factors and diseases.
- The average diet does not contain enough omega-3. You need to make a conscious effort to reduce omega-6 in your diet and increase omega-3 consumption.
- Empirically, manufactured trans fats are unhealthy and linked to numerous diseases. Make every conscious effort to eliminate these from your diet, particularly if you are suffering from a disease or illness.
- Partially hydrogenated oils are no longer regarded as safe. As of January 2020, they are banned by the FDA in food production. Australian and New Zealand laws still allow the sale of PH oils.

To chew the fat some more, check out the resources page for links to my podcasts, graphs and other books for an even deeper dive into the world of cholesterol, oils and all things fat-related: www.enterprisediet.com/resources

ACTION POINTS

Here is a helpful list you can use when you're deciding which oils to use.

Eliminate, replace and/or reduce:

- All partially hydrogenated oils
- All hydrogenated oils
- Margarine and variations such as olive spreads
- All vegetable oils
- Soybean oil
- Canola oil
- Cottonseed oil
- Rapeseed oil
- Corn oil
- Rice bran oil

Use:

- Coconut oil
- Olive oil
- Butter
- Ghee
- Lard
- Duck fat
- Chicken fat
- Avocado oil
- Macadamia oil

This chapter has given you detailed information on gluten, industrial dairy, soy, and hydrogenated and partially hydrogenated oils. My hope is that you now have the information and tools to ask better questions about your health, which will guide you to better choices and better results. Nothing in this chapter should be taken as nutritional dogma. If you're able to get the results you desire and include the foods discussed in this chapter, more power to you.

COMING UP

In the next chapter you're about to discover the scientific advantages of using advanced supplementation and lab tests to bio-hack your way to better and faster results. More than a buzzword, biohacking can help you get precise with your results by understanding how your body works and how to support it from the inside out.

CHAPTER SEVEN

DON'T BLAME YOUR DOCTOR

In this chapter, we'll look at which lab tests to consider for health and performance and the supplements you can take to support the process.

Many health-conscious consumers head down to their local pharmacy or health food store hoping they can buy fat loss or muscle in a bottle. They ask questions like, “*If I take protein, will it make me too big?*” or “*Is creatine legal?*”

It's easy to buy fish oil on special for \$25 for 400 caps and think you're getting a great deal, and be confused as to why the practitioner supplements behind the counter cost three times more. Then you wonder why anyone would pay three times the amount for the same thing.

So why take supplements in the first place?

Firstly, you don't *need* to take supplements, just like you don't *need* the latest smartphone. Supplements, like smartphones, help make our busy lives more efficient. They are meant to fill nutrient voids that your regular diet doesn't cover – and just as I was about to finish that sentence, I can already hear someone say, “*Can't I get all I need from food?*”

In theory, you could, but I don't know anyone who does, myself included.

Getting all the nutrition you need for optimal performance requires careful nutritional planning as well as a food rotation schedule that takes calories into consideration. Most folks don't eat enough protein, let alone meet their micro-nutrient quotas for zinc, magnesium, vitamin D and other key vitamins, minerals and amino acids.

There is also dosage to consider. If I wanted to ingest one gram of vitamin C, I could do so easily with a supplement. If I were going to ingest one gram of vitamin C from oranges, I would need to eat 14 oranges or drink around 10 cups of orange juice⁽¹⁾. Likewise, when was the last time you ate or drank enough ashwagandha to feel its therapeutic effects?

Supplements have their place.

To navigate buying supplements, it's helpful to subdivide them into three main categories:

- Sport and performance supplements
- Health supplements
- Practitioner supplements

Note: Practitioner supplements include both sport and performance and health supplements. The difference is that practitioner supplements are manufactured with much stricter quality assurance testing. They undergo clinical trials to ensure they are safe and effective.

Sport and performance supplements are the most common type of supplements fitness aficionados consume. These products are stocked at health food stores and sport supplement retailers. The main products in this category are protein powders, pre-workout 'energy' formulas and fat burners. These include beneficial compounds like creatine and betalanine, but this category is notorious for bastardising, hype marketing and overpricing.

A good example of bastardising and overpricing is what this category did with the ever-so-humble creatine. The overwhelming body of research on creatine looks at creatine monohydrate. Slap ethyl ester on the end of creatine and all of a sudden you have a novel creatine, with limited research but another 30-40 per cent to pay at the checkout.

Sport performance supplements that are store-bought or heavily marketed online stand out with their sleek labels and endorsements from bodybuilders or fitness influencers. Aside from the protein powders, these supplements often carry patent-pending formulas of vitamins, minerals, herbs and amino acids, which make consumers think they're more special than they really are. More often than not, the patent-pending 'formulas' are a cheap marketing trick that combine inferior ingredients in inferior amounts.

Think of these as a shotgun approach to supplements. These supplements are usually titled with what they do or words that imply what they do, rather than what's in them. The fat burners and pre-workout formulas usually contain aggressive doses of stimulating compounds; caffeine, guarana, tyrosine and B vitamins amongst other things. For this reason, they can actually do more harm than good.

Health supplements cover a broad range of supplements; fish oil, multivitamins, specific vitamins, minerals, herbal formulas and amino acids. These supplements can be purchased from supermarkets or local health food stores.

This category of supplements greatly varies in quality. When you buy traditional health supplements, you're usually buying the right compound at poor quality and efficacy. This is why they're so much cheaper than practitioner supplements. Fish oil that comes from the polluted waters of China is going to be cheaper than the fish oil that comes from the pristine waters of Norway. Vitamins, minerals or amino acids in this category are typically found as oxide or carbonate, which are poorly absorbed in the body. This is the main reason we hear the line, '*Supplements lead to expensive urine*'.

Practitioner supplements emphasise quality and can include both sport and health supplements. The telltale sign of practitioner supplements is that they have restricted distribution by a doctor, naturopath, nutritionist, well-versed personal trainer or strength coach. These supplements are categorically the most expensive but also the most effective.

If these supplements are sold at your local health food store, they will be behind the counter, under lock and key and purchased under the recommendations of the staff. They don't have sexy names; usually, the wording on the label implies what the product contains, not what the product does. This is why you need a practitioner to decode what you would take and why. These supplements can bring tremendous benefits in the context of the right plan. The big difference with practitioner products is how they are formulated and/or where the active ingredient is sourced. Formulation and sourcing of ingredients affect price while dramatically increasing bioavailability and effectiveness.

To further demonstrate the difference between store-bought and practitioner-grade supplements, let's look at magnesium. If you buy magnesium from a local supermarket, likely the main compound will be magnesium oxide or carbonate because it's cheaper. You want magnesium to come as an amino acid chelate, orotate, glycerophosphate – or for it 'bound' to something (usually) ending in 'ate' (excluding carbonate). How it's 'bound' will greatly impact its effect on the body.

For example, magnesium glycinate will boost liver function and energy production whereas magnesium threonate will calm the nervous system and produce a bedtime effect. One you could take pre-workout, the other before bed, even though it's the same mineral. One study on magnesium concluded that bioavailability was not related to magnesium content, but rather how it was formulated⁽²⁾. In short, bioaccessibility matters more than how much of the ingredient you put in.

As you might have guessed, you should choose practitioner-range supplements wherever possible. Remember this saying: *Cheap supplements*

are expensive. If budget is an issue, you are better off buying fewer supplements, but higher in quality to ensure what you are taking is correctly formulated for bioavailability.

Practitioner companies include:

- Designs for Health
- Thorne
- Mediherb
- Orthoplex
- Poliquin

Please note the above is a shortlist of the common practitioner brands within Australia, not what's available globally (although most of these brands are available globally).

The best way to get access to these supplements is to consult with a qualified practitioner, which helps ensure you get the right supplements and protocol.

SUPPLEMENTING OUR PHYSIOLOGY

You might be familiar with the term 'biohacking'.

Biohacking is an easy soundbite but it is not at all accurate.

The term was first coined in the late 1980s and then grew in popularity from 2008. It refers to hacking our physiology, commonly with supplements, to accomplish better health and performance. But the term 'hack' is often one that implies crude force. What I'm going to share has nothing to do with crude force, but rather, absolute precision. The idea here isn't to hack your biology but to support it with exactly what it needs to be optimal.

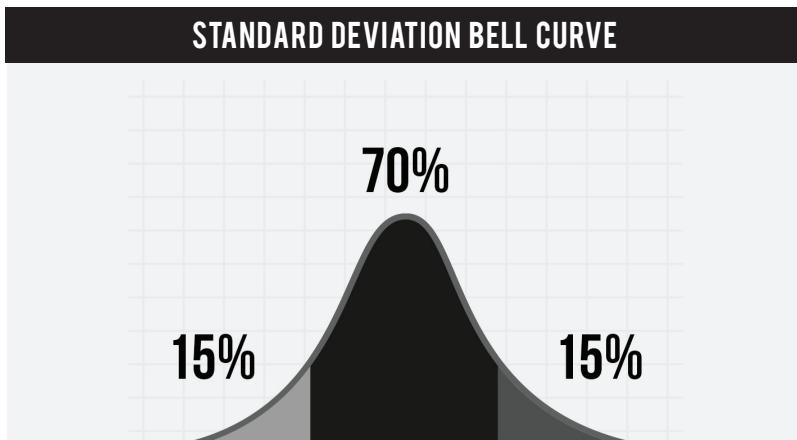
Think of it as a sniper shot compared to a shotgun when trying to hit a precise target. A sniper uses one bullet and can hit its target from a considerable distance effectively. A shotgun sprays its bullets and has to be used at close range. For this reason, the shotgun is not very effective for a precise target. It can often do more harm than good when precision is needed.

