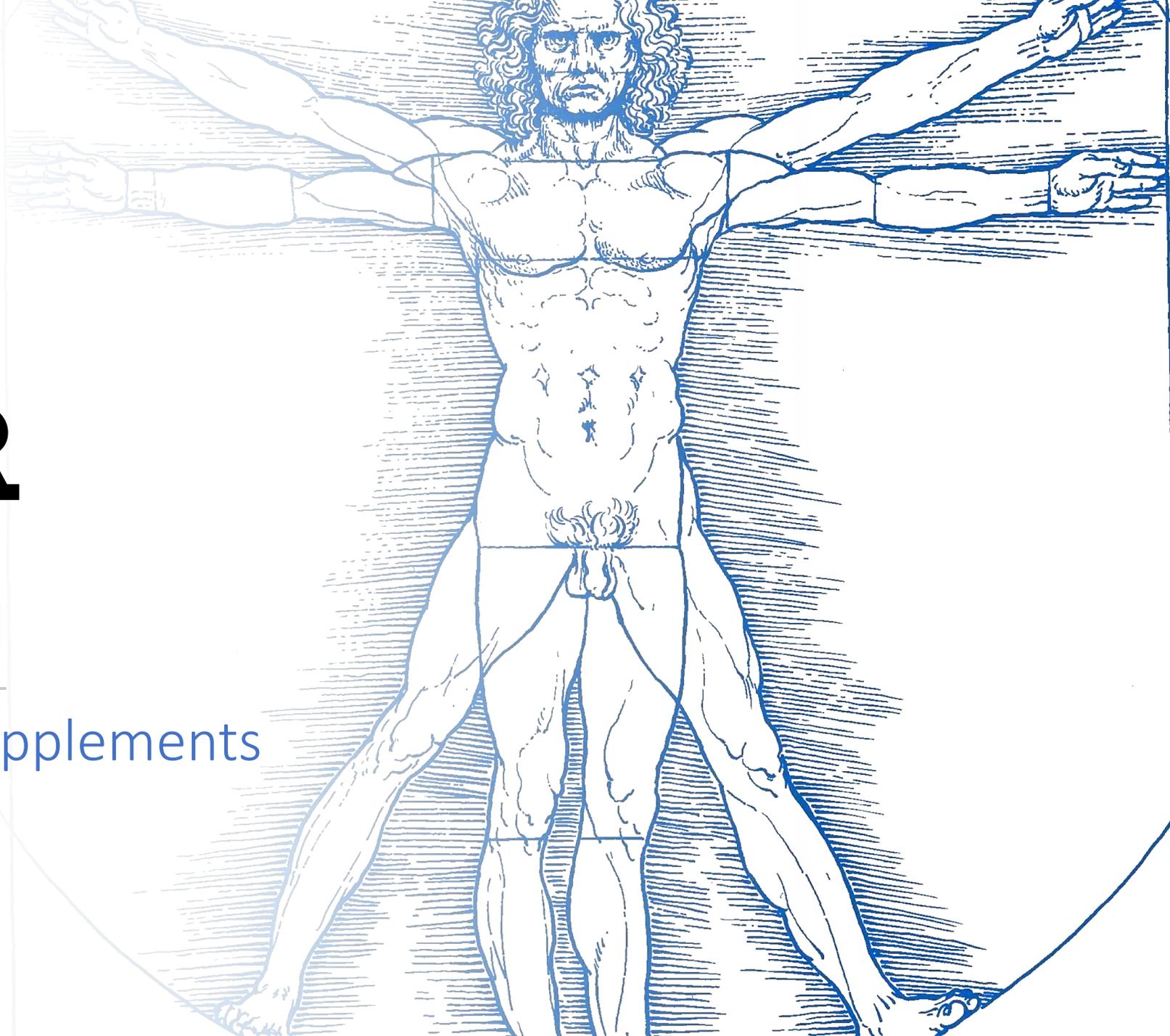




**SHAWN WELLS**  
THE INGREDIENTOLOGIST



# HARDER TO KILL

TOP 12 Biohacks and Supplements

**RESILIENCE** is a state of being tougher and “anti-fragile” – being “harder to kill”

- More than that, it means living an **optimized and fulfilling life**
- The **amount of stress** on the mind and body is known as allostatic load, and there are intra- and **inter-individual differences** for how much stress we can “carry”
- We can only carry so much stress in our “**bucket**” before it overflows and becomes counterproductive
- Keep in mind that **not all stress is “bad”**; we actually need a certain degree of stress to force adaptation (called hormesis)
- Hormesis is quite literally the path to **unshakable resilience**; it teaches the body how to cope with and bounce back from stress bigger, better and **stronger than before** -- and with more energy, vigor and vitality



- **Hormesis enhances our resilience** to normal aging and protects against a broad spectrum of neurodegenerative and cardiovascular diseases, as well as trauma and other threats to health and well-being
- **The right amount of stress** can help put us “in the zone” or in a flow state; it can improve our decision-making abilities significantly
- **Eustress, or positive stress**, supports biological resilience, offering constructive pressure that can ultimately boost your energy; distress, or negative stress, does the opposite, leading to anxiety or an inability to perform, which lowers your energy
- The top biohacks and supplements that I’ll share either act as hormetic stressors or improve the **ability to cope with stress**



# Top 12 Supplements



# L-BAIBA ( $\beta$ -aminoisobutyric acid)

- Referred to as an “exercise factor”, “exercise mimetic” or even “exercise in a bottle”
- L-BAIBA is a myokine: a non-protein amino acid secreted by skeletal muscles during exercise
- Produced from the utilization of the branched chain amino acid L-valine
- Plays a powerful role in the many benefits of regular exercise
- Increases energy expenditure (i.e., metabolic rate) by activating the  $\beta$ -oxidation pathway of hepatic fatty acids





# L-BAIBA

- Triggers the browning of white adipose tissue, which can lead to **increased metabolic rate** and fat oxidation
- **Improves insulin sensitivity**
- May help **reduce body fat**
- Seems to exert **anti-inflammatory** effects
- Favorably affects **lipid metabolism**
- Pairs particularly well with exercise and **cold exposure**
- Look for **MitoBurn**
- Recommended **dose: 750 - 2000mg** (e.g., before exercise and/or before cold exposure)

# Grains of Paradise (GP)

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- Ancient spice in the ginger family
- Has been shown to **activate brown adipose tissue (BAT)**
- Unlike white adipose tissue (e.g., subcutaneous fat), which stores calories as fat, BAT is mitochondrial dense and metabolically active, **burning calories to generate heat**
- Activating BAT can help **increase metabolic rate**, fat oxidation and glucose disposal
- Pairs particularly well with **cold exposure**
- Good choice for body composition goals and **optimizing metabolic health**
- “An effective and safe tool for **reducing body fat**” and for “preventing visceral [belly] fat in humans”



