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5 Pillars to Optimize for Healthspan & Life from Top Podcasters

About The Author Mr. Podcast Notes

21-26 minutes

#partnership

The science of longevity… it's time Podcast Notes summarize the best of what the podcast world has to offer. While we certainly can't take credit for the below analogy (hat tip to Peter Attia), it fits the subject perfectly. We present… The Table of Longevity.

Why a Table?

Picture a table that has five legs – one at each corner, and one in the middle. If all the legs are strong and sturdy, the table itself will be strong and sturdy. If three of the legs are strong, but one is wobbly, the table is still largely functional and overall pretty sturdy. But, when two OR THREE (!) of the legs start weakening, things start to get troublesome. Your table is a dinner plate away from falling to the floor.

This table is a metaphor for living a long, healthy, and happy life. Here are what the four legs represent, what we call the Fundamental Four:

- **Leg #1 – Nutrition**
- **Leg #2 – Exercise**
- **Leg #3 – Sleep**
- **Leg #4 – Emotional Health**

Get the Fundamental Four right and go for gold with:

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- **Leg #5 – Exogenous Molecules & Supplements**

These five elements are essential for optimizing healthspan (the period of time during which you are healthy and functional) and lifespan (how long you live).

If one of the legs starts to slip to the side and weaken, you'll largely be fine as the other legs will bear the load. For example, if you eat a crappy diet but optimize for everything else, it sure isn't optimal, but as long as the other four legs of your health are in tip-top shape, you won't suffer too many negative consequences.

But… if you stay sedentary and start to let both your nutrition *and* sleep quality fall to the wayside, there's no doubt about it – you're setting up your healthspan (and lifespan) to take a hit.

Let's take a deep dive into what the podcast world has taught us about each leg of the longevity table.

We're going to start with #5 as we can't help but geek out on this stuff, but keep the above metaphor above in mind.

Leg #5 – Exogenous Molecules & Supplements

The below was compiled from the following Podcast Notes:

- *Dr. Peter Attia: Fasting, Autophagy, and mTOR Inhibition – High Intensity Health*
- *Dr. Peter Attia on Longevity Compounds, Fasting, Supplements and More – The Kevin Rose Show*
- *David Sinclair, Ph.D.: Can Humans Live For 1000 Years? – Modern Wisdom*
- *David Sinclair, Ph.D. – The Joe Rogan Experience*
- *David Sabatini, M.D., Ph.D.: Rapamycin and the Discovery of mTOR | The Nexus of Aging and Longevity? – The Peter Attia Drive*
- *David Sinclair, Ph.D. on Extending Human Lifespan & the Science Behind Aging – The Rich Roll Podcast*
- *Ben Greenfield's Top Anti-Aging Tactics: Basic & Ancestral Strategies To Enhance Longevity – Ben Greenfield Fitness*

Nicotinamide Riboside (NR) and NAD+

Sirtuins are a class of genes that control aging and promote DNA repair. More specifically, they protect our body from deterioration and disease. Sirtuins (and all the body's cells) need the coenzyme NAD+ **(nicotinamide adenine dinucleotide) to function**. If you didn't have NAD+ in your body, you'd be dead in about 30 seconds. **NAD+ is responsible for hundreds of critical biological processes, including creating energy, regulating sleep/wake cycles, and maintaining healthy DNA.**

But here's the problem: **NAD+ declines with age no matter how much you exercise and how well you eat**. By the time you're 50, your NAD levels are about half what they were when you were 20.

So what can you do? **You have a few options, but the most promising and the one we'll focus on is supplementing with the oral NAD+ precursor, NR (nicotinamide riboside).** NR provides the raw material from which your body makes NAD+ through a series of chemical transformations. NMN, discussed below, is also an NAD+ precursor, but is much larger in size, meaning it needs to be broken down to enter the body's cells. NR, on the other hand, can enter a cell as is and follows the most efficient path of conversion to NAD+.