To truly 'hack' your physiology, you first need schematics on how your body works and the processes that need support. The problem is that everyone's physiology works slightly differently. It's not as simple as everyone should take 'X' compound in 'Y' dose.

Take for example methylation, a process that happens in our cells billions of times per second and is crucial to both physical and mental health. The difference between people who are undermethylators and those who are overmethylators is significant. Give an overmethylator methylenetetrahydrofolate reductase (MTHFR) and watch them become anxious or even paranoid. Give an undermethylator the same compound in the right dose, watch their brain fog begin to clear and their mood (among other functions) be transformed. Overdose the undermethylator on MTHFR, and you're back to square one. Physiology works on a continuum, not an absolute. More is not better, particularly as it relates to supplements and our physiology.

Enter the bell curve, formally referred to as a standard deviation.

A standard deviation graph shows that approximately 15 per cent of the population will be non-responsive to intervention, 15 per cent will be super responsive and 70 per cent will have a response somewhere in-between, known as the mean. General discussions or recommendations about supplements are always referring to the 70 per cent. But applying standard deviation, there are two groups of 15 per cent of the population who will have an inverse response to the supplement or intervention.



WELCOME TO ADVANCED SUPPLEMENTATION

When you're figuring out what supplements to take, the two pressing questions are:

1. What are you trying to achieve?
2. What are the deficiencies in your physiology?

To answer the second question, you need labs, which will guide how you best achieve the answer to question one.

Results-focused supplementation and lab testing are married. By gathering lab results, we are ascertaining the 'schematics' of an individual. This informs the starting point and gives a snapshot of the health of the individual. It numerically and objectively identifies health deficiencies and surpluses, which allows us to assess and measure the effectiveness of a lifestyle and supplementation protocol and its impact on overall health.

In simple terms, if you want to know what supplements you should take, the most advanced answer will begin with sending you off for lab work to identify your physiology shortfalls and surpluses. Friend and foreword

contributor, Dan Garner, explains this as looking for the constraint on our physiology and removing it to enhance health and performance.

That's not to say you shouldn't take generally beneficial supplements like fish oil and magnesium without labs. It's just that if you want supplement precision, you need to look under the hood of your physiology.

There are many lab tests you can take: blood, stool, saliva, food sensitivity, environmental pollutants, genetic and metabolic tests are just a few. I have no doubt the number of tests available will continue to increase as medical breakthroughs are made. Regardless, no matter how advanced lab tests become, it's helpful to keep two factors front of mind:

1. Getting the right test for the right information
2. Having the results correctly interpreted

For example, a comprehensive blood test gives an overall indication of health and possible pitfalls but fails to give in-depth and specific insight into the inner workings of your gut. To diagnose and gain a proper understanding of the parasites or bacteria that live inside the gut, and in what ratios, you need a stool test.

Likewise, you can have all the right tests, but if you use standard reference ranges that diagnose disease, you will miss the subtleties to improve, optimise or, in some cases, entirely avoid future health issues.

DON'T BLAME YOUR DOCTOR

You might think because you got a blood test from your GP and nothing was diagnosed, or because you fall within the reference range, you can put a full stop on your health.

The truth is most lab reference ranges are based on population and assessment averages, and the average person who gets a test is sick. In other words, most people only get labs done when there's a red flag.

Furthermore, the average Westerner is overweight and unhealthy. To paraphrase the late and great Charles Poliquin, lab reference ranges are based on 'Homer Simpson health'.

The reference ranges on lab tests are to diagnose diseases, not to chase optimal health – and from a public health perspective, that's a good thing. Public health is set up to manage the needs of the sick and clinically diagnosed conditions, not for the healthy who want to perform at their peak. Those chasing above-average health can get all the right tests, but shouldn't expect the doctor to assess their lab work from a perspective of 'optimal'. Doctors have waiting rooms full of sick and injured people who require urgent medical attention. That's also why reference ranges are set up the way they are, to diagnose illness and disease without a shadow of doubt. Can you imagine the strain it would put on public health if every gym junkie saw their doctor because they wanted to optimise their testosterone and burn fat faster?

I don't believe it's the job of public health to focus on peak performance, and unlike many natural health and fitness zealots, I remain extremely empathetic to the amazing work doctors (and nurses) do daily with the waiting rooms of the actual sick. In short, if you want to optimise your health, you can understand why it's a personal expense, not a public health deduction.

However, this is also where there is a gaping hole concerning preventative care.

Many diseases and illnesses don't just 'happen' overnight; rather, there has been a medical history trending towards it for years, if not decades. For example, diabetes type 2 doesn't just 'happen'. It's usually preceded by years of high blood sugar, something that can be prevented by adjusting lifestyle and diet. The official diagnosis of diabetes will come only when blood markers reach the threshold of 7 mmol/L but it will have been a long time coming.

Another example is thyroid disease. The standard test GPs will run to ascertain thyroid function looks at total thyroid-stimulating hormone (TSH). But TSH is a poor marker of thyroid health because it doesn't tell us much about how the thyroid is actually functioning. To make matters worse, the reference range for TSH of 0.5 to 5.0 mIU/L. 0.5 to 5 mIU/L is like me saying the average body fat for a female is 5 per cent to 30 per cent. If you're 5 per cent, you're probably about to compete in a bodybuilding competition; if you're 30 per cent, you're morbidly obese. Thyroid dysfunction can be picked up much earlier if the assessment for TSH used had a tighter reference range and included thyroid antibody tests T3, T4 and reverse T3. This is not to say all diseases can be prevented, but with the right labs, and the right interpretation, you will have the best fighting chance.

Reference ranges change in response to managing public health. Take vitamin D. I remember getting back lab results in 2011 and the reference ranges for vitamin D being 80 to 120 IUs. Today, if your doctor will even run a vitamin D test, so long as you are over 50 IUs, you're not going to be classified as deficient in vitamin D. The reference range has nothing to do with optimal or proactive indicators of morbidity and is well below par.

The reason why doctors will hesitate to order a vitamin D test is because of Medicare regulations, and Medicare auditing doctors on why they are spending taxpayer dollars on a test for someone who clearly isn't unwell.

So while a proactive approach is often encouraged, most only take notice when something's been clinically diagnosed. As it relates to labs, the question then focuses on how to best interpret lab reference ranges to manage public health.

The uncomfortable truth is that the majority of people are comfortable with subclinical health and will do something about it only when it gets *bad enough*. Furthermore, many would rather take a pill to band-aid the issue than change their lifestyle. The mainstream medical system is there to serve ill health, not optimal health. But this isn't a reason for health seekers to fret or become disenfranchised.

Health and physiology exist on a continuum. By being proactive about your health, you can shift which side of the continuum you play on.

USING LABS

First, it's vital to note that I am talking about these tests specifically through the lens of those seeking optimal health, not those with disease, illness or sickness. Nothing here is meant to be used as a self-diagnosis tool. Rather, I'm aiming to point you in the right direction and equip you with better questions to ask your doctor and/or health care practitioner. This is not health or medical advice and I would like to point out that I deal only in the realm of body composition and performance, not disease or treatments.

With that out of the way, let's talk about the labs and tests I have found to be helpful.

BLOOD TESTS

Generally speaking, for an overall indication of health, you should start with a full blood count (FBC), electrolyte and liver function (ELFT), and a TSH (thyroid), iron and ferritin, which are all blood tests.

Other more proactive tests like vitamin D, full hormone panels, red blood cell magnesium, red blood cell zinc and metabolic function tests likely won't be covered by Medicare and will be an out-of-pocket expense. Your medical history, presenting symptoms (and perhaps bank balance) will determine how necessary further tests are.

A combination of tests will give you a helicopter view and a snapshot of your health. I can't stress the point enough: these tests aren't on their own 'valuable' for chasing better health. Rather, it's the interpretation of them by a practitioner who uses tighter reference ranges. I've heard too many clients say, "*I went to my doctor, and they said everything is fine,*" when under functional analysis, there are deficiencies and systems that can be supported with both nutritional and supplemental interventions.

Below is a summary of the most common functional lab tests:

FULL BLOOD COUNT (FBC)

An FBC is sometimes referred to as a complete blood count (CBC). It's a snapshot of what's happening with your red and white blood cells. This reflects things like the health of your immune system, B12 and/or folate deficiency, thyroid imbalances, dysbiosis and decreased oxygen (O_2) availability. Specific markers on an FBC will be used to diagnose diseases such as anaemia.

For those chasing optimal health, FBC can indicate inflammation, dehydration, hypochlorhydria (low gastric acid) and suppressed or overactive immune function.

For hard-training athletes, white blood cell count (WBC) is always of particular interest as it indicates overall immune health, adrenal regulation and inflammation. An increased white blood cell count implicates acute, localised and/or general bacterial infections. A low white blood cell count usually occurs when an infection or disease process is chronic or has been present for a long period. Examples can include autoimmune diseases such as rheumatoid arthritis, parathyroid imbalances, food allergies or intestinal parasites.

I like to have insight on these markers when working with high-performing athletes as it gives feedback on how well they are tolerating training volume and recovering, as well as any other health issues that could be limiting optimal results.

Note: It is quite normal after having an intense training session for blood markers such as neutrophils and leukocytes, and liver function tests to be elevated as it's a breakdown of tissue and skeletal muscle. Beware when you do the test that it's not directly after a workout.

To determine what's what, these markers must be interpreted in conjunction with other functional tests for blood pathology.

ELECTROLYTE AND LIVER FUNCTION TEST (ELFT)

An ELFT will show electrolytes, potassium and sodium, which are reflections of nerve conduction, muscle weakness and fatigue, mental acuity and hydration.

