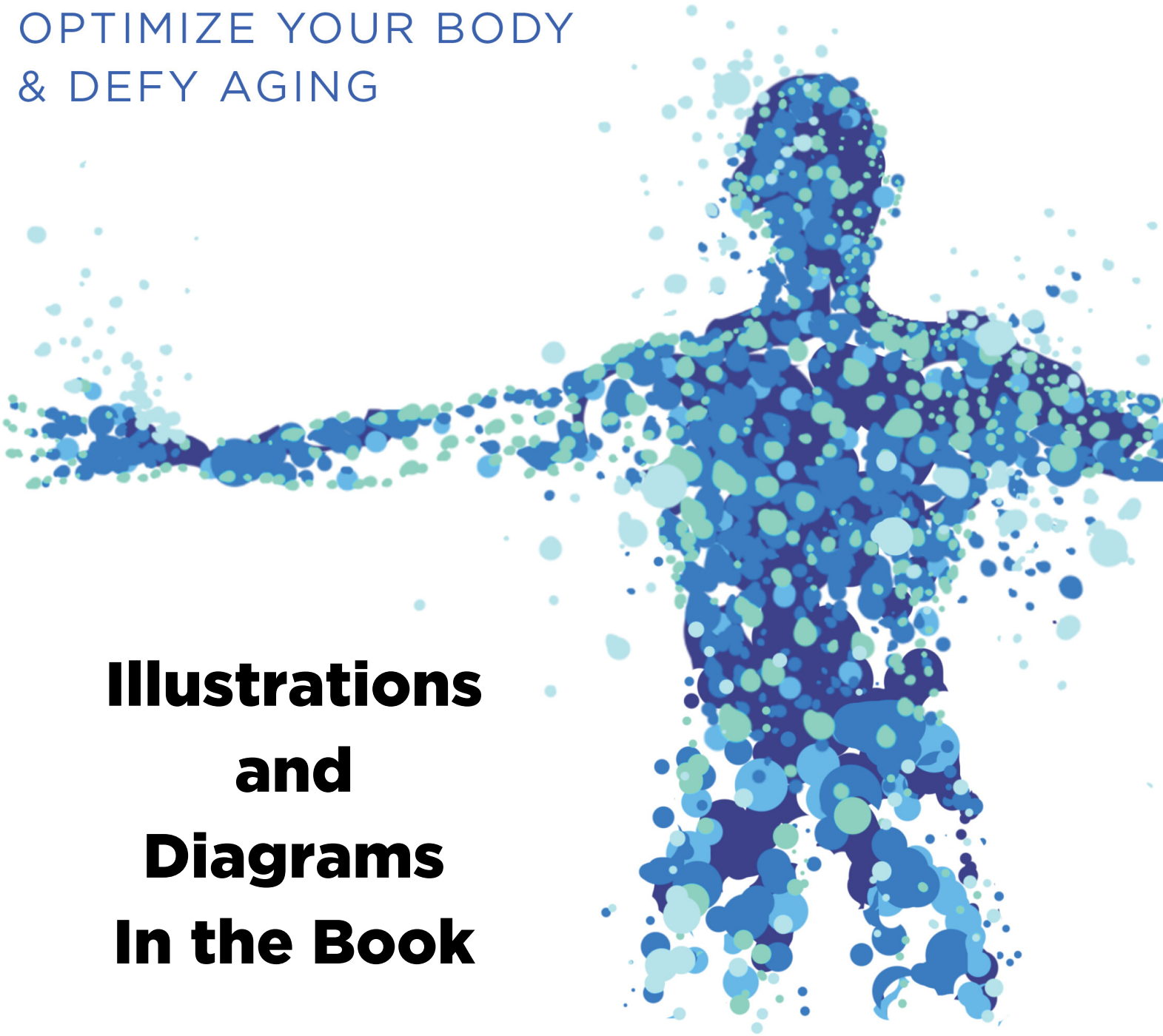
BOUNDLESS

UPGRADE YOUR BRAIN,
OPTIMIZE YOUR BODY
& DEFY AGING



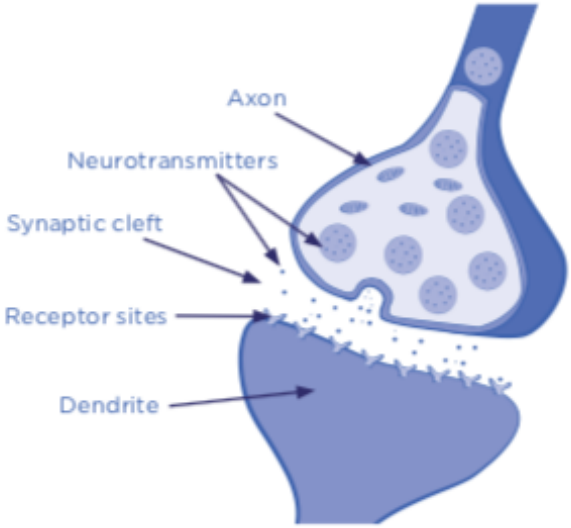
Illustrations and Diagrams In the Book

NEW YORK TIMES BESTSELLING AUTHOR

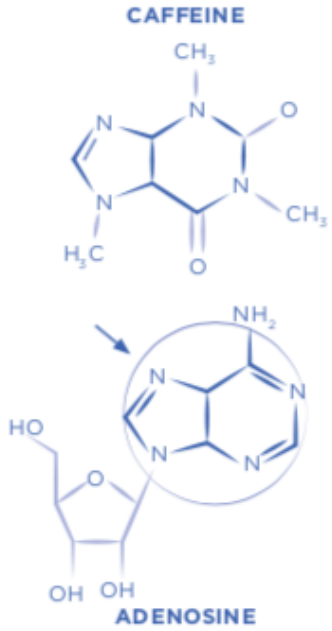
BEN GREENFIELD

Chapter 1

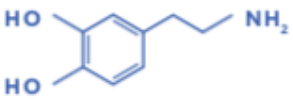
- Neurotransmitter



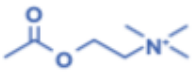
Caffeine v. Adenosine



The Most Common Neurotransmitters



Dopamine is the primary motivating chemical; it can promote ambition, drive, and action by influencing the areas of the brain responsible for conscious movement.



Acetylcholine promotes focus, memory, and cognition and is necessary for motor neuron function and muscular movement.

GABA helps you relax and calm down. Without it, you become tense and anxious.

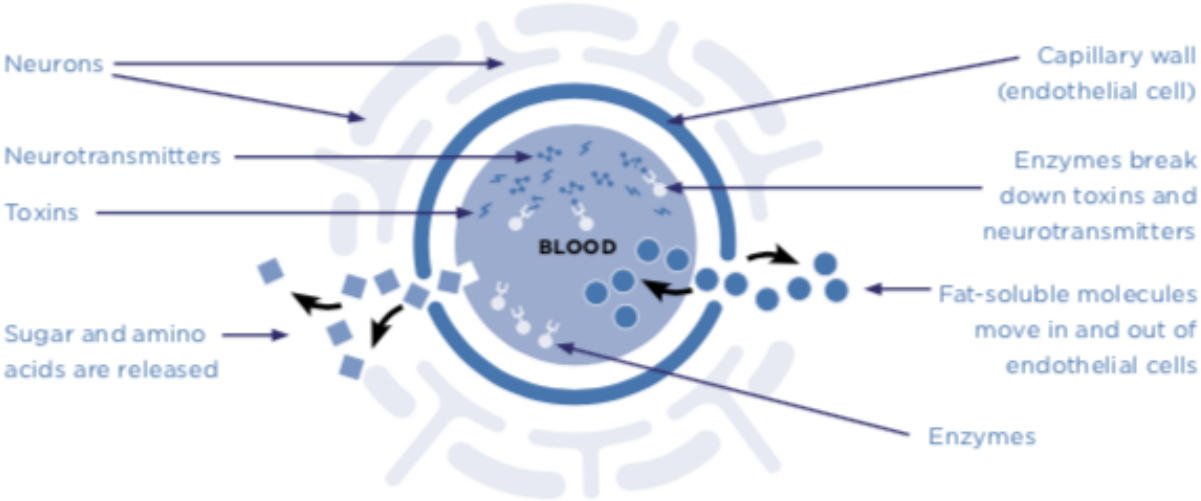
Building Blocks

VITAMIN B_6	VITAMIN B_{12}	FOLATE	VITAMIN B SUPPLEMENTS
bell peppers turnip greens spinach	calf's liver snapper	broccoli beets lentils calf's liver asparagus spinach	full-spectrum blend with 5-methyltetrahydrofolate (5-MTHF)

Chapter 2

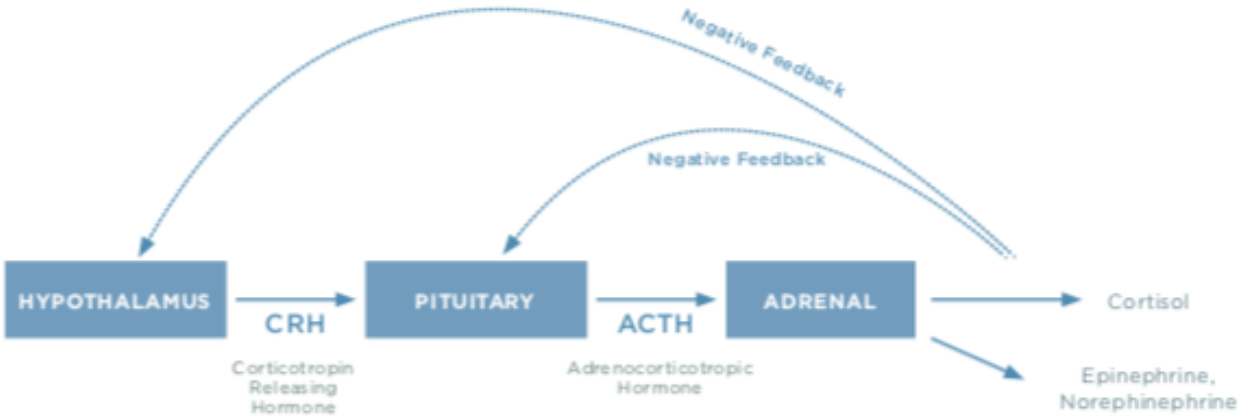
Breathing Exercise

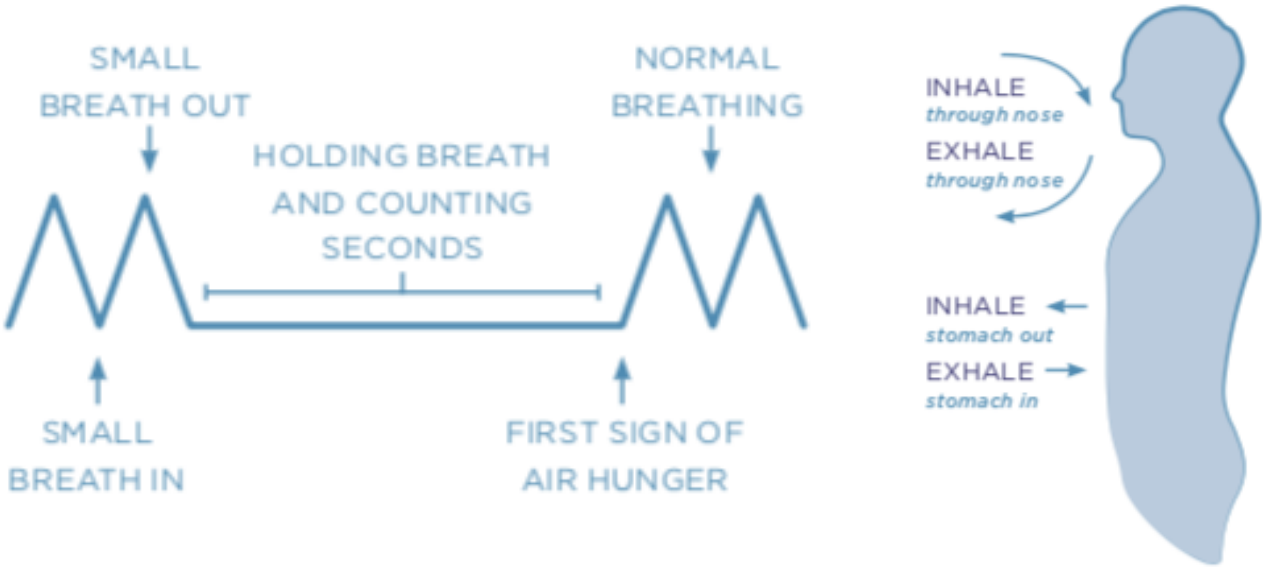
The Blood Brain Barrier



Chapter 3

The HPA Axis Feedback Loop



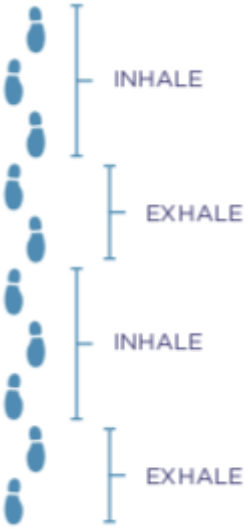


A CO_2 tolerance table is designed to accustom the body to high levels of carbon dioxide by reducing the duration of resting time between breath-holds. The following table, which requires about twenty-five minutes to complete, consists of eight cycles and is based on breath-holds of one and a half minutes:

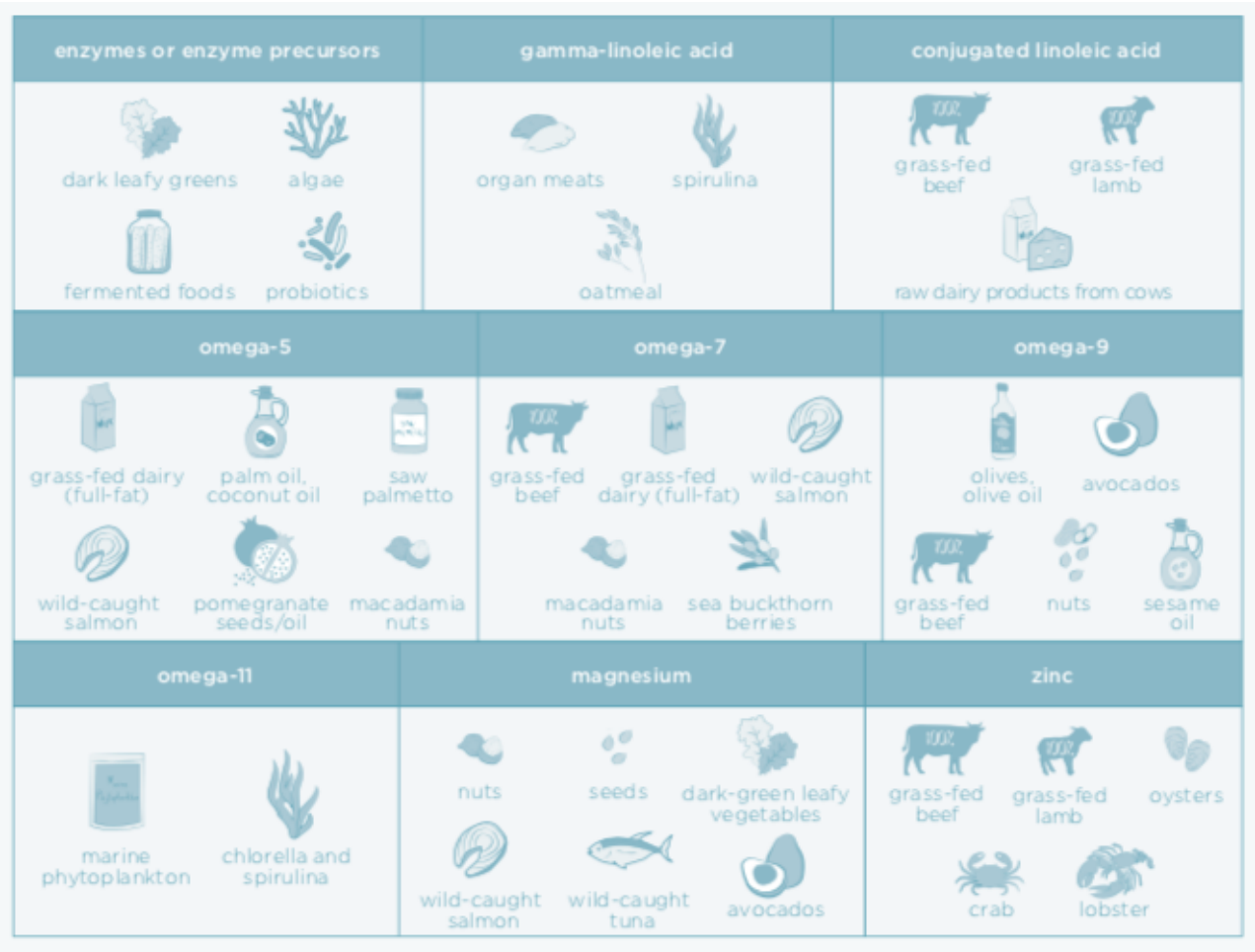
1	Hold breath 1:30 min		5	Rest 1:30 min	Hold 1:30 min
2	Rest 2:15 min	Hold 1:30 min	6	Rest 1:15 min	Hold 1:30 min
3	Rest 2:00 min	Hold 1:30 min	7	Rest 1:00 min	Hold 1:30 min
4	Rest 1:45 min	Hold 1:30 min	8	Rest 1:00 min	Hold 1:30 min

In contrast, an O_2 tolerance table is designed to accustom the body to extremely low levels of oxygen by prolonging the duration of breath-holds between resting periods. The following table, which requires about thirty minutes to complete, consists of eight cycles:

1	Hold breath 1:00 min		5	Rest 2:00 min	Hold 2:00 min
2	Rest 2:00 min	Hold 1:15 min	6	Rest 2:00 min	Hold 2:15 min
3	Rest 2:00 min	Hold 1:30 min	7	Rest 2:00 min	Hold 2:30 min
4	Rest 2:00 min	Hold 1:45 min	8	Rest 2:00 min	Hold 2:30 min



Chapter 4



FAT/OIL	SMOKE POINT (UNREFINED/REFINED)	BEST USES
Avocado oil	520°F	• high-heat cooking • low-heat cooking • dressing • finishing
Butter, ghee	300/480°F	• high-heat cooking • baking
Coconut oil	350/450°F	• high-heat cooking • sautéing • baking
Duck fat	375°F	• high-heat cooking
Lard (pork, bacon fat)	375°F	• high-heat cooking
Macadamia nut oil	410°F	• low-heat cooking • dressing • finishing
Olive oil	320/465°F	• high-heat cooking • low-heat cooking • dressing • finishing
Peanut oil	230/450°F	• high-heat cooking
Rice bran oil	415°F	• low-heat cooking
Sesame oil	450°F	• dressing • finishing
Tallow (beef fat)	400°F	• high-heat cooking
Walnut oil	400°F	• dressing • finishing

Chapter 5

Getting Started with Microdosing

For any of the psychedelic compounds discussed in this chapter, I recommend following the protocol laid out by James Fadiman in chapter 16 of his excellent *Psychedelic Explorer's Guide:*

- Consume a microdose of your chosen psychedelic twice per week for ten weeks.
- Allow two to three days between each microdosing day (for example, consume your microdoses on Wednesdays and Sundays).
- Write about your experience and be mindful of your expectations and desires.
- Especially in the early stages of experimentation, use the compound in a familiar or controlled setting.
- At the end of the ten weeks (or however many weeks you microdose), reflect on your experience and ask yourself, "Did I accomplish my purpose for microdosing?"

For one of the more comprehensive and insightful guides on microdosing, I also recommend Michael Pollan's book *How to Change Your Mind,* in which the author—an immersive journalist with little to no psychedelic experience—takes a deep dive into the world of psilocybin, LSD, DMT, and beyond.

Where to Buy Psychedelics

There are a variety of websites that sell psychedelics, but not all sources contain good-quality ingredients, nor is there any guarantee that the substance you purchase is not laced with undesirable compounds.

