

# Live forever – or die trying.

by Enoch Root

Please respect our privacy – so we can respect yours.

# Why try to live forever?

- Freedom is ultimately limited if it does not include freedom from death.
- Getting older is a slow decline of mental and physical faculties – preserving brainpower and physical fitness longer allows you to effectively use your accumulated experience longer. (We discuss the resulting problems after this talk.)
- Most current anti-aging tech at least expands the "health-span", meaning less suffering and more agency to change the world while not being sick. Worst case it provides you with greater tolerance against the side effects of unhealthy pleasures (smoking, drinking, drugs).

# Warnings

- This is not biochemistry / metabolism 101 and I will brutally simplify things – a lot. No scientific references are given.
- The detailed science aspects are really complex, so they are left as an exercise to the reader. Search for relevant studies.
- **Nothing here should be considered professional health advice, if you need that go see a doctor. Do your own research regarding possible interactions with your personal health issues or medicines you need to take.**

# Most promising directions

- Stop cell aging / death while preserving effective removal of aberrant cells.
- Stop autoimmune reactions.
- Restore activity of organs / glands that have declined.
- Replenish critical compounds that are plentiful in youth but decline with age.
- Prevent cardiovascular incidents, cancer, diabetes, suicide etc.
- Preserve / regain neuroplasticity.

# Blood test for vitamins, minerals and hormones

- Most of us have a genetic or lifestyle based deficiency in various vitamins, minerals or hormones, and insulin sensitivity
- Finding out what is deficient and design a supplement regime and/or lifestyle change to correct that is the very first step to a longer, healthier life
- Flying in the dark and just trying out this and that can work, but can also cause weird side effects that are hard to track
- A lot of problems are caused by undiagnosed deficiencies (incl. psychiatric effects)
- Repeat the test periodically and track changes.

# Reduce your carbohydrate intake

- The standard "food pyramid" is a lie.
- Carbohydrate metabolism is a core problem in staying healthy
- Fewer carbohydrates improves insulin sensitivity (reduces the diabetes risk substantially) and improves gut biome
- Learn about the **glycemic index** and avoid foods with a high index number (sugar is 1)
- DO NOT consume too much fructose (unfortunately high fructose corn syrup or glucose/fructose syrup is in most soft drinks, a lot of bakery products etc., even those with old fashioned sugar are better!)

# Diabetes & Fasting

- When you get a diabetes / insulin sensitivity warning from your doc, try out a severe caloric restriction regime (600 cal per day). Success rate is >80%.
- Ketogenic or low-carb diet often provides similar results and may prevent diabetes from occurring at all.
- Interval fasting (reducing the number of hours per day you eat or having eating / non-eating days) shows very promising results (when you can integrate it into your life).



# Avoid processed & industrial food

- We do not know yet why exactly, but the more milled, ground and processed food is, the more negative side effects it has. (inflammation, cancer, obesity, gut biome problems, autoimmune reactions, allergies etc.)
- Regardless of food believe system (omnivore, carnivore, veggie, vegan etc.), processed & industrial food is universally bad.



# Watch your gut biome

- The gut biome composition is probably the most underestimated field of risks / improvements today
- Gut biome is super complex, and it changes depending on food, region, people you hang out, have sex with etc.
- Antibiotics ruins and other medicine can change your gut biome, which can lead to weight gain, depression, tons of unspecific health problems
- The usual "probiotic" drinks are bullshit, if you need to re-normalize your gut biome get the supplement with the highest number of different cultures in the highest dose available and follow a low-carb diet.
- Make sure to get enough fibre, even on keto diet, your gut biome needs it!

# Move more

- Muscle activity is good for you, regardless of the kind (walking, bicycling, running, swimming, weight training etc.)
- If you really don't like sports and want to save time, look into High Intensity Training
- If fitness studios etc. don't work for you try App-based bodyweight training, or set personal move goals in your phone or watch and try to ramp up

# Get your DNA sampled

- Might provide some insights into your personal situation and general predispositions.
- But: Most single-marker DNA risk indicators are bullshit. In reality, most risk factors are complex gene networks and are activated or not, based on many factors.
- You may get unnecessarily anxious about a risk that is never going to manifest.
- Keep an eye out for advances in Epigenetic / Ribosome / Methylation sampling (mapping the actually expressed and active genes), because this might provide actual data about your current system state.

# NAD<sup>+</sup>

- Replenishing NAD<sup>+</sup> is by far the most effective practical usable anti-aging method known today.
- Restores energy at cell level, activates Sirtuines, anti-oxidative, surprising effects against autoimmune diseases (even those considered untreatable), improves fertility, improves blood vessel elasticity, anti-inflammatory, reduces blood pressure, athletic performance... Basically youth in a pill.
- Nicotinamide Riboside (trade name: Niagen) is currently the best studied, safe and effective way to replenish NAD<sup>+</sup>
- Nicotinamide mononucleotide (NMN) is another potential option for NAD<sup>+</sup>, but is currently far less well studied and is biochemically one step further from NAD<sup>+</sup>, efficiency / bioavailability needs further studies

# Resveratrol

- Antioxidative and Antiinflammatory
- some studies show caloric restriction mimicry effects and Sirtuin1 activation
- various positive effects found in studies of non-healthy people (diabetes, overweight, high blood pressure, endometriosis etc.)
- bioavailability is low (gets partially metabolized during digestion)
- large individual difference in lab measurements in trials point to a large influence of the gut biome on bioavailability

# Pterostilbene

- In principle the "better" Resveratrol due to higher bioavailability, roughly the same effects at lower doses
- **But:** several newer studies show that it **significantly raises "bad" LDL cholesterol** at relatively low doses (50mg) for yet to be determined reasons
- Possibly safe when taken in combination with other substances, but no clear study base yet.
- Keep checking for new studies, but avoid until better understanding has been achieved.