Potassium, along with sodium, plays a role in your kidneys' regulation of pH and is greatly influenced by the hormone aldosterone, which is regulated by the adrenal glands. Chloride levels and carbon dioxide are necessary for assessing acid-base regulation and lactic acid build-up; hence, they can be useful to monitor in hard-training individuals.

A liver function panel can also provide information on digestive dysfunction, hormone transport, oxidative stress, immune activity and parathyroid function. If liver enzymes are high, it can indicate numerous other areas of investigation including obesity, thyroid imbalances, recreational drugs, excessive alcohol consumption and prolonged medication.

An electrolyte and liver function panel becomes particularly useful with athletes and gym junkies to assess whether they are overtraining and if they require electrolytes or further central nervous system support.

Other blood panels useful for testing for athletes concerned with body composition are:

Red blood cell magnesium: For assessing optimal magnesium status. Magnesium is involved in numerous functions including blood glucose regulation, nervous system, testosterone production and muscle spasms.

Red blood cell zinc: For assessing optimal zinc status. Zinc is involved in immune health, blood glucose regulation, androgen aromatase and gastrointestinal health.

Note: Serum magnesium and zinc are what are commonly tested. Serum magnesium and zinc will not dramatically change when functionally deficient in the mineral.

STOOL TEST

A stool test is going to tell you specifically what's going on inside your gut. Basically, you send a sample of your poo to a lab and the lab tests it by trying to grow different bacteria and cultures. This test uncovers overgrowths in bacteria, parasites and gut dysbiosis. If you have ongoing or chronic gut issues, at some point you will most likely encounter this test.

Before starting any gut protocols, this is an important test to take as it guides and directs the best approach forwards. Not all bacteria and parasites respond to the same treatment. You may have a bacteria that is resistant to a certain 'usually beneficial' compound. Likewise, prebiotics, which under normal circumstances are helpful, may cause certain bacteria to flourish. This is why it's important to test and know exactly what you're trying to manage or eliminate.

ORGANIC ACID TEST

This test tells you how well your metabolic pathways are functioning and gives insight into specific vitamins, amino acids or minerals used in energy production. It is often run when people are feeling sluggish or tired all the time. It can also give insight into gut function.

I like this test because it gives data on which vitamins, minerals and amino acids could support your specific metabolic pathways. If someone is taking a lot of supplements, this is a good test to narrow down what's actually working, and what's overstimulating or harmful.

ENVIRONMENTAL POLLUTANTS TEST

Before I explain this test, it warrants explaining why it would be necessary.

If you live in any major city or use modern personal care products, it's likely you're getting exposed to a multitude of chemicals that don't belong in your body. From phthalates to parabens, for most, exposure

to environmental pollutants is unavoidable. But you can be proactive in avoiding excess exposure with little effort.

Environmental pollutants that accumulate in the body can slow down metabolic processes or create ill health. The previous chapter's example I gave was mercury, which can result in brain damage if accumulated in the brain, leading to changes in personality, loss of sensation and difficulties with memory⁽³⁾.

Unlike mercury and other heavy metals that are an obvious problem and clear to distinguish, many pesticides and environmental toxins fly under the radar as they are classified as xenoestrogens, which is a fancy way of saying 'pretend' or 'fake' oestrogen.

Xenoestrogens have the ability to sit on top of oestrogen receptor sites and interfere with the body's natural signalling of hormones, from lowering testosterone to interfering with the menstrual cycle. They go unnoticed as oestrogens are found in the body and ascertaining what excess oestrogen is from environmental pollutants isn't obvious. The only way of knowing if your body is burdened by an environmental chemical soup is to run an environmental pollutants test.

Sources of environmental pollutants vary from pesticides (non-organic food), personal care products (such as make-up, lotions and perfumes), industrial and atmospheric pollutants to plastic water bottles and containers.

Pesticides are a common source of environmental oestrogens as they are sprayed on the majority of non-organic foods and food products. Most consumers remain unaware of what's sprayed on their food and the potential consequences as there are currently no food labelling laws that educate the average consumer.

Further to that, it isn't widely accepted that environmental pollutants

are endocrine-disrupting or problematic as it's the dose that makes something toxic, like in the example of heavy metals. For endocrine-disrupting chemicals, the dose is harder to define, as a small amount can interfere with optimal hormone function.

Many believe there is sufficient evidence to conclude that environmental pollutants and xenoestrogens have been contributing factors to the rapid decline in sperm count over the decades. The average sperm count fell from 113 million per millilitre in 1940 to 66 million in 1990. In addition, the definition of 'normal' sperm count fell from 60 million per millilitre to 20 million in the same period⁽⁴⁾. Today, the average sperm count is between 40 million and 300 million sperm per millilitre which is the medical equivalent of giving everyone a medal to boost self-esteem, regardless of how much you suck.

The poster child of environmental pollutants is bisphenol A (BPA). Developed in the 1960s, it was found to mimic oestrogen. Further development led to it being added to plastics to make them shatterproof. BPA can leach from the plastic container into the food or liquid it contains, particularly with changes in temperatures to the container. Marketing has pushed the sale of BPA-free containers, despite most not really understanding what BPA is.

However, BPA-free doesn't mean what most think it does. Unless you're buying steel, ceramic or glass, it simply means you're using another plastic or compound that hasn't been tested, and in some cases, contains more oestrogen than BPA⁽⁵⁾.

The question is not will you be exposed to environmental toxins and pollutants: living in any major city, you most certainly will. It's more about how well your body does at detoxifying and eliminating them.

Before taking this test, I recommend being proactive and doing a survey of personal care products (make-up, deodorants, shampoos, etc.) and diet, particularly as it relates to how you store and heat your food.

Choosing organic foods will help minimise pesticide intake.

The best way to review your personal care products is by searching them on the Skin Deep database by the Environmental Working Group (EWG). Visit www.ewg.org/skindeep. This database has analysed 83,959 products and 2,397 different brands, and gives products a score of one to 10, with one being safe, and 10 being toxic and potentially harmful. If you want to reduce your exposure to environmental pollutants, changing your personal care products is a big step in the right direction. There's no point taking a bunch of supplements to detoxify phthalates if you're rubbing them all over your body every day.

Common environmental toxins in personal care products to be aware of are:

- Parabens
- Phthalates
- Dioxins
- Fragrance

As for food and liquid storage, use glass, ceramic or steel (not aluminium). Avoid BPA and BPA-free containers. Cut as many of the environmental pollutants at the source as you can.

GENETIC TESTING

I've spoken to many high-level functional medicine practitioners and it seems that this is the most requested yet least relevant test. This is because such a test often doesn't give them much in the form of usable data.

In short, it's not so much our genes per se, but how we express those genes.

For example, a genetic test might say you're a poor methylator (conversion of B6 to MTHFR) but it might not be a problem for you as your diet is adequate to support the process. Additionally, it doesn't necessarily mean you should run out and buy 5MTFR if you are a poor methylator either.

Functional tests like the organic acid tests give practical data about a client's present health status rather than the potential.

If you have a budget of \$500 for consults, supplements and testing, a genetic test is nice to have, but often there are other tests that give more practical and usable data.

Despite all this, genetic tests nowadays are heavily marketed and many of the genetic tests available have raised serious questions about the accuracy of data.

In summary, genetic tests are nice to have but not essential, particularly if budget is an issue.

HAIR MINERAL ANALYSIS TEST

A hair mineral analysis test is often used in conjunction with other tests to identify heavy metals like mercury, aluminium or lead. Hair mineral analysis gives an overview of mineral status. This is not a test normally taken for those seeking optimal health unless heavy metals are suspected.

A hair mineral test will indicate mineral status and deficiency. Hair, because it's slower to grow, is a reflection of 'reserves' or excess. Hair mineral needs to be interpreted in conjunction with other tests for a complete picture of health status.

For example, if your hair mineral indicates high heavy metal status but a urine test shows no metals and your blood tests show compromised liver function, that picture would indicate you have heavy metals and are not eliminating them. Likewise, if your hair mineral indicates heavy metals, your urine test shows metals and your blood test shows elevated liver function, it would indicate you have heavy metals, and your body is detoxifying them.

Note: The world of detoxifying metals is very complex and one that should be explored only with the help of a qualified expert.

THE FINAL WORD ON LABS

When you undergo this path, there will be three main expenses:

1. The labs

Payable to the lab. Some tests may be eligible for bulk billing if you have a doctor's referral. Proactive tests (like a genetic or organic acid test) or tests without a doctor's referral will be an out-of-pocket expense.

2. The consultation fee

This is not the same as the lab and test fees. You pay this for the practitioner to interpret the results and create your plan.

3. The supplements

The practitioner will recommend supplements to take. These will be purchased separately from the consultation and the lab results. The best place to purchase these is usually through the practitioner you consult with.

The other common question is, “*Will the practitioner or naturopath take my bloods or perform the test?*” The answer is almost always no.

If you want your tests to be bulk billed, you will need a referral letter from a doctor. Some doctors aren't open-minded to having their patients work with naturopaths or allied health professionals in interpreting blood work so they may question the request or simply deny it. Remember, doctors have Medicare to answer to and they can't be sending every fitness model complaining that they are not lean enough for tests.

NON-LAB TESTS AND TOOLS TO OPTIMISE PERFORMANCE AND RECOVERY

Along with getting your labs, there are simple tests and devices that can help offer insights into recovery and performance. Here are my go-to super-easy, simple tools to gain insights on recovery and performance.

OURA RING

I am not affiliated with Oura ring in any way other than being an avid user of their product.