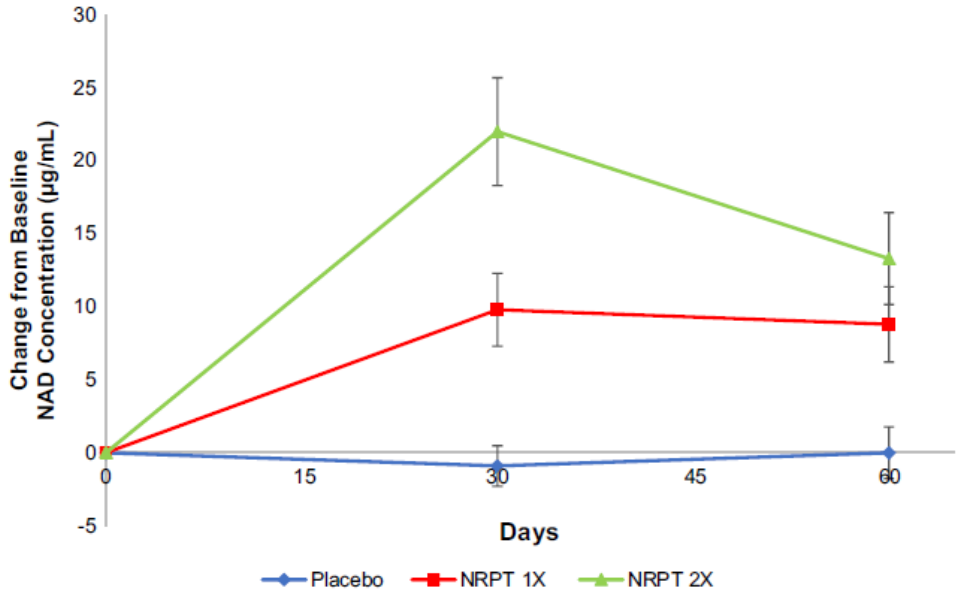
The next question is where to find NR and how much to take. There is a plethora of good-ish sounding options on Amazon, but it's always tough to know what's trustworthy (David Sinclair is very tight-lipped about his particular source).

For us at Podcast Notes, hands down, when it comes to a brand of NR, we can't recommend Elysium Basis **enough (this link will get you $45 off a semi/annual subscription). We, Matt and Yoni, have been researching the company and trying Basis out for the past 3 months**. Basis is a proprietary formulation of **crystalline NR and** pterostilbene that supports cellular health by increasing and sustaining NAD+ levels and thus activating sirtuins. Pterostilbene is a polyphenol that aids in the specific activation of sirtuin 1 (SIR1) which plays a critical role in DNA repair (structurally similar to resveratrol but more bioavailable). Here's the analogy we like to give: NR is the gas for the car and Pterostilbene is the nitrous to make it go fast. Pterostilbene also activates multiple signaling pathways in the human body that are protective, including one called NRF2, which is the master regulator of the cell's antioxidant response. When the body is under oxidative stress (which is what damages cells) NRF2 turns on all the enzymes needed to fight back.

Long-term health starts at the cellular level. If you want to improve your healthspan and increase your energy levels, replenish your NAD+ levels in the most efficient way possible with Elysium Basis **($45 off).**

Why do we recommend Basis so much?

- The number one reason: They're a science-first company. They have research to support their products. It's nearly unheard of to see any gold standard clinical trials done for a supplement, never mind one with such a larger sample (n=120) and a clear and persistent dose-dependent effect (see below). This data was published in *Nature Partner Journals*, which is at the highest tier of peer-reviewed journals.



- 10% of Basis customers are doctors
- They have a STACKED advisory board filled with world-class scientists

- And lastly, check out the founder's (Dr. Leonard Guarente) background – impressive to say the least!

Rapamycin

This quote from Peter Attia says it best:

- ***"If you look at the administration of rapamycin across about a billion years worth of evolutionary animal models, everything from yeast to worms, fruit flies to mammals (mice and dogs), this compound seems to universally increase life"***

Rapamycin is a compound that binds to a complex called mTOR (mechanistic target of rapamycin) in our cells and inhibits it. mTOR does many things, but perhaps most important is it regulates autophagy. Autophagy is the self-cleaning process where a cell breaks down its damaged components and remakes them – this is essentially the cell rejuvenating itself. The dysfunctional cells (like cancer cells) tend to be "eaten" first. **When mTOR activity is turned down, the body is more likely to undergo autophagy.**

Are there other ways to suppress mTOR?

- Yes! – Periodic long-term fasts (see Fundamental #1- Nutrition)

Can anyone take rapamycin?

- It requires a prescription and isn't actually "indicated" for this sort of use. Talk to your Doctor about it, but keep in mind that all medicines have risks or side effects.

What's the optimal rapamycin dosing?

- Much more research needs to be done, but if Peter Attia had to take a guess: 4-6 mg every 4-7 days.

***NMN and** Resveratrol*

NMN, like NR, is simply another precursor to NAD+ (which, as mentioned, sirtuins need to function). The body converts it to NAD+ in response to hormesis (AKA mild stress – a lack of glucose/sugar/amino acids during a fast, exercise, or something like heat/cold stress).