I have personally found the following three resources to be quite helpful when purchasing psychedelics or finding a quality source:

- The Third Wave (thethirdwave.co): This website offers a host of valuable information and downloadable pdfs on dosing, sourcing, safety, and techniques—and even an entire instructional course on microdosing.
- Reddit (reddit.com/r/psychedelics): Reddit contains many helpful personal anecdotes that are voted up or down by other users, and although it is rife with N=1 stories that may not apply to your specific situation, I've found it to be a helpful resource for discovering what DIY biohackers and psychedelic users are experimenting with in their own protocols.
- RealChems (RealChems.com): RealChems sources synthetic versions of 1P-LSD, ALD-52, ETH-LAD, AL-LAD, 4-AcO-DMT, and many other psychedelic and nootropic "research chemicals" that are "not sold for human consumption" (nudge, nudge, wink, wink).

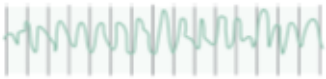
For most of the psychedelic purchases you make online, you will need some form of cryptocurrency like Bitcoin and, in most cases, if you want to remain anonymous, a Tor browser or other cloaked browser.

Chapter 6

FOUR CATEGORIES OF BRAIN WAVE PATTERNS

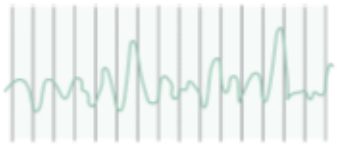
BETA (14–30 Hz)

- Concentration, arousal, alertness, cognition
- Higher levels associated with anxiety, disease, feelings of separation, fight or flight



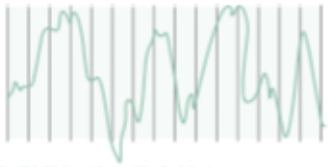
ALPHA (8–13.9 Hz)

- Relaxation, superlearning, relaxed focus, light trance, increased serotonin production
- Pre-sleep, pre-waking drowsiness, meditation, beginning of access to unconscious mind



THETA (4–7.9 Hz)

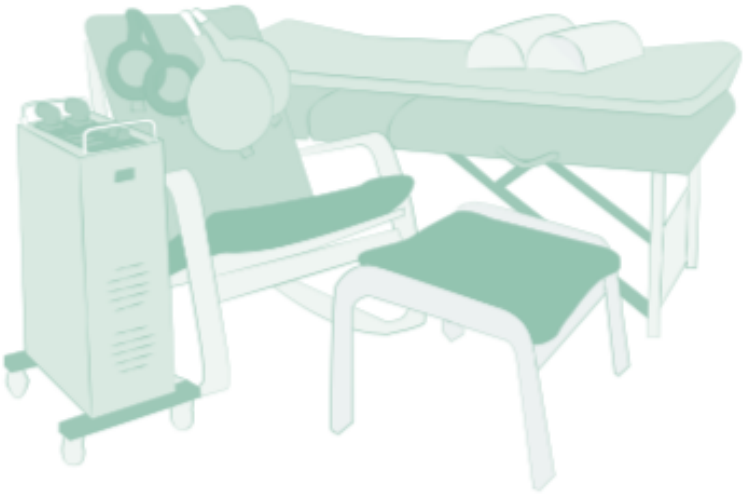
- Dreaming sleep (REM sleep)
- Increased production of catecholamines (vital for learning and memory), increased creativity
- Integrative, emotional experiences, potential change in behavior, increased retention of learned material
- Hypnagogic imagery, trance, deep meditation, access to unconscious mind



DELTA (0.1–3.9 Hz)

- Dreamless sleep
- Human growth hormone released
- Deep trancelike, nonphysical state, loss of body awareness
- Access to unconscious and "collective unconscious" mind, greatest "push" to brain when induced with Holosync (see page 125)

FLEX PULSE



PULSE CENTER XL PRO

Chapter 7

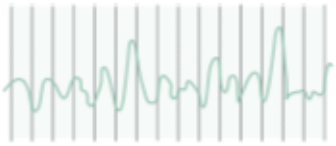
FOUR CATEGORIES OF BRAIN WAVE PATTERNS

BETA (14–30 Hz)

- Concentration, arousal, alertness, cognition
- Higher levels associated with anxiety, disease, feelings of separation, fight or flight

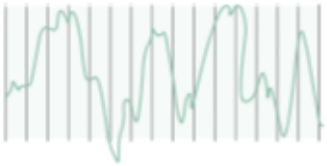
ALPHA (8–13.9 Hz)

- Relaxation, superlearning, relaxed focus, light trance, increased serotonin production
- Pre-sleep, pre-waking drowsiness, meditation, beginning of access to unconscious mind



THETA (4–7.9 Hz)

- Dreaming sleep (REM sleep)
- Increased production of catecholamines (vital for learning and memory), increased creativity
- Integrative, emotional experiences, potential change in behavior, increased retention of learned material
- Hypnagogic imagery, trance, deep meditation, access to unconscious mind



DELTA (0.1–3.9 Hz)

- Dreamless sleep
- Human growth hormone released
- Deep trancelike, nonphysical state, loss of body awareness
- Access to unconscious and "collective unconscious" mind, greatest "push" to brain when induced with Holosync (see page 125)

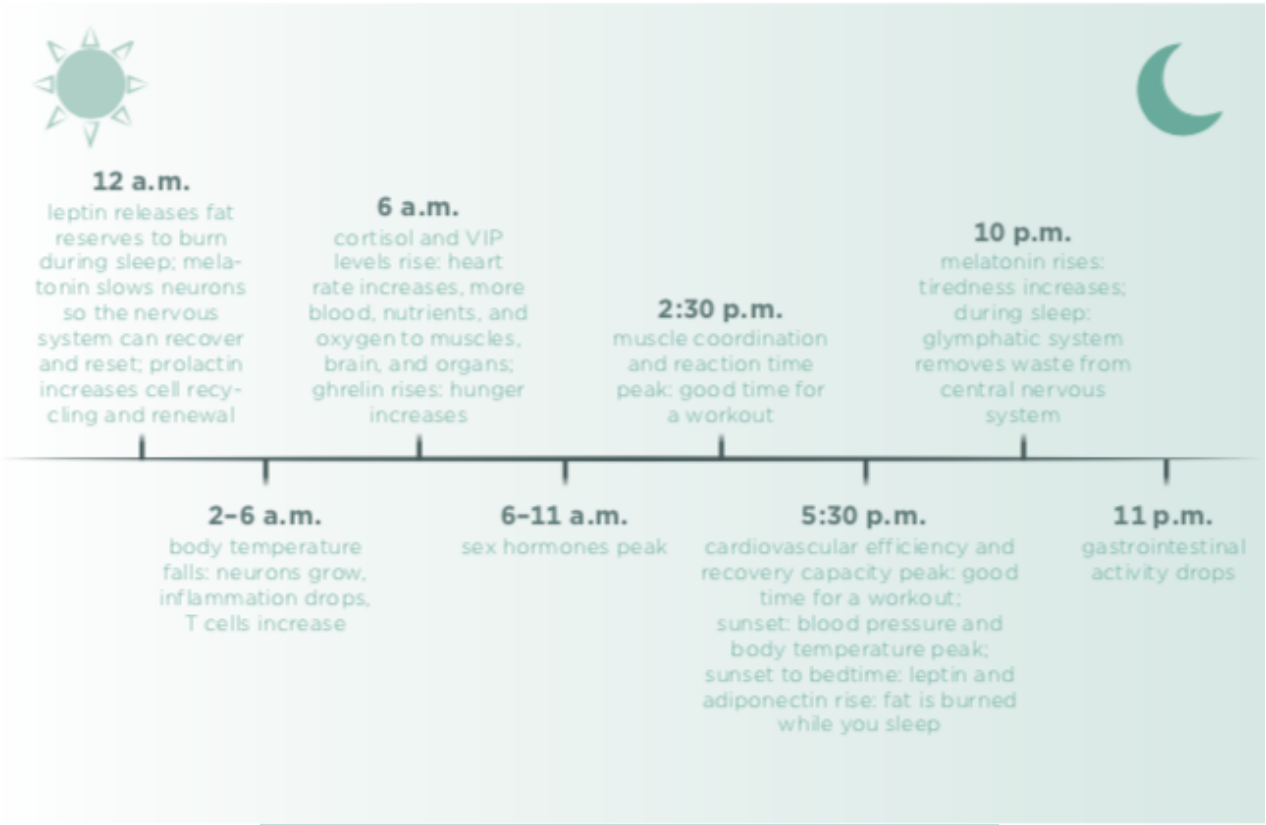
Golden Milk Bedtime Elixir

This delicious drink aids your digestion, relaxes an amped-up nervous system, and helps you get in the mood for a night of restful sleep.

- ½ cup full-fat coconut milk
- 1 teaspoon ginger powder, or 2 tablespoons ground fresh ginger
- 1 teaspoon turmeric powder, or 2 tablespoons ground fresh turmeric
- ¼ teaspoon ground nutmeg
- 4 whole peppercorns, crushed
- 2 or 3 drops organic liquid stevia
- 1 teaspoon coconut oil
- Pinch of ground cinnamon (optional)

1. *Place all the ingredients except the coconut oil and cinnamon in a saucepan over medium heat and bring to a simmer, then turn the heat down to low. Simmer for 5 minutes, then remove the pan from the heat and allow to cool for 5 minutes.*
2. *Strain the cooled liquid through a fine-mesh strainer or cheesecloth into a glass or mug. Add the coconut oil. Sprinkle with ground cinnamon if desired for additional flavor.*

Chapter 7



The Ideal Routine for Every Type of Person

According to psychologist and sleep specialist Dr. Michael Breus, there are four different chronotypes, or a person's internal clock and rhythm.

DOLPHIN

Dolphins are light sleepers and are often diagnosed with insomnia.

6:30 a.m.
Wake up and exercise.

7:30 a.m.
Eat breakfast.

9:30 a.m.
Have coffee.

10 a.m.–12 p.m.
Brainstorm and work on creative projects.

12 p.m.
Eat lunch.

1–4 p.m.
Walk around the block if you're feeling tired.

4–6 p.m.
Work on intellectually demanding tasks. Send professional emails.

6 p.m.
Meditate or do yoga.

6:30–8 p.m.
Eat dinner.

10:30–11:30 p.m.
Turn off all screens. Take a hot shower/bath. Read a novel.

11:30 p.m.
Go to sleep.

LION

Lions tend to wake up early with lots of energy. By early evening, they're exhausted.

5:30 a.m.
Wake up and eat breakfast.

6–7 a.m.
Do planning and big-picture thinking. Meditate.

9–10 a.m.
Have coffee.

10 a.m.–12 p.m.
Hold meetings.

12 p.m.
Eat lunch.

1–5 p.m.
Brainstorm and journal.

5–6 p.m.
Exercise.

6–7 p.m.
Eat dinner.

10 p.m.
Turn off all screens.

10:30 p.m.
Go to sleep.

BEAR

Bears' internal clocks track the rise and fall of the sun. They need a full 8 hours of sleep a night.

7 a.m.
Wake up and do a few minutes of exercise.

7:30 a.m.
Eat breakfast.

9–10 a.m.
Plan your day.

10 a.m.
Have coffee.

10 a.m.–12 p.m.
Work on difficult tasks. Send professional emails.

12 p.m.
Take a walk, eat lunch, and take another walk.

2:30–2:50 p.m.
Nap or meditate.

3–6 p.m.
Make phone calls and send emails.

6–7 p.m.
Exercise.

7:30 p.m.
Eat dinner.

8–10 p.m.
Brainstorm.

10 p.m.
Turn off all screens.

11 p.m.
Go to sleep.

WOLF

Wolves have a hard time waking up early and are most energetic in the evenings.

7–7:30 a.m.
Wake up with two alarms. Jot down your thoughts.

7:30 a.m.
Eat breakfast.

8:30 a.m.
Do a few minutes of outdoor exercise.

9 a.m.
Plan your day.

11 a.m.–1 p.m.
Have coffee. Take care of busywork.

1 p.m.
Take a walk and eat lunch.

4–6 p.m.
Hold meetings and present your ideas to coworkers.

6–7 p.m.
Exercise.

8 p.m.
Eat dinner.

11 p.m.
Turn off all screens. Meditate. Take a hot shower.

12 a.m.
Go to sleep.

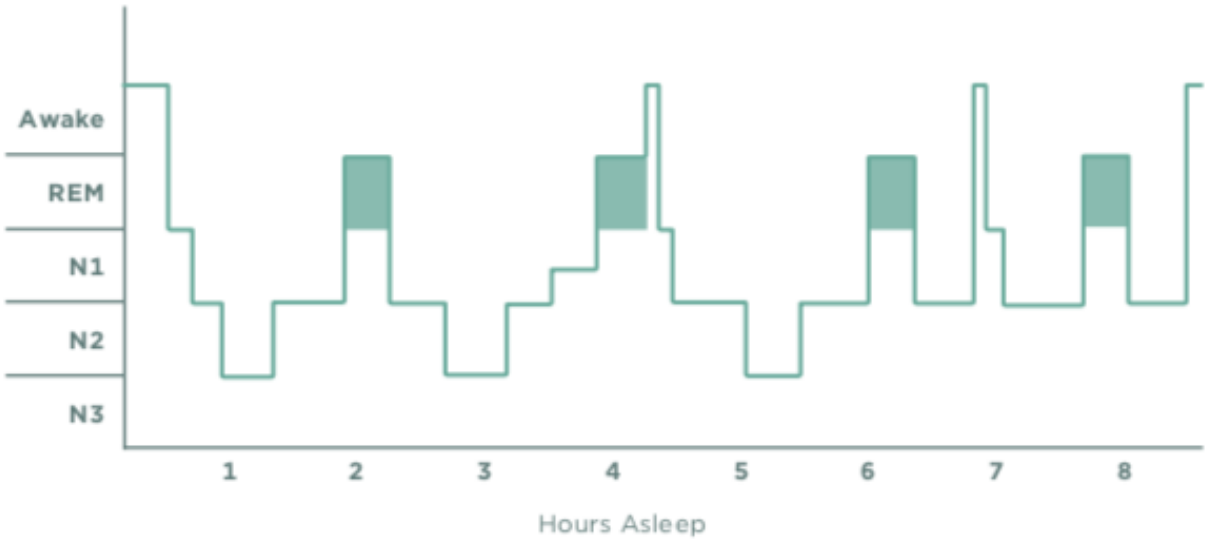
Chapter 7

Three Simple Changes for Better Sleep

After reading the Ayurvedic medicine and lifestyle book *Change Your Schedule, Change Your Life*, I began to incorporate three primary practices from that book that drastically improved my sleep quality:

1. Go to bed at the same time each night, preferably before 10:30 p.m. (although the best bedtime for you will depend on your chronobiology).
2. Do some light exercise before breakfast.
3. Avoid eating a mega-meal for dinner and instead make lunch the largest meal of the day.

The Stages of Sleep in One Night



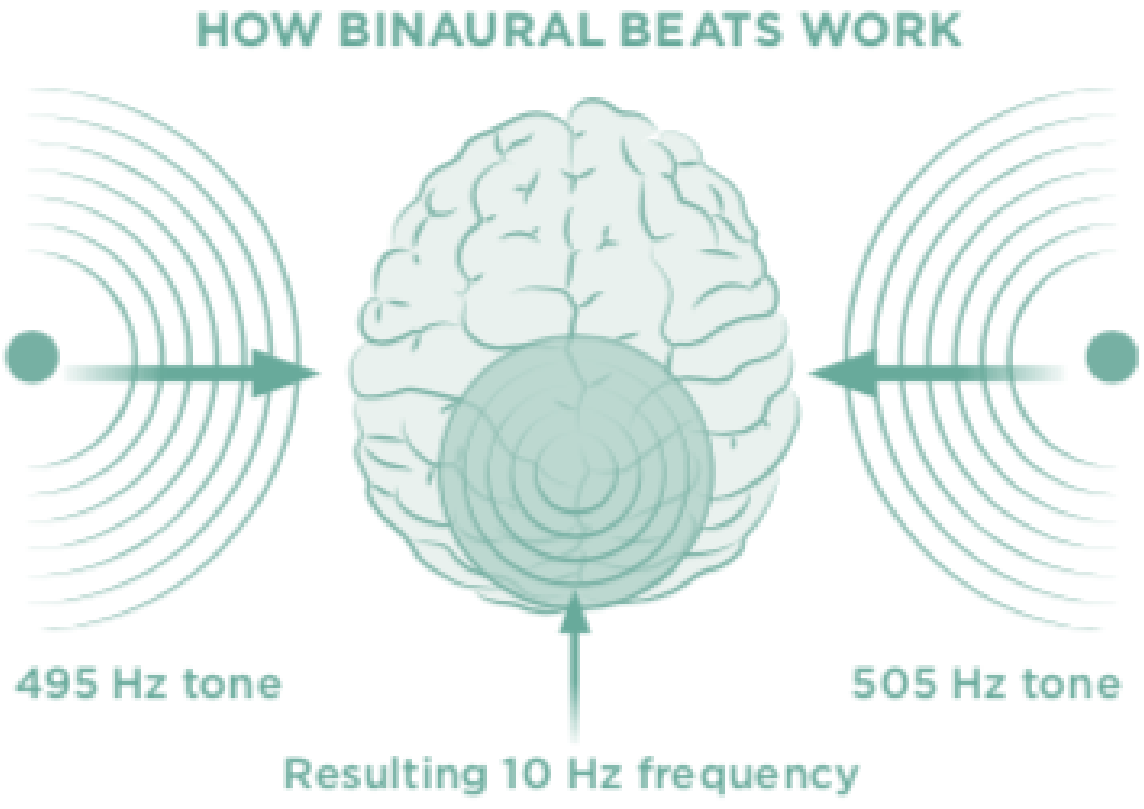
Source: Kimberly A. Babson and Matthew T. Feldner, eds., Sleep and Affect: Assessment, Theory, and Clinical Implications *(New York: Academic Press, 2015)*.

Chapter 7

Sleep Needs by Age

Newborns (0–3 months)	14–17 hours
Infants (4–11 months)	12–15 hours
Toddlers (1–2 years)	11–14 hours
Preschoolers (3–5)	10–13 hours
School-age children (6–13)	9–11 hours
Teenagers (14–17)	8–10 hours
Younger adults (18–25)	7–9 hours
Adults (26–64)	7–9 hours
Older adults (65+)	7–8 hours

Source: "How Much Sleep Do We Really Need?," National Sleep Foundation, www.sleepfoundation.org/articles/how-much-sleep-do-we-really-need.



Chapter 9

While an EMS device certainly isn't going to help you burn enough calories or fat to give you an Adonis-like six-pack, it can provide a significant boost in cardiovascular and musculoskeletal fitness. (For more tips on how to incorporate EMS into a training session, read my blog post "How to Use Electrical Muscle Stimulation to Enhance Performance, Build Power and VO_2 Max," linked to on BoundlessBook.com/9.)

A sample on-the-road workout for me includes:

- BFR bands wrapped around my arms and legs
- A 2-minute burpee warm-up
- 10 suspension strap pull-ups
- 10 suspension strap push-ups
- 1 minute of jumping jacks
- 10 elastic band sideways shuffles
- 10 elastic band squat-to-overhead presses.
- 1 minute of sitting down on the floor and standing up as many times as possible (a surprisingly difficult and highly functional exercise)
- 10 elastic band upright rows
- 10 suspension strap lunges for each leg

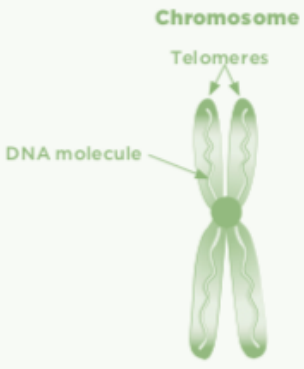
Repeat three to five times through with minimal rest. Include the burpee warm-up in each round for an additional challenge.

Another favorite workout of mine, if I have access to a gym, is to perform back-to-back supersets for each muscle group, following each superset with two minutes of cardio performed as hard as possible. A sample workout would include:

- 2 minutes on a cardio machine such as an elliptical trainer, bike, rowing machine, or stairmill
- Chest press to failure—8 to 15 reps
- Row to failure—8 to 15 reps
- 2 minutes on a cardio machine
- Squat or leg press to failure—8 to 15 reps
- Dead lift or leg curl to failure—8 to 15 reps
- 2 minutes of cardio
- Shoulder press to failure—8 to 15 reps
- Lat pull-down to failure—8 to 15 reps
- 2 minutes of cardio
- First core exercise of choice to failure, such as side plank rotations
- Second core exercise of choice to failure, such as lower back extensions

Repeat three to five times through with minimal rest.