The Oura ring has many features and gives an overall score of 'Readiness', 'Sleep' and 'Activity'. However, the three main indicators I use to help assess my performance and recovery are Resting Heart Rate (HR), Heart Rate Variability (HRV) and Body Temperature.

The overall scores are great features, but if you are like me and don't wear the ring all day every day, activity and recovery balance scores won't be tracked correctly, which can affect the overall scores. This is why I narrow my indicators and don't pay much attention to the aggregate scores.

Heart rate is the easiest of all to track and gain meaningful actions from. If your early morning resting heart rate is over 10 per cent of normal, it's an indicator that you haven't fully recovered from the previous day's workout and could do with a rest from your regular training. For example, if your normal/average early morning heart rate is 60, and you wake up at 66, that would indicate to either take the day off training or work out at a reduced volume. Of course, you could assess resting heart rate in numerous ways and devices – I just find Oura to be the easiest.

Heart rate variability is how much your heart beat varies between beats. I like to think of it as the variation of beats within the beats. The more variable it is, the better; you don't want a predictable heartbeat. This indicates overall recovery and how well-rested and recovered your autonomic nervous system (ANS) is. The ANS is your body's unconscious control system. It regulates things like respiratory rate, digestion and of course, heart rate. The ANS is the primary mechanism in control of the fight-or-flight response; hence, the more we are able to relax and recover, the better it functions and the less reactive to stress we are.

If your HRV is lower than normal, it usually indicates you're burning the candle at both ends.

Tracking your body temperature is particularly useful for early signs when you're sick or ill. The autonomic nervous system elevates body temperature during sickness. So if you think you're getting sick but are not quite sure, body temperature is an early marker to tell you to up your vitamin C and take a little rest.

BONUS!

For three more ways to track optimal performance and recovery, head to *The Enterprise Diet* resources page: www.enterprisediet.com/resources. There I'll explain how to use grip strength, blood pressure and the vertical jump test to gain insights on your recovery.

SUPPLEMENTS

In our day and age, supplements can be considered 'nutrition insurance'. Our topsoil has been depleted, which means the quality and nutrition content of our food is not all that it once was, regardless of how balanced your diet is. Combine that with the additional burden of toxicity each of us faces by living in populated cities; supplements can help fill the nutrient gaps and support our training and recovery.

To begin describing beneficial supplements, we have to identify the system and function we are trying to improve. Below is a broad list of categories, systems and functions supplements can support:

- General health
- Inflammation and blood sugar
- Joint pain
- Digestion
- Gut health
- Immune health
- Recovery
- Sports performance
- Sleep
- Stress
- Mood
- Concentration and focus
- Detoxification
- Anti-ageing/longevity
- Energy production
- Hormones

I would need to write another book to thoroughly address all the categories above. As this book is dedicated to giving you practical strategies for getting and staying in shape, the supplements discussed here are limited to those that are generally beneficial and used often.

BONUS RESOURCE:

My ‘go-to’ supplement guide by category

As the world of supplements is constantly evolving, and in fear of committing something to print that may become out of date or discontinued, I've compiled a list of my common go-to supplements by category (which we update regularly). Available at *The Enterprise Diet* resources page: www.enterprisediet.com/resources

With all the categories listed, you can quickly see how the allure of supplements can pile up. You might start with supplements for general health, then add sport/gym performance, then read something about gut health, or listen to a podcast about supplements to improve energy. With an increasingly busy modern life and accessibility of information, it's easy to go down the slippery slope of adding more and more supplements.

GENERAL PROTOCOLS

There are only so many supplements you can take and, no, that isn't a challenge.

Many health- and fitness- conscious folk document their supplementation with lists long enough to fill two shopping bags. Supplementing with a little of ‘everything’ is a shotgun approach and a telltale sign that something isn't working. Remember earlier how we discussed standard deviation and the bell curve?

When you supplement with *everything*, you're pushing the extreme end of that bell curve. Unfortunately, this is a common scenario, particularly for those who truly value their health. We're all taught that more is better, but *more* is often a step towards *worse*.

To combat the ever-growing number of supplements you could take, I like to keep supplement protocols under five in total unless instructed by a healthcare practitioner, who would be basing their protocol on blood works or labs.

Why five? Because five is still a lot and if you're investing in more than five supplements at a time, you're going to get far more bang for your buck from starting with labs.

Before we hop into general protocols, remember that the best supplements and supplement protocols on the planet will not fix you or provide magical cures. They only offer support and should be used in conjunction with lifestyle and nutrition modifications that support your health.

So what would a general protocol look like?

As a general starting point, the top three supplements I recommend are:

1. Electrolytes (KTS Solutions, Synerplex Electrolytes)
2. Protein power (if you are not consuming enough protein. See chapter five for more information)
3. Magnesium

ELECTROLYTES

Electrolytes are technically fluids that can conduct electricity. By that definition, many soft drinks qualify as electrolytes. Most of the heavily marketed electrolytes are poor conductors of electricity and contain copious amounts of sugar (which does not conduct electricity).

An electrolyte solution is usually made up of mineral salts like sodium, potassium, magnesium and phosphorus. The key here is the balance of these minerals. For example, too much sodium has been implicated in hypertension whereas too little can cause nausea, headaches or muscular weakness.

Today's modern diets deliver anywhere from 3,400 milligrams of sodium and 2,400 milligrams of potassium a day. Ideally, we should be getting 2,300 milligrams of sodium and 4,700 milligrams of potassium.

The ideal ratio of potassium to sodium should be 2:1. Most diets err on the side of sodium over potassium⁽⁶⁾. Keeping these minerals balanced is important as it optimises the body's electrical system, which is something not often considered, much less spoken about.

For anyone training hard (or eating a diet high in protein) the demands for sodium and potassium are going to be higher. Sodium is depleted when we sweat during a workout and potassium is used up intracellularly in muscle contractions.

A good electrolyte product should have a balance of a 2:1 ratio of potassium to sodium. It should also have a balance of bicarbonates, magnesium and phosphorus as well as be devoid of sugar and artificial sweeteners. Popular electrolyte products fall short on all accounts, being far higher in sodium than potassium and containing a considerable amount of sugar per serve.

If I were going to buy a store-bought electrolyte drink, I would opt for coconut water as it outperforms and has an average sodium content of 45 milligrams, plus 450 milligrams of potassium and 11 grams of sugar. With that said, coconut water is not in a balanced ratio and you would also need to allocate the carbs to your calories if it were something you were going to have as a staple part of your diet.

The electrolyte product that stands head and shoulders above all others is

the KTS Solutions, Synerplex Electrolytes, formulated by my friend and author of *Achieving Victory Over a Toxic World*, Mark Schauss. I've used this product both with clients and personally for over a decade. Synerplex has a 2:1 ratio of potassium to sodium and contains magnesium and phosphorus as well as bicarbonates. Bicarbonates have been shown to improve athletic performance and endurance. The suggested mechanism is that it buffers lactic acid buildup and decreases cramping, making it ideal to consume before and during workouts and training.

At time of writing, KTS Solutions, Synerplex Electrolytes is the only product I recommend or personally use.

PROTEIN POWDER

I almost don't classify protein powders as a 'supplement' as I look to them as more of a food substitute. However, when it comes to body composition, most folks don't consume enough protein to support their training and body composition goals; hence, it's hard to look past recommending a good-quality protein powder.

Most folks should shop for whey protein isolate (WPI). Whey protein concentrate (WPC) can be beneficial if you want your protein to be absorbed more slowly (say in extended mealtimes or during sleep) but can cause digestive distress for some due to higher lactose and milk proteins content.

As for vegan proteins like rice or pea, they are generally fine; however, I don't personally like the taste or texture.

Protein powders should not be viewed as meal replacements but as an effective way to bolster the protein content in your diet.

For more, see chapter five, where I discuss protein in depth.

MAGNESIUM

Magnesium has over 300 chemical functions in the body and is used widely. From being part of the Krebs cycle and energy production, contributing to bone health and muscle relaxation, to being involved in glucose metabolism and insulin sensitivity, magnesium is essential for anyone chasing optimal health.

The problem with being able to consume enough magnesium through diet is threefold:

1. Regular weight trainers and exercisers require more than the recommended daily intake of magnesium.
2. Typical diets don't achieve optimal magnesium intake.
3. Our modern environments and exposure to heavy metals deplete magnesium.

From a medical point of view, true magnesium deficiency is uncommon. However, this is because standard magnesium testing is serum magnesium, which does not reflect intracellular magnesium. A better test is red blood cell magnesium (RBC magnesium). This is why consideration can be made for subclinical and optimal dosing⁽⁶⁾.

To figure out magnesium intake, I use the formula taught by functional medicine practitioner and educator legend, James LaValle, of 0.10 milligrams times bodyweight in kilos. That means that if you weigh 60 kilos, you would take 600 milligrams of magnesium (not all at once!).

ROUNDING OFF YOUR PROTOCOL

The next two supplements you add to your general protocol will be based on what you're trying to support. I always look to supporting sleep and digestion above all else as they greatly affect your health, and you can make improvements with the right supplements.

Additionally, I recommend using supplement formulations, which are combinations of ingredients designed to enhance one another's effects. The other benefit of formulations is that they can have positive impacts on multiple systems and functions. For example, Designs for Health *Trigandha* is a combination of three Ashwagandha extracts that can impact sleep, mood, adrenal health and in turn energy. This would be a great supplement to add for someone who is stressed and wired.

BONUS RESOURCE:

Supplement protocols

Want to support your body with supplements but not ready to get labs? Check out the resources page for examples of supplement protocols I've put together using recommended practitioner-grade supplements:
www.enterprisediet.com/resources

There, you will also find links to where to order.