Resveratrol is a powerful antioxidant that's also thought to have a beneficial effect on sirtuins. It's found in nuts, grapes, and red wine but the best way to get adequate amounts is by supplementing.

How much of each should you take?

- Here's David Sinclair's regimen: 1 gram of NMN and 0.5 grams of resveratrol every morning mixed in with some yogurt (to increase absorption, you want to consume both supplements with a bit of fat).

Metformin

Metformin is a prescription drug meant for lowering blood glucose levels in type 2 diabetics. As lowering blood glucose levels is thought to protect against heart disease, cancer, Alzheimer's disease, and aging overall, the drug has become quite popular in the field of longevity research.

A quote from Peter Attia to keep in mind:

- "The more metabolically ill you are, the more benefit you probably get from metformin"

What's the optimal metformin dosing?

- Some diabetics take up to 2 grams/day (1 gram in the morning and 1 gram at night)
- Dr. David Sinclair, in these Podcast Notes, mentioned that he'd been taking 1 gram/day for the last 3 years

Other Longevity Supplements

- Consuming ceylon cinnamon, apple cider vinegar, berberine, and bitter melon extract can lower your blood glucose levels.
- Fisetin (found in wild strawberries) and Quercetin (found in wild apples) are sirtuin-activating compounds which protect your mitochondria.
- Calorie restriction mimetics are things that mimic the physiological benefits of fasting. Ketone esters fit this bill. Here are the best ketone esters on the market:
    - HVMN Ketone Ester
    - KetoneAid Ketone Ester

Back to the Fundamentals with Leg #1 – Nutrition

The below summarizes content from the following series of Podcast Notes:

- *Brain-Boosting Foods and Supplements, Keto, and Exercise for Stress Relief | Max Lugavere - The Genius Life*
    - *Dr. Peter Attia: Fasting, Autophagy, and mTOR Inhibition – High Intensity Health*
    - *Dr. Rhonda Patrick – The Joe Rogan Experience #901*
    - *Dr. Rhonda Patrick – The Joe Rogan Experience #1054*
    - *Dr. Rhonda Patrick – The Joe Rogan Experience #1178*
    - *Dr. Satchin Panda on Circadian Rhythms and Time-Restricted Eating to Improve Health – STEM-Talk*

EVERYTHING starts with your diet – from your mood, to the way you look, to your overall energy levels… you name it.

It's been stated widely – Instead of focusing on *how* to become successful/happy, just figure out what you need to *avoid* in order to do so. Let's take this concept to the realm of nutrition. Here are three categories of things you should avoid when optimizing your diet for longevity:

- **Sugar**
- **Soda and other sweetened drinks (even fruit juice!)**
- **Vegetable oils (canola, safflower, and sunflower oil)**

And of course, here's what you should eat more of:

- **Dark/leafy greens**
- **Raw nuts and seeds**
- **Avocados**
- **Eggs from pasture-raised chickens**
- **Wild-caught salmon**
- **Grass-fed beef**
- **Healthy oils (olive and avocado oil)**

If you do the above, you will have mastered your nutrition better than 99% of the population.

Let's take things a step further with fasting.

As Peter Attia has said, **"Fasting is the single most potent tool in our toolbox of nutrition."** During long periods of fasting, cellular autophagy (the cleanup of cellular debris and turnover of old cells) is upregulated. There are TONS of different fasting regimens, but because we can't measure autophagy it's tough to tell which is best.

Here's what we suggest: Start small and do what you can. The fact is, most Americans are practically hooked up to a siphon of food for 16 continuous hours a day (which is far from optimal). If you're a beginner, first try lengthening the amount of time you can go in between meals. For example, say you normally take your last bite around 10 PM and then have your first bite around 6 AM the next day; see if you can make it until 10 AM. Once that's a piece of cake, go a little longer; try making it until 12 or 2 PM.

Although autophagy likely isn't occurring with a time-restricted eating protocol like this, it's a HUGE mental advantage to know you can go without food for 16-20 hours. **If our ancestors couldn't function when they were hungry, we wouldn't be here.** Short-term adaptation to starvation is beneficial. That being said, **time-restricting your eating window to ~8 hours is thought to increase insulin sensitivity, improve blood sugar levels, lower blood pressure, reduce overall levels of inflammation in the body, and often makes it easier to reduce your total calorie intake.**

Once you feel comfortable fasting for 20 hours or so in between meals, try experimenting with a prolonged fast of 2-3 days. **It's thought that autophagy starts occurring around day 3 of a prolonged fast** (remember we can't measure it, so we're just guessing)- this is what you want to aim for.