# Grains of Paradise (GP)

- One study showed an increase of, on average, **100 more calories burned** daily with GP supplementation
- Non-stimulatory **thermogenic**
- Important to use GP extract with all four **metabolism-enhancing bioactive** compounds: 6-Paradol, 6-Gingerdione, 6-Shogaol and 6-Gingerol
- **Beware of adulterated GP extracts**, which are spiked with ginger, and provide only one active
- Stacks well with L-BAIBA
- Look for CaloriBurn GP
- Use **40 - 80mg twice daily**, combine with cold plunges/cryo

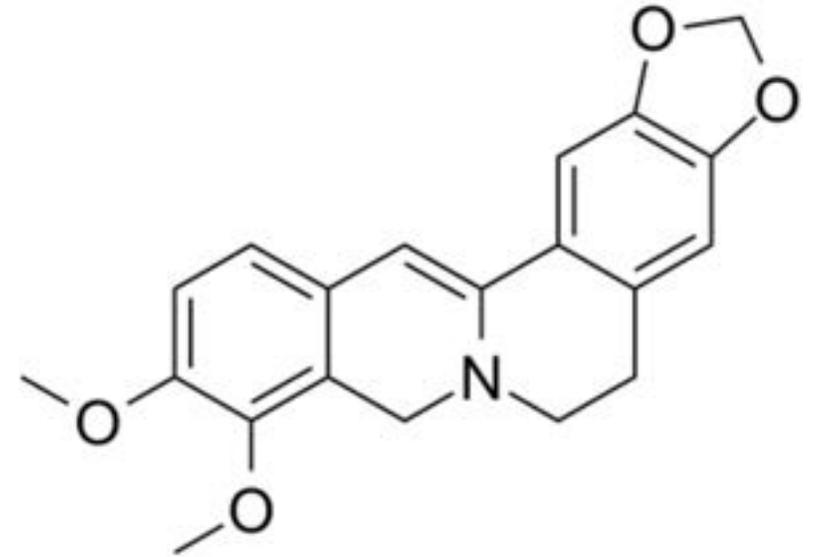


## Dihydroberberine (DHB)

- **My favorite anti-aging supplement** and one of my favorite supplements overall
- Often referred to as a **glucose disposal agent**
- Berberine has been used in **Chinese and Ayurvedic medicine** for decades to help lower blood sugar
- Has been shown to be **comparable** in doing so to the popular **diabetic drug Metformin**
- Offers powerful **support for glycation** (i.e., helps reduce formation of advanced glycation end products) and healthy lipid metabolism (e.g., cholesterol, triglycerides)
- **Berberine must be converted to DHB by gut bacteria**; DHB is then oxidized back to berberine after intestinal absorption

# Dihydroberberine (DHB)

- Supplementing with DHB sidesteps the rate-limiting step of **microbial reduction**
- Practically speaking, animal data shows a **5-fold relative increase in absorption** of DHB compared to berberine
- Animal studies demonstrate **DHB is 4 times more effective** than berberine at reducing body fat and improving glucose tolerance
- Look for **Glucovantage**, which incorporates **phytosome technology** (i.e., phospholipids) to further enhance absorption
- Take **150mg twice daily**



# NAD Support

- NAD = Nicotinamide Adenine Dinucleotide
- Important healthspan and housekeeping molecule, plays a **critical role in energy metabolism** and helps certain enzymes involved in **vital cellular functions**, such as cellular repair and cellular defense
- For example, NAD is the key cellular fuel for the sirtuins, the **gatekeepers of key longevity and resilience pathways**
- Sirtuins (SIRT) = “toughness genes”
- NAD levels drop with age
- **Chronic inflammation** causes a reduction in NAD levels, as does excess alcohol consumption, excess UV exposure, inadequate sleep, poor diet, viral infections and a **sedentary lifestyle**



# NAD Support

- Ironically, **exercising too much/too often** at a high intensity can also deplete NAD levels
- **Levels of CD38 also rise**; CD38 (aka NADase) is an enzyme involved in breaking down NAD
- Bottom line: As we age, **our bodies make less NAD**, and what we do make disappears faster than when we were young; for example, by the time we hit 50, NAD levels are half of what they were in our youth
- NMN (Nicotinamide Mononucleotide) is a **precursor to NAD**; supplement with **250 - 2,000mg/day** to support NAD production, NR is inferior
- The polyphenols **Apigenin** and Quercetin may slow down the activity of CD38, thereby promoting healthy levels of NAD, **Fisetin** boosts NAD as well and is the most effective polyphenol when compared to 10 others
- Stack **pairs particularly well with Fasting** (which upregulates expression of sirtuins) and Exercise





## L-Ergothioneine

- Rare amino acid found **primarily in mushrooms**
- A powerful antioxidant that has become known as the “**longevity vitamin**”
- **Humans cannot make l-ergothioneine** (it must come from the diet/supplements), yet humans produce a highly specific transport protein for it, leading many to speculate about its potential importance because such specific transporters are rarely present for non-nutrient bioactive compounds
- Research has suggested a **positive association** between l-ergothioneine **consumption and life expectancy**; deficiency in l-ergothioneine may predispose people to cognitive decline
- Recent research shows that l-ergothioneine has **immune-enhancing properties**

# L-Ergothioneine

- It can help promote healthy cytokine expression and signaling
- L-ergothioneine up-regulates toll-like receptor (TLR) responses in bone marrow-derived macrophages, which leads to strong innate immune activation
- May help “rev up” the mitochondria, where it is usually concentrated
- May promote recovery from exercise
- Look for **MitoPrime**, the branded version of this next-level antioxidant
- Recommended dose: 5 - 10mg, 1 - 3 times/day



The wonderful world of mushrooms guide on my website  
[www.shawnwells.com](http://www.shawnwells.com)



# Vitamin D

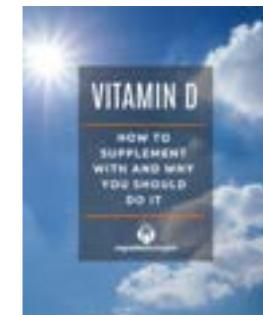
- Vitamin D controls the expression of **more than 1,000 genes** -- that's around 1/24 of the genome
- 75% - 86% of Americans and Europeans **may be vitamin D deficient** or insufficient (25(OH)D < 20ng/mL or 30ng/mL, respectively)
- Vitamin D insufficiency/deficiency **tied to reduced brain oxytocin**, increased **aging, early death, immune dysfunction**, increased inflammation, increased cancer risk, reduced brain serotonin, reduced nerve growth factor, learning impairments, **increased depression** and more
- Vitamin D plays a critical role in **both innate and adaptive immunity**, and it is essential for a healthy, properly functioning immune system
- For example, vitamin D **supports induction of antimicrobial peptides** in response to both viral and bacterial stimuli; it can also induce other innate antimicrobial effector mechanisms