REMEMBER!

If you're not quite ready to reach out to a naturopath and start taking supplements, don't fret. The discussion in this chapter is not something you '*have to*' do, but rather a step towards optimising for those who are ready to leave no health and fitness stone unturned.

Yes, having labs helps guide the process towards creating a more optimal solution for your health and fitness needs. However, a lot can be achieved by optimising your diet choices and general supplementation.

If you're a complete newbie to the world of health and fitness, start training and improve your nutrition. Only then think about one supplement that could support your goals. Again, I like to start with supporting base functions like sleep and digestion or simply adding protein powder to help you reach your protein goals.

And if you are going to use supplements, remember to supplement smart!

ACTION STEPS

- Consider getting labs from your doctor and getting them interpreted by a naturopath or functional medicine practitioner who uses tighter reference ranges. My practitioner recommendations are Kristine Ottobre and Dan Garner. For Kristine, visit www.wellixa.com.au For Dan, visit www.coachgarner.com
- Review what supplements you're taking and why. Limit to five where possible.
- Buy and seek practitioner advice and products for quality and bioavailability.
- Remember, it's not the test, but who interprets the results.

FURTHER READING AND HELPFUL RESOURCES:

- My article for T-Nation, 'Fighting the T-Killing Toxins'. Google 'Mark Ottobre – T Nation' or type in the link www.t-nation.com/living/fight-the-t-killing-toxins
- Environmental Working Group – www.ewg.org
- Book – *Achieving Victory Over a Toxic World* by Mark Schauss

COMING UP

The most common nutritional hot topics exposed... from organic food to kombucha and more. All the stuff you wanted to ask, answered without BS so you can take action immediately.

CHAPTER EIGHT

MY THOUGHTS ON... **(FREQUENTLY ASKED** **QUESTIONS)**

People always say to me, “But what about...”

Here are the answers to the questions I encounter regularly.

What about organic food?

I am a big advocate of organic food and organic farming as it has positive effects on our environment, local economies and health. But instead of looking at all the positives, let's start with the main arguments against buying organic produce and farming:

1. Organic food costs more.
2. Organic food is not necessarily more nutritious than non-organic food.
3. Organic farming can't feed the world.

Associated with organic food is the extra cost. An effective way to save money on organic produce is to buy direct from local farms or farmers' markets. Produce prices vary from season to season but they are still lower than you would find at a supermarket or greengrocer. If the thought of getting out to a farmers' market is too much, there are farmers and co-ops that offer home delivery. It pays, or in this case, *saves*, to do a little research into what's available in your local area.

As for organic food being no more nutritious than non-organic food, it's debatable. However, that's not why you buy organic. There are multiple reasons to buy organic, from supporting local economies to improving your health. From a health perspective, the main reason to buy organic food is to avoid consuming pesticides and herbicides. The nutrition argument shouldn't discourage you from forking out extra for organic produce. It's less about what you get and more about what you avoid.

With that said, if you want to watch your back pocket and minimise your pesticide exposure, there is a happy medium. The Environmental Working Group (EWG) analyses approximately 46 fruits and vegetables each year and collates data on the produce with the highest and lowest pesticide residue. These lists are known as *The Dirty Dozen* and *The Clean Fifteen*.

Though the EWG's data is collected via the USDA and FDA (US sources), it's reasonable to presume samples collected from Australian growers would produce similar results. Keep in mind, many fruits and vegetables are imported from other countries anyway.

Australia has different laws concerning herbicides and pesticides so EWG figures should be used as a guide only.

Let's take a look at *The Dirty Dozen*; the fruits and vegetables with the highest amounts of pesticide residue:

- | | |
|----------------------------|---|
| 1. Strawberries | 8. Peaches |
| 2. Spinach | 9. Pears |
| 3. Kale and mustard greens | 10. Capsicum (bell peppers) and hot peppers |
| 4. Nectarines | 11. Celery |
| 5. Apples | 12. Tomatoes |
| 6. Grapes | |
| 7. Cherries | |

Try to buy organic where you can if you consume these items regularly. I would also add coffee to this list as it's also heavily sprayed. Note: Strawberries have been number one on the list for years. To download the list of the Dirty Dozen, visit the EWG website: <https://www.ewg.org/foodnews/dirty-dozen.php>.

The Clean Fifteen are the fruits and vegetables with the lowest amounts of residue pesticide. These are the items that you could consider saving a few bucks on and not buying organic:

- | | |
|------------------|--|
| 1. Avocado | 9. Broccoli |
| 2. Sweet corn | 10. Cabbage |
| 3. Pineapple | 11. Kiwifruit (or Chinese
gooseberry) |
| 4. Onions | 12. Cauliflower |
| 5. Papaya | 13. Mushrooms |
| 6. Peas (frozen) | 14. Honeydew melon |
| 7. Eggplant | 15. Rockmelon (cantaloupe) |
| 8. Asparagus | |

For more information on *The Clean Fifteen*, visit <https://www.ewg.org/foodnews/clean-fifteen.php>

ORGANIC SCAMS

Consumers often think of 'health' when they hear 'organic'.

Many chemicals are technically *organic* but you wouldn't dare consume them. What most folks don't know is that Australia has no domestic regulation for *organic*. This means organic products intended for the Australian market don't have to be certified before being labelled '*organic*'.

In other words, your favourite blueberries could be branded as *Organic Blueberries*. This means while they may be certified by an international

MY THOUGHTS ON... (FREQUENTLY ASKED QUESTIONS)

organic body, they may not meet the same standards as the ones we recognise in Australia for certification. However, if those blueberries were labelled as *Certified Organic Blueberries*, they would need to be certified organic by an Australian body.

These confusing loopholes make weary consumers question if organic is really worth it.

To ensure you're buying organic and not a made-up brand name, it pays to be aware of the six certifying bodies⁽¹⁾ that issue organic certifications in Australia:

- Australian Certified Organic
- Aus-Qual Pty Ltd
- Bio-Dynamic Research Institute (BDRI)
- NASAA Certified Organic (NCO)
- Organic Food Chain (OFC)
- Southern Cross Certified Australia Pty Ltd (SXC)

TRUSTED CERTIFIED ORGANIC IN AUSTRALIA



To shop organic with confidence, look for products that are '*certified organic*' and carry a logo from one of the organisations above.

If a product is imported and you want to ensure it meets Australian standards, look for the country of import's sticker of certification along with one of the six logos on the previous page. If the product carries only the country of import's sticker, the question is then: *Are that country's certified organic standards equivalent to Australian standards?*

For example, New Zealand organic products will often sport the AsureQuality logo. Technically, in Australia, this isn't recognised as *certified* organic, though New Zealand has near-equivalent organic standards to Australia.

Take-home point: Some businesses mislead consumers by using words like *organic* or *natural* to position their products or even give them a hefty price tag. To be certain you're buying organic, buy *certified organic* and look for one of the six logos.

FEEDING THE WORLD AND ORGANIC FARMING

As for organic not being able to feed the world, this is a multi-faceted topic that you can analyse from many angles.

First, you need to understand the difference between conventional farming and organic farming.

Conventional farming uses synthetic and non-renewable fertilisers. This includes the use of pesticides, herbicides and genetically modified crops in some cases. Organic farming relies on organic fertilisers like manure and food waste as well as livestock and animal rotation, all of which can be self-sustaining and carbon-sequestering.

If we analyse this based on environmental impact; our topsoil gets depleted, and the only way to grow anything on depleted topsoil is with synthetic fertiliser. The most common fertiliser is synthetic NPK (nitrogen, phosphorus and potassium). Synthetic NPK is derived from petroleum and fossil fuels. When you factor transportation of food shipped all around the country or overseas, the fossil fuel bill isn't sustainable or renewable.

Farms that produce one crop (monocrops such as soy, corn, wheat, sugarbeets, russet potatoes) do so by taming Mother Nature's will with aggressive farming practices. First, the land is cleared so nothing will grow other than the intended crop. Then synthetic fertilisers are used so seeds can be planted. These crops are usually genetically modified to resist pesticides, then pesticides are sprayed to ensure the death of any other plant life and insects.

Depending on the crop, it will probably be sprayed again with a pesticide before it goes into storage to prevent mould and insects from spoiling the harvest. It has been estimated that raising one calorie of food this way can cost over a hundred calories of fossil fuel, and that's underestimating as it doesn't include transportation or manufacturing.

Research has pointed out that organic food can't feed the world due to lower yields. In the short term, it's true. But in a managed five-year transition period, organic yields become competitive with conventional. If we gain any wisdom from nearly 40 years of study completed by the Rodale Institute⁽²⁾, it's this:

- Organic yields are competitive with conventional yields after a five-year transition period.
- Organic farming yields up to 40% higher in times of drought.
- Organic farming gives up to six times greater profits for farmers. (This is a good thing. We want to keep organic farmers in business.)
- Organic farming doesn't leach toxic chemicals into waterways.
- Organic farming uses 45% less energy.
- Organic farming releases 40% fewer carbon emissions.

When there's so much concern about environmental factors like climate change and drought, it surprises me that there isn't a bigger push for people to choose organic. Even if organic food fed only a relatively small segment of the market, it's still a huge win for people's health and the environment.

Additionally, it's not like industrialised farms are doing a better job at

feeding the world. As mentioned, feeding the world is more an issue of affordability and access than it is about production. The majority of food produced on industrialised farms:

- Becomes animal feed that further supports factory farming
- Goes to the creation of high-fructose corn syrup
- Gets used for ethanol production.