Finally, once you have a 2-3 day fast under your belt, aim for a longer 5 or 7-day fast. Peter Attia does a 7-day fast once per quarter. This, we hear, is the sweet spot when it comes to optimizing for longevity.

Ah, one more thing…

When you eat matters just as much as what you eat. All things equal, the earlier in the day you consume your food, the better. Eating late into the night has a detrimental effect on the body's circadian rhythm in addition to your overall sleep quality.

Wait, one more…

If you're going to eat animal meat, or a high-protein diet, make sure you're exercising. Here's why: Animal meat, and protein in general, contains a slew of amino acids that activate IGF-1, a powerful growth factor that encourages cells to grow. IGF-1 is great in many ways: it plays an important role in the repair/growth of muscle tissue as well as new neurons. Here's where things get a little complicated: There have been multiple studies linking chronic IGF-1 activation to higher incidences of cancer-related mortality, all-cause mortality, and cardiovascular disease. BUT, research also seems to suggest that exercise, specifically load-bearing, directs IGF-1 to the places it's supposed to go (the brain and muscle tissue). In short, when you exercise, the link between IGF-1 and reduced lifespan is demolished. This is a perfect segway to the next leg…

Leg #2 – Exercise

The below was summarized from the following Podcast Notes:

- *Dr. Rhonda Patrick – The Peter Attia Drive*
- *Brain-Boosting Foods and Supplements, Keto, and Exercise for Stress Relief | Max Lugavere - The Genius Life*
- *Top Tactics for Fat Loss, Weight Gain, and Muscle Growth – Mind Pump on The Genius Life Podcast*

Humans were made to move, not to sit still for 14 hours a day. It doesn't matter what type of exercise you choose to do, anything is better than nothing.

Here are a few bullet points picked up from podcast land if you need more convincing that exercise is a must:

- **It seems to be that exercise is the single most important thing you can do to preserve brain health.**
- There have been multiple studies showing aerobic exercise helps with executive function and long-term planning.
- Strength training has been shown to prevent muscle atrophy (the wasting away of muscle), and lower the incidence of cancer.
- **Resistance training has been proven to have a significant effect on reducing symptoms of depression and anxiety.**
- In a way, lifting weights turns your muscles into a sponge, allowing them to better suck glucose out of the blood (and therefore lower your blood glucose levels).
- Aerobic exercises has been proven to boost brain-derived neurotrophic factor (BDNF).
- Resistance training has been proven to speed up the body's metabolism and help you burn more calories.

Leg # 3 – Sleep

The below was summarized from the following Podcast Notes:

- *Dr. Matthew Walker – The Joe Rogan Experience*
- *Dr. Matthew Walker on Sleep for Enhancing Learning, Creativity, and Immunity – Found My Fitness with Dr. Rhonda Patrick*
- *Dr. Matthew Walker on Unlocking the Power of Sleep – The Jordan Harbinger Show*
- *Dr. Matthew Walker on The Peter Attia Drive:*

    - *AMA: Strategies For Sleeping More, Sleeping Better, and Avoiding Things That Are Disrupting Sleep*
    - *Dangers of Poor Sleep, Alzheimer's Risk, Mental Health, Memory Consolidation, and More (Part I)*
    - *Heart Disease, Cancer, Sexual Function, and the Causes of Sleep Disruption (Part II)*
    - *The Penetrating Effects of Poor Sleep From Metabolism to Performance to Genetics, and the Impact of Caffeine, Alcohol, THC, and CBD on Sleep (Part III)*
- *Matthew Walker, Ph.D.: Sleep is the Boss of You – Bulletproof Radio*

This could be a post in and of itself (and it was), but here's what you need to know about sleep and its effect on longevity:

Do we really need 8 hours of sleep?

YES – Based on evidence from over 100,000 studies, the number of people who can survive on 5 hours of sleep or less, without showing any impairment, rounded to a whole number and expressed as a percentage of the population…is 0.

Fun fact – there's a genetic abnormality in the DEC gene, which promotes wakefulness chemistry in the brain, which allows people to sleep ~5.5-6 hours/night without showing any signs of impairment. **Bad news:** you're more likely to be struck by lightning in your lifetime (odds of 1/12,500) than you are to have it.