# Quercetine

- Protects against viral Upper Respiratory Tract Infections (10x reduction in infections in combination with Vitamin C!)
- Athletic Performance Enhancement (ca. 3% in solid human studies)
- Anti-Inflammatory (significant decrease in inflammatory illnesses like arthritis)
- Prevents / Reduces Liver Fat accumulation (rodent and human studies)
- likely Cardiovascular Protection (studies show that higher intake lowers risk)
- possibly Anti-Histamine and Anti-Allergy Effect (lab results, not enough human trials)
- possibly Anti-Carcinogenic (so far rodent studies and limited human trials)
- possibly protects against Thrombosis (lab results are very promising)



# low-dose Aspirin

- Solid evidence for reduction of cardiovascular problems
- Anti-Inflammatory
- significantly lowers risk of thrombosis and blood clots
- But: slightly higher bleeding risk, may worsen the outcome in case of blood vessel bursting (check for family history of this!). In case of injury or surgical procedures, stop 7 days before

# Lions Mane mushroom

- Currently the most promising easily available Nootropic supplement to preserve / regain neuroplasticity
- Triggers production of nerve growth factors NGF1, that eases the building of new neuron connections
- Fast effect ("the fog is gone") on mental clarity, focus and productivity
- Improves situation in case of dementia and beginning Alzheimer (human trials with clear results)
- Combination protocols with Niacin and Psilocybin microdosing show even greater effect (no proper study yet, popular in Nootropic circles)

# ALK5 inhibitor + oxytocin

- Possibly **the** big breakthrough anti-aging-cure.
- Mimics successfully the effect of transfer of blood from younger individuals to older (which has been shown to work).
- Regulates TGF-beta, stimulates growth of new brain cells and improve muscle and tissue health. Oxytocin, activates stem-cell formation in response to tissue damage or atrophy (declines naturally with age).
- Very early in study phase (currently mice), but might be "the big thing". Keep watching.

# Mood / Depression

- Depressive episodes often have biochemical reasons, have that checked first!
- Role of gut biome is massive (thats why Antibiotics can cause suicidal tendencies!!)
- Standard Antidepressive medication should only be used if nothing else helps and preferably only as time-limited intervention
- Most potent harmless depression intervention substance is Ketamine (immediatelly interrupts circular thought and rebuilds damaged neuron pathways afterwards)

# Winter blues

- Winter seasonal mood lows have two primary causes:
  - not enough blue-green light due to shorter days and cloud cover, so the Melatonin (sleep hormone) reduction in the morning is not triggered
  - not enough Vitamin D3 formed due to lack of UV from sunshine
- Proven treatment / coping regime is full spectrum light (esp. in the morning) plus Vitamin D3 supplement (2000-5000 I.E. daily in winter) plus sport / moving and prioritizing self-care when its too bad.

# Lets do science to it!

- Playing with your biochemistry is an experiment with study size  $N=1$
- If you do not keep records on body parameters (weight, body fat, muscle mass, blood pressure, pulse, blood test results etc.), supplements taken and subjective feeling (mood, energy, productivity / mental clarity) you are just toying around and will not get systematic improvements.
- Recording activity is easy, recording calorie intake requires discipline and is often unnecessary.



Substance	Daily Dosage	Risk / Benefit Estimate	Note
Nicotinamid Riboside (NR)	300-1000mg	+++	Sleep problems when taken in the evening.
Quercetine	500-1000mg	+++	May slow metabolism of some drugs.
Resveratrol	150-500mg	+++	Avoid fatty meals around taking (bioavailability)
Aspirin	100-325mg	++	Enteric coated only, watch bleeding risks.



<b>Substance / Activity</b>	<b>Daily Dosage</b>	<b>Risk / Reward Estimate</b>	<b>Note</b>
Lions Mane	1000mg	+++	Avoid if you have mushroom allergy,
Vitamin D3	2000-5000 IE in winter	+++	
Ketamine	as intervention 30-100mg (not daily!!)	+++	Urinary tract problems when used permanently

# Scams, Rip-Offs & Desinformation

- Anti-aging is a competitive field with few regulations.
- Many similarities to cryptocurrency scene (noise level, biased "experts", lots of commercial interests etc.).
- Anything that does not have at least a small human trial with positive results and (preferably) a human safety study is in the "too early" category
- Unpleasant side effects or interactions are discovered all the time (see Pterostilbene...), so you need to keep watching out for new studies
- Quality of products is a neverending story, too cheap suppliers are usually too cheap. On the other hand there are "brand products" (usually combinations) that are rip-offs (usually too low dosages of substances)

Thank you.