In other words, boosting yields of monocrops isn't going to solve feeding the world either.

FOOD WASTE AND FARMING

On the topic of environmental issues and farming, I would be remiss if I didn't mention that globally we waste **one-third** of the food we produce. That's 33 per cent of all the food grown globally. This is billions of litres of water every year that gets washed away in growing food that never gets eaten.

Consumers are partially at fault. Supermarkets have taught us that fruits and vegetables should look the 'same'. As such, supermarkets sell mostly *perfect-looking* fruit all year. But fruits and vegetables, like people, come in all different shapes and sizes. The obsession for perfectly shaped fruits and vegetables is not only ridiculous but one with severe costs to the environment and economy. An oddly shaped apple or carrot has the same nutrition and value as a 'standard' one.

The global cultural stigma of 'perfect food' needs to change. Denmark, the world's leader in preventing food waste, has re-educated consumers with their very successful '*Stop Spild Af Mad*' (*Stop Wasting Food*) campaign. Local supermarkets work with companies like *Bo Welfare* to collect imperfect and near-expired fruit and vegetables to redistribute in food waste pop-up shops. These shops serve everyone, from the homeless to the well-to-do bargain hunter. France has also adopted food waste laws, forbidding supermarkets to destroy unsold food product and compelling them to donate it instead.

The Australian Government estimates food waste costs our economy \$20 billion dollars each year. Over 5 million tonnes of food ends up as landfill, enough to fill 9,000 Olympic-sized swimming pools!

In NSW, Byron Shire Council conducted a bin composition audit and found that 50 per cent of landfill was organic waste. Since then, efforts have been made to recycle that organic waste and give it back to local farmers in the form of organic compost. The organic compost grows nutritionally dense food that is sold at local markets. It's a closed chain, farm-to-folk distribution model, with the scraps going back to the farm.

An upgrade from organic is **organic and local**. My preference is always to buy local organic rather than just organic. Of course, that's not always possible. Where possible, support local farmers; it's better for you and the local economy.

WHAT ABOUT A VEGAN OR VEGETARIAN DIET?

The topic of whether or not to include or exclude animal products from your diet can get heated thanks to all the political, environmental, moral, ethical and health debates. We all have our unique way of looking at the world, and often that perspective bleeds into the foods we choose.

My first question to all vegans and vegetarians is, “*why?*”

If you choose a vegan diet for moral, ethical or religious reasons, it's pointless to argue as it depends on what you define as moral and ethical. If you eat vegan or vegetarian for these reasons, then the only option is to construct a nutrition plan that respects your beliefs.

If it's for health or environmental reasons, I believe these are incomplete perspectives. On a surface level, the claims have evidence. However, when you take a deeper look, the evidence usually fails to put things in context.

When it comes to ‘the health argument’, the vegan diet shines when

compared to the standard Western habits of fast food, alcohol and a sedentary lifestyle. When vegan gurus say, “*It’s healthier*”, it must be asked, “*Compared to what?*” There is no question that a health-conscious vegan with a well-laid-out plant-based diet will be healthier than the average obese Australian. But I’m not talking about the standard Western lifestyle, and neither are you.

The reason for blowback around some of the scientific literature surrounding a vegan diet is cited correlation, not causation. For example, vegans and vegetarians have what’s known as a *healthy user bias*.

A healthy user bias is where the group engages with more health-conscious behaviours, like avoiding alcohol, not smoking, good sleep habits, moderating calories, etc. This skews research and evidence in the favour of the diet. However, it certainly doesn’t ‘prove’ that the inclusion of animal products is detrimental to health.

Additionally, a large body of scientific literature doesn’t factor in types of meat. What I mean here is that you can’t tell me that grass-fed or wild-caught game meat is the same as processed deli meats or grain-fed meat from a tortured cow. Yet, these two categories of meat are seldom distinguished in nutritional research. For vegan zealots, ‘meat’ is the all-too-easy scapegoat for a foul bill of health.

The other point of contention for unfavourable outcomes is quantity and excessive calorie consumption. The average vegan or vegetarian diet is 600 calories lower than a diet that includes animal products. This makes sense as animal products contain higher amounts of fat; fat yields nine calories per gram, whereas carbs and protein yield only four.

In big nutritional studies that rely on nutritional recall at quarterly intervals, this becomes an important point: many vegans are in a calorie deficit, while their omnivore friends are eating in a surplus, particularly if they dine out regularly.

Consequently, the studies that do account for calories and protein show positive health and body-composition outcomes for omnivores. In other words, it's not just about animal products, but the bigger context of your nutritional plan as a whole. It's not an *either/or* scenario. You can be health-conscious, control calories *and* add animal proteins to your diet.

A vegan and vegetarian diet's main health concerns are nutrient deficiencies and reaching a daily protein macro target. The main nutritional deficiencies to be aware of include zinc, fat-soluble vitamins A, D, K and E, iron, B vitamins (particularly B12), choline and of course, protein. To counteract vitamin and mineral deficiencies, supplementation based on regular blood work would be recommended, although interpreting blood for performance is not a common skill. This is why I recommend working with a qualified and clinical naturopath.

As for protein, it's simply harder to hit macro protein requirements due to the restrictions of food choices (see chapter 5). Furthermore, most vegan-friendly high-protein foods also contain fat and carbs; calories and macros that need to be accounted for.

I'm not saying a vegan diet is impossible to get results from. We have achieved it numerous times for vegan clients at Enterprise Fitness. What I am saying is, it's harder, and you are limited by food selection, particularly high-protein foods. There is no doubt about it; plant-based proteins are incomplete in amino acid profiles, and animal protein sources are superior – and that's not a point of contention.

Other things to consider following a strictly plant-based menu are:

- 1. Food volume:** Vegan meal plans are naturally higher in food volume due to the low caloric nature of plant-based foods. If you struggle to eat large amounts, this will make hitting macro targets harder for you.
- 2. Planning:** As plant-based foods contain a mixture of carbs, fat and protein, to ensure you hit a protein goal without exceeding your calories,

you need to pay close attention to the macro composition of your meals. This requires planning. It's unwise to 'wing it' when you follow a vegan or vegetarian plan. Vegan diets and food options don't lend themselves well to the advice 'pick a protein'. (See chapter five for more.)

3. **Food fatigue:** There aren't many high-protein vegan foods. This will mean you end up eating the same foods regularly. If you like eating the same foods, it probably won't bother you; however, beware of developing food sensitivities, gas, bloating, or compromised digestion. These are not normal, vegan or otherwise.
4. **Supplementation:** If you're going vegan, supplements, including protein powders will become a mainstay item. Don't bury your head in the sand about deficiencies. Be proactive and eat sensibly.

THE VEGAN ENVIRONMENTAL ARGUMENT

I discussed the environmental impact of industrialised farming in the sections on soy and dairy in chapter six. Here is a summary as it relates to the vegan and vegetarian diets:

When people turn to a vegan diet, they often turn to monocrops like soy, wheat and corn to replace the animal-based calories in their diets. While producers of those foods aren't directly intending to 'slaughter' animals, the practice of farming monocrops comes at a huge environmental expense – and one that is also paid by animals indirectly. It's estimated that industrial farming has an impact on (and kills) billions of insects and native animals each year, and dumps tonnes of harmful pesticides into our waterways, adding further insult to the environment, animal and human health. Furthermore, most crops grown in this system are sent off to be fed to factory-farmed animals and converted to sub-par meat.

If you are choosing to eat a vegan or vegetarian diet for environmental reasons, then at the very least, I would suggest buying your food locally and not supporting the production of industrial monocrops. Buying industrially farmed products like soy is, in my opinion, hypocritical. Industrial farming,

whether it be for plant or animal foods, has far more impact on the environment than eating and buying eggs from your local chicken farmer.

In short, following a vegan or plant-based diet, or eliminating meat and fish, is not healthier because health can't be simplified into one singular variable. The inclusion of animal products, in many cases, is good for you and a better option for the environment.

With all this said, if you want to remain a vegan and vegetarian, we can still be friends!

For more on this topic, check out my podcast with author of *The Vegetarian Myth*, Lierre Keith. You'll find it on YouTube or on the resources page www.enterprisediet.com/resources

WHAT ABOUT FRUIT?

I bet you've heard the one about fruit.

"Fruit makes you fat."

Correction: Eating anything in a calorie surplus makes you fat.

As far as a body composition and performance diet goes, fruit should be factored into your carbohydrate intake. I usually allocate no more than 20 per cent of a macro carbohydrate target to fruit. Theoretically, you could go higher or exclude it entirely. My preference is to keep starchy carb intake higher than swapping it out for fruit. This is obviously also dependent on how many carbohydrates you're eating each day and how much you like (or hate) fruit.

Many people look at fruit as a 'free' food because it's natural. Just because something is natural doesn't mean it gets a free pass. If you're not losing weight and you want to, you may just need to allocate specific amounts and portions of fruit rather than avoiding it entirely. This comes back to calculating your macros and carb intake correctly.

As for fruit juice, this can rack up calories with relatively small servings. For this reason, I don't recommend fruit juice for weight loss or fat loss.

In instances of fructose sensitivity, you will need to abstain from most fruit because it can cause bloating and pain. Those who have chronic gut issues may need to eliminate fruit to aid and assist the healing of the gut.

Lastly, buy local and organic where possible. Eat a variety and, preferably what's in season. The best way to know what's in season is to ask your farmer or go to a website like <http://seasonalfoodguide.com/australia-general-seasonal-fresh-produce-guide-fruits-vegetables-in-season-availability.html>.

WHAT ABOUT ARTIFICIAL SWEETENERS AND SWEETENERS IN GENERAL?