SELECTED FOOD SOURCES OF  
**VITAMIN D** 

Food	Amount	% RDI
Cod liver oil, 1 tablespoon (15 ml)	1,360 IU / 34 mcg	227%
Salmon, cooked, 3 ounces (85 grams)	447 IU / 11 mcg	75%
Tuna, canned in water, 3 ounces (85 grams)	154 IU / 4 mcg	26%
Beef liver, cooked, 3 ounces (85 grams)	42 IU / 1 mcg	7%
1 large whole egg (D is found in yolk)	41 IU / 1 mcg	7%
1 sardine, canned in oil, drained	23 IU / 0.6 mcg	4%

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Vitamin D guide on  
my website  
[www.shawnwells.com](http://www.shawnwells.com)



# DEFICIENCY SYMPTOMS

THE ONLY WAY TO KNOW YOU ARE DEFICIENT IS TO HAVE YOUR DOCTOR PERFORM A ROUTINE BLOOD TEST. POSSIBLE SIGNS OF VITAMIN D3 DEFICIENCY INCLUDE:

- WEAKNESS
- CHRONIC FATIGUE
- DEPRESSION
- ANXIETY
- TROUBLE SLEEPING
- WEAK OR BROKEN BONES
- WEAKENED IMMUNE SYSTEM
- INFLAMMATION AND SWELLING

TESTS INCLUDE: '25 HYDROXYVITAMIN D3 TOTAL' OR '25(OH) D3 TOTAL'

KEEP THESE NUMBERS IN MIND WHEN READING YOUR TEST RESULTS.

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## Vitamin D

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- According to a systematic review and meta-analysis published in the *bmj*: “Vitamin D supplementation was safe and it **protected against acute respiratory tract infection overall.**”
- September 2020 JAMA study: “likely deficient vitamin D status was associated with **increased COVID-19 risk**”
- September 2020 PLOS ONE paper found that vitamin D sufficiency (25(OH)D  $\geq$  30ng/mL) **reduced the risk for adverse clinical outcomes** in patients with COVID-19
- Recommended dosage: **2,000 - 8,000 IU/day**
- **Pairs best with Vitamin K2** (e.g., MK-7), as Vitamin K supports some of Vitamin D’s critical functions (e.g., calcium absorption and proper utilization)

# Tetrahydrocurcumin (THU)

- THU is the major **bioactive metabolite of curcumin**, the well-known polyphenol found in turmeric
- THU has recently been characterized to be the primary metabolite responsible for **curcumin's diverse biological properties**
- For instance, THU possesses extremely **strong antioxidant** activity that is superior compared to other curcuminoids
- Curcumin's efficacy is limited by its poor solubility, low absorption, rapid metabolism and rapid elimination -- problems that THU overcomes with its **superior bioavailability and biological activity**
- The bottom line is that most people realize that curcumin has powerful antioxidant properties and can support a healthy inflammatory responses -- properties that make it particularly well suited to support an array of full-body benefits, like **healthy aging, detoxification, joint health, skin health, heart health, brain health and more**



# Tetrahydrocurcumin (THU)



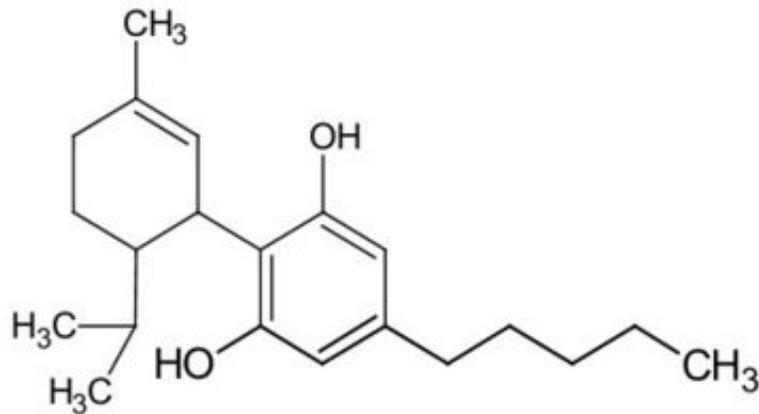
- The beneficial properties of curcumin -- and the associated benefits -- may actually be attributed to THU, which you can think of as the **bioactive, body-ready form of curcumin**
- In other words, THU (which is more stable and more readily absorbed than curcumin) is ultimately the **active form of curcumin** inside the body
- Look for **CurcuPrime**; take 200mg twice daily
- Alternatively, look for **CurcuWIN**, an optimized curcumin preparation, taking **1,000mg per day**

# Cannabidiol (CBD)

- Cannabidiol (CBD) is the **main phytocannabinoid** in the hemp plant
- CBD works with the body's endocannabinoid system (ECS), which is specifically designed to promote homeostasis; the ECS is the body's major regulatory system, **responsible for maintaining internal balance**
- Wherever the body is agitated (e.g., feeling discomfort, anxiousness, difficulty sleeping, mood issues), the **ECS works to get it back in balance**
- Unfortunately, **many people have a dysregulated ECS** (e.g., inadequate levels of certain endocannabinoids and excessive production of others)
- CBD is all about helping bring the body into balance, which is why it's a helpful tool for **recovery, resilience and overall well-being**



# Cannabidiol (CBD)



- **Pairs well with MCTs**, as CBD may be better absorbed and more effective when co-administered with fats, especially ones that are uniquely metabolized as MCTs are
- **Also pairs well with curcumin/tetrahydrocurcumin** to optimally support a healthy inflammatory response
- I generally prefer a **full-spectrum CBD extract** because there seems to be an “entourage effect” where the various phytocannabinoids and terpenes synergize to produce even better results; that said, **CBD isolate may still have a place**
- Supplement with **10 - 100mg, one to two times daily**
- Stacks well with FastBliss, a branded preparation of anandamide, the bliss molecule, which naturally works with the ECS to promote relaxation, a healthy mood and more

# Collagen

- Collagen protein is the main structural protein in the body, making up 30% of the protein in your body; that makes collagen **the second most abundant substance in the body besides water**
- Collagen makes up **70% of the protein in our skin**, and it's the primary structural protein in joints, bones, cartilage, ligaments, tendons, blood vessels, the intestinal wall and more
- It's literally **the glue that holds us together**
- **As we get older, collagen levels drop** -- with collagen breakdown increasing and collagen synthesis decreasing
- For example, **skin levels of collagen decrease** by 11 - 13% each passing decade after the age of 20