If you follow BenGreenfieldFitness on Instagram, you will find plenty more workouts to try, as I'm often posting creative travel workouts I do when I'm on the road.



Chapter 10

The 7-Minute Workout
30 sec. push -- 10 sec. rest

Jumping jacks or burpees

Wall sits

Push-ups or clapping push-ups

Crunches or knee-ups

Step-ups or lunge jumps

Squats or squat jumps

Dips

Planks

Lunges or lunge jumps

Jump rope, stair sprints, or running in place with high-knees

Push-ups with rotation
(at the top of the push-up, alternately raise your arms and point them straight up)

Side planks

Chapter 10

A Perfect Two Weeks of Training

WEEK 1

COLD THERMOGENESIS

Choose 5 to 7 days this week and complete the following 5-minute showering protocol in a fasted state: 10 seconds of warm water followed by 20 seconds of cold water, 10 times through.

In addition, choose one day and do either a 10-minute ice-cold shower or 15 to 20 minutes of full-body cold-water immersion

DAY 2

Workout 1: Morning Fasted Fat Burning

Before breakfast, perform 20 to 30 minutes of light cardio: yoga, fast walking, cycling, the elliptical, swimming, or hiking. The goal is to burn fat and lean up. You can drink a cup of plain black coffee or tea before this, but don't consume any calories until you are done. If you can't perform this cardio in the morning, do it after dinner and don't eat anything afterward.

Workout 2: Swim Hypoxic Sets (optional)

Perform a 500-meter warm-up. Then swim 12 rounds of 25 meters each. During each round, do not breathe, or keep breathing to a minimum. Recover for 10 seconds, then repeat. Swim as smoothly as you can—you don't need to sprint. See what changes in technique and fluidity you can make to conserve energy and oxygen.

Workout 3: The 7-Minute Workout

Perform each exercise for 30 seconds with 10 seconds of rest between exercises. One round takes about 7 minutes, but, if time allows, I recommend doing 2 or 3 rounds. Be sure to use good form on each exercise.

- Jumping jacks
- Wall sits
- Push-ups
- Crunches
- Step-ups
- Squats
- Dips
- Planks
- Running in place with high knees
- Lunges
- Push-ups with rotation
- Side planks

DAY 1

Foundation Training

You will need the book *True to Form: How to Use Foundation Training for Sustained Pain Relief and Everyday Fitness* by Dr. Eric Goodman to do this properly. Go through each of the ten foundation exercises in the book just once (it will take you about 10 to 15 minutes), with a focus on perfect form.

Tabata Sets

Perform a 10-to-15-minute warm-up, then complete 8 rounds of 20 seconds of a single exercise (burpees, jumping jacks, mountain climbers, kettlebell swings, squats, treadmill running, cycling, rowing machine—you choose) with 10 seconds of rest between rounds. Go at an all-out, maximum-intensity pace each round. Cool down with nasal breathing and easy aerobic movement for 5 to 10 minutes.

DAY 3

Workout 1: Metabolic Mobility (The Ultimate Foam Roller Routine)

At each station, make 20 to 30 passes with the foam roller. Making one pass means you go up the muscle group and back down.

- **Station 1:** Perform 10 burpees. Foam-roll the Achilles tendon and calf on your right leg.
- **Station 2:** Perform 10 burpees. Foam-roll the Achilles tendon and calf on your left leg.
- **Station 3:** Foam-roll your right hamstring. Perform 20 forward and backward high leg swings with your right leg.
- **Station 4:** Foam-roll your left hamstring. Perform 20 forward and backward high leg swings with your left leg.
- **Station 5:** Perform 10 burpees. Foam-roll the outside of your right hip.
- **Station 6:** Perform 10 burpees. Foam-roll the outside of your left hip.
- **Station 7:** Foam-roll the IT band on your right leg (located on the outside of your thigh). Perform 20 side-to-side leg swings with your right leg.
- **Station 8:** Foam-roll the IT band on your left leg. Perform 20 side-to-side leg swings with your left leg.
- **Station 9:** Perform 10 burpees. Foam-roll the adductors (on the inside of your thigh) on your right leg.
- **Station 10:** Perform 10 burpees. Foam-roll the adductors on your left leg.
- **Station 11:** Perform 50 jumping jacks. Foam-roll your back from bottom to top.
- **Station 12:** Perform 50 jumping jacks. Foam-roll your entire right shoulder complex.

Chapter 10

- **Station 13:** Perform 50 jumping jacks. Foam-roll your entire left shoulder complex.
- **Station 14:** Perform 10 burpees. Foam-roll your neck (back, left side, right side).
- **Station 15:** Perform 10 burpees. Foam-roll the front of both quads.

Workout 2: Tabata Sets
Perform a 10-to-15-minute warm-up, then complete 8 rounds of 20 seconds of a single exercise (burpees, jumping jacks, mountain climbers, kettlebell swings, squats, treadmill running, cycling, rowing machine—you choose) with 10 seconds of rest between rounds. Go at an all-out, maximum-intensity pace each round. Cool down for 5 to 10 minutes.

DAY 4

Workout 1: Morning Fasted Fat Burning
Before breakfast, perform 20 to 30 minutes of light cardio: yoga, fast walking, cycling, the elliptical, swimming, or hiking. The goal is to burn fat and lean up. You can drink a cup of plain black coffee or tea before this, but don't consume any calories until you are done. If you can't perform this cardio in the morning, do it after dinner and don't eat anything afterward.

Workout 2: Super-Slow Routine
For this workout, view the video on BoundlessBook.com/10, which lays out the exact routine to perform.

DAY 5

Workout 1: Tabata Sets
Perform a 10-to-15-minute warm-up, then complete 8 rounds of 20 seconds of a single exercise (burpees, jumping jacks, mountain climbers, kettlebell swings, squats, treadmill running, cycling, rowing machine—you choose) with 10 seconds of rest between rounds. Go at an all-out, maximum-intensity pace each round. Cool down with nasal breathing and easy aerobic movement for 5 to 10 minutes.

Workout 2: Sauna
Spend 20 to 40 minutes (as long as you can tolerate) in a dry sauna. Focus on deep breathing, box breathing (four count in, four count hold, four count out, four count hold), occasional yoga moves, and stretches.

Drink water in moderation (as little as you can get away with). Finish up with a cold shower. It is fine for your heart rate to get high during this session and for it to feel a bit uncomfortable.

DAY 6

Workout 1: Morning Fasted Fat Burning
Before breakfast, perform 20 to 30 minutes of light cardio: yoga, fast walking, cycling, the elliptical, swimming, or hiking. The goal is to burn fat and lean up. You can drink a cup of plain black coffee or tea before this, but don't consume any calories until you are done. If you can't perform this cardio in the morning, do it after dinner and don't eat anything afterward.

Workout 2: Mitochondrial and Metabolic Sprints
Do an all-out, maximum-intensity sprint on a rowing machine, bike, or elliptical (kettlebell swings, lunge jumps, or squat jumps can be used as a substitute if necessary) for 4 rounds of 30 seconds with 4 minutes of active rest between rounds. Active rest can be walking, easy jogging, or easy cycling. Finish with five 4-second all-out sprints, with 20 seconds of rest between sprints. (For more on the science behind these two forms of sprinting, visit BoundlessBook.com/10.)

DAY 7

Workout 1: Deep Breathing & Yoga
Engage in deep, nasal belly breathing during a morning yoga routine, which, for this particular day, should ideally last 45 to 60 minutes. Try to do this routine in the sunshine to amplify vitamin D levels. If that isn't an option, use a brightly lit room. Focus on your breath.

The yoga routine you follow is up to you. Whatever routine you perform, you should preferably perform it alone. My top recommendation is Gaia TV and any of their 45-to-60-minute relaxation routines. No power or calorie-blasting yoga! Many of the Rodney Yee DVDs are also good.

Workout 2: Morning Fasted Fat Burning
Before breakfast, perform 20 to 30 minutes of light cardio: brisk walking, cycling, the elliptical, swimming, hiking, or anything else you can perform while maintaining an easy, conversational, aerobic pace. The goal is to burn fat and lean up. You can drink a cup of plain black coffee or tea before this, but don't consume any calories until you are done. If you can't perform this cardio in the morning, do it after dinner and don't eat anything afterward.

Hot-Cold Contrast
Alternate between a 5-minute cold shower, cold soak, or easy cold-water swim (the water must be 55 degrees or less) and a 10-minute dry sauna or wet sauna session. Cycle between these for as long as possible, preferably for 30 to 45 minutes, which would allow you to perform two or three cycles.

Chapter 10

A Perfect Two Weeks of Training

WEEK 2

COLD THERMOGENESIS

Choose 5 to 7 days this week and complete the following 5-minute showering protocol in a fasted state: 10 seconds of warm water followed by 20 seconds of cold water, 10 times through.

In addition, choose one day and do either a 10-minute ice-cold shower or 15 to 20 minutes of full-body cold-water immersion

DAY 2

Workout 1: The 7-Minute Workout

Perform each exercise for 30 seconds with 10 seconds of rest between exercises. If time permits, attempt to do 2 or 3 rounds. Use good form on every exercise.

- Jumping jacks
- Wall sits
- Push-ups
- Crunches
- Step-ups
- Squats
- Dips
- Planks
- Running in place with high knees
- Lunges
- Push-ups with rotation
- Side planks

Workout 2: Morning Fasted Fat Burning

Before breakfast, perform 20 to 30 minutes of light cardio: brisk walking, cycling, the elliptical, swimming, hiking, or anything else you can perform while maintaining an easy, conversational, aerobic pace. The goal is to burn fat and lean up. You can drink a cup of plain black coffee or tea before this, but don't consume any calories until you are done. If you can't perform this cardio in the morning, do it after dinner and don't eat anything afterward.

Workout 3: Swim Hypoxic Sets (optional)

Perform a 500-meter warm-up. Then swim 12 rounds of 25 meters each. During each round, do not breathe, or keep breathing to a minimum. Recover for 10 seconds, then repeat. Swim as smoothly as you can—you don't need to sprint. See what changes in technique and fluidity you can make to conserve energy and oxygen.

DAY 1

Workout 1: Tabata Sets

Perform a 10-to-15-minute warm-up, then complete 8 rounds of 20 seconds of a single exercise (burpees, jumping jacks, mountain climbers, kettlebell swings, squats, treadmill running, cycling, rowing machine—you choose) with 10 seconds of rest between rounds. Go at an all-out, maximum-intensity pace each round. Cool down with nasal breathing and easy aerobic movement for 5 to 10 minutes.

Workout 2: Foundation Training

Go through each of the ten Foundation exercises in the book *True to Form* by Dr. Eric Goodman just one time with a focus on perfect form.

DAY 3

Workout 1: Tabata Sets

Perform a 10-to-15-minute warm-up, then complete 8 rounds of 20 seconds of a single exercise (burpees, jumping jacks, mountain climbers, kettlebell swings, squats, treadmill running, cycling, rowing machine—you choose) with 10 seconds of rest between rounds. Go at an all-out, maximum-intensity pace each round. Cool down with nasal breathing and easy aerobic movement for 5 to 10 minutes.

Workout 2:
Metabolic Mobility (The Ultimate Foam Roller Routine)

At each station, make 20 to 30 passes with the foam roller. Making one pass means you go up the muscle group and back down.

- **Station 1:** Perform 10 burpees. Foam-roll the Achilles tendon and calf on your right leg.
- **Station 2:** Perform 10 burpees. Foam-roll the Achilles tendon and calf on your left leg.
- **Station 3:** Foam-roll your right hamstring. Perform 20 forward and backward high leg swings with your right leg.
- **Station 4:** Foam-roll your left hamstring. Perform 20 forward and backward high leg swings with your left leg.
- **Station 5:** Perform 10 burpees. Foam-roll the outside of your right hip.
- **Station 6:** Perform 10 burpees. Foam-roll the outside of your left hip.
- **Station 7:** Foam-roll the IT band on your right leg (located on the outside of your thigh). Perform 20 side-to-side leg swings with your right leg.
- **Station 8:** Foam-roll the IT band on your left leg. Perform 20 side-to-side leg swings with your left leg.
- **Station 9:** Perform 10 burpees. Foam-roll the adductors (on the inside of your thigh) on your right leg.
- **Station 10:** Perform 10 burpees. Foam-roll the adductors on your left leg.

Chapter 10

- **Station 11:** Perform 50 jumping jacks. Foam-roll your back from bottom to top.
- **Station 12:** Perform 50 jumping jacks. Foam-roll your entire right shoulder complex.
- **Station 13:** Perform 50 jumping jacks. Foam-roll your entire left shoulder complex.
- **Station 14:** Perform 10 burpees. Foam-roll your neck (back, left side, right side).
- **Station 15:** Perform 10 burpees. Foam-roll the front of both quads.

DAY 5

Workout 1: Tabata Sets
Perform a 10-to-15-minute warm-up, then complete 8 rounds of 20 seconds of a single exercise (burpees, jumping jacks, mountain climbers, kettlebell swings, squats, treadmill running, cycling, rowing machine—you choose) with 10 seconds of rest between rounds. Go at an all-out, maximum-intensity pace each round. Cool down with nasal breathing and easy aerobic movement for 5 to 10 minutes.

Workout 2: Sauna
Spend 20 to 40 minutes (as long as you can tolerate) in a dry sauna. Focus on deep breathing, box breathing (four count in, four count hold, four count out, four count hold), occasional yoga moves, and stretches.

Drink water in moderation (as little as you can get away with). Finish up with a cold shower. It is fine for your heart rate to get high during this session and for it to feel a bit uncomfortable.

Workout 3: Foundation Training
Go through each of the ten Foundation exercises in the book *True to Form* by Dr. Eric Goodman just once with a focus on perfect form.

DAY 6

Workout 1: 4-Minute HIIT with 4-Minute Rest Periods for VO_2 Max
Complete five rounds of intense 4-minute intervals. Go at the maximum pace you can maintain without compromising on form. Take a 4-minute easy, aerobic, active rest period between each round. You can run, bike, swim, use the elliptical, or row. You'll find more information on the effectiveness of this routine on BoundlessBook.com/10.

Workout 2: Morning Fasted Fat Burning
Before breakfast, perform 20 to 30 minutes of light cardio: brisk walking, cycling, the elliptical, swimming, hiking, or anything else you can perform while maintaining an easy, conversational, aerobic pace. The goal is to burn fat and lean up. You can drink a cup of plain black coffee or tea before this, but don't consume any calories until you are done. If you can't perform this cardio in the morning, do it after dinner and don't eat anything afterward.

DAY 4

Workout 1: Super-Slow Routine
For this workout, view the a video on BoundlessBook.com/10, which lays out the exact routine to perform.

Workout 2: Morning Fasted Fat Burning
Before breakfast, perform 20 to 30 minutes of light cardio: brisk walking, cycling, the elliptical, swimming, hiking, or anything else you can perform while maintaining an easy, conversational, aerobic pace. The goal is to burn fat and lean up. You can drink a cup of plain black coffee or tea before this, but don't consume any calories until you are done. If you can't perform this cardio in the morning, do it after dinner and don't eat anything afterward.

DAY 7

Workout 1: Hot-Cold Contrast
Alternate between a 5-minute cold shower, cold soak, or easy cold-water swim (the water must be 55 degrees or less) and a 10-minute dry sauna or wet sauna session. Cycle between these for as long as possible, preferably for 30 to 45 minutes, which would allow you to perform two or three cycles.

Workout 2: Morning Fasted Fat Burning
Before breakfast, perform 20 to 30 minutes of light cardio: brisk walking, cycling, the elliptical, swimming, hiking, or anything else you can perform while maintaining an easy, conversational, aerobic pace. The goal is to burn fat and lean up. You can drink a cup of plain black coffee or tea before this, but don't consume any calories until you are done. If you can't perform this cardio in the morning, do it after dinner and don't eat anything afterward.

Workout 3: Deep Breathing and Yoga
Engage in deep, nasal belly breathing during a morning yoga routine, which, for this particular day, should ideally last 45 to 60 minutes. Try to do this routine in the sunshine to amplify vitamin D levels. If that isn't an option, use a brightly lit room. Focus on your breath.

The yoga routine you follow is up to you. Whatever routine you perform, you should preferably perform it alone. My top recommendation is Gaia TV and any of their 45-to-60-minute relaxation routines. No power or calorie-blasting yoga! Many of the Rodney Yee DVDs are also good.

Chapter 11

The "Family Reunion with No Gym" Workout

I recently packed up my wife and twin boys and embarked upon our annual family vacation to the tiny, sleepy coastal town of Seaside, Oregon. A somewhat touristy town with far more arcades, candy stores, and ice cream shops than gyms, Seaside wouldn't be my ideal choice for an active, healthy hot spot. But vacationing in Seaside is a long-standing tradition in my wife's family, so I joined in.

As I tend to do for road trips, into the back of the car I threw my kettlebell, my suspension trainer, an elastic band, and a couple of light sliders (think tiny plastic plates the size of dinner plates that can be used for a host of different exercises). With no access to a gym or any other workout equipment, but armed with these four simple and easy-to-transport tools and five basic exercises for each tool, every day I was able to perform an enormous variety of exercises, including the following (you can view any of these exercises at YouTube.com/BenGreenfieldFitness or ExRx.net):

KETTLEBELL

- Swings
- Around the world
- Single-arm clean to overhead press
- Goblet squat
- Bent row

SUSPENSION STRAP

- Pull-ups
- Suspended push-ups with knee-to-chest
- Left and right leg suspended lunges
- Plank rotations

SLIDERS

- Mountain climbers
- Lateral slides
- Pikes
- Bridges
- Crocodile walks

ELASTIC BAND

- Front raises
- Side raises
- Lateral shuffles
- Squat to press
- Kickouts

BODY WEIGHT

- Burpees
- Jumping jacks
- Skipping in place
- Sit to stand
- Plank to push-up

As you can imagine, when completed with little to no rest between sets, this workout simulates exactly what I'd get at a highfalutin health club—all performed in the backyard of a beach house.

Chapter 12

	TOTIPOTENT	PLURIPOTENT	MULTIPOTENT
Cell types capable of generating	Differentiate into any cell type	Differentiate into most cell types	Differentiate into a limited range of cell types
Found in	Early cells of fertilized egg	Inner mass cells of the blastocyst	Many adult tissues (fat, bone, etc.)
Research pros	Easy to isolate and grow	Easy to isolate and grow	Fewer ethical issues, less chance of immune rejection if taken from same patient
Research cons	Ethical issues	Ethical issues, possible tumor formation	Hard to isolate, limited differentiation, scarce

Source: Anna MacDonald, "Cell Potency: Totipotent vs Pluripotent vs Multipotent Stem Cells," Cell Science, Technology Networks, May 29, 2018, www.technologynetworks.com/cell-science/articles/cell-potency-totipotent-vs-pluripotent-vs-multipotent-stem-cells-303218.

Near-Infrared vs. Far-Infrared Light

Light can be broken down into wavelengths, and the wavelengths of infrared radiation, also called infrared light, are longer than those of visible light, so it's invisible to the human eye. Infrared light wavelengths extend from 700 nanometers, the red edge of the visible light spectrum, all the way up to 1 mm.

Near-infrared radiation (NIR) exists within the spectrum of natural sunlight. In fact, about half of the total energy of the sun is NIR, which means that our bodies are already naturally adapted to use it for different processes like collagen and elastin stimulation (which tightens skin), combating cancerous cells, and improving circulation. Far-infrared radiation (FIR) has longer wavelengths than NIR, and the benefits of FIR therapy mimic many of the benefits derived from natural sunlight, but without the risk of burns or cancerous effects. FIR can promote blood flow and healthy blood vessel growth and also modulate proper sleep. Both NIR and FIR induce relaxation and detoxification via sweating, and my recommendation is to use a one-two combo of both, preferably along with the visible wavelength of red light so that you get the best of all spectrums.

Keep in mind that the benefits of NIR and FIR exposure are dose-dependent. While moderate exposure to the infrared radiation of the sun throughout the day is beneficial, as is a dose of sauna exposure or the use of PBM devices that simulate or concentrate the conditions of natural sunlight, chronic exposure or doses higher than recommended can lead to skin and cell damage. In addition, certain infrared saunas may expose you to unhealthy levels of electrical pollution (the same type of EMF you'll learn more about in chapter 20), which is especially concerning since these saunas often have FIR emitters all the way around the sauna, meaning you may be bombarded by pollution from all directions. This is why it is important to only use PBM for ten to sixty minutes per day, depending on the power of your chosen device, and to look for an NIR sauna that uses heat lamps or other low-EMF strategies, such as two separate magnetic devices that will cancel each other out, and also has minimal amounts of electrical wiring throughout the walls.