The topic of artificial sweeteners is hotly contested online.

My peers and colleagues in natural health condemn artificial sweeteners while my contacts and friends in evidence-based communities say they are generally considered safe and an effective tool to help curb someone's sweet tooth without adding calories. Research supports the view that they are generally safe. To put it frankly, the reason natural health communities don't like artificial sweeteners is because they are artificial. That's not a valid reason or argument.

A common claim against artificial sweeteners is that they are bad for your gut. A study that points to potential harm grew pathogenic bacteria from artificial sweeteners in a petri dish⁽³⁾. However, this is not sufficient evidence to conclude all artificial sweeteners are bad for humans, particularly when they are consumed in relatively small amounts. Many lean on this study to prove the negative effects of artificial sweeteners but a number of human randomised control trials showed that artificial sweeteners have little to no impact on gut health^{(4), (5), (6)}. In terms of evidence, randomised controlled trials carry more weight than experiments in petri dishes.

This doesn't mean I give artificial sweeteners a blanket 'green light'. Here's what I have observed after having thousands of clients come through our doors:

Clients who follow a properly laid-out plan and maintain a healthy relationship with food can include a little artificial sweetness and walk away without needing more. This means they are eating enough protein, fat and carbohydrates, even though they may also be in a slight calorie deficit.

For those who crash diet, who have a history of bad eating habits or who are yo-yo dieters, I have seen artificial sweeteners make sugar cravings worse. Before you talk about the benefits and drawbacks of these products, you must develop a healthy relationship with food and set a proper plan. Then we can discuss adding sweetness.

In practical terms, if you're doing everything right and feel like a little Pepsi Max every now and then, it won't do you any harm, unless of course that Pepsi Max prompts you to make more 'bad' choices. For this reason, artificial sweeteners can be a double-edged sword. For one person, it can be just enough sweetness to keep them away from a binge; for others, it can be the taste that leads to their doom.

My artificial sweetener/sweetener intake is very minimal, but that has more to do with how I mentally think about sweet foods than the health implications of sweeteners. I don't like sweetness in coffee or tea because it hides the quality of the coffee bean or tea leaf, and if I'm having dessert, I'm having dessert! I'm also not particularly fond of soft drinks; however, I do enjoy Jocko Willink's *Jocko Go*, flavoured with monk fruit.

Remember, not all sweeteners are the same. My general top three are stevia, monk fruit and xylitol.

WHAT ARE YOUR THOUGHTS ON SALT?

There are three main salts you will find in the supermarket and health food store:

1. Iodised salt or cooking salt
2. Pink Himalayan salt
3. Celtic sea salt

Pink Himalayan salt is marketed as 'better' than regular iodised salt, but there isn't much evidence for that claim. Both are approximately 99 per cent sodium chloride.

The big difference is in Celtic sea salt. Celtic sea salt is 33 per cent sodium and 50.9 per cent chloride. If you need to lower sodium intake, this would be a good option. One caution: Ensure you buy *Celtic* sea salt and not just sea salt.

As a general rule of thumb, add a pinch of salt to each meal or item you're cooking.

WHY LIMIT KOMBUCHA TO ONCE A WEEK?

Kombucha is the fastest-growing beverage in the health space, so with commercial interests at hand, as usual, I have reason to remain critical.

A 2018 systematic review of empirical evidence looked at 310 articles and papers. It concluded that there isn't hard data on whether or not kombucha is beneficial. Things like dose, amount, frequency or even mechanisms have not been substantiated with formal research⁽⁸⁾. Many of the studies touting the benefits of kombucha were poorly executed, having no control or using data from participants mailing in a review.

We must make our judgements using first-principle thinking. Here are my thoughts:

Fermented foods and drinks can contain pre and probiotics, which are generally considered a good thing. The problem with consuming foods that contain high amounts of pre- and probiotics is balance. There's a bell curve to intake. There's a point at which consumption is optimal, and any more is detrimental. There is a delicate balance of good and bad bacteria in your gut.

If you have dysbiosis, an imbalance of good and bad bacteria, you need to be selective about the pre- and probiotics you consume. The only objective way to ascertain the bacteria in your gut is with a stool test.

If there's an imbalance of bacteria, providing the gut with prebiotics can be food for the bad bacteria to grow. This is why someone with dysbiosis wouldn't want to supplement with fibre inulin, which is something that would otherwise be considered healthy. A so-called *healthy* drink that contains pre- and probiotics could be doing more harm than good.

This is also not mentioning that the vast amount of existing research is on kombucha tea – not the ready-to-drink, carbonated kombucha you see in the supermarket or health food store. As a side note, carbonated ready-to-drink kombucha is acidic. It can eat away at the enamel layer of your teeth. This is something else to consider when moderating your intake.

In short, a little kombucha is probably fine for most people, but it's certainly not something I would recommend you have every day, particularly the carbonated varieties. In my experience, when I 'recommend' or give something the green light, it's almost always over-consumed. Hence, I've learned from experience so when giving recommendations, I err on the conservative: have one a week, if any.

WHY AVOID TOO MUCH CANNED TUNA?

Tinned and canned tuna, the variety most bodybuilders live off, is packaged in an aluminium can lined with BPA. Regardless of whether it's canned or fresh, tuna contains mercury.

I learnt about tuna and mercury the hard way. When I was in my late teens and early twenties, wanting to get buff but also not having the funds (or understanding) to buy quality food, I consumed a lot of tuna. Canned tuna is high in protein, cheap, and easy to prepare. Unfortunately, even a couple of cans a week can exceed the recommended weekly intake of mercury. I was consuming two large (425g) tins of tuna a day for some time.

The first person who warned me off consuming too much tuna was Charles Polquin. Shortly after his lesson, I got tested for mercury, and lo and behold! I had very high amounts.

As a standard recommendation, Food and Standards Australia New Zealand (FSANZ) recommends two to three serves of tuna per week, defining a serve as 150 grams⁽⁹⁾. If you're after a more exact recommendation, the US Environmental Protection Agency (EPA) formula is no more than 0.1 micrograms per kilogram of body weight, per day⁽¹⁰⁾. Simpler still, Omni Calculator offers a Fish Mercury Calculator at www.omnicalculator.com. Search for 'mercury' once you're on the page.

If you simply must eat fish from a can, I recommend replacing canned tuna with canned salmon or sardines or getting what's known as *tuna light*, which is albacore or white tuna. Generally, this variety contains less mercury than skipjack tuna. As a general rule, the bigger the fish, the higher in mercury (think tuna, shark/flake, swordfish) and the smaller the fish, the lower in mercury (think sardines, anchovies, herring, mackerel, shrimp).

Note: The estimated allowance for children, and pregnant or breastfeeding mothers for fish and mercury is calculated lower than the above guidelines. Consult a nutrition or medical professional to see what's right for you.

WHY AVOID CATFISH AND BASA?

Basa is factory-farmed in Vietnam on the Mekong River. The Mekong is one of the most polluted rivers in the world. From plastics pollution⁽¹¹⁾ and high levels of e.Coli⁽¹²⁾ to being a runoff sink for a growing population⁽¹³⁾, the Mekong river is all kinds of nasty.

Basa is sold under four main names: Basa, Catfish, Pacific Dory or Vietnamese Cobbler.

As Basa is factory-farmed in very polluted water, I recommend avoiding it.

WHAT ARE THE BEST FISH TO EAT?

Wild-caught fish that are low in mercury⁽¹⁴⁾⁽¹⁵⁾.

See the table below on fish that are high and low in mercury:

Fish Higher in Mercury	Fish Lower in Mercury
Shark	Mackerel
Ray	Silver warehou
Swordfish	Atlantic salmon
Barramundi	Herrings
Gemfish	Sardines
Orange roughy	All prawns, lobsters and bugs
Ling	Trevally
Southern bluefin tuna	Whiting

HOW DO I HANDLE PEER PRESSURE WHEN IT COMES TO STICKING TO MY PLAN?

Peer pressure is something every health nut or certified gym junkie will face at some point. The three main sources are:

- Work colleagues
- Friends
- Family

Not all relationships are the same, and things that work in one relationship and context may not work in another. However, there is one consistent factor in all: your perception and attitude. Often, it's not the problem itself but our attitude towards the problem. When people ask me questions about peer pressure, I can't help but think of my nonna's lasagne.

My nonna never understood why I stopped eating the pasta and delicious homemade lasagne she spent hours preparing. The concept of bodybuilding was foreign to her. She was an immigrant, fresh off the boat from Italy, looking to set up her family in Australia. I'm guessing that body composition or getting ripped were the furthest things from her mind. Not only was time and money scarce (as for most people), she also needed to find a house, work, feed her family, learn the language and understand the culture, all while looking after her children.

By the time grandkid number four popped out and grew to become a gym buff, life was well-established for my nonna. Her focus was family. I remember the first time I went to my nonna's house and passed up the pasta. It was met with; "*Perché? Che causale?*"

I replied, "*I'm good, nonna, honestly*". She looked at me with confusion and said, "*Faccia di bebè, you-getting-too-skinny*" in her thick Italian accent, then grabbed my cheek and said, "*Mangiare!*" My nonna didn't care that I wanted to be ripped or shredded. She cared that I was part of the family, and sharing food was an offering to those she loved and cared for.

I loved my nonna, and never thought she was trying to 'sabotage' my goals by trying to get me to eat (a story some people tell themselves). In these situations, I often hear how people take these events as a personal attack.

People can't help but ascribe meaning to things that inherently have none. My nonna wasn't trying to change me. She just didn't understand my goals – as most people won't understand your goals either.