- The good news is that supplementing with collagen protein, particularly **hydrolyzed collagen peptides**, can help support healthy collagen levels and the benefits associated with them
- What makes collagen unique (and different than other protein sources) is its very **unique amino acid profile**; collagen is high in proline, hydroxyproline, glycine and arginine, which are the same building blocks that make up the collagen-containing tissues in your body
- Top benefits of collagen supplementation include: **healthy, young-looking skin; healthy, mobile joints; strong, healthy tendons and ligaments; recovery from exercise; and gut health**
- I recommend supplementing with **10 - 40 grams of hydrolyzed collagen peptides** per day, and I suggest getting a variety of collagen types (e.g., I, II, III, V and X) from an array of food sources (e.g., bovine, marine, poultry, eggshell)

# Adaptogens

- Adaptogenic herbs essentially support the **body's ability to "adapt"** ideally to its environment
- Adaptogens are thought to have very **unique bimodal functions**, either providing an energizing effect or a relaxing effect, depending on the needs of the individual in a specific situation
- Adaptogens help the body adapt to mental and/or physical stress by **supporting the body's systems and promoting resilience** to future such stress
- Two of my favorite adaptogens are **Ashwagandha** and **Rhodiola** (followed by Maca and Lions Mane)



# Adaptogens

- Ashwagandha is referred to as a “royal herb” because of its well-known rejuvenating effects; it has been shown to combat stress, slow the aging process, improve feelings of well-being, increase stress tolerance, increase muscle mass and strength and more
- Look for Sensoril, an optimized Ashwagandha extract backed by 12 clinical studies
- Recommended dose: 125mg twice daily



# Adaptogens

- Rhodiola has a long history of use (very storied use in Russia) to **combat fatigue, improve mood, enhance focus and learning**, improve sleep, reduce irritability, increase strength and more
- Rhodiola is considered “an excellent choice for individuals who are **weighed down by stress and fatigue as a result of demanding intellectual work**”
- Look for **RhodioPrime**, a highly potent Rhodiola extract (High in Salidroside)
- Recommended dose: **200 - 600mg daily**



# Medium Chain Triglycerides (MCTs)

- MCTs differ from the majority of dietary fats (which are long-chain triglycerides) because they have only **6 - 12 carbon atoms**, with **C8 and C10 being the two most prominent**; it's debatable whether C12 (lauric acid) is truly an MCT
- For what it's worth, only about **13 - 15% of the fat in coconut oil** comes from C8 and C10
- Because of their shorter length, MCTs are transported **directly to the liver** where they are quickly and efficiently burned for energy
- **They bypass adipose (fat) tissue**, which makes them less likely to be store as fat
- MCTs have been shown to **increase metabolic rate** and daily caloric energy expenditure, as well as enhance fat burning and satiety (feelings of fullness and satisfaction)



The MCT's guide on  
my website  
[www.shawnwells.com](http://www.shawnwells.com)



# Medium Chain Triglycerides (MCTs)

- Caprylic acid (C8) is more ketogenic than other MCTs (C10, C12), meaning that it is more readily, reliably and rapidly converted to ketones in the body
- Ketones are an important energy source for the brain, and along these lines, C8 may help improve energy levels, focus, mental clarity and cognitive function
- Ketones also serve as signaling molecules, which may help upregulate key anti-aging and longevity pathways
- MCTs pair particularly well with fasting and exercise
- Look for C8Vantage (powder) or Bulletproof Brain Octane (liquid)
- Recommended dose varies considerably based on experience, tolerance and goals (e.g., 5 - 30 grams per day)

**TOP 3 MCTs**  
ON A BUDGET

MCT Type	Image	Cost	Ketogenic Rating
COCONUT OIL		Cost: \$	Ketogenic: ★
MCT OIL (BLEND)		Cost: \$\$	Ketogenic: ★★★
C8 MCTs (OIL)		Cost: \$\$\$	Ketogenic: ★★★★★

DO YOU WANT TO KNOW MORE? CHECK OUT MY FREE GUIDE ABOUT MEDIUM-CHAIN TRIGLYCERIDES: [SHAWNWELLS.COM](http://SHAWNWELLS.COM)

# Exogenous Ketones

- Beta-hydroxybutyrate (BHB) is the most **prevalent ketone in the body when produced naturally**, and it is the most common source of exogenous ketones
- Exogenous ketones **supply fat-burning fuel to the brain/nervous system and skeletal muscle** to help support both cognitive and physical performance
- A number of studies have shown that **exogenous ketones may enhance endurance**, cognitive decision-making and physical recovery
- Exogenous ketones may also help **support optimal appetite management**; one study found that supplementation with exogenous ketone esters reduced hunger, desire to eat and levels of the **hunger hormone ghrelin**
- Exogenous ketones can rapidly and **reliably raise levels of ketones in the body**; helpful for keto-adaptation and for getting into deeper levels of ketosis, even without a ketogenic diet



# Exogenous Ketones

- There are two main types of exogenous ketones: Ketone esters and ketone salts; generally speaking, ketone esters have been shown to be more effective at raising levels of BHB in the body
- This is largely because most ketone salt supplements are a mixture of BHB isomers, including weaker variations (e.g., L-BHB)
- Meanwhile, D-BHB (also called R-BHB) is the more bioactive, body-ready isomer
- Look for KetoVantage, a premium source of exogenous ketones that features the bioidentical ketone salt R-BHB/D-BHB), which can put you in ketosis in as little as 30 minutes and provides active, clean-burning fuel for the brain and muscles
- Recommended dose: 3 - 10 grams, taken 1 - 3 times per day (e.g., before workout, when hungry)
- Pairs well with fasting and exercise

**TOP 3 EXOGENOUS KETONES**

**KETONE SALTS**  
Dose: 5-15g of the active isomer (D-BHB)

**MCT OIL**  
They can raise blood ketones to roughly 0.5-1.0mmol/L.

**KETONE ESTERS**  
Dose: 25-30g servings. Split this dose into 2 or 3 servings.

I like to take ketones **pre-workout**, especially when fasting; they are a **great source of energy** when you reach an afternoon 'slump'.



# Top 12 Biohacks

# Cold Exposure

- **Powerful form of hormetic stress** - mild, transient stress can be highly beneficial, lead to adaptation and promote resilience
- Other examples of **hormetic stress**: exercise, water, oxygen, intermittent fasting and certain phytochemicals (e.g., resveratrol, curcumin, sulforaphane, epicatechins)
- **Cold exposure activates brown adipose tissue (BAT)**, a metabolically active thermogenic tissue designed to generate heat to help regulate body temperature (i.e., non-shivering thermogenesis); activating BAT is an “energy-wasting” process
- Cold can **increase metabolic rate, increase fat oxidation and utilization**, and over an extended period of time, reduce body fat
- Incredible for **blood sugar regulation** (e.g., improved insulin sensitivity and glycemic control)
- Can help **reduce inflammation and pain**; interestingly, if the temperature is too cold (e.g.,  $< 46^{\circ}\text{F}$ ), it may diminish the benefits on pain, swelling, inflammation, etc. More noxious, tolerable temperatures may be more effective.