Finally, red light, which occurs at a wavelength of 680 nm, does not penetrate as deep as near infrared or far infrared, but it is more readily absorbed by your skin, leading to increased collagen production and skin health—so if your goal is to minimize scar tissue, address wrinkles, and improve skin tone, you should also include a red-light source in your photobiomodulation protocol.

Chapter 12

What would a typical recovery day, week, or month look like if you were uninjured and just trying to maximize the results of your training? What would it look like if you were injured and trying to heal your body as fast as possible? What would it look like if you were overtrained and in a state of chronic fatigue? What would it look like in those last few precious weeks leading up to a competition? What would it look like in the throes of healing your body from something like a Spartan Race or an Ironman or a marathon?

After all, properly programming these recovery techniques can take some serious forethought and scientific application. If you are concerned about how to string all this training and recovery material together into a viable and effective program that doesn't leave you gasping for air during a race because you spent too much time hanging from an inversion table or electrocuting yourself, don't worry. Here's a simple guide to a typical year of optimized recovery. Many of these strategies, such as infrared light or sauna, can be used while doing other productive activities, such as reading, listening to audiobooks, or working.

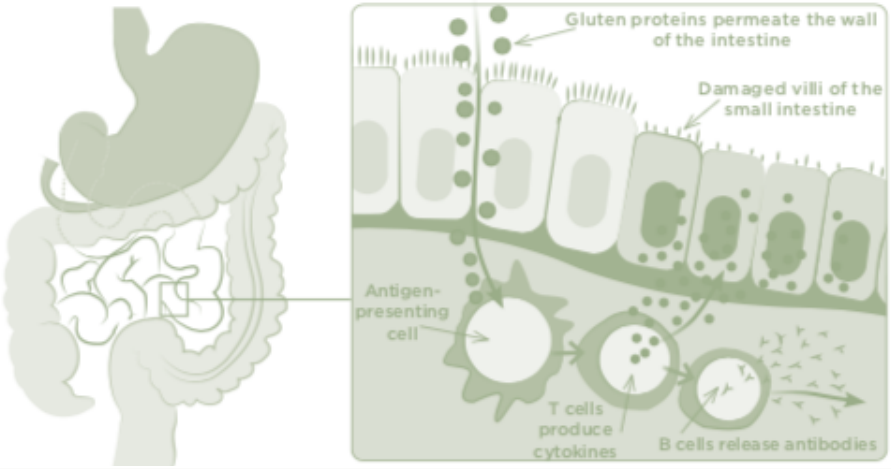
DAILY	
 Identify inflammatory foods (InflammationFactor.com is a good resource) and avoid them.	 Apply full-body photobiomodulation for ten to twenty minutes.
 Fast for 12 to 16 hours.	 Drink hydrogen-rich or structured water with minerals added.
 Self-administer foam rolling or deep-tissue work on any tight or sore spots, using books like *Becoming a Supple Leopard* and *Ready to Run* as "cookbook" guides for any areas that need detailed work.	 Practice inversion for five to ten minutes.
 Use vibration therapy on any tight or sore spots.	 Take 10 to 50 mg of CBD prior to bed.
 Take a quick cold shower or cold plunge every morning and evening.	 Take three Kion Flex capsules on an empty stomach sometime during the day.
 Wear compression socks or tights during the day and when traveling.	 Take 1 to 20 g of fish oil with one meal each day.

WEEKLY	
 Get a 60-to-90-minute massage.	 Take one longer, 20-to-30-minute cold soak or cryotherapy session.
 Have a chiropractic adjustment (I personally swear by a weekly quick adjustment to shoulders, hips, back, and wrists).	 Have between two and five 20-to-30-minute infrared sauna sessions.

Chapter 12

IF INJURED	
	Apply electrical muscle stimulation one to two times daily for 10 to 30 minutes, preferably combined with ice and topical magnesium or topical CBD.
	Apply pulsed electromagnetic field therapy throughout the day as often as possible. These devices can be worn throughout the day and night.
	Have a sixty-to-ninety-minute HBOT session once or twice a week, especially after periods of heavy workouts or airline travel.
	Take three Kion Flex capsules in the morning and another three in the evening.
	Take 20 to 40 g of Kion Aminos spread throughout the day.
	Adjust your training protocol so you can stay active with less intense activities (e.g., sauna; cold thermogenesis; walking; swimming; non-weight-bearing cardio such as rowing machine, cycling, and elliptical; light weights or bodyweight training combined with blood flow restriction bands).
	Use prolotherapy or stem cell therapy (optional).
	Sleep with magnets on the injured area (optional).
	Take a high-dose vitamin C supplement or get a vitamin C IV (optional).

Chapter 13



FOODS SUITABLE ON A LOW-FODMAP DIET					
Fruit	• banana • blueberry • boysenberry • cantaloupe	• cranberry • durian • grape • grapefruit	• honeydew melon • kiwifruit • lemon • lime	• mandarin orange • passionfruit • pawpaw • raspberry	• rhubarb • rockmelon • star anise • strawberry • tangelo
Vegetables	• alfalfa • bamboo shoots • bean shoots • bok choy	• carrot • celery • choko • choy sum • endive • ginger	• green beans • lettuce • olives • parsnip • potato • pumpkin	• red capsicum (bell pepper) • silver beet • spinach • squash • swede	• sweet potato • taro • tomato • turnip • yam • zucchini
Herbs	• basil • chili • coriander	• ginger • lemongrass • marjoram	• mint • oregano • parsley	• rosemary • thyme	
Grain Foods	• gluten-free bread or cereal products	• 100% spelt bread • rice	• oats • polenta	**OTHER** • arrowroot • millet	• psyllium • quinoa • sorghum • tapioca
Milk Products	**MILK** • lactose-free milk* • oat milk*	• rice milk* • soy milk*	**CHEESES** • hard cheeses • Brie • Camembert	**ICE CREAM SUBSTITUTES** • gelato • sorbet	**BUTTER SUBSTITUTE** • olive oil **YOGURT** • lactose-free varieties
Other	**SWEETENERS** • sugar** (sucrose) • glucose	• artificial sweeteners not ending in "-ol"	**HONEY SUBSTITUTES** • golden syrup** • maple syrup**	• molasses • treacle	

** Check for additives*
*** Small quantities*

FOODS TO ELIMINATE ON A LOW-FODMAP DIET					
Excess Fructose	**FRUIT** • apple • mango • nashi • pear	• canned fruit in natural juice • watermelon	• concentrated fruit sources • large servings of fruit	• dried fruit • fruit juice	**SWEETENERS** • fructose • high-fructose corn syrup • honey
Lactose	**MILK** • milk from cows, goats, or sheep	• custard ice cream • yogurt	**CHEESES** • soft unripened cheeses • cottage	• cream • mascarpone • ricotta	
Fructans	**VEGETABLES** • artichokes • asparagus • beetroot • broccoli • brussels sprouts • cabbage	• eggplant • fennel • garlic • leek • okra • onions (all) • shallots • spring onions	**CEREALS** • wheat and rye in large amounts, e.g. bread, crackers, cookies, couscous, pasta	**FRUIT** • custard apple • persimmon • watermelon	**MISCELLANEOUS** • chicory • dandelion • inulin • pistachio
Galactans	**LEGUMES** • baked beans • chickpeas	• kidney beans	• lentils • soybeans		
Polyols	**FRUIT** • apple • apricot • avocado • blackberry	• cherry • longon • lychee • nashi	• pear • plum • prune • watermelon	**VEGETABLES** • cauliflower • green capsicum (bell pepper) • mushroom • sweet corn	**SWEETENERS** • sorbitol • mannitol • isomalt • maltitol • xylitol

Chapter 13

If You Eat Bread, Eat This Bread

I do indeed eat bread—but it is the mouthwatering, slow-fermented sourdough bread that my wife Jessa makes. The process of fermentation used in sourdough bread not only predigests the gluten but also reduces the glycemic index of the bread, making it far more friendly to your gut and blood sugar levels.

Lest you think that you can go to the grocery store and grab any old sourdough loaf, it is important to note that the fermentation process capable of breaking down gluten is called slow fermentation. Many sourdoughs are short-fermented sourdoughs and are made quickly with chemicals and acids that impart a soured taste without actually allowing natural yeasts and lactic acid bacteria to work through the grain. If you want to experience the full benefits of sourdough, make sure to find a baker who makes slow-fermented sourdough or learn how to make it at home.

This is my wife Jessa's sourdough recipe, in all its tasty, mildly addictive glory. I highly recommend serving it with a pat of grass-fed butter, a drizzle of raw honey or blackstrap molasses, and a sprinkling of coarse salt.

- 1 cup sourdough starter
- 1 cup lukewarm water
- 2 teaspoons salt
- 3 to 4 cups organic all-purpose flour

1. *In a large mixing bowl, combine the starter, water, and salt and mix well. Add 2 cups of the flour and stir until well combined. Allow the mixture to rest for 5 minutes.*
2. *After 5 minutes, add more flour ½ cup at a time, until the dough is sticky but can be handled. Sprinkle the counter with flour, place the dough on the flour, and knead (the dough should feel elastic and easy to knead). Continue to add small amounts of flour at a time while kneading until the dough does not stick to your hands. Knead for 10 to 15 minutes for a high-gluten flour, less for flours with less gluten, like einkorn wheat flour.*
3. *Place the dough in a large mixing bowl and cover it with plastic wrap. Allow the dough to sit for at least 8 hours or overnight at room temperature. The dough should double in size.*
4. *Pop it out of the bowl, knead in about 2 tablespoons of flour, and shape the dough to fit whatever you'll be baking it in, such as a loaf pan. If you are using a loaf pan, grease it now. If you are using a traditional proofing basket, sprinkle it with flour. Place the shaped loaf in the pan or basket and loosely cover it with plastic wrap. Place it on the countertop and let it rise for 2 to 4 hours. You will know it is ready when it is close to or fully doubled in size.*
5. *Preheat the oven to 550°F or the hottest setting (sourdough likes it hot!). If you are using a proofing basket, place a cookie sheet in the oven before preheating. Once the oven is preheated, turn the temperature down to 450°F. If you are using a proofing basket, take the cookie sheet out and gently flip the loaf out of the basket and onto the cookie sheet.*
6. *Place the loaf in the oven and bake for 10 minutes. Turn the temperature down to 350°F and bake for an additional 30 minutes, or until the bread sounds hollow when you knock on it or the internal temperature is 190°F.*
7. *If you are using a loaf pan, remove the pan from the oven and place it on a wire rack to cool. If you are using a cookie sheet, use hot pads to transfer the bread out to a wire rack.*
8. *Allow the bread to cool completely before cutting into it, preferably with a serrated knife to avoid any problematic crumbling.*

TIP: Whole-wheat flour tends to absorb water less quickly, so if you use it, be patient in step 1 and allow the flour mixture to rest for the full 5 minutes. Too little water or too much flour results in a useless brick of dough.

NOTE: A proofing basket is generally made of wicker and is used to produce a rustic, artisan-style bread. It's used during the second ferment of the sourdough, and when you transfer the dough from the basket to the cookie sheet, you will see the spiral design of the basket imprinted on the loaf.

Chapter 13

The Probiotic Enema

As gross or off-putting as it may sound, you can repopulate your good gut bacteria by sticking a tube up your butt and funneling probiotics into your colon—very much like a coffee enema, but with probiotics rather than a cup o' joe. My friend Matt Gallant is a professional poker player and biohacker who has created a recipe for a probiotic enema. It maximizes absorption by minimizing the distance that the probiotics have to travel through the digestive tract, bypassing the acidity of the stomach, and mainlining the bacteria directly into the colon.

For this enema recipe, you will need:

- 1 liter of coconut water
- 5 capsules of Matt's P3-OM Probiotics (for a discount code, visit BoundlessBook.com/13)
- 2 butyric acid (butyrate) capsules (optional, for an even more beneficial effect)
- A large glass jar with a lid, such as a 32-ounce mason jar

1. *In a large mixing bowl, mix the coconut water and P3-OM capsules with a fork, whisk, or latte frother. (If you're using butyric capsules, break them open and add them to the mixture too.) Pour the whole mixture into the glass jar and put the lid on it.*
2. *Let the mixture ferment at room temperature for three to six hours, until you see bubbles in the mixture (the warmer the room, the less time you'll need). You can even leave it overnight.*
3. *Once the whole probiotic bath is cultured and you can see bubbles, keep it refrigerated until you are ready to use it. To administer the enema, you will need an enema tube (you can find the full stainless steel enema kit I use on BoundlessBook.com/13). Administer the mixture, then hang upside down from an inversion table or yoga trapeze, or lay on your back with your legs up against the wall, for about 20 minutes to let the mixture soak in.*

If you are too squeamish to give yourself an enema, you can also drink this mixture over two days after it is cultured and refrigerated. (If you decide to drink it, I recommend adding sweeteners, such as pureed fruits like blueberries or strawberries, maple syrup, or liquid stevia.) But as uncomfortable as it may sound, the quickest route is right up the back door.

How to Make a Cleansing Detox Juice

I'm not gonna lie: the first time you try this detox juice, it is going to taste absolutely horrible. That's because, unlike the juices found at Whole Foods, it doesn't contain eighteen apples, three bananas, and a pound of other concentrated sugar and fructose sources. The first time I tried it, I had to water it down and chug it so that I wouldn't have to taste the full flavor of the concoction. But between the potent ginger and garlic, the spicy cayenne, and the powerful turmeric, it will knock out just about any major toxins that are floating around in your system. If you must, add stevia to bestow just a bit of sweetness to the brew.

For this detox juice, you will need:

- 1 (1-inch) piece of ginger, chopped
- 3 cloves garlic
- ½ to ¾ cup water
- 1 teaspoon cayenne pepper
- 1 teaspoon turmeric powder
- Juice of 1 lemon
- ⅓ cup apple cider vinegar (see Tip)
- Liquid stevia (optional)

1. *Place the ginger, garlic, and water in a medium-sized saucepan over high heat and bring to a boil. Boil for 10 minutes, then remove from the heat and let cool to room temperature (you can drop a few ice cubes in there).*
2. *Add the rest of the ingredients to the mixture. If you prefer, transfer it to a blender and blend for a minute or two, until smooth.*
3. *Pour it into a glass, slam it, and try not to gag. There's an entertaining video of my first time trying it on BoundlessBook.com/13.*

TIP: Use organic apple cider vinegar with the mother, like Bragg brand.

Chapter 13

My Full-Body Detox Protocol

This is what my annual full-body detox protocol typically looks like. If I'm home for a long enough stretch (without traveling), I'll stick to this protocol for up to four weeks, but if it's the first time that you're doing it or you need a deep "spring cleaning" for your body, I recommend following it for three months. It is okay to continue your normal workout routine during this time, although you may find that for the first several days or even the first couple of weeks, you are a bit more fatigued than usual and may need to primarily get your movement in with yoga, sauna, swimming, hiking, or easier bodyweight workouts.

Daily Diet Guidelines

- Avoid frequent snacking; shoot for two or three meals per day with just one to two snacks, maximum.
- Avoid any foods that have been heavily cooked or exposed to high heat.
- Avoid baked goods.
- Avoid soy, wheat, legumes, and dairy unless fermented, soaked, or sprouted.
- Avoid high intake of heavy foods like cheeses and nut butters.
- Avoid extremely spicy foods.
- Avoid white sugar, simple starches, high alcohol intake, high caffeine intake, and frequent recreational drug use.
- Include fermented foods such as kimchi, sauerkraut, natto, kefir, and kombucha, as long as they do not have added sugars.
- Include a wide variety of bitters and digestifs, such as ginger, lemon, lime, and dandelion.

Teas and Broths: Drink several cups of any of the following each day, preferably spread throughout the day:

- Pau d'arco tea, preferably blended with a tablespoon of soy lecithin or sunflower lecithin and a teaspoon of turmeric powder. You can add stevia for flavor.
- Organic bone broth. I prefer Kettle & Fire beef or chicken broth. You can also find instructions for making your own bone broth on BoundlessBook.com/13.
- Decoction tea. You'll find more information and the recipe on page 363. Read John Douillard's book *Body, Mind, and Sport* for more on the science behind this tea.
- Fresh celery juice

Hot and Cold Therapy: Stay in a dry sauna, steam sauna, or infrared sauna for ten to thirty minutes, at least long enough to begin sweating and preferably long enough that you begin to get uncomfortably hot. You can kill two birds with one stone and do any of the day's other activities in the sauna. You can also read or simply sit and breathe—staying still in a sauna can increase parasympathetic nervous system activity and enhance detoxification. Just stay away from your phone, WiFi, Bluetooth, and other emitters of electromagnetic fields. Another good sauna activity is breathwork: resisted breathwork, restricted breathwork, holotropic breathwork, breath holds, or any of the other breathwork tactics in chapter 3. Follow this sauna session with a two-to-five-minute cold shower, soak in a cold bath, dip in a cold pool, or any other cold thermogenesis activity.

Dry Skin Brushing: Either in the sauna or after a shower, perform a full-body dry skin brush for two to five minutes. You can find dry skin brushes, as well as full instructions for how to use them, on BoundlessBook.com/13.

Rebounding: At any point during the day (I prefer first thing in the morning to get the lymph fluid circulating), jump on a rebounding trampoline for five to fifteen minutes. I recommend any of the JumpSport model trampolines. It is okay to alternate between single- and double-leg bouncing. A vibration platform or tai chi full-body shaking are also good options.

Oil Pulling: This practice involves simply swishing oil in your mouth for five minutes (not twenty minutes) each morning. You can find full instructions on how to do this on BoundlessBook.com/13. Be sure to spit the oil out instead of swallowing it when you're finished. For oil, I prefer The Dirt brand oil-pulling oil or extra-virgin coconut oil.

Intermittent Fasting (daily): After dinner, wait for a minimum of twelve hours (and up to sixteen hours) before your next meal. The closer you can get to sixteen hours, the better.

Meditation (two to five times per week): Meditate for fifteen to sixty minutes. This can include yoga, prayer, transcendental meditation, mindfulness meditation, box breathing, underwater swimming, nature sit spots,

Chapter 13

Full Body Detox, cont'd.

or the use of a meditation app such as Headspace, Calm, Oak, or Sam Harris's meditation app. You do not need to do the same form of meditation each Sunday.

24-Hour Fast (once a week): At either breakfast, lunch, or dinner on Saturday, begin a twenty-four-hour fast until breakfast, lunch, or dinner on Sunday. During this fast, you can consume a maximum of 2 cups of each of the teas listed above, as well as bone broths and celery juice. You can also drink good, clean water liberally, and, especially if you are an athlete concerned about energy levels or muscle maintenance, you can use any or all of the following:

- Up to 30 g of essential amino acids, split into several 5-to-10-gram portions
- Two or three shots of trace liquid minerals, or sea salt and lemon juice in water
- Two or three handfuls of EnergyBits organic spirulina or chlorella. Swallow them whole or chew them. (You'll find a discount code on BoundlessBook.com/13.)
- One to two servings of exogenous ketones, such as HVMN, KetoneAid, PerfectKeto, KetoForce, or Ancient Nutrition. (You'll find discount codes on BoundlessBook.com/13.)
- Chia seed slurry: Fill a 16-to-20-ounce glass mason jar with 2 to 4 tablespoons of chia seeds. Fill the rest of the jar with water, place the lid on the jar, and refrigerate overnight. Try not to consume more than 4 tablespoons of chia seeds in the course of twenty-four hours (1 tablespoon is about 60 calories). You can add stevia, lemon juice, or sea salt to this chia seed slurry.
- Any low-calorie or no-calorie beverage, such as Pellegrino or Gerolsteiner with stevia, Bragg's apple cider vinegar drinks, coconut kefir, Zevia, or any of the teas listed above

When you break your fast, begin with a light, easy-to-digest meal. One of the best, most comprehensive guides to fasting and what you can and cannot consume before, during, and after a fast is *The Complete Guide to Fasting* by Dr. Jason Fung with Jimmy Moore.