There were continual food offerings every time I went to my nonna's house. And being Italian, I went to my nonna's a lot. To her, my goals and behaviour were alien. She was never granted the luxury of going to the gym, so she didn't understand what I was trying to do. Instead of making a big deal of it, I would either eat before, eat my own prepared meal, or politely say, "*No thank you*" and sit quietly at the table. I understood the traditions **I was breaking**; hence, I did my best to appease them by not drawing attention to the fact I was doing something different.

The reason I share this is that when people begin their stories of peer pressure, the story usually begins with how the person disrespected their goals or beliefs.

But to be understood, you first must understand. Once you understand someone's vantage point, you can understand why your goals and choice may cause tension. People talk about getting frustrated with their friends or family because 'they don't understand'. I don't believe we have a right to be frustrated; after all, they are *your goals* and achieving them is on you.

Furthermore, I think the worst thing you can do is bite back and try to push your food on others. So your family members aren't the healthiest of folks? The best way to inspire others is to set an example. The more you push, the more they push back. I know it can be extremely difficult to watch the unhealthy behaviours of loved ones, particularly when it's your parents. But what's the alternative? Constantly fighting with them about something they don't want to change? This is where small suggestions and encouragement over time can go a long way.

Sometimes the best thing you can do is to let go of having that person understand. The question you need to ask yourself is: "How important is it that they are on board with my goals in the context of our relationship?" If it's a friend or family member, these scenarios are usually workable. If it's your significant other, it's bound to cause more issues, (but that doesn't mean you should give up on your health and fitness goals).

The great societal myth is that you need to get all your values met from one person or your family. It takes communities to do great things and I would encourage you to seek the communities that support, understand and help you achieve your goals.

THE PRACTICAL TIPS ON DEALING WITH PEER PRESSURE

#1 Don't explain yourself

When you begin to explain your diet, you give room to opinions. Personally, I have always found it easier not to explain (unless someone is truly interested).

It's a more common scenario in the workplace that your colleagues aren't paying attention to what they eat, from kebabs, pizza, cake, soft drink and fast food to lunch from the fried food joint down the road.

Then there's you, also known as *chicken salad*.

First, be ok with that alias. You're not missing out and they're not doing anything 'wrong'. Don't try and change them from being 'unhealthy' and they will be less likely to try and flavour up your lunch.

Accept you might get a few looks or initial comments but don't waste time explaining to those who don't care. You should also keep in mind that Australians, particularly male Aussies, give each other a hard time about everything. If you actually ate the pizza, the same people would tell you to "slow down" or to "save some for the rest of us". No matter what you do, people will have an opinion, so eat what makes you feel good.

Comments like, "*One slice won't hurt*" or "*Why not add some sauce?*" are either coming from ignorance around nutrition or their own insecurities of not being able to stick to a plan. Either way, don't let it throw you. If you want my advice, when someone asks why you're eating a chicken salad and not a slice of pizza, reply with, "*Because it tastes good*".

Why are you eating that?

Because it tastes good.

Are you on a diet?

Nah, this tastes good.

Why not add some sauce?

It tastes good without sauce.

Saying your food tastes good doesn't require a further explanation. You'll be surprised how little you will have to say other than that.

#2 Plan and prepare

If you fail to plan, you plan to fail. Changing habits, rewiring your brain and improving body composition requires planning. This is why I encourage routine and meal preparation. At the very least, plan where you're going to eat before you leave the house for work.

If your meals aren't prepped or if you don't have a plan of what you're going to eat before you leave the house, you invite random choices. As discussed at the start of this book, willpower is not an unlimited energy source. It's hard to say no to Mary's homemade brownies when they are in front of you and you haven't eaten in hours.

Make your decisions in advance, not when the smell of Mary's freshly cooked chocolate brownies hits your nostrils. Furthermore, if there's a family lunch or dinner, find out what's on the menu. If nothing aligns with your body composition goals, bring a meal that supports your progress, and if appropriate, enough for others. Likewise, you can always call the restaurant ahead of time to find out what's on the menu and the alternatives on offer.

The stems of poor nutritional decisions are hunger, fatigue, anger, loneliness, boredom or habit. The best way to face these is with the support of a plan.

#3 Exercise your options

In each situation, you have four options:

This one. That one. Both. Neither.

Choose the one that is most fitting for your goal.

DO I NEED TO COUNT CALORIES?

The laws of energy balance and thermodynamics need to be respected. However, from a practical point of view, counting calories is only one way to get your nutrition on track. Yes, eating fewer calories than you need will lead to weight loss; however, our concern is body composition. This is why counting macros is far more useful.

There are three ways I suggest to control and plan out your nutrition:

1. Follow the Enterprise Fitness nutritional guidelines

These are behavioural modifications and frames of thinking about nutrition, not instructions to count calories. This is where you should start if you don't want to weigh or measure food.

2. Use a food system and food targets

This is something I implement with most clients. I see this as a practical way of implementing macros because it turns macro goals into actual food servings, which is how most people relate to nutrition. Simply, you set a target of food that needs to be consumed at each meal: 100 grams of a protein food, 10 grams of a fat food, etc. (See chapter five.)

3. Count macros

This allows the most flexibility but also requires the most planning, particularly if you're going to change your food daily.

I have seen clients excel when using all three. The trick is to find something you can stick to for the long haul. See chapter five for information on putting your plan together and chapter three for more about calories and hormones.

WANT MORE Q AND AS INCLUDING MY ANSWERS TO THESE QUESTIONS?

- What's the difference between GI and GL?
- What about protein powders?
- What about protein powders for vegans?
- Why is grass-fed and organic always preferable?
- And more...

Check out the resources page: www.enterprisediet.com/resources

WHY NOW!

First, thank you for making it all the way to the end of the book.

This book took me years to write, and sharing it with you brings me a deep sense of fulfilment. Thank you for taking the time to read it and for giving me your attention. I hope you have now gained the necessary knowledge to take the next step on your journey.

A fitting conclusion to a book that is all about helping you create better body composition and health is to ignite the next step.

Action.

And the secret to taking action?

Urgency.

Urgency is the most underrated yet necessary ingredient of success. Urgency invites everything we've learnt and all we want to be to the here and now.

You may already understand the importance of urgency. If this is the case, you have probably already started making changes to your nutrition and lifestyle. I look forward to hearing about your transformation and improvements. Trust in the process and success will be only a matter of time. Please post the changes you've made or intend to make in a review on Amazon (or Audible) so we can spread the word.

If you have reached this page but you're not jumping off the couch and into the kitchen ready to make improvements, it could be for one of the following reasons:

1. I wasn't convincing and you don't believe me.
2. You don't understand everything well enough to implement.
3. It's not important enough (right now) to make changes (even though you really want to).

At this point, if you've read through my book in its entirety, there's not much more I can do about the first point.

To overcome point two, I encourage you to review the information until you know it well enough to take action. Additionally, the help and guidance of a good coach or trainer will go a long way. Remember, you don't have to take this journey alone and having a coach in your corner can make all the difference.

As for point three....

Delaying working on your goals, even though you truly want to make a change, is often a symptom of wanting to have everything 'perfect' before you begin.

Let me tell you now; the sun, stars and moon will never align. In fact, the reverse is usually true. You'll get promoted, take on more responsibilities, set bigger financial goals and commit yourself to more, not less. In the chase for modern success, it's easy to put your health and fitness goals on the back burner, particularly if things aren't so bad.

But, the longer you put off making a change, the deeper the frustration. If you feel overwhelmed by starting today, imagine how overwhelmed you will feel after another two years of doing nothing?

In short, it will never get easier than it is right now – and if you're currently facing other overwhelming challenges, just start with something simple and easy to commit to. A small change is better than no change.

Pain is a far better motivator than pleasure. You'll move your hand faster from a hot stove than you will reach for a cold bottle of water. This is why you need to shift from being outcome-driven to being process-driven. Set the goal to start with *something*, preferably an action that you have full confidence you can complete every day.

Life is messy. Dancing with the mess and our seemingly conflicting goals is the first skill to master. The truth is, you may need to compromise on expectations in the short term. You might not be the poster child for a 12-week transformation or the next bikini champion. But in the long term, you'll be consistent and have something even the 12-week champion wants, and that is sustainable results.

Wishing you health and the ability to hit your body comp goals!

Train hard! And don't forget to leave a review if you've enjoyed the book.

MARK OTTOBRE

Owner and Founder, Enterprise Fitness

Author, *The Enterprise Diet*

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To all the Enterprise Fitness clients, followers and supporters. Thank you. I wouldn't have written this book if it weren't for you. I hope it fills in any knowledge gaps and gives you the deeper *why*. Most of all, I hope it helps you achieve your goals.

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Mark Ottobre - Author of The Enterprise Diet

I GUARANTEE THIS ISN'T LIKE ANY HEALTH AND FITNESS BOOK YOU'VE EVER READ....

At the risk of sounding like a cliché, I wrote this book to help more people... This sounds like I'm entering "self-help guru" territory, but hear me out.

The world of fitness and nutrition is almost as divisive as American Politics... Calorie Counters are in conflict with Keto, intermittent fasters are in a battle with the evidence-based community, and vegans are at war with... well, everyone, including each other for not being **#VegoEnough**.

THEN THERE'S YOU AND ME

We just want results and to learn and practise a lifestyle so we can feel powerful in the boardroom and sexy in the bedroom.

So here it is. My approach is now yours. It's no-nonsense, easy to understand, and most importantly, **it works**.

Let me help you ditch diets, shift your mindset and give you the practical tools to train hard, eat well and supplement smart!

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