Here's a huge list of what happens when you don't get enough sleep:

- Men who sleep 5-6 hours a night have a level of testosterone 6-10 years their senior.
- **The shorter your sleep, the shorter your life – a lack of sleep predicts all-cause mortality.**
    - **If you're regularly getting 5 hours of sleep or less, you have a 65% increased risk of dying at any moment in time, relative to people getting 8 hours of sleep or more.**
- **"Every disease that's killing us in the developed world now has a causal link to insufficient sleep."** – Dr. Matthew Walker
    - **This list includes – cancer, Alzheimer's disease, stroke, cardiovascular disease, diabetes, obesity, depression, anxiety, and suicide.**
- With less sleep, leptin gets suppressed, and ghrelin gets ramped up.
    - Leptin is the body's main satiety hormone. It tells our brains we're full. Ghrelin does the opposite. It's the hunger hormone.
    - People sleeping 4-5 hours a night will on average eat 200-300 extra calories each day (this equates to 70,000 extra calories each year, which translates into 10-15 lbs. of extra body mass).
- **One study tracked sleep-deprived individuals for one night (to 4 hours of sleep) – they experienced a 70% reduction in critical anti-cancer-fighting cells (natural killer cells).**
- With just 6 hours of sleep, you're 33% more likely to get into a traffic accident.

Practical sleep tips:

- One hour of iPhone use will delay the onset of melatonin production by about 3 hours (your peak melatonin levels will also be 50% less) – so stay off your phone near bedtime
    - Keep your room as cold as you can tolerate – your brain needs to drop its temperature 2-3 °F in order to sleep
    - Wear blue light blocking glasses *(use the code "PodcastNotes10" for 10% off at checkout on a pair of True Dark glasses. PodcastNotes has tested 3 brands and these are the best– both for comfort, quality, and efficacy. We like the Twilights.)* a few hours before going to bed – excess blue light exposure (from phones, TVs, and computer screens) prevents melatonin levels from rising

- You have to sleep at the same time every night. If you shift your sleep by a few hours, you're going to miss certain stages.
    - Caffeine has a half-life of 5-6 hours, so 5-6 hours after drinking a cup of coffee, half of the caffeine will still be in your system, hindering your sleep – best to avoid it after 12 PM
    - What gets measured, gets managed – the Oura Ring is hands down the best sleep tracker on the market and we couldn't recommend it enough

Leg #4 – Emotional Health

Why aim to live to 120 if you're going to be miserable along the way? Here's what the podcast world has taught us about how to optimize mental health, silence the monkey mind, and limit anxiety:

1) Eat a healthy diet

There's a lot of debate on what a "healthy diet" is. Forget the debate. There's one thing we can all agree on – limit your intake of processed carbohydrates and sugar. STOP EATING SUGAR. It's that simple. Research shows that sugar has a detrimental effect on your microbiome and brain, both of which regulate mood.

2) Exercise

It doesn't matter what type of exercise you do, just move! Humans were not made to wake up, eat a crappy breakfast, drive to work, sit in a cubicle for 9 hours a day, drive home, sit on the couch, and go to bed. Do something – go for a walk, strength train, do cardio, swim, it doesn't matter. Get out of your mind and into your body.

3) Get more of the right kind of light

I want to paint a scene; this is what each day looks like for the vast majority of people – wake up, scroll your phone, go sit under artificial incandescent light for 9 hours, go home, and then watch TV/look at your phone until it's time for bed. It's just way too much artificial light.

Wake up and get as much natural light as possible. Go outside if you can. Start taking frequent breaks at work just to go out for some sun. Stop using electronics 1-2 hours before bed, and if you absolutely have to, get a pair of blue light blocking glasses *(use the code "PodcastNotes10" for 10% off at checkout)*.

4) Implement a meditation practice

Some of our Podcast Notes on meditation to get you started:

- *Tim Ferriss – 10% Happier with Dan Harris:*
- *Sharon Salzberg, World-Renowned Meditation Teacher – The Tim Ferriss Show*

There are tons of resources out there on how to meditate and it seems like there's a new meditation app popping up every day (Headspace, Calm, Oak, etc.). Everyone is skeptical before they start, that's just the way it is. But listen to everyone who meditates. 99% of people say it provides at least some benefit in their lives. What do you have to lose… 10 minutes of your day?

If traditional meditation isn't for you, give Naval Ravikant's 'Art of Doing Nothing' meditation a try.

5) Get a good night's sleep

This one doesn't need much explaining – we're ALL happier people with a great night of rest.

Here's what sleep expert Dr. Matthew Walker had to say in these Podcast Notes:

- "In my lab, the most reliable thing we see when we deprive people of sleep of any dose – anxiety goes up"
- **With one night of sleep deprivation, you can instigate a level of anxiety which would fall under the umbrella of a clinical anxiety order diagnosis**