## METHODS TO PRACTICE COLD EXPOSURE



# Cold Exposure

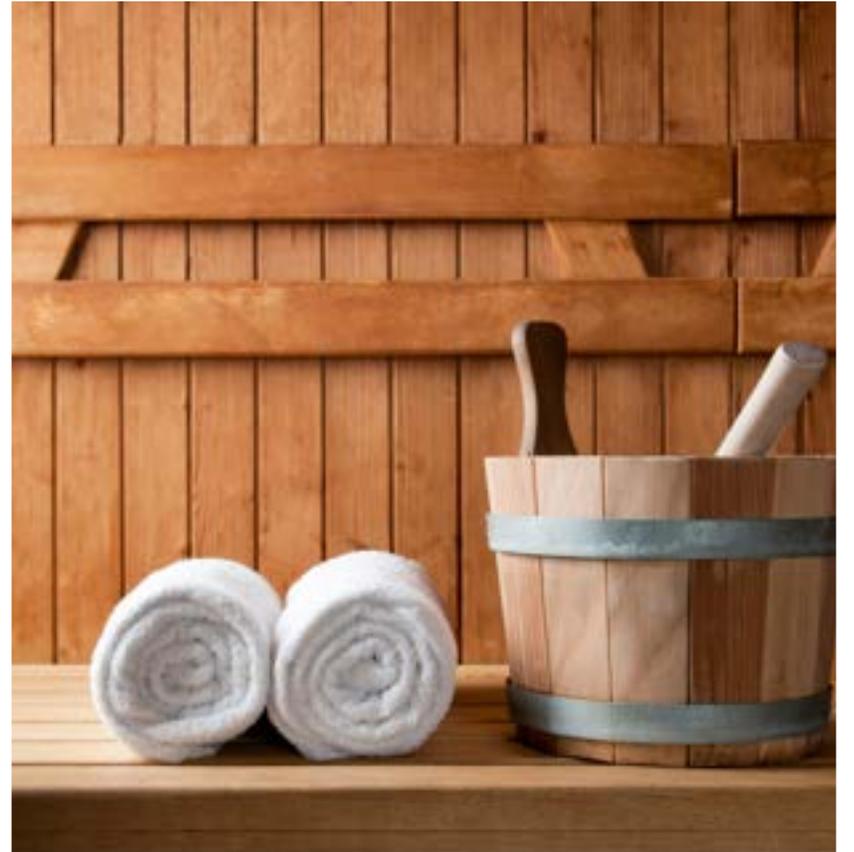
- Cold may also **improve mood, optimize sleep quality** and circadian rhythms, and it may also improve cognitive function
- Cold exposure also **“hardens” the body**, increases resilience and enhances stress tolerance
- The temperature **doesn’t need to be unbearably cold**; benefits may be seen at temperatures as moderate as 58 - 62°F. Both colder air and water will do the trick. **Contrast showers/baths can be very effective**, as the relative temperature change seems to be particularly important
- Cold-water immersion, cryotherapy, turning down the thermostat and **going outside in the cold** are all effective options
- Pairs well with: L-BAIBA, Grains of Paradise



# Sauna Bathing/Heat Exposure

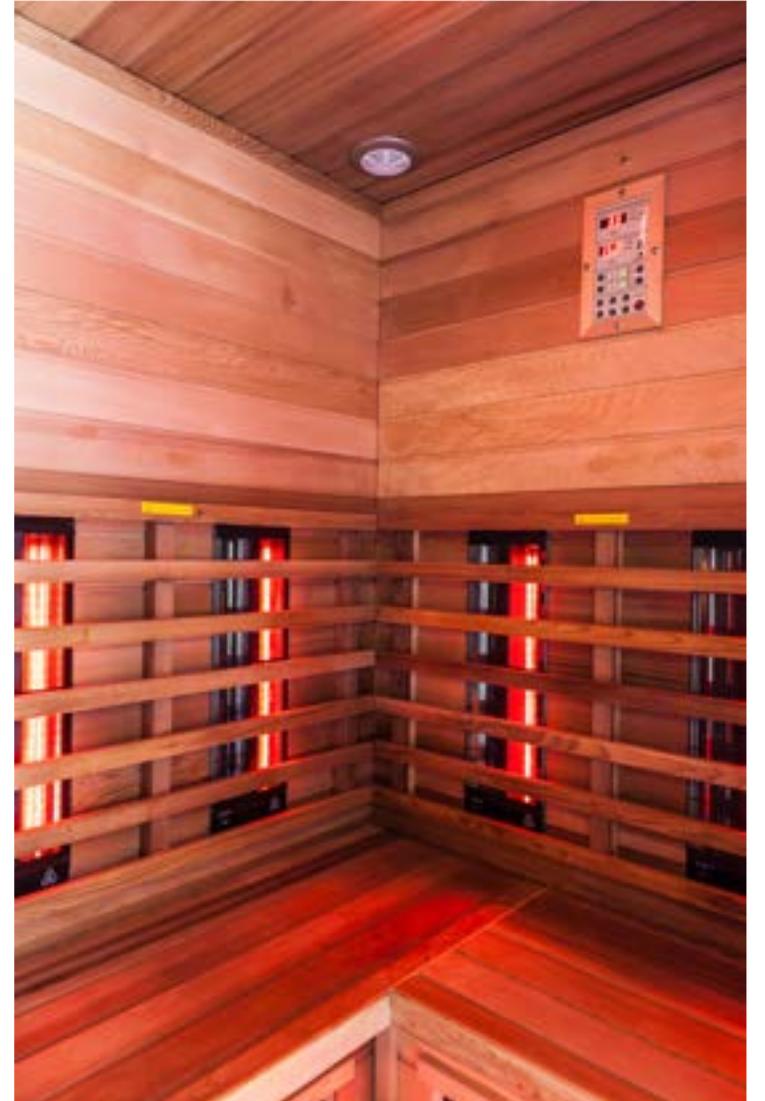
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- On the other end of the **thermoregulation spectrum** is **heat exposure**, which is associated with its own laundry list of benefits
- Regular **sauna bathing** is **associated with longevity**, and it has been shown to reduce blood pressure, improve the function of blood and lymphatic vessels and improve lipid profiles
- Sauna bathing is perhaps best known for its **cardiovascular benefits**, as it's associated with a **reduction in cardiovascular disease** (50% reduction in men who sauna bathe 4 - 7 times per week) and all-cause mortality
- Also been shown to **reduce the risk of developing dementia** or Alzheimer's; perhaps due to an increase in brain-derived neurotrophic factor (BDNF)