Coffee Enema (one to two times per week): Since an enema is something you don't want to make a mistake with, you can find full instructions for how to do this on BoundlessBook.com/13. After you have used a stainless steel enema kit and tube to add 20 to 40 ounces of organic black coffee to your colon, lie on your left side for twenty minutes. If you have trouble retaining the enema, add a tablespoon of blackstrap molasses.

Chapter 14

Is It Healthy to Put Fat in Your Coffee?

You are no doubt familiar with the current craze of dumping butter, coconut oil, MCT oil, or ghee into what your grandparents would have consumed as a no-frills, plain ole cup of coffee.

There is definitely something to this trendy practice. When blended with fats, cognitively enhancing cholesterols found in the mighty coffee bean, including cafestol and kahweol, can cross the blood-brain barrier, increasing coffee's cognitive benefits and extending the mental boost to a level beyond that which caffeine can provide. In addition, adding fats to coffee can keep you satiated for long periods of time, boost ketone production if you use MCT or coconut oil, provide anti-inflammatory effects and feed beneficial bacteria in the gut if you use butter, and even provide a slight elevation in metabolic rate if you use MCT oil (due to the thermogenic effect of combining caffeine and MCT oil).

So I am certainly a fan of blending fat into your coffee. But you also can't consume oodles of saturated fat in large doses without taking some steps to mitigate the potential damage. For example, the long-chain fatty acids found in coconut oil can cause a rise in inflammatory T cells that, if left unchecked, can lead to and exacerbate autoimmune diseases or gut discomfort. The short-chain fatty acids found in vegetables can reverse this damage, so if you do add concentrated amounts of fat to your coffee, make sure to consume several servings of vegetables throughout the day, especially antioxidant-rich greens, herbs, and spices. In other words, don't have fatty coffee for breakfast, sardines and an avocado for lunch, and a rib-eye steak and mashed potatoes for dinner and expect your cholesterol, inflammation, and other biomarkers to respond favorably. A better scenario would be a fatty coffee for breakfast, a giant salad for lunch, and boatloads of roasted vegetables with dinner.

Keep in mind, too, that you are often drinking many, many calories in a fatty coffee beverage—remember, fat has twice as many calories as protein or carbohydrates—so it counts as a full meal and isn't best consumed along with, say, a big plate of bacon and eggs, assuming you care about the size of your waistline. And finally, if intermittent fasting is your thing, be aware that a cup of high-calorie fatty coffee will definitely take you out of a fasted state, although because it is unlikely to spike glucose or insulin levels, it is one of the better choices for staying "semi-fasted."

Now don't get me wrong: there's nothing wrong with a big black cup o' joe, but occasionally it's fun to spin the brain's dials with inventive deliciousness. So here are three of my favorite fatty coffee recipes to get your creative wheels churning: two hot, for those chilly fall or winter days or when you crave the comfort of a hot brew, and one cold, for a pre- or postworkout pick-me-up or a cognition-enhancing treat on a warm summer day. Pro tip: For all these recipes, I pretty much only use a smaller NutriBullet blender. A big countertop blender is unnecessary, unwieldy, and leaves too much of your coffee goodness stuck to the sides of the blender jar.

COFFEE-CACAO SIPPER

Prepare yourself for an intense chocolate experience with a hint of java. The Ceylon cinnamon helps control blood sugar, and though the collagen is optional, I recommend it for active individuals. The cardamom or rosemary is also optional but will enhance the coffee's antioxidant properties.

- 12 to 16 ounces brewed coffee, hot
- 1 scoop unflavored collagen peptides (optional)
- 2 tablespoons cacao powder
- 1 tablespoon almond or other nut butter
- 1 tablespoon coconut butter or coconut manna
- 1 teaspoon Ceylon cinnamon
- Drop of butterscotch toffee–flavored or vanilla-flavored liquid stevia
- Pinch of cardamom or dried ground rosemary (optional)

Place the ingredients in a blender and blend for 1 minute, until smooth and oh-so-frothy. Oh, and be careful when you open the lid: this stuff can get a bit fizzy under pressure. Just ask my wife, who has—perhaps more than once—had to help me clean a coffee explosion off the kitchen walls.

Chapter 14

CRUNCHY COFFEE FROSTY

This drink is like a milkshake-coffee combo with a bit of a superfood crunch at the end. I'll occasionally break off a few chunks of a nice, very dark chocolate bar and stir that in instead of the cacao nibs.

- 8 to 12 ounces brewed coffee, chilled
- 4 ounces full-fat coconut milk or coconut cream
- 2 tablespoons cacao powder
- 1 teaspoon ground Ceylon cinnamon
- Drop of butterscotch toffee–flavored or vanilla-flavored liquid stevia
- Cacao nibs, for topping
- Unsweetened coconut flakes, for topping

Place all the ingredients except the toppings in a blender and puree until smooth, adding water and ice to achieve your desired texture. After blending, top with or stir in the cacao nibs and unsweetened coconut flakes.

GHEE-COCONUT-CACAO COFFEE

This wonderful morning brew keeps me satiated for hours, and the cacao offers a nice boost of dopamine too. I occasionally use two packets of Four Sigmatic mushroom extract instead of coffee.

- 8 ounces brewed coffee, hot
- 2 tablespoons cacao tea (I recommend the MiCacao brand, which is a delicious mix of cacao shells and nibs)
- 1 tablespoon coconut butter or coconut manna
- 1 tablespoon ghee (optional, but if you don't use it, I'd double up on the coconut butter or coconut manna)
- Drop of butterscotch toffee–flavored or vanilla-flavored liquid stevia (I prefer Omica Organics)

Place the ingredients in a blender and blend for 60 to 90 seconds, until well combined and smooth.

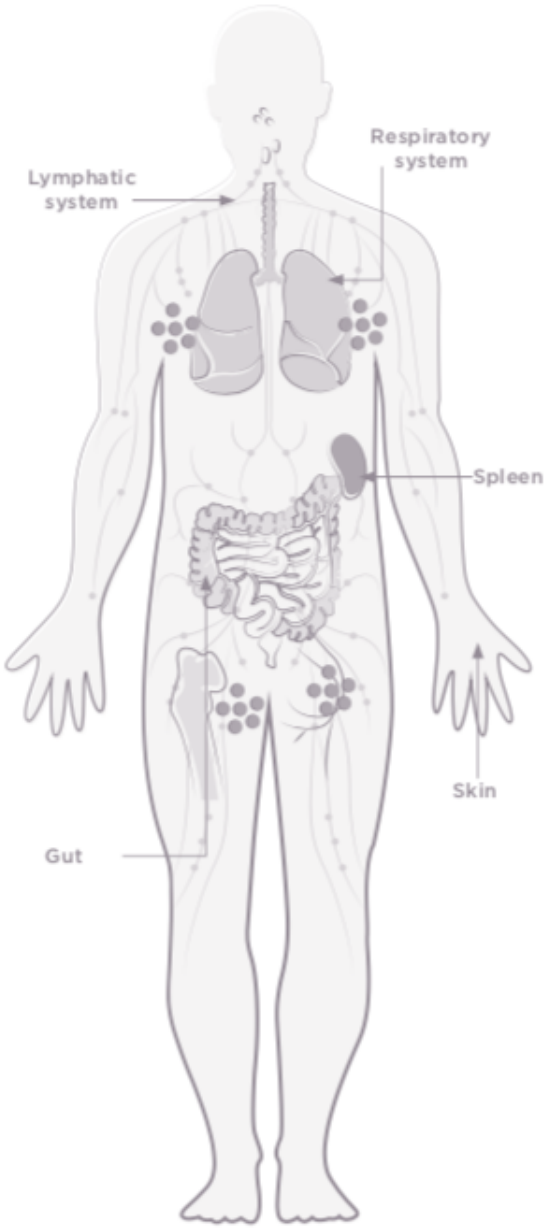
The second problem that can accompany a low-carb, ketogenic diet is a cluster of symptoms known collectively as the "keto flu," also known as carbohydrate withdrawal. Keto flu can manifest as any or all of the following symptoms:

Brain fog	Irritability
Headaches	Muscle soreness
Chills	Nausea
Sore throat	Poor focus
Confusion	Stomach pains
Dizziness	Sugar cravings
Insomnia	

Chapter 15

IMMUNITY 101

The complex immune system has six components:



- The lymphatic (lymph) system, which is a network of organs, nodes, vessels, and tissues that transport lymph fluid throughout the body. Lymph fluid contains infection-fighting white blood cells, and the organs and nodes are where toxins, waste, and other unwanted debris are filtered.
- The respiratory system, which consists of a series of organs, including the mouth, lungs, pharynx, larynx, and trachea, that take in oxygen and expel carbon dioxide. Airways are covered in a mucus layer that traps pathogens and other particles before they can reach the lungs. Tiny hairlike, muscular projections called cilia propel the mucus layer.
- The skin, which is the human body's largest organ and serves as a barrier to the external environment. The skin's immune system contains an estimated twenty billion T cells (a type of white blood cell), which control skin microbes and educate the immune system as a whole.
- Lymphocytes, small white blood cells that seek out and destroy pathogens and orchestrate an immune response. The two types of lymphocytes are B cells, which make antibodies that attack bacteria and other toxins, and T cells, which help destroy infected or cancerous cells. Killer T cells are a subgroup of T cells that kill cells that are infected with pathogens or are otherwise damaged. Helper T cells determine which immune responses the body has to a particular pathogen.
- The spleen, which stores white blood cells and platelets, filters blood, and recycles old red blood cells. It also helps fight certain kinds of bacteria.
- The gut, which harbors many different kinds of bacteria and other organisms that make up what's called the gut microbiome. Good bacteria help control harmful colonies of bad bacteria, fight pathogens by producing antimicrobial substances, and affect the pH of the gut environment to provide a chemical barrier against harmful microbes. Gut flora also regulate inflammation and activate immune functions. As a matter of fact, 60 percent of the immune system is found in the gut-associated lymphoid tissue (GALT), which is located just outside the intestinal lining. In addition, the intestines are lined with immune cells called mast cells, which coordinate the immune system's and nervous system's responses to toxins and infectious agents.

Chapter 15

Little-Known Diet Strategies to Hack Your Killer Cells

Natural killer (NK) cells are a type of lymphocyte and are critical to the immune system. They are produced in your bone marrow, lymph nodes, spleen, tonsils, and thymus gland and then enter into the circulation to control tumor formation, microbial infection, and tissue damage. People lacking adequate NK cells have been shown to experience more frequent viral infections, including herpes and HIV, and to die prematurely from cancers.

Circulating NK cells remain in a resting, inactive state until they are activated by inflammatory cytokines and invade any tissues that possess pathogen-infected cells. The NK cells then secrete cytokines such as interferons and TNF-alpha and release a membrane-disrupting protein called perforin, which causes the death of the target cell.

But more NK cells are not better, and your goal should be to modulate normal, natural activity of NK cells, not to increase the number NK cells. For example, in a state of rampant inflammation or excess abdominal fat, the number and activity of NK cells is increased, which can result in insulin resistance, pancreatic damage, exacerbation of autoimmune issues such as asthma, and miscarriages in pregnant women. On the other hand, impairment of and deficits in NK cells are associated with cancer, viral infections, multiple sclerosis, rheumatoid arthritis, lupus, and advanced aging.

Research-proven ways to modulate the normal activity of NK cells include many of the same antiaging strategies and compounds you will learn more about in chapter 19, including these:

- Exercise
- Massage
- Curcumin
- Zinc
- Selenium
- Astaxanthin
- Melatonin
- Astragalus
- Spirulina
- Eleuthero
- Blueberry
- Echinacea
- Thymus peptides (particularly epithalon)

When I interviewed nutritionist Jonathan Clinthorne on my podcast, he also highlighted a few other little-known, research-proven methods for increasing NK cell activity, including these:

- Avoiding the synthetic forms of folic acid often found in B vitamins, multivitamins, and folic acid–fortified foods such as cereals and packaged/processed foods. Always use the natural form of folate called 5-methyltetrahydrofolate.
- Regular consumption of aged garlic extract (approximately 2.5 g daily), especially during cold and flu season or intense periods of exercise or travel stress
- Avoiding frequent oscillations in calorie intake—both too few and too many calories have been found to suppress NK cell function. This is not to say that intermittent fasting or alternate daily fasting suppresses killer cells, but rather that long-term calorie deprivation or frequent excess calorie intake should be avoided.

Finally, although it is not available in the US, nor is it FDA approved, several overseas clinics are offering a type of immune system upgrade via NK cell infusions. Originally developed for cancer patients, this protocol involves obtaining billions of white blood cells from your body, washing them, sterilizing them, growing them, combining them with cytokines to speed up the process of cell expansion, and finally infusing them back into your body. For this protocol, look up practitioners such as Dr. Matt Cook, who offers this protocol in Mexico City, or Dr. Rafael Gonzales and Dr. Eduardo Ulloa at the World Stem Cell Clinic in Cancun.

Chapter 15

The Importance of Letting Your Body Heal Itself

By Dr. Thomas Cowan

Over the years many patients have asked me how to take care of their immune systems. My response is always that—in contrast to what we generally believe—we don't have an immune system. Rather, we have two distinct immune systems. Only when these two immune systems are working together harmoniously do we have the possibility of being in robust health. The way to understand the functioning of our two immune systems is to examine what happens when we encounter a simple viral infection.

Take chicken pox, for example. When we are first exposed to the virus that causes chicken pox, we have no immunity against it, so it enters through our respiratory tract and infects thousands or perhaps millions of cells. These infected cells are distorted and dysfunctional and must be eliminated from the body. The elimination of these infected cells is the job of our first immune system, the cell-mediated immune system, otherwise known as the innate immune system. This system relies upon nonspecific defense mechanisms that activate either immediately or soon after a toxic or bacterial attack begins in your body. The nonspecific defense mechanisms include chemical defenses in the blood, immune cells like white blood cells, and even physical barriers, like your skin. The job of the cell-mediated immune system is to target infected cells, digest them, and eliminate them through the various elimination channels of the bowels, lungs, nasal passages, skin, etc. The crucial point here is that what we generally call being "sick," such as having a fever, mucus, cough, or rash, is actually the working of the cell-mediated immune response. A virus or toxin only stimulates the activity of this crucial innate immune response.

I know that this is so because you can infect someone with a virus, then inhibit the activity of their cell-mediated response and innate immune system, and they will never show any signs of sickness! They could die of the infection, but there will be no fever, no mucus, no outward signs of being sick. On the other hand, we can use various chemical stimulators of the cell-mediated response, with no infection needed, and we will show all the signs we typically associate with being sick. Fascinating, eh? This cell-mediated response is crucial to our health. It is how we detoxify, it is how we clear diseased cells and tissues from our bodies, and it is how we eliminate unwanted toxins and microorganisms from our bodies. Without a robust cell-mediated response, we are like a house that is unable to take out its garbage: over time we become more and more toxic.

The cell-mediated response usually lasts seven to ten days, after which we are restored to good health. But the body in its wisdom has realized it would be no good to keep going through the same illness over and over in our lives, so it has developed a second immune system, called the humoral or antibody-based immune response. The humoral immune system recognizes a certain unique protein associated with a particular virus or any other foreign assailant (called the antigen) and makes antibodies to that specific antigen. As a result of the antibody production, from that time on we are able to clear the infection from our bodies without ever having to involve the innate immune cell-mediated response. Since the humoral response has no outward symptoms, we will never again get "sick" in response to infection from that same microorganism. When these two systems—the innate and humoral immune systems—work together as they are meant to, your immune system is almost 100 percent foolproof, and it is extremely rare for a person to suffer the same viral disease more than once in their lives.

Up until the twentieth century, prior to the era of vaccinations, it never happened that we made a humoral response without at least some prior innate immune cell-mediated activity. Remember: in a normal immune response, we first have to clear the infection and only then can our immune system remember what happened. Vaccines changed all that because the theory behind vaccines is that we can develop immunity to a microorganism even if we bypass the cell-mediated response. Vaccines are essentially engineered to create minimal or no cell-mediated response and to only stimulate an antibody response.

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There are many problems with this unnatural approach. The first is that toxic chemicals, like aluminum, must be used to stimulate an antibody response in the absence of cell-mediated activity. Second, the immunity from this antibody approach is never lifelong, as proven by the continual need for booster shots. Third, and most crucially, a strategy of downplaying the cell-mediated immune system in favor of repeated stimulation of antibodies is guaranteed to produce a nation of people who suffer from chronic autoimmune disease and cancer. Autoimmune disease is defined as the state in which a person has developed excessive antibodies to their own tissues and includes conditions such as low thyroid, celiac disease or gluten sensitivities, acne and eczema, inflammation, joint pain, and much more. Conventional medicine says we don't know the etiology of this excessive antibody activity, but many studies have proven that repeated vaccination leads directly to this high-antibody disease state. Sure, there are other ways to develop autoimmune diseases, but vaccinations certainly are not helping.

And then there's cancer. The case of cancer being related to a suppressed cell-mediated response was dramatically demonstrated by a sarcoma (a virulent type of bone cancer) specialist named William Coley in the early part of the twentieth century. Coley was able to cure thousands of cancer patients simply by injecting them with a bacterial toxin that stimulated a high fever response. Fever is the quintessential sign of an activated cell-mediated immune response, and intensely stimulating fever for about a month is a powerful enough therapeutic maneuver to cure even some end-stage cancer patients. There can be no better demonstration of the value and power of our cell-mediated immune system, and the body's innate ability to heal itself through built-in immune system mechanisms, than the story of Coley's toxins.

We are in a dangerous time in the history of medicine. We are the first medical system in the entire long history of human beings that has waged war on our cell-mediated immune system. A system that ignores the healing power of fever and acute illness is a medical system that will produce a nation of chronically sick people. It is far past time to reevaluate how we do medicine and how we care for our vital two-part immune system.

Note from Ben: All of Dr. Cowan's books are excellent, but I especially recommend that, for the topic of immunity, you read two most recent titles: *Vaccines, Autoimmunity, and the Changing Nature of Childhood Illness* and *Cancer and the New Biology of Water.* For more on the body's ability to be able to heal itself and the importance of allowing conditions such as a fever to run their course, look up the work of Dr. Rudolf Steiner. It is from Dr. Steiner's work that I first learned that Western allopathic medicine has spread the belief that fever is symptomatic of sickness. Fact is, it's actually a symptom of healing. When many people get a fever, they reach for Motrin, Tylenol, or other over-the-counter drugs, but this does nothing except prevent your body's immune response from doing its job while letting the infection itself run rampant.

Instead of suppressing a fever, one of the most effective ways to ensure your or your child's health is to let an illness run itself out. This concept may go against conventional advice, but normal childhood illnesses like measles, chicken pox, colds, and mumps are crucial for a child to build a powerful immune system. Preventing them with vaccines or suppressing them with antibiotics and other drugs keeps their immune systems from getting stronger.

Finally, to learn more about how medicine took a very wrong turn from finding the root cause of illness to masking the symptoms, I recommend the books *Undoctored* by Dr. William Davis and *Unconventional Medicine* by Chris Kresser.

Chapter 15

Thieves Oil Recipe

4 oz dried rosemary tops
4 oz dried sage
2 oz dried lavender
5 oz fresh rue
1 oz camphor dissolved in vinegar
¼ oz sliced garlic
1 oz bruised cloves
1 gallon strongly distilled wine vinegar

Digest for 7 or 8 days, with occasional agitation: pour off liquor: press out the remainder, and filter the mixed liquids.

My Perfect Wendy's Frosty–esque Morning Smoothie

- 8 to 12 ounces bone broth, or 1 cup frozen bone broth (such as Kettle and Fire)
- Large handful of ice
- 2 teaspoons ground Ceylon cinnamon
- 1 drop Omica Organic vanilla stevia
- 2 scoops of a good protein powder (I prefer Organifi, Thorne, Ancient Nutrition, or Living Fuel brands)
- Juice of ½ lemon (this enhances collagen absorption from the bone broth)

For topping (optional):

- Coarse sea salt
- Fermented cacao nibs
- Spirulina
- Unsweetened coconut flakes

Blend for 3 minutes on high (this is key for proper consistency—a long blend time!). Top with coarse sea salt, fermented cacao nibs, spirulina bits, and unsweetened coconut flakes, if desired.