# Sauna Bathing/Heat Exposure

- Heat therapy has also been shown to **improve mood and reduce depression**
- Sauna bathing can also enhance endurance, and this is probably where the heart health benefits come into play; **heart rate can reach 100 - 150 beats** per minute during a sauna session, which is similar to low- to moderate-intensity exercise
- Sauna bathing can also **activate heat shock proteins**, which are important for metabolism, immune function and fat metabolism
- Dry saunas (174°F) **and infrared saunas both work**
- Pairs well with Grains of Paradise, Cayenne, BioPerine/Black Pepper, Niacin, Electrolytes



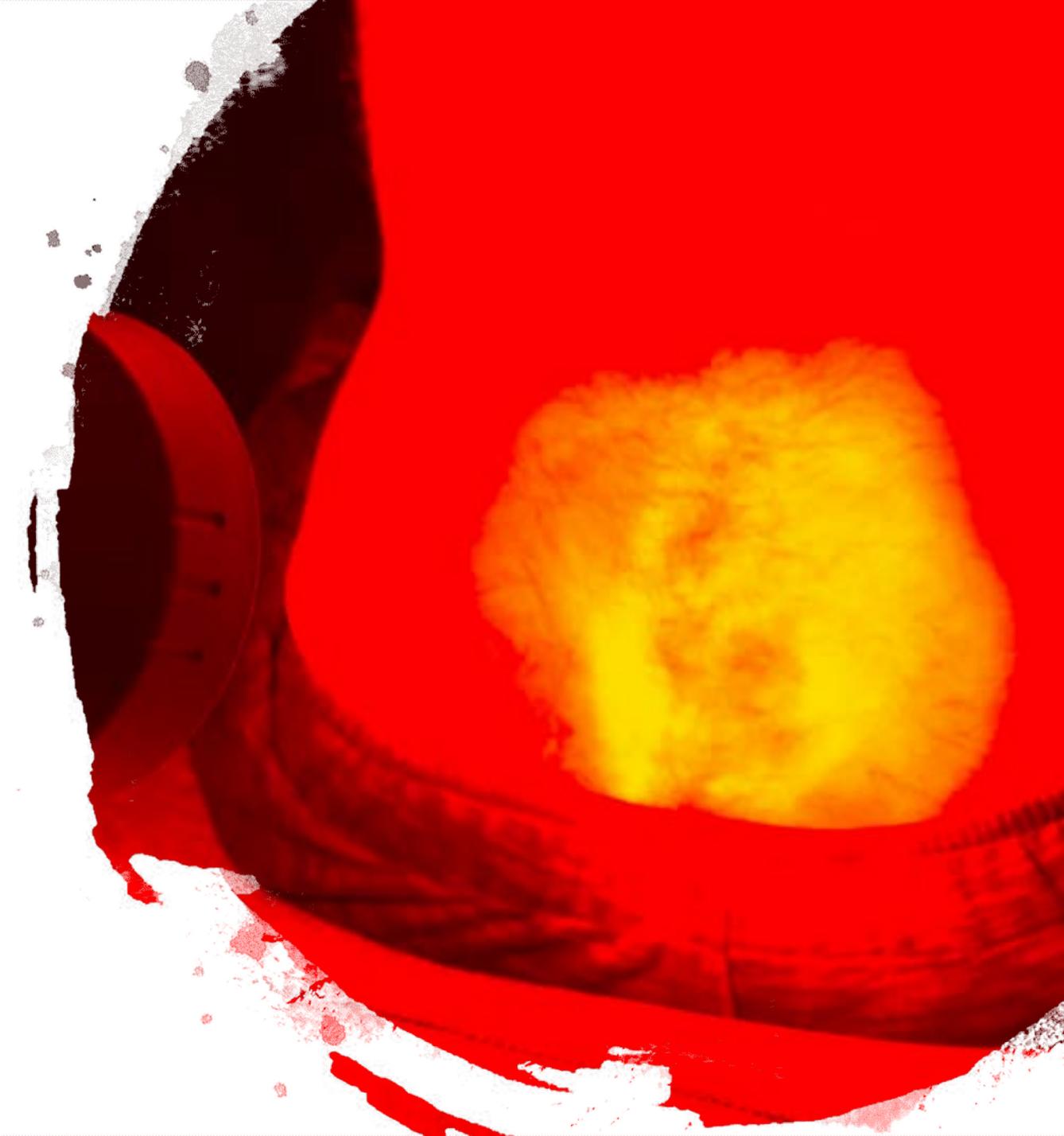
# Red Light Therapy

- Just as blue light can play an important role in helping you wake up or prevent you from going to sleep, red light therapy can help align circadian rhythms, and along those lines, support healthier sleep
- Red light is essential for healthy cellular function and energy production, just like water, sleep and nutrients from food; unfortunately, most people don't get as much natural light as they need for optimal health
- Red light therapy is designed to enhance cellular function and promote greater efficiency and balance in the cellular energy making process; for example, red and near infrared light improve the efficiency of the cellular respiration process and help the body make and use ATP energy more efficiently



# Red Light Therapy

- Red light therapy **impacts the mitochondria**, and it can increase the number of mitochondria and also boost their **function in the cell**
- Red light therapy **promotes healing and recovery**, and it also **reduces inflammation and supports healthy sleep**; red light therapy also stimulates the production of collagen and promotes healthy-looking skin
- As little as **10 - 20 minutes per day** can be beneficial; Joovv is one popular example
- Pairs well with collagen protein, CoQ10, PQQ, NAD, tetrahydrocurcumin and L-Ergothioneine



# Sleep Hygiene

- Light and dark are the **primary drivers of the body's circadian clock**
- Many other **factors can disrupt** or synchronize circadian rhythms, including food/meal timing, exercise, temperature, shift work, travel, jet lag, stress and more
- Increasing your exposure to sunlight, particularly early in the day, is **extremely important to entraining circadian rhythms** (e.g., appropriately raising cortisol and serotonin, which is the precursor to melatonin); **reducing your exposure to artificial blue light** in the evening is also key, as it can inhibit melatonin production
- Healthy sleep hygiene is crucially **important to promoting healthy sleep and circadian rhythms**