Chapter 15

DIY Antiaging Yogurt

by Dr. William Davis

Note from Ben: I first discovered the wonders of homemade yogurt from my friend and cardiologist Dr. William Davis, author of Undoctored. *He was kind enough to share the secrets behind this powerful and delicious creamy treat.*

I've been discussing this idea of making yogurt by starting with a specific strain of Lactobacillus reuteri ATCC PTA 6475, based on the detailed studies conducted at MIT and elsewhere, both experimental animal and human, that have suggested dramatic effects. Those effects include:

- Complete shutdown of appetite, an "anorexigenic" effect, that can be used to facilitate intermittent fasting or break a weight-loss plateau
- An increase in metabolic rate, which also contributes to weight loss
- A dramatic increase in skin thickness and skin collagen, along with acceleration of skin healing, a surrogate for overall youthfulness and health. I'm a big fan of dietary collagen, such as those in collagen hydrolysates, bone broths/soups, slow-cooking meats, the skin on chicken and fish, etc. This *L. reuteri* strategy amplifies this effect considerably.
- Increased oxytocin. A doubling of oxytocin levels was observed in mice. This effect is responsible for the extravagant skin benefits, reduced insulin resistance, dramatic increases in testosterone in males, increased estrogen in females (magnitude unclear), and thicker and more plentiful hair (though the consistency of this effect is not yet clear). Other studies have demonstrated substantial weight loss, especially from visceral fat, along with increased muscle mass and increased bone density.

Put all these effects together—reduced appetite, increased skin health, increased bone density, fat loss, muscle gain, etc.—and you have one of the most powerful antiaging, youth-preserving strategies I have ever come across.

Because the most robust data were generated using the ATCC PTA 6475 strain of *L. reuteri* (and, to a lesser extent, the DSM 17938 strain), I have been confining my efforts to this strain. Other *L. reuteri* strains may mimic these effects, but we don't know that for certain, as the studies have not been performed. Strain specificity can be a crucial factor. After all, all of us have several strains of *E. coli* in our intestines that live quietly and don't bother anyone. But get exposed to selected strains of *E. coli* from contaminated produce, and you develop life-threatening diarrhea that can be fatal, especially in children. Same species (*E. coli*), different strains—strain specificity can be a critical factor.

So we start with *L. reuteri* ATCC PTA 6475 provided by the Swedish company BioGaia, which has somehow locked this species up with patents. Their product is called Gastrus and combines the ATCC PTA 6475 strain with the DSM 17938 strain. Problem: there are only 100 million CFUs (live organisms) per tablet. I have not observed any substantial health benefits by ingesting the tablets.

However, the counts can be increased with fermentation in the presence of prebiotic fibers, so I have been amplifying bacterial counts by making yogurt. Just as ingesting prebiotic fibers increases bacterial counts in your intestines, so it goes in yogurt as well.

This yogurt is thick and delicious, and given its extraordinary thickness of the end-product, it is likely that trillions of CFUs are present, sufficient to convert the soupy liquid of your starting coconut milk to rich yogurt that's thick enough to stand up on a plate. People who consume ½ cup per day of this preparation are reporting the effects listed above.

There are probably many ways to make this yogurt and yield the bacterial counts you desire. But this is how I did it.

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- 1 quart organic half-and-half, cream, whole milk, canned full-fat coconut milk, goat's milk or cream, or sheep's milk or cream (see Note)
- 1 tablespoon inulin or another prebiotic, such as sucrose, glucose, or potato starch
- 10 tablets BioGaia Gastrus, crushed

1. *In a large glass or ceramic bowl, combine 2 tablespoons of the half-and-half with the inulin and crushed probiotic tablets. Mix thoroughly and make sure the inulin and sugar are dissolved. Then add the remaining half-and-half and stir to combine well.*
2. *Turn the oven to 300°F for about 60 to 90 seconds, just until a desert-hot temperature is reached. Place the yogurt in the oven and turn the oven off.*
3. *After 4 to 6 hours, turn the oven back to 300°F for 60 to 90 seconds and then turn it off again. The goal is to keep the temperature at 100°F for around 24 hours; this method isn't precise, but it works fine when using dairy for fermentation.*

Note: If you use coconut milk, you will need to add 1 tablespoon sugar because there is no lactose to ferment in coconut milk. Don't worry, the sugar is fermented to lactic acid, so there's little sugar in the yogurt. Just as the cucumbers you grow in your garden were fertilized with cow manure but ripe cucumbers contain no cow manure, so the final fermented yogurt should contain little to no sugar.

In addition, fermenting coconut milk is much fussier than fermenting dairy, and you'll need to have more precise control over the temperature. It's best to use a yogurt maker, Instant Pot, sous vide device, rice cooker, or any other device that allows you to maintain a constant temperature. (I used a yogurt maker with good results.) Any of these devices can also be used to make this yogurt with dairy.

To make more batches, reserve a few tablespoons from the original batch and use it in place of crushed tablets, since your yogurt should contain plentiful microbes. The first batch tends to be a bit thinner with curdles, but subsequent batches tend to be thicker and smoother.

There are some uncertainties:

- Is there a reduction in bacterial counts or contamination by air organisms when you make yogurt from prior batches? Some people have "re-seeded" their yogurt by adding a few more crushed tablets of probiotic after several rounds of yogurt-making.
- We've arrived at the dose of ½ cup by trial and error, as judged by the anorexigenic effect that results when oxytocin levels increase. But is that the ideal dose? Don't know yet.
- Can we improve on taste, texture, and bacterial counts by altering fermentation temperature, choice of prebiotic, or other conditions?

Despite the uncertainties, I am witnessing some dramatic changes in the people trying this yogurt.

Note from Ben: I have been able to achieve a perfect texture and taste by stirring in 4 heaping tablespoons of organic Great Lakes unflavored beef gelatin and 4 dropperfuls of Omica Organics vanilla stevia to the mix, then refrigerating it for one day after fermentation. For a step-by-step audio demonstration of the yogurt-making process we use, go to my children's podcast at GoGreenfields.com and listen to the coconut yogurt episode.

Chapter 16

How to Change Your Triglycerides

If your triglycerides are elevated, generally about 150 mg/dL, implement the following strategies:

- Consume high amounts of monounsaturated and omega-3 fats and little sugar and starch (e.g., low-carb Mediterranean-style diet).
- Supplement with vitamin C.
- Supplement with fish or krill oil.
- Eat more olive oil.
- Add fenugreek seeds to your meals.
- Supplement with ashwagandha.
- Get more prebiotics and probiotics from fermented foods and supplements (see chapter 13).
- Eat fruit in moderation, preferably small, dark-colored berries.
- Exercise before meals (brisk walking is particularly effective).

If your HDL is low, generally below 60 mg/dL, implement the following strategies:

- Eat more olive oil.
- Eat more eggs.
- Follow a low-carb or ketogenic diet.
- Eat more anthocyanin-rich foods, such as blueberries, blackberries, pomegranates, eggplants, red cabbages, and other dark-colored fruits and vegetables.
- Stick to a low-to-moderate alcohol consumption.
- Cook with coconut oil and/or add it to meals.
- Eat more fatty fish.
- Get more aerobic exercise.

In most cases, a doctor or medical textbook will give you the usual one-size-fits-all "normal" cholesterol and lipid ranges, such as the following:

Total cholesterol	Less than 170 mg/dL for those under twenty years old, and less than 200 mg/dL for those aged twenty or older
HDL cholesterol	Greater than 45 mg/dL for those under twenty, and greater than 40 mg/dL for those twenty or older. In women aged twenty or older, normal values are greater than 50 mg/dL.
LDL cholesterol	Less than 110 mg/dL for those under twenty, and less than 100 mg/dL for those twenty or older
Total-cholesterol-to-HDL ratio	Less than 5.0 mg/dL
Non-HDL cholesterol	Less than 120 mg/dL for those under twenty, and less than 130 mg/dL for those twenty or older
Triglycerides	Less than 75 mg/dL for those aged nine or younger, less than 90 mg/dL for those aged ten to nineteen, and less than 150 mg/dL for those twenty or older

Here's a more detailed breakdown of what to look for in a WBC panel:

	EXPECTED	HIGHER VALUES INDICATE	LOWER VALUES INDICATE
Neutrophils	40–80%	Viruses, autoimmunity, or detoxification challenges	Drug reaction, autoimmunity, aplastic anemia, bone marrow cancers
Lymphocytes	20–40%		Autoimmunity, hepatitis, flu, or other viral or bacterial infection
Monocytes	0–7%	Liver dysfunction, prostate problems, or recovery from an infection (or Epstein-Barr virus)	Hairy cell leukemia or bone marrow damage (but only if there's a low value on multiple tests)
Eosinophils	0–3%	Food sensitivities, environmental allergies, or parasites	Stress, steroid use
Basophils	0–1%	Histamine intolerance	Stress, allergic reaction, steroid use, hyperthyroidism

Chapter 16

How I Use My Sleep Data

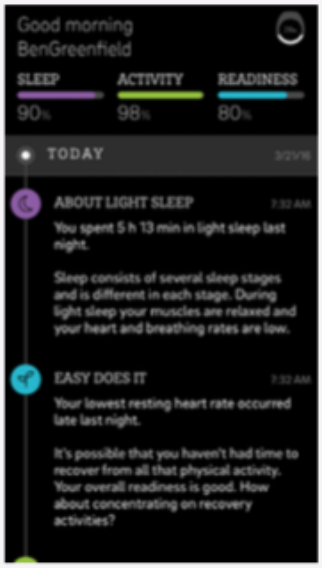
Let's take a look at how to practically use the data you can glean from a sleep system like the Oura, shall we? Before writing this chapter, I opened up all my app data. Two nights ago, I was in bed from 10:31 p.m. until 7:29 a.m. Pretty impressive, eh? Makes me a good little sleeper. But upon taking a closer look at my sleep data, I can see a few concerning issues, including these:

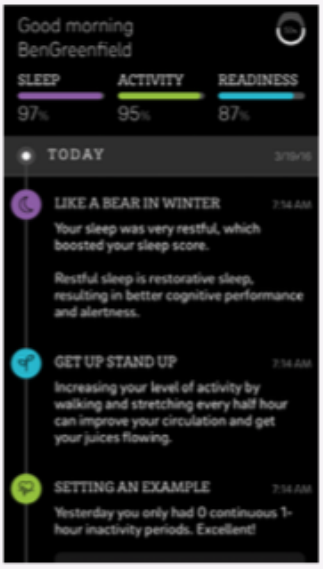
- I spent a good hour of that time awake.
- I spent five hours and thirteen minutes of that time in light sleep (59 percent of the total night of sleep!).
- My lowest resting heart rate of 39 bpm occurred at about 4:30 a.m., nearly two hours later than my lowest resting heart rate normally occurs, and was three beats higher than my normal lowest resting heart rate of 36 bpm.

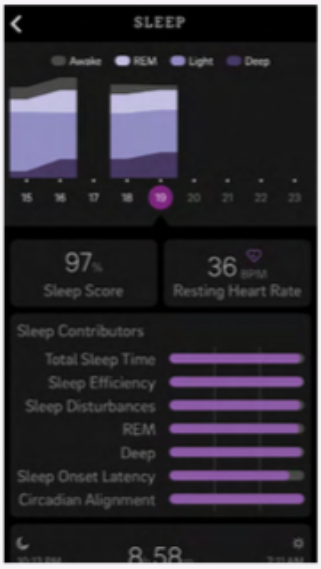
So although one would think upon first glance that I had a complete rock-star night of sleep, that's far from the truth. As a matter of fact, this morning I received a warning that my readiness score is low and that I may not be recovered fully from the previous day's activity. Interestingly, the previous day's activity was a three-hour horseback ride, an activity my body definitely was not used to and which it needed additional recovery time for.

Pretty interesting, eh?

By adjusting my activities the next night—avoiding screen time after 9 p.m., eating a light dinner, not drinking a second glass of wine, and taking a magnesium bath to both relax me and bring my core temperature down—I achieved a sleep score of 97 percent, with my lowest heart rate during sleep being 34 bpm (nice and low for me), achieved at my ideal time of 2:30 a.m. I spent 27 percent of the night in deep sleep and only 5 percent awake, and I was even congratulated the next day by my smartphone Oura app on sleeping "like a bear in the winter." I had a high readiness score and high physical activity recommendation for the day.







Chapter 17

Office Stretches

Standing or sitting in one position all day while you're working can cause your joints to become stiff and subject your neck and back to long-term, chronic compression, which can lead to back pain, poor posture, and physical performance degradation. Ideally, you should switch your working positions throughout the day, take short exercise and walking breaks, or use a treadmill workstation to avoid these problems, but if you find yourself forced to be seated for an extended period of time, you can perform the following exercises to decompress your joints, improve blood and lymphatic flow, eliminate aches, and keep your energy levels higher throughout the day. When I'm at conferences or in meetings, I'll often use these stretches and poses, which take full advantage of what causes many of the problems in the first place: a chair. You don't need to perform all these stretches at once but can weave them in throughout the day.

1. **Standing Overhead Reach**

Stand with your feet hip-width apart and your toes pointing forward. Grasp your fingers together and turn your hands so that your palms face up. Reach overhead with your clasped hands and press your palms up while engaging your shoulders and core. Hold the position and take five deep breaths. Release the position, then repeat twice more.

2. **Butterfly Elbows**

While seated, sit tall and place your fingertips behind your ears (without interlocking them). Make sure you're not applying any pressure to your neck or the back of your head. Lift up your chest and ribs and pull your elbows back until you feel a stretch across your chest. Inhale deeply, and, as you exhale, round your back, drop your chin and bring your elbows together in front of you while pressing your elbows forward to stretch out your upper back and shoulder blades. As you inhale again, return to the starting position. Repeat the movement for a total of four full reps.

3. Chair Chest Opener

While sitting on the very edge of your chair, reach your hands back and grab the sides of the back of the chair with your thumbs pointing down. Roll your shoulders back and down, lift your chest, and elongate your neck (imagine you're pressing into the ceiling with the top of your head). To stretch out your chest, lean deeper into the movement. Take five deep breaths, release, then repeat once more.

4. Standing Chair Lat Stretch

Stand about three feet away facing your chair. While keeping your knees slightly bent, bend at the hips and reach out to grab the top of the back of the chair, keeping your arms straight. Flatten your lower back and lengthen your shoulders to form a straight line from your hands to your hips. Line up your head between your arms and take five deep breaths. Release the position, then repeat once more.

5. Standing Chair Lat Twist

In the position held at the end of the Standing Chair Lat Stretch, with your knees slightly bent and your lower back flat, reach down with your right hand and touch your left foot. Hold this position and take two breaths, then return to the original position with both hands on the back of the chair. Twist in the opposite direction and touch your right foot with your left hand, holding for two breaths. Repeat the movement twice more on each side.

6. Mirrored Chair Pose

Face your chair and put your feet together. Squat and try to match the height of the chair with the tops of your thighs. While maintaining a straight spine, reach overhead with your palms facing each other. Hold the position and take five breaths. Release and repeat twice more.

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7. Seated Figure 4 Hip Stretch

Sit with both feet flat on the ground. Place your right ankle across your left knee and flex your right foot. Sit tall with your back straight and lean forward while pressing down on your right knee until you feel a stretch in your hips. Hold the position and take three breaths. Release and repeat with your left ankle, then repeat twice more on each side.

8. Seated Spinal Twist

Start by sitting with both feet flat on the ground. Put your right arm over the back of the chair, and put your left hand on your right knee. Press with both hands as you look over your right shoulder and twist your torso. To give yourself more space to twist, lean slightly forward. Hold the position and take two deep breaths. Release and repeat on the other side. Repeat the movement twice more on each side.

9. Bound Neck Stretch

Sit tall in your chair and reach down with your right arm (you can grasp the seat of the chair as long as you're still able to keep your arm straight). Reach behind your back with your left hand, clasp your right wrist and tilt your neck to the right. You can enhance the stretch by gently pressing your arm away from your torso. Hold the position and take two deep breaths. Release and repeat with the opposite arm. Repeat the movement twice more on each side.

10. Alternating Fingers Wrist Stretch

Sit tall in your chair and stretch your right arm straight in front of you with your fingers pointing down. With your left hand, gently pull on the back of your right hand to stretch out the top of your right wrist. Hold the position and take two breaths, then flip your right hand so that your palm faces out and your fingers point up. Pull gently on the front of your right hand with your left to stretch out the bottom of your right wrist. Hold the position and take two breaths. Stretch the top and bottom of your right wrist twice more, then repeat the movements for three reps with the opposite hand.

11. Hamstring Stretch

Stand about two feet away facing your chair. Place the heel of your right foot in the middle of the chair while flexing your right foot (try to point your toes upward). While keeping both knees slightly bent, put your hands on your hips and bend forward until you feel a stretch in your right hamstring. Hold the position and take three deep breaths. Release and switch to the left leg. Repeat once more with each leg.

12. Chair Pigeon Pose

Stand facing your chair, bend your right knee, and place your right calf across the front of your chair while flexing your right foot (your knee should be on the chair while your foot should be off the edge). Grab both sides of the seat and step back with your left leg until your left knee and hip are straight. You can make the stretch deeper or shallower by bending or straightening your elbows. Hold the position and take three deep breaths. Release and switch to your left leg. Repeat once more on each side.

13. Single Leg Toe Pull

Stand up and face your chair. Bend forward from the hips and place both hands on the front of the seat. Reach down and grab your right toes with your right hand while keeping your left hand on the seat and slightly bending your left leg. Gently pull up on your right toes until your calf and hamstring feel stretched (try to keep your hips square and your lower back flat). Hold the position and take two breaths. Release and switch to the left arm and leg. Repeat twice more on each side.

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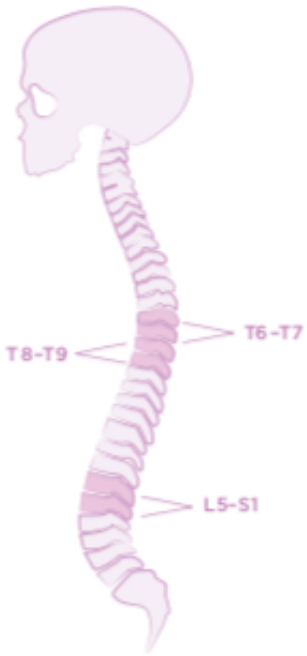
On BoundlessBook.com/17, you'll find several helpful videos of what ELDOA looks like, along with my podcast with Jacob. But I focus on three primary ELDOA stretches that give me the most bang for my buck: T6–T7 (this stands for thoracic vertebrae 6 and 7), T8–T9, and L5–S1 (lumbar and sacral vertebrae, respectively).

ELDOA T6–T7 stretch

ELDOA T8–T9 stretch

ELDOA L5–S1 stretch



Chapter 17

I'm a big fan of the minimum effective dose of any body-enhancing program like this, so I personally keep the chart at right, from Dr. Goodman's book, on my phone and try to perform the list of exercises for each respective day, weaving them throughout the day. Each day's exercises take about ten minutes to incorporate.

Monday, Wednesday, Friday *3 repetitions of each*	Tuesday, Thursday, Saturday *3 repetitions of each*
1. Standing Decompression	1. Supine Decompression
2. Lunge Decompression	2. Prone Decompression
3. Woodpecker	3. Founder
4. Internal Leg Tracing	4. Woodpecker
5. Anchored Bridge	5. Woodpecker Rotation
6. Anchored Back Extension	6. Integrated Hinges
7. Kneeling Decompression	

In most cases, a doctor or medical textbook will give you the usual one-size-fits-all "normal" cholesterol and lipid ranges, such as the following:

Total cholesterol	Less than 170 mg/dL for those under twenty years old, and less than 200 mg/dL for those aged twenty or older
HDL cholesterol	Greater than 45 mg/dL for those under twenty, and greater than 40 mg/dL for those twenty or older. In women aged twenty or older, normal values are greater than 50 mg/dL.
LDL cholesterol	Less than 110 mg/dL for those under twenty, and less than 100 mg/dL for those twenty or older
Total-cholesterol-to-HDL ratio	Less than 5.0 mg/dL
Non-HDL cholesterol	Less than 120 mg/dL for those under twenty, and less than 130 mg/dL for those twenty or older
Triglycerides	Less than 75 mg/dL for those aged nine or younger, less than 90 mg/dL for those aged ten to nineteen, and less than 150 mg/dL for those twenty or older

How to Change Your Triglycerides

If your triglycerides are elevated, generally about 150 mg/dL, implement the following strategies:

- Consume high amounts of monounsaturated and omega-3 fats and little sugar and starch (e.g., low-carb Mediterranean-style diet).
- Supplement with vitamin C.
- Supplement with fish or krill oil.
- Eat more olive oil.
- Add fenugreek seeds to your meals.
- Supplement with ashwagandha.
- Get more prebiotics and probiotics from fermented foods and supplements (see chapter 13).
- Eat fruit in moderation, preferably small, dark-colored berries.
- Exercise before meals (brisk walking is particularly effective).