# Sleep Hygiene



- **Maintain a regular**, consistent bed and wake time
- Ensure a quiet, cool and **dark bedroom environment** (“quiet” may mean white noise, for example)
- **Avoid caffeine** and other stimulants prior to sleep; individual differences apply, but no later than 6 hours before bed
- **Avoid light-emitting technology** devices in the hours prior to sleep (e.g., turn off electronics at least an hour before bed)
- **Implement relaxation strategies** (e.g., meditation, breathwork) before bed
- Pairs well with CBD, melatonin, magnesium, glycine, GABA, Ashwagandha, honokiol (magnolia)



# Breath Work

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- More specifically, **nasal breathing**, which may be the ultimate tool -- because of its accessibility and effectiveness -- for resilience
- Nasal breathing is far more healthy and efficient than breathing through the mouth; breathing through the nose heats, cleans, slows and pressurizes air so the lungs can extract **more oxygen with each breath**
- Many people **breathe rapidly and shallowly**, through the mouth, and this “over-breathing” can lead to all kinds of problems, many of which center around a reduction in carbon dioxide, which, in turn, leads to reduced oxygen delivery to the brain and other tissues of the body
- Nostril breathing also promotes the **release of nitric oxide**, which enhances circulation and optimizes blood pressure

# Breath Work

- You can “hack” your nervous system through nasal breathing also:
  - The left nostril is closely linked to the **parasympathetic nervous system** and the right brain, which inspires creative thinking
  - The right nostril is, on the other hand, intricately tied to the sympathetic nervous system and left brain, which is associated with logical decisions
- There are many **effective breath work techniques** to restore balance, promote resilience and instill a sense of peace and calm: alternate nostril breathing, box breathing and 4-8 breathing are good examples
- Breath holds (i.e., CO2 retention) **can be highly effective for enhancing oxygen dissociation** (i.e., better oxygenation) and promoting the release of hypoxia inducible factors (HIF), which may be particularly useful around exercise, as it acts as a signal that **promotes adaptation** (e.g., stimulates erythropoietin)
- For example, when you’re taking a walk, take a normal inhale followed by a normal exhale, then hold your breath (while you continue to walk) until you feel an **overriding urge to breathe** (i.e., air hunger)
- Pairs well with exogenous ketones, niacin, omega-3s



# Mouth Taping

- Nasal breathing should be an “all-day” thing -- including while you sleep
- Mouth breathing while sleeping is a silent pandemic; well, not literally silent, as mouth breathing is both a cause of and contributor to snoring and sleep apnea
- All the same rules about nasal breathing mentioned before apply during sleep as well; that includes better oxygenation and production of nitric oxide, which influences immune function, weight, circulation, mood and sexual function
- While hypoxia (e.g., HIF) can be useful at certain times (e.g., during/after exercise), while you’re sleeping is NOT one of them; lack of oxygen (i.e., hypoxia) during sleep promotes obesity, cancer, accelerated aging and a host of other more transient problems





# Mouth Taping

- Mouth breathing during sleep can directly **contribute to poor-quality sleep, waking during the night, elevated blood pressure, asthma, ADHD, anxiety, fatigue, abnormal facial development, misaligned teeth, bad breath, cavities, dehydration, poor mental processing skills and the list goes on**
- **Mouth taping helps increase oxygenation during sleep**, and that can lead to significant improvements in energy, aches, trips to the bathroom (you should not be getting up to go to the bathroom at night) **and even weight**
- Pairs well with melatonin, vitamin D, GABA, CBD and oleamide

# Fasting

- Most people are familiar with **intermittent fasting (IF)**, in particular, alternate-day fasting, periodic fasting, and most popularly, time-restricted feeding
- IF can be useful for **enhancing weight loss, metabolic function** (e.g., insulin sensitivity, glycemic control), heart health and longevity (e.g., blood lipids, inflammatory markers, markers of oxidative stress), parasympathetic activity and more
- The bottom line is that eating less frequently and having a relatively **shorter feeding window most of the time appears to be a pretty useful strategy** for weight management, metabolism, inflammation, oxidative stress and more
- IF is also often **touted as a powerful anti-aging strategy**, as it can help reduce free radical production, lead to an increase in ketone production and upregulate pathways (e.g., sirtuins, AMPK) involved in repair and resilience
- Arguably, the magic (at least in terms of anti-aging) really kicks in with **extended fasting** (i.e., fasts lasting longer than 2 days)

## INTERMITTENT FASTING

- ✓ TIME RESTRICTED FEEDING (TRF)
- ✓ ALTERNATE-DAY FASTING (ADF)
- ✓ ALTERNATE-DAY MODIFIED FASTING (ADMF)
- ✓ PERIODIC FASTING (PF)
- ✓ FASTING MIMICKING DIETS (FMD)
- ✓ INTERMITTENT ENERGY RESTRICTION (IER)
- ✓ CONTINUOUS ENERGY RESTRICTION (CER)
- ✓ CALORIE RESTRICTION (CR)

Fasting Journal on  
my website  
[www.shawnwells.com](http://www.shawnwells.com)



## INGREDIENTS TO SUPPORT THE BODY'S DETOXIFICATION



CURCUMIN



N-ACETYL-L-CYSTEINE (NAC)



GLUTATHIONE (LIPOSOMAL)



MILK THISTLE



INDOLE-3-CARBINOL,  
DIINDOLYLMETHANE (DIM)  
OR SULFORAPHANE



PHOSPHATIDYLCHOLINE



BINDERS  
(E.G., ACTIVATED CHARCOAL,  
CLAY, ALOE VERA, PECTIN AND  
OTHER FIBERS)

# Fasting

- Extended fasting promotes **stress resistance and autophagy** (in particular, chaperone-mediated autophagy), which is the body's "deep-cleaning" mode, and it can also trigger the body's detoxification pathways
- Extended fasting may also **activate stem cells, promote mitochondrial biogenesis** and steer the gut microbiome and gut lining in favorable ways
- There are also psychological and **emotional benefits of extended fasts**, which can help you regain control of your eating habits by improving your relationship with food
- Pairs well with electrolytes, NAD stacks, polyphenols, exogenous ketones, NAC, Tetrahydrocurcumin, milk thistle (silymarin), charcoal, etc.