If your HDL is low, generally below 60 mg/dL, implement the following strategies:

- Eat more olive oil.
- Eat more eggs.
- Follow a low-carb or ketogenic diet.
- Eat more anthocyanin-rich foods, such as blueberries, blackberries, pomegranates, eggplants, red cabbages, and other dark-colored fruits and vegetables.
- Stick to a low-to-moderate alcohol consumption.
- Cook with coconut oil and/or add it to meals.
- Eat more fatty fish.
- Get more aerobic exercise.

Chapter 18

Why Sex Is So Good for You

Pardon the expression, but I suspect your mind will be absolutely blown by the seriously legit biological and spiritual benefits that regularly getting busy with a partner can produce. These effects go far beyond orgasms or propagation of the human race and include the following.

1. **A stronger immune system:** Researchers have discovered a direct correlation between sexual activity a few times a week and higher salivary levels of immunoglobulin A (IgA), an antibody that helps fight infections and the common cold. In contrast, IgA levels were lowest in people who had no sex or lots of sex (more on excessive sex later in this chapter).

2. **Less depression and stress:** Contact with semen during intercourse has an antidepressant effect on women. Regular intercourse also makes blood pressure more resilient to stress, reduces overall psychological stress, and reduces plasma and salivary cortisol while producing beneficial mental health effects.

3. **Better brainpower:** A study on rodents found that sexual activity increases neurons in the hippocampus, the section of the brain that stores memories. In addition, sex may also increase analytical thinking capabilities.

4. **Improved overall physical fitness:** Depending on how you do the act, a half hour of sex can burn through close to 150 calories (that counts for at least a couple of those chocolate-covered strawberries). By the way, the reverse is also true: frequent exercise has been shown to enhance sexual performance.

5. **Reduced pain:** Oxytocin is the trust hormone that makes you want to snuggle up to your partner after sex, and it also reduces stress and promotes feelings of calm and well-being. In addition, sex causes a release of serotonin, endorphins, and phenylethylamine, which are all hormones that generate intense feelings of pleasure while at the same time eliminating pain. This is likely why studies have shown that intercourse can stop migraines and lower the discomfort of arthritis.

6. **Improved sleep:** Following an orgasm, and even during sex, the brain releases norepinephrine, serotonin, oxytocin, and vasopressin, all of which can help you fall asleep faster and increase the amount of time you spend in deep sleep. Men are especially likely to succumb to the sleep-inducing effects of sex because the prefrontal cortex, the part of the brain responsible for interpreting and responding to new information, slows significantly in men after orgasm.

7. **Enhanced sense of smell:** After sex, the body produces the hormone prolactin. Prolactin can generate new neurons in the olfactory bulb, which is the part of the brain that controls how you understand and react to smells.

8. **Antiaging effects:** Studies have shown that couples who had intercourse three or more times a week appeared on average ten years younger than their chronological age. Orgasms also trigger the release of estrogen in both men and women, which can improve hair and skin quality, making people look more attractive.

9. **Better heart health:** Research suggests that sex reduces the risk of stroke and coronary heart disease in men. Men who have sex once a month or less are 45 percent more likely to contract cardiovascular disease than those who have sex more frequently. Research also suggests that men with better overall health have higher libidos and therefore more sex overall, which creates a positive feedback loop that further builds a healthy cardiovascular system. Interestingly, results from most studies suggest that high sex frequency is positively related to later risk of cardiovascular events for men but not for women,

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whereas good sex quality (a high perceived rating of sexual satisfaction) seems to protect women but not men from cardiovascular risk in later life.

10. **Regular menstrual periods:** The odorless pheromones in male perspiration can have a significant effect on a woman's mind and body. Scientists have found that women exposed to male sweat are calmer and more relaxed. These women also experience smaller changes in their levels of luteinizing hormone, which controls the menstrual cycle. The stress-reducing effect of sex is another contributing factor in maintaining regular periods.

11. **Lower blood pressure:** High blood pressure can cause erectile dysfunction in men and reduced arousal and ability to orgasm in women. But multiple studies show a link between low testosterone and high blood pressure, and the spikes in testosterone associated with sexual activity may help lower blood pressure in both men and women.

12. **Possible lower risk of prostate cancer:** There is a link between regular ejaculation and prostate health. Some studies suggest sex flushes out any carcinogens in the prostate gland. On the other hand, a recent study showed that frequent sexual activity in young men (in their twenties and early thirties) could actually increase the risk of developing prostate cancer. But frequent ejaculation in middle-aged or older men (age fifty and above) decreased disease risk. In other words, the verdict is still out on this one—and later in this chapter, I'll cut through the confusion and address what frequency of sex means for your health.

13. **Lowered risk of pregnancy complications:** Frequent sexual intercourse and exposure to semen can reduce women's risk of developing a serious pregnancy complication called pre-eclampsia, which can cause swollen extremities, headaches, nausea, and seizures. This is because a protein found in semen called HLG-A can regulate women's immune systems.

14. **Enhanced sperm:** Studies show that men who ejaculate daily for seven days have higher-quality sperm at the end of the week, and the sperm's rate of DNA fragmentation drops from 34 percent to 26 percent, meaning it is more likely to fertilize an egg. This is likely because frequent ejaculation means that sperm spends less time in the testicular ducts and is therefore less likely to be damaged.

I find it interesting that when expressing and receiving the emotion of love and experiencing the physical act of sex are combined, it builds just about every health base you need to cover, which makes frequently loving and making love one of the most powerful things you can do to become boundless.

Chapter 20

The Best Natural Household Cleaners

The natural cleaning ingredients below can all be used alone or combined to create nontoxic cleaning solutions for many applications. At right are recipes for some of my favorites, and you can find many more thorough instructions for anything you'd ever need at Eartheasy.com, which is an organic-living website owned by my friend Aran Seaman.

Of course, if you don't have time, you don't have to create your own cleaning supplies. There are a growing number of commercial nontoxic home-cleaning products, and you can find these and other organic, natural products, from kitty litter to diapers, on websites such as ThriveMarket.com or OrganicConsumers.org. On BoundlessBook.com/20, you'll find links to some of the products I recommend most.

Baking soda cleans and deodorizes.

White vinegar cuts grease and removes mildew, odors, some stains, and wax buildup.

Lemon is a natural acid that is effective against most household bacteria.

Rubbing alcohol is good for cleaning floors, especially tile.

Washing soda, also known as SAL soda, is sodium carbonate decahydrate, a natural mineral. It cuts grease, removes stains, softens water, and cleans walls, tile, sinks, and tubs.

Cornstarch can be used to clean windows, polish furniture, and clean carpets and rugs.

Borax, despite its scary name, is simply sodium borate. It cleans, deodorizes, disinfects, softens water, and cleans wallpaper, painted walls, and floors. It is also good for killing mold.

There are dozens of **essential oils**, but we stick to three when we need to kill bacteria or clean our bodies or kitchen counters: oregano, thieves, and lemon.

Unscented natural **soap**, such as castile soap, goat's milk soap, and coconut oil soap, comes as a liquid, flakes, powders, or bars. It's biodegradable and will clean just about anything, and you can make it at home yourself. We get most of our soap-making goods from Mountain Rose Herbs.

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All-purpose cleaner: Mix ½ cup vinegar and ¼ cup baking soda into ½ gallon of water. You can also use natural fiber cloths, which remove dirt, grease, and dust on their own, without any cleaning solution, because they are formulated to penetrate and trap dirt. You'll find a number of brands listed on BoundlessBook.com/20.

Toilet bowl cleaner: Mix ¼ cup baking soda and 1 cup vinegar, pour it into the toilet bowl, and let it sit for a few minutes. Scrub with a brush and rinse. A mixture of two parts borax and one part lemon juice will also work.

Mold remover: Mix one part hydrogen peroxide (3 percent) with two parts water in a spray bottle and spray on areas with mold. Wait at least one hour before rinsing or using the shower.

Oven cleaner: Mix ¾ cup baking soda, ¼ cup salt, and ¼ cup water to make a thick paste, and spread it throughout the oven. Let sit overnight, remove with a spatula, and wipe clean.

Dishwashing soap: Use any nontoxic liquid soap, such as Dr. Bronner's. For tough jobs, add 2 or 3 tablespoons of vinegar to the warm, soapy water

Stain remover: For stains on clothes, you can use a 1:1 solution of water and 3 percent grade hydrogen peroxide to soak out grass, underarm, and many food stains.

Floor cleaner and polish: For vinyl and linoleum, mix 1 cup vinegar and a few drops of olive oil in 1 gallon of warm water. For wood, use a solution of ¼ cup vinegar and ½ gallon of warm water. For polishing wood, apply a thin coat of equal parts vegetable oil and vinegar and rub in well.

Window cleaner: Mix 2 teaspoons of white vinegar with 1 quart of warm water. Spray it on windows and glass and wipe it off with crumpled black-and-white newspaper or a cotton cloth. Alternatively, you can buy Citra Clean natural window and glass cleaner.

Carpet cleaner: Mix equal parts white vinegar and water in a spray bottle. Spray directly on the stain, let it sit for several minutes, and then clean with a brush or sponge using warm soapy water. For fresh grease spots on the carpet, you can sprinkle cornstarch onto the stain and then wait 15 to 30 minutes before vacuuming. For a heavy-duty carpet cleaner, mix ¼ cup each of salt, borax, and vinegar, rub the paste into the carpet, and leave it for a few hours before vacuuming.

Disinfectant: Mix 2 teaspoons borax, ¼ cup vinegar, and 3 cups hot water.

Dishwasher soap: Mix equal parts washing soda, baking soda, and salt.

Laundry detergent: Grate one 5-ounce bar of castile soap and mix it with 2 cups of washing soda. You can also try Eco Nuts, an effective laundry detergent made from the dried fruit of the soapberry tree.

Chapter 21

Power Exercises

UPPER-BODY PUSH

- Overhead push press
- Explosive or clap push-up
- Medicine ball chest throw or overhead throw
- Snatch
- Burpees

UPPER-BODY PULL

- Jumping pull-up
- Explosive horizontal pull-up
- Battle rope
- Fast single-arm cable or dumbbell row
- Muscle-ups

LOWER-BODY PUSH

- Jump squat
- Lunge jumps
- Explosive step-ups

LOWER-BODY PULL

- Power clean
- Hang clean
- Clean and jerk
- Kettlebell swing
- Medicine ball slam

CORE/CARRY/MOVE

- Lunge jumps
- Box jumps
- Fast farmer's walk
- Sled push
- Explosive stair climbs
- Explosive torso twists
- Medicine ball side throw
- Rowing machine
- Bicycle
- Treadmill or another sprint
- Banded side-to-side walks
- Mountain climbers
- Burpees
- Muscle-ups

Full-Body Kettlebell Training

Do 3–5 rounds of the following:

- 5 Turkish get-ups per side
- 30 swings, split into 3 sets of 10 with 10 seconds' rest between each set
- 5 goblet squats
- 30 snatches per side, split into 3 sets of 10 with 10 seconds' rest between each set
- 5 bottoms-up presses per side
- 60 seconds of walking with two kettlebells "racked" on your chest or held farmer's carry–style at your side

Ideally, use hypoxia during the 30-to-60-second hard cardio mitochondrial efforts, such as a Training Mask or LiveO2.

Strength Core/Carry/Move Exercises

- Walking dumbbell lunge
- Walking overhead dumbbell lunge
- Farmer's walk
- Incline sit-up
- Incline sit-up with rotation
- Any version of a knee-up, V-up, or get-up
- Any version of a hanging bent- or straight-leg raise
- Reverse hyperextension
- Slow torso twists
- Turkish get-ups

Chapter 21

Auto Immune Paleo Diet (AIP)

You may want to follow this diet if you have...		
	MARKERS	**TESTS**
Blood	• Sm/RNP antibodies (Smith/ribonucleoprotein) • SS-A and SS-B antibodies (Sjogren's-syndrome-related antigens A and B) • Scl-70 antibodies (scleroderma-70) • Jo-1 antibodies (John P.-1) • centromere B antibodies • ribosomal P antibodies • high aluminum	You can order autoimmune blood tests online through Quest Diagnostics, such as their Inflammatory Bowel Disease Differentiation Panel, ANCA Screen, and Lactoferrin Quantitative Immunoassay.
Urine	• proteinuria (high protein levels in urine) • hematuria (blood in urine, which may or may not be visibly detectable) • active sediment (red or white blood cell casts in urine)	You can ask your doctor or medical provider to perform a urinalysis that includes these markers, or order the Urinalysis, Complete with Microscopic Examination online through DirectLabs. An Intestinal Permeability (Leaky Gut) Kit by Genova can indicate whether you have a leaky gut.
Stool	• calprotectin (a protein released by neutrophils that can indicate inflammation) • imbalances in gut microbiota (research suggests that commensal bacteria can play a role in the pathology of autoimmune diseases)	You can request a calprotectin stool test from your doctor or medical provider as well as a comprehensive stool analysis to analyze gut levels of commensal bacteria. You can also order a comprehensive stool analysis through labs such as the Great Plains Laboratory and Genova Diagnostics.
Genes	There are over 1,000 gene variants associated with susceptibility to autoimmunity, but important ones to look at or ask your medical practitioner about are these: • AIRE • FOXP3 • FAS • PI3K • CTLA4 • CD25 deficiency • STAT3 and STAT1 gain-of-function • IL-10 deficiency • STING gain-of-function • PLCG2 gain-of-function	You can order a genetic test through 23andMe, then upload your raw data into a genetic analysis tool like StrateGene, Genetic Genie, FoundMyFitness, or MyHeritage. You can also get a more comprehensive analysis through services such as Bob Miller's TreeOfLife, The DNA Company, or Health Nucleus.
Symptoms	• inflammation • fatigue • muscle aches • difficulty concentrating • hair loss • rashes	

Chapter 21

Specific Carbohydrate Diet (SCD)

You may want to follow this diet if you have...		
	MARKERS	**TESTS**
Blood	• autoantibodies • tissue transglutaminase antibodies • total serum IgA (immunoglobulin A)	You can order a blood test that checks for these markers through your physician. If you prefer to order them yourself online, DirectLabs offers tests for tissue transglutaminase and IgA, and Quest Diagnostics offers tests for tissue transglutaminase and total IgA.
Urine	• red urine • proteinuria • hematuria	The Urinalysis, Complete with Microscopic Examination from DirectLabs can determine proteinuria and hematuria, and you can typically determine whether your urine is red just by looking at it. Red urine is frequently caused by hematuria. An Intestinal Permeability (Leaky Gut) Kit by Genova can indicate whether you have a leaky gut.
Stool	• foul-smelling stool • fatty stool • diarrhea	These markers are pretty obvious (fatty stool is indicated by excess bulk and a pale, oily appearance, and often coincides with a particularly awful odor), but you can also order a stool test through labs like Great Plains Laboratory and Genova Diagnostics.
Genes	• HLA-DQ2 • HLA-DQ8	You can order a genetic test through 23andMe, then upload your raw data into a genetic analysis tool like StrateGene, Genetic Genie, FoundMyFitness, or MyHeritage. You can also get a more comprehensive analysis through services such as Bob Miller's TreeOfLife, The DNA Company, or Health Nucleus.
Symptoms	• abdominal discomfort • bloating • gas • gastritis • skin rashes	• nausea • vomiting • nerve damage (manifesting as nerve tingling) • fluid retention • fatigue

Chapter 21

Gut and Psychology Syndrome Diet (GAPS)

You may want to follow this diet if you have...		
	MARKERS	**TESTS**
Blood	• antibodies associated with large proteins from foods like dairy, grains, shellfish, and nuts, and the proteins themselves (a Cyrex lab test can identify these) • high levels of zonulin (the compound that controls intestinal permeability) • high LPS (lipopolysaccharides)	There is a new blood test based on blood cell membrane potential that may indicate ADHD by testing your MPR ratio. You can order this blood test through your physician. A Cyrex food allergy panel (especially Array 10C) is excellent for identifying antibody reactions to specific food proteins.
Urine	• proteinuria	The urine albumin-to-creatinine ratio indicates if you have proteinuria. You can also order a urine test for proteinuria through your doctor or online through DirectLabs. An Intestinal Permeability (Leaky Gut) Kit by Genova can indicate whether you have a leaky gut.
Stool	• zonulin • alpha-1-antitrypsin • increased levels of colonic gram-negative *Enterobacteriales* • reduced levels of *Lactobacillus and Bifidobacterium* (although some recent evidence suggests that excessive levels of *Bifidobacterium* may contribute to ADHD)	You can order a stool test through your doctor or purchase a Microbiology Analysis online through Genova Diagnostics.
Genes	• the NOD2/CARD15 genetic mutation 3020insC (leaky gut, ADD/ADHD) • the ATG16L1 (autophagy-related 16 like 1) polymorphism rs2241880 (leaky gut, ADD/ADHD) • the IRGM (immunity-related GTPase M) polymorphisms rs13361189 and rs4958847 (leaky gut, ADD/ADHD) • the 7-repeat allele of the 48-base pair of the VNTR section of the DRD4 gene (ADD/ADHD) • the rs27072 polymorphism of the SLC6A3 gene (ADD/ADHD) • the rs1611115 polymorphism of the DBH gene (ADD/ADHD)	You can order a genetic test through 23andMe, then upload your raw data into a genetic analysis tool like StrateGene, Genetic Genie, FoundMyFitness, or MyHeritage. You can also get a more comprehensive analysis through services such as Bob Miller's TreeOfLife, The DNA Company, or Health Nucleus.
Symptoms	• irritable bowel syndrome • gastric ulcers • food allergies • small intestine bacterial overgrowth • infectious diarrhea • Crohn's disease • ulcerative colitis • other autoimmune diseases • a propensity to gain weight • lack of focus • low motivation • difficulty with organization • avoidance of activities that require sustained attention • forgetfulness	

Chapter 21

Swiss Detox/Colorado Cleanse

You may want to follow this diet if you have...		
	MARKERS	**TESTS**
Blood	• low or high levels of alanine transaminase • low or high levels of aspartate transaminase • low or high levels of alkaline phosphatase • low or high levels of bilirubin • low or high levels of albumin • low or high levels of gamma-glutamyl transferase • high white blood cell count • abnormal liver enzyme counts	Abnormal liver enzyme levels can indicate gallbladder inflammation resulting from gallstones. You can get a blood test that analyzes these markers through your doctor or order a Liver Profile, Complete from DirectLabs or a White Blood Cell (WBC) Count from LabCorp.
Urine	• dark urine • bilirubin • urobilinogen • abnormal levels of the enzymes amylase and lipase	You can order a urinary test through your doctor or use urine test strips easily available online to test for liver damage markers such as bilirubin and urobilinogen.
Stool	• pale or clay-colored stool (indicating low liver bile production or blocked liver bile ducts) • bloody or tar-colored stool (indicating potential liver failure) • yellow stool (indicating excessive bilirubin production) • higher levels of proteobacteria than *Firmicutes* (types of gut bacteria that can indicate nonalcoholic fatty liver disease) • fatty stool • bile acid diarrhea (may indicate liver or gallbladder dysfunction)	Some of these issues are detectable just by examining your stool's color, but to test for imbalanced gut bacteria and excess bile, you can also order the Genova Diagnostics Comprehensive Digestive Stool Analysis from your doctor or online from DirectLabs.
Genes	• the rs58542926 variant of the TM6SF2 gene • the rs2228603 variant of the NCAN gene for increased risk of NAFLD • the rs1799945 variant of the HFE gene for hereditary hemochromatosis (excessive iron absorption) and subsequent liver cirrhosis or liver failure • the rs20417 variant of the PTGS2 gene for increased risk of gallbladder cancer	You can order a genetic test through 23andMe, then upload your raw data into a genetic analysis tool like StrateGene, Genetic Genie, FoundMyFitness, or MyHeritage. You can also get a more comprehensive analysis through services such as Bob Miller's TreeOfLife, The DNA Company, or Health Nucleus.
Symptoms	• jaundice (yellowing of the skin and eyes) • abdominal pain, especially in the mid and upper-right section of the abdomen • swelling of the abdomen, legs, and ankles • vomiting • itchiness • loss of appetite • fever • chills • nausea • chronic fatigue	

Chapter 21

Elemental Diet

You may want to follow this diet if you have...		
	MARKERS	**TESTS**
Blood	• anti-CdtB antibody (indicator of IBS, which can be linked to FODMAPs) • anti-vinculin antibody (indicator of IBS, which can be linked to FODMAPs)	A food-sensitivity test and blood panel test for food particles could together indicate SIBO. Cyrex Labs offers food-sensitivity blood panels, such as the Array 10, Array 10-90, and Array 10-90x, as well as the Array 2 Intestinal Antigenic Permeability Screen. Just note that if you test positive for one of these panels, it doesn't necessarily mean that you have SIBO, especially if you lack other markers and symptoms. You can order the IBSchek Blood Test for Irritable Bowel Syndrome, which can indicate FODMAPs sensitivity, through Commonwealth Diagnostics International.
Urine	**SIBO (but may point to other GI problems as well)** • indican • high concentration of drug metabolites • conjugated para-aminobenzoic acid **FODMAP sensitivity** • histamines (however, there aren't established levels that indicate sensitivity) • p-hydroxybenzoic acid • azelaic acid	Currently, there are no comprehensive urine panels that test for all the metabolites listed above, but the Organix Dysbiosis profile by Genova Diagnostics will test for many and can be quite useful for getting an overall snapshot of gut health.
Stool	• nasty, horrible-smelling, pale, and oily stools • fecal Reg 1β • fecal calprotectin	You can order a quantitative Fecal Fat test through LabCorp.
Genes	• There are no well-known genetic markers that predict or contribute to SIBO or FODMAP problems, but research suggests genotypes that contribute to underproduction of interleukin-1 receptor antagonist (IL1RN) may be associated with IBS-related SIBO.	A full microbiome analysis through Viome or Onegevity can tell you if you possess genes linked to high levels of methane-producing bacteria, which often go hand in hand with SIBO.
Symptoms	**SIBO** • abdominal bloating • gas • abdominal pain • food allergies or intolerances • brain fog • constipation • diarrhea **FODMAP sensitivity** • gas • cramping • depression • fatigue • headaches • brain fog • constipation • diarrhea	

Chapter 21

Wahls Protocol

You may want to follow this diet if you have...		
	MARKERS	**TESTS**
Blood	• elevated levels of serum tryptase	Your physician can order a tryptase blood panel online through LabCorp. Lyme disease is tested for via a blood test that detects antibodies that fight the disease, and your physician can also order a Lyme disease antibodies test through LabCorp. For information on testing for mold exposure, revisit chapter 4.
Urine	• N-methylhistamine (the major metabolite of histamine and a sign of both mast cell/histamine and Lyme/mold/mycotoxin issues)	A 24-hour N-methylhistamine test is available online through LabCorp. To test for Lyme disease, you can order the Ceres Lyme Antigen test. For information on testing for mold exposure, revisit chapter 4.
Stool	There are no well-established stool markers for mast-cell-induced histamine problems, Lyme disease, or mold and mycotoxin exposure.	
Genes	• -1112C/T polymorphism of the interleukin-13 (IL13) promoter gene (associated with systemic mastocytosis, in which mast cells accumulate in high numbers) • CYP1A2 and CYP3A4 variations in the cytochrome P450 (CYP450) genes (indicate greater susceptibility to poisoning via mycotoxin exposure)	You can order a genetic test through 23andMe, then upload your raw data into a genetic analysis tool like StrateGene, Genetic Genie, FoundMyFitness, or MyHeritage. You can also get a more comprehensive analysis through services such as Bob Miller's TreeOfLife, The DNA Company, or Health Nucleus.
Symptoms	**Lyme disease** • severe headaches • bull's-eye rash • neck stiffness • severe arthritis or joint swelling and pain • irregular heartbeat • loss of muscle tone **Mold exposure** • brain fog • impaired memory, balance, and concentration • insomnia • anxiety • shortness of breath/ asthma • eye irritation • headache • fatigue • skin irritation **Mast cell/histamine issues** • flushing • urticaria • diarrhea • wheezing • low blood pressure • shortness of breath • weight loss • enlarged lymph nodes	

Chapter 21

Plant Paradox Diet

You may want to follow this diet if you have...		
	MARKERS	**TESTS**
Blood	• blood TNF-alpha levels over 3 pg/mL • adiponectin levels over 16 mcg/mL • elevated interleukin-6 levels (the ideal range is 2 to 6 pg/mL) • fasting insulin below 2.5 uIU/mL (the lectin wheat germ agglutinin reduces insulin levels by increasing insulin binding) • white blood cell count below 5 K/uL • ferritin under 70 ng/mL for men and under 50 ng/mL for women • adiponectin levels over 16 ug/mL • free T3 under 3 nmol/L	Through LabCorp online, your physician can order TNF-alpha, white blood cell (WBC) count, and ferritin tests. Through DirectLabs, you can order adiponectin, interleukin-6 (IL-6), insulin, and free T3 (FT3) tests. Gluten sensitivities can be tested with the Cyrex Array 3X, which tests for a host of blood markers, including a variety of agglutinin- and gliadin-related antibodies. Through LabCorp, you or your physician can order tests for iron, zinc, and manganese—all of which may be low if you're consuming too many phytates, which prevent them from being absorbed. In addition, Cyrex has a host of panels that are highly accurate for food protein sensitivities, particularly their arrays 3, 4, 5, 6, 7, 8, 10, 11, and 12.
Urine	There are no well-established urinary markers or tests for lectin sensitivities, although research suggests that IgA nephropathy may be correlated with lectins found in wheat (but that requires a kidney biopsy to investigate!). There are also no urinary tests for gluten sensitivity, but the Gluten Detective test (available online) can determine whether you have consumed gluten within the previous 24 hours that's not being properly digested. If you eat gluten and some of it doesn't get digested, metabolites of it will eventually end up in your urine, so this test is helpful for determining compliance with a gluten-free diet and an inability to properly digest gluten. There are no publicly available urinary tests that determine if you are consuming high levels of phytic acid.	

Chapter 21

Plant Paradox Diet

	MARKERS	TESTS
Stool	• diarrhea • creatinine, lactulose, and mannitol levels (may indicate increased intestinal permeability)	While there are no well-established stool tests for lectin sensitivity, there are stool tests for IBS and IBD, and if you have these, a lectin-elimination diet may improve symptoms. Genova Diagnostics offers an Intestinal Permeability Assessment. LabCorp offers a Calprotectin, Fecal test that screens for Crohn's disease, and DirectLabs offers IBStatus, a comprehensive look at the overall health of your gastrointestinal tract. Celiac disease can be tested by measuring the levels of fat in your stool. Your doctor can order this test, or you can get LabCorp's Fecal Fat, Quantitative test. There are no well-established stool tests for excess phytic acid consumption.
Genes	• the rs1049353 variant of the CNR1 gene • the rs1801133 and rs1801131 variants of the MTHFR gene • the rs4680 variant of the COMT V158M gene • all variants of the SOD2 gene • the rs9891119 variant of the STAT3 gene • the rs10758669 variant of the JAK2 gene • the rs2395185, rs10484554, rs3135388, and rs3135391 variants of the MHC gene	You can order a genetic test through 23andMe, then upload your raw data into a genetic analysis tool like StrateGene, Genetic Genie, FoundMyFitness, or MyHeritage. You can also get a more comprehensive analysis through services such as Bob Miller's TreeOfLife, The DNA Company, or Health Nucleus.
Symptoms	**General concerns** • irritable bowel syndrome • Crohn's disease • colitis **Problems digesting lectins** • brain fog • systemic inflammation • abdominal pain or discomfort • nausea **Problems digesting gluten** • bloating • abdominal pain or discomfort • headaches • fatigue • diarrhea • constipation • skin rashes **Mineral deficiencies due to phytates** • paleness (iron deficiency) • dizziness (iron deficiency) • dry hair and skin (iron deficiency) • restless legs (iron deficiency) • anxiety (iron deficiency)	• headaches (iron deficiency) • fatigue (iron deficiency) • diarrhea (zinc deficiency) • hair loss (zinc deficiency) • poor immune function (zinc deficiency) • loss of appetite (zinc deficiency) • impaired glucose tolerance (manganese deficiency) • low fertility (manganese deficiency)

Chapter 21

Mediterranean Diet (Low Carb)

You may want to follow this diet if you have...

	MARKERS	TESTS
Blood	• abnormally high levels of cardiac troponins (indicates damage to the heart muscle) • high levels of hs-CRP (indicates inflammation and an increased risk of cardiac events) • high levels of B-type natriuretic peptide (BNP) and N-terminal-pro-BNP (indicates probable congestive heart failure) • elevated levels of lipoprotein phospholipase A2 (known to promote atherosclerosis)	Your physician can order tests for all these markers online through LabCorp.
Urine	• high levels of urinary protein and blood (indicates kidney damage, which, in turn, often causes high blood pressure)	Through LabCorp you can order a urinary Protein Total Quantitative test and Urinalysis, Routine with Microscopic Examination on Positives.
Stool	There are no well-established stool tests for determining cardiovascular disease or predicting cardiovascular events.	

	MARKERS	TESTS
Genes	• the rs429358 and rs7412 variants of the APOE gene (predict hyperlipoproteinemia, the accumulation of excess lipids and cholesterol in the blood) • the rs2200733 variant of the PITX2 gene (predicts atrial fibrillation, irregular heartbeat) • the rs8055236 variant of the CDH13 gene (predicts coronary artery disease, the blockage of coronary arteries) • the rs1746048 variant of the CXCL12 gene (predicts heart attacks) • the rs1051730 variant of the CHRNA3 gene (predicts peripheral arterial disease, the blockage of arteries to your limbs) • the rs1801133 variant of the MTHFR gene (predicts venous thrombosis, blood clotting) • the rs7961152 variant of the BCAT1 gene (predicts hypertension)	You can order a genetic test through 23andMe, then upload your raw data into a genetic analysis tool like StrateGene, MyHeritage, or Genetic Genie to determine if you carry any of these variants.
Symptoms	• chest pain, pressure, or tightness • shortness of breath • nausea • fatigue • faintness • cold sweats	• pain in the back, left shoulder, jaw, elbows, or arms • fluttering in the chest • racing heartbeat • pale gray or blue skin • swelling in the abdomen, legs, hands, ankles, feet, and around the eyes

Chapter 21

Paleo Diet

You may want to follow this diet if you have...		
MARKERS		TESTS
Blood	• lactose- or dairy-related antibodies (indicates dairy or lactose sensitivities) • markers for autoimmune diseases • bacterial cytotoxins and cytoskeletal proteins (associated with gut inflammation)	Cyrex offers the Array 10, Array 10-90, and Array 10-90X, which test for sensitivities to different forms of dairy, like goat's milk, hard and soft cheeses, and yogurt. LabCorp offers the Allergen Profile, Milk, IgE with Component Reflexes, which tests for sensitivity to cow's milk. Cyrex has five panels that screen for autoimmune disorders: the Array 5, 6, 7, 7X, and 8. For gut inflammation, Cyrex also offers an irritable bowel/SIBO screen that tests for bacterial cytotoxins and cytoskeletal proteins.

Chapter 21

Paleo Diet

	MARKERS	TESTS
Urine	• proteinuria (may indicate an autoimmune disorder) • hematuria (may indicate an autoimmune disorder) • active sediment (may indicate an autoimmune disorder)	There are no well-established urine tests for dairy sensitivities, specific autoimmune disorders, or gut inflammation. However, DirectLabs offers a Urinalysis, Complete with Microscopic Examination, which measures the general markers for autoimmune disorders.
Stool	• lactic acid in stool (a sign of undigested, unabsorbed lactose in the gut) • fecal calprotectin (indicates gut inflammation, which may indicate an autoimmune disorder) • lactoferrin (indicates gut inflammation, which may indicate an autoimmune disorder)	LabCorp offers a pH, Stool test that screens for acidity in stool. DirectLabs offers a Calprotectin, Stool test that may indicate an autoimmune disorder such as Crohn's, celiac, lupus, or ulcerative colitis. LabCorp offers a Lactoferrin, Fecal, Quantitative test for gut inflammation.
Genes	If you lack these gene variants, it's likely you're genetically predisposed to be lactose intolerant: • the rs4988235 and rs182549 variants of the MCM6 gene in those of European ancestry • the rs1459469881 variant of the MCM6 gene in those of sub-Saharan African ancestry • the rs41380347 and rs41525747 variants of the MCM6 gene (regardless of ancestry) For the long list of genes that predict autoimmune diseases and gut inflammation, see BoundlessBook.com/21. A sample, all for genes related to ulcerative colitis: • the rs76418789 variant in the IL23R gene • the rs4728142 variant in the IRF5 gene • the rs1830610 variant near the JAK2 gene • the rs1555791 variant near TNFRSF14 • rs6478108 in TNFSF15	You can order a genetic test through 23andMe, then upload your raw data into a genetic analysis tool like StrateGene, Genetic Genie, FoundMyFitness, or MyHeritage. You can also get a more comprehensive analysis through services such as Bob Miller's TreeOfLife, The DNA Company, or Health Nucleus.
Symptoms	**Dairy sensitivity** • diarrhea • nausea • vomiting • gas • bloating • abdominal pain • fatigue • psoriasis • rashes • headaches **Autoimmunity** • diarrhea • nausea • vomiting • gas • weight fluctuations • bloating • abdominal pain • fatigue • headaches • rashes • lack of focus and concentration • swelling and redness • muscle aches • hair loss	**Gut inflammation** • diarrhea • gas • bloating • abdominal pain • new food intolerances and allergies • chronic fatigue • poor sleep • weight fluctuations • heartburn

Chapter 21

THE BOUNDLESS SUPPLEMENT PROGRAM

Due to the inherent complexity of the human body, this section was difficult for me to write. In an ideal world, you would be able to fully customize every supplement you take to your unique physiology rather than following a cookie-cutter program. But in my coaching, consulting, research, and experimentation, I've developed supplementation protocols that paint with a relatively broad brush and cover most bases for beginner, intermediate, and advanced goals, as you'll see below.

Beginner

This is for you if you are on a budget, want the lowest-hanging fruit to give you 80 percent of the results with 20 percent of the expense and effort, or need the minimum effective dose of supplementation to look, feel, and perform as good as possible each day. Include:

- A multivitamin-multimineral complex, such as the Thorne Multi
- A good fish oil, such as Living Fuel SuperEssentials or Thorne—2–3 g per day with a meal
- Creatine—5 g per day, taken with a meal or smoothie or another beverage, split into two 2.5 g servings (one in the morning, one in the evening). The brand is not important as long as there are no added sweeteners or fillers. I prefer Thorne Creapure.
- If you are traveling or unable to eat a wide range of plants, greens powder such as Athletic Greens, Organifi Greens, or Living Fuel SuperGreens
- If you are injured, a natural anti-inflammatory such as Kion Flex or Thorne Meriva (see chapter 12)
- If you have difficulty sleeping, 200–500 mg magnesium, 50–100 mg CBD, or 1–2 packets of Sleep Remedy in the evening before bed (see chapter 7)
- If you have gut issues or are unable to eat a wide variety of fermented foods, a good probiotic and gut support blend, such as Seed Probiotic or Thorne Bio-Gest (see chapter 13)

Chapter 21

Intermediate

This is for you if you have a slightly higher budget and want to add supplements that can further enhance performance, longevity, and mental function without necessarily breaking the bank. Follow the beginner protocol and add the following:

- 10–20 g of essential amino acids (EAAs) per day—preferably pre- or postworkout without a meal
- Prior to your largest meal or largest carb-containing meal of the day, insulin-stabilizing foods or supplements like bitter melon extract, Ceylon cinnamon, apple cider vinegar, berberine, rosemary, turmeric, ginger, fenugreek, *Gymnema sylvestre*, or cayenne
- On more cognitively demanding days, caffeine or green tea blended with stabilizing compounds such as L-theanine, tulsi, or astragalus (see chapter 5)
- Once or twice a year, use any of the detoxification systems from Dr. Pompa, Dr. Shade, or Dr. Walsh described toward the end of chapter 13.

Advanced

This is for you if you are willing to invest in better living through science so you can live as long as possible and perform at a high level, and you desire to incorporate a full-blown boundless supplements protocol. Follow the intermediate protocol and add the following:

- Qualia, TianChi, nicotine, or another nootropic stack or adaptogenic herb blend on more cognitively demanding days (see chapter 5)
- Immune support via mushroom blends in your morning coffee or tea and oregano oil in your morning or evening water (see chapter 15)
- Ketone salts or ketone esters for longer workouts or longer periods of fasting, especially on more-active days
- Occasional microdoses of psilocybin, LSD, or other psychedelics (see chapter 5)
- Hydrogen-rich water (whether you dissolve tablets in water, purchase canned hydrogen-rich water, or use a hydrogen water–generating machine)
- Several times per week in a morning or midday smoothie: rhodiola, colostrum, chlorella, marine phytoplankton, aloe vera, coffeeberry fruit extract, frozen broccoli sprouts, and moringa. You can also include other sirtuin-supporting foods from chapter 19 in the smoothie, such as blueberries, cacao powder or cacao nibs, black currant powder, turmeric, or green tea extract.
- Daily supplementation with longevity-supporting compounds, including CoQ10, PQQ, glutathione, rapamycin or metformin, pterostilbene, MitoQ, astragalus, C60, nicotinamide riboside (NR), and SkQs (see chapter 19)

Finally, at my company, Kion, I am currently developing a suite of flagship formulations that will allow you to get all the supplements above in a minimum number of products. Over the next three years, you will see appearing at Kion complete, done-for-you formulas for the following seven needs: gut and digestion, longevity and mitochondria, joints and recovery, weight management and blood sugar control, hormone balance, sleep, and immunity. Once each of these supplement formulas is fully developed, you will no longer need to venture to the four corners of the planet to hunt down everything you need for supplementation. I highly recommend you subscribe to the newsletter at GetKion.com to receive an instant alert each time I release a new formulation.

BoundlessBook.com

All resources, links, blogs, podcast, articles, studies, downloads, books, and (literally) hundreds of pages of additional content and science are all available on this official *Boundless* website.

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Each week, I publish photos, short articles, giveaways, caption contests, controversial stories and other items guaranteed to make you a smarter, more productive, healthier human.

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My company for products, coaching, and solutions that empower you to live a more adventurous, joyful, and fulfilling life. Anytime I create a new supplement—including flagship formulations for longevity, digestion, brain, sleep, recovery, hormones, weight management, and beyond—you will find it here. I also have a mentoring program called KionU, where personal trainers, physicians, nutritionists, and other health professionals can become certified in all my advanced coaching methods (you can apply to join at GetKion.com/become-a-kion-coach).

Twitter.com/BenGreenfield

On a daily basis, I use this platform to tweet science, research, articles, and any other fascinating snippets I find.

Instagram.com/BenGreenfieldFitness

Entertaining and inspirational photos and videos, along with behind-the-scenes stories from my family and me. This is where you'll find raw, live footage of everything from feeding goats to cooking new recipes to brewing coffee enemas.

BeyondTrainingBook.com

This is the website for my *New York Times* bestselling book on striking the ideal balance between performance, health, and longevity. You can also visit my Amazon author page to see all the other books I've written on subjects from triathlon training to low-carb diets to raising superhuman kids.

BenGreenfieldFitness.com

Once a week, I publish a new long-form article similar to the chapters in this book, and twice a week I post a podcast in which I answer listener questions and interview the world's leading experts in biohacking, nutrition, fitness, self-improvement, longevity, and beyond.

YouTube.com/BenGreenfieldFitness

On YouTube, you can find videos on subjects such as ice-cold showers, ways to boost testosterone, and cognitive enhancement, along with product reviews, free conference talks, and much more.

As you already know if you've read all of *Boundless*, my clear and distinct purpose is to empower people just like you to live a more adventurous, joyful, and fulfilling life—to discover and unlock their boundless energy. I trust that this book has done just that for you.

Now go forth and be boundless!

Ben Greenfield