# Xenohormesis

- Hormesis doesn't start or stop with humans; it also extends to plants, whose capacity to adapt to stress can, in fact, benefit humans
- “Stressed” plants produce powerfully health-promoting compounds in response to environmental stressors (e.g., temperature variation, UV radiation, drought, nutrient availability, predation)
- Scientists believe that, through a process known as xenohormesis, these bioactive compounds can benefit human health by enhancing stress resistance, activating longevity pathways, bolstering antioxidant and detoxification systems and more
- As discussed in a recent paper published in the journal *Nutrients*, these xenohormetics (most often, polyphenols) act as “caloric-restriction mimetics and autophagy inducers”



# Xenohormesis

- One of the best examples is the **polyphenol resveratrol** (found in grape skins, red wine, peanuts, pistachios, tomato skins, cranberries and cocoa), which activates the sirtuins; other examples include **epigallocatechin gallate** (found in green tea), **apigenin** (found in chamomile, parsley, celery, oranges, thyme, basil and oregano), **quercetin** (found in apples, onions, berries, cherries, citrus, kale, grapes and tomatoes), **ellagic acid** (found in blackberries, raspberries, pomegranate, strawberries and walnuts) and **fisetin** (found in strawberries, apples, mangoes, kiwi, grapes, tomatoes, onions and cucumbers)
- A major take-home point here is that we have to look beyond the macros -- beyond calories, carbs, fats, proteins and even vitamins and minerals -- and understand that food provides information; **information that can promote resilience and provide powerful detoxification and longevity support**
- Pairs well with polyphenol supplements, NAD stacks, CoQ10 and PQQ



# Gratitude

- Embrace an **abundance mindset** (abandon scarcity)
- Gratitude **can radically transform you**, your life, your relationships and your health
- It can **elevate your mood**, help you feel more **connected** and help you become a better, more likeable and more trustworthy person
- Gratitude can help **lower levels of inflammation**, help you cope with stress, reduce anxiety, boost energy levels, reduce the severity/symptoms of illness and **even improve sleep**
- There are many **simple, everyday things in life** -- including many that we take for granted -- that we can all be grateful for





“If you look at what you have in life, you will always have more. If you look at what you don’t have in life, you will never have enough.”  
Oprah Winfrey

- **We should even be grateful for “negative” things** -- like pain, disappointment, fear and sadness -- which can deeply transform you and your life in positive ways -- ways you could have never imagined when you were/are in the thick of it
- It’s **never too late to reach out** to say “thank you” to someone who impacted you and your life
- Mindfulness and awareness are **critical to capturing the beauty in life** and actively practicing gratitude
- If you’re not already, set aside time **daily to practice gratitude**; over time, the practice will evolve from a practice (e.g., a 5-minute journaling session) to a **mindset** (i.e., actively taking inventory of and counting your blessings throughout the day)



CHANGE  
YOUR  
MINDSET

# Reframing

- Instead of thinking, “Why is this happening *to* me?”, think, “Why is this happening *for* me?”
- Reframing is about perception; what you perceive is your reality. You may not have control over your conditions, but you do control how you perceive a set of circumstances
- We have a choice, and when we experiment with our choices, we are able to create new responses and outcomes; as Randy Pausch famously said, “We cannot change the cards we are dealt, just how we play the hand.”
- Reframing is a central tenet of stress management; ideally, reframing is a healthy intersection between being realistic and optimistic, taking a look on the bright side

“The obstacle in the path becomes the path.  
Never forget, within every obstacle is an  
opportunity to improve our condition.”  
- Ryan Holiday, author, *The Obstacle is the Way*

- Even though it may not seem like it when you're “in the thick of it”, many (arguably, all) **stressful events can be fortuitous**
- Instead of **immediately reacting and the regretting** whatever you do or say, take a step back, take six deep breaths and list all the positives that could come out of any given negative
- Reframing **stressful situations can allow us to find focus** and choose the elements over which we have control, creating a new response
- Reframing is a powerful tool that is **characteristic of a growth mindset**
- **Adversity builds strength**; look at challenges as opportunities, and remember, you either win or you learn



# Meditation

- Meditation is one way to pull ourselves out of our sympathetic mind and into a parasympathetic state
- Meditation is a form of mindfulness practice that we can use to train ourselves to be less reactive
- Meditation is a useful tool to help us slow down and view things from a calmer, more objective perspective
- Much of our stress comes from being distracted; practicing mindfulness meditation can help us focus on one thing at a time and stay fully present
- Practice mini-meditations - focus on your breath and become aware of your bodily sensations





# Meditation

- **Meditation doesn't have to be fancy**; just a few minutes of silence and connecting to a peaceful place can be highly effective for stress management
- Mid-day meditation can be a useful tool to help you **be more focused**, more relaxed and more energized
- I am not a meditation expert, but I have **found that even five minutes of silence** can make a world of difference in how my day looks and feels
- Meditation can be intimidating at first...**all those voices in your head**...all those thoughts and things you need to do...here are some easy techniques to get into a better meditative space:
  - **Focus on your breath**
  - **Take a walk**
  - **Practice grounding**
  - **Exercise**
- Supplements that can help: L-Theanine, Phosphatidylserine, GABA, Rhodiola, Ashwagandha

# Morning Routine



- Over the last few years, **there's been a lot of focus on morning routines**; according to Tim Ferriss, successful people have two things in common: they have solid morning routines and they are experimenters
- Your morning routine can set the tone for the entire day; it can either help you get off to a great start...or not
- The right morning routine can **increase happiness, boost productivity**, reduce stress and help you get and stay grounded
- Our mornings ultimately determine whether we're set up for success or stagnation; **having a routine is one of the most critical** ways to enhance and sustain our energy throughout the day -- and our lives
- It's no surprise that highly successful people have very **dialed-in morning routines, and some of the common denominators** include: gratitude journaling, deep breathing, cold showers, blue light devices, relaxing podcasts, meditation, words of affirmation, vision boards and more



## Morning Routine

- In order to get the **most out of our lives**, we need to set the tone each day, first thing in the morning
- The best way to start is by choosing one thing and **trying it out for a couple of weeks**; if it's something that works for you and adds benefit, include that element as part of that routine, build it into your life and stick with it
- Get accountability; for example, when I decided to make exercise a part of my morning routine, I **hired a trainer** -- even when I had a fraction of the income I have now because I knew being accountable to someone else would help me commit to the habit
- Once you've got your **first thing down, add something else**; if you try everything at once, you have no idea what works, not to mention that can be overwhelming
- A good morning routine is **founded on good habits** and that means finding a routine that fits your individual rhythm



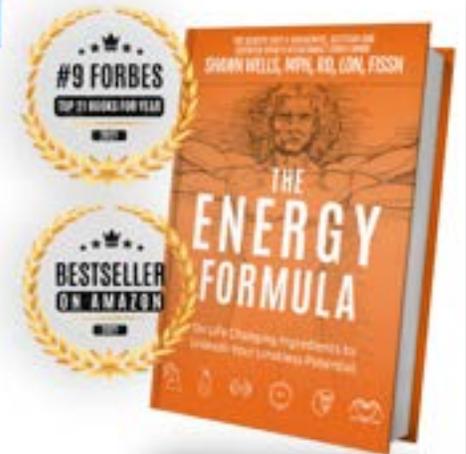
# THANK YOU

You can find out more at [www.shawnwells.com](http://www.shawnwells.com)

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