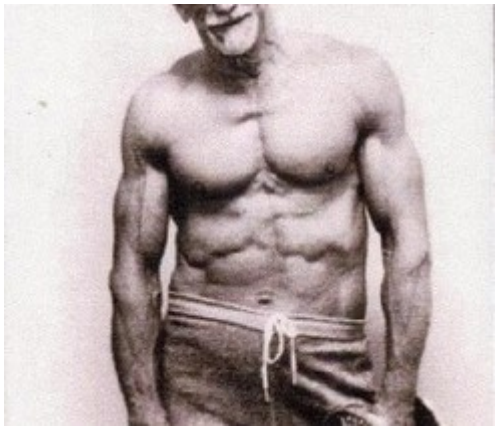

My Current Anti-Aging Program

Anti-aging goals and interventions

One of the main focuses on this site is anti-aging, and while I've written lots about it, I thought it would be useful to gather some of it in one place and outline my current anti-aging program.

Given that aging research is changing and advancing continually, any program that seeks to put this research into practice must change as well. So I'm constantly seeking out new research and reading the opinions of others like myself with the same interest.

One consequence of new findings in aging science is that the practitioner of an anti-aging program must be willing to revise his opinions and change his practices, which is not always easy. Humans have lots of irrational biases, one of which is wanting to believe that they are always right.

Another aspect of an anti-aging program is that it can be difficult to reconcile with other goals. Conspicuously, the goal of maximizing both muscle strength and virility may conflict with the goal of slowing aging, and this is so because of the trade-off between growth and longevity, a fundamental concept in aging. For example, exogenous growth hormone may keep someone more muscular, energetic, and and with a greater sense of well-being, but at the cost of faster aging and an earlier death. Greater dietary protein might do this too, though I think to a much lesser extent.

Aging proceeds through many pathways, so any anti-aging program needs to attack aging on multiple fronts. Many of the interventions also attack aging using overlapping mechanisms, for example fasting decreases inflammation, lowers IGF-1, and increases mitochondrial function. In what follows, I list what I'm trying to affect, then how I do so.

My current anti-aging program

Goal: Low insulin levels

Interventions: intermittent fasting, exercise, low-carbohydrate diet. I currently do regular 16-hour fasts, usually twice a week, and less often 20-hour fasts. I lift weights once every 3 days, and do a 10-minute HIT workout – jump rope, calisthenics, sprints – once or twice a week. I don't closely track macronutrients, but I estimate that I usually eat under 100 grams of carbohydrates daily, often a lot less, and probably get into ketosis fairly often, say a few times a week.

Goal: Activate Nrf2

Nrf2 is a transcription factor that in turn activates numerous cellular stress defense mechanisms, and is one of the main mechanisms of hormesis. Interventions: resveratrol, curcumin, fruit and vegetable intake, tea. I take ~100 mg resveratrol and 500 mg curcumin daily. Cruciferous vegetables have a high content of sulforaphane, a Nrf2 activator, and I try to get plenty of these – although I need to work harder at this. I drink several cups of tea, both black and green, daily (in addition to a cup of coffee first thing in the morning).

Goal: Low iron

This goal is relatively new to me, so I'm working out my interventions. I'm exploring phlebotomy, as well as iron chelation. I recently increased my curcumin dosage because this has been shown to be a good iron chelator – it causes iron deficiency in mice if given long enough and in sufficient quantity. I take 80 mg of aspirin almost daily – again, I recently increased the frequency of use due to its effects in lowering iron.

Goal: Greater frequency and intensity of autophagy

Autophagy, the cellular self-cleaning process, declines with and is a prime correlate of age. Interventions: intermittent fasting, ketosis, supplements including hydroxycitrate, nicotinamide, green tea. I often take hydroxycitrate or nicotinamide on my fasting days to boost autophagy.

Goal: Build muscle and bone

Seen in the light of anti-aging, this helps fight sarcopenia, or muscle wasting, a common scourge of the old. Interventions: weightlifting, whey and other dietary protein, leucine. I normally take 25 grams of whey right before or after a lifting session (hey, I did a 305 lb deadlift the other day), but hardly ever at any other time. I strive to keep protein intake at about 1.2 g/kg a day, or about 100 grams for me. I often (when I remember) take 2 grams of leucine with a meal to increase muscle protein synthesis and improve body composition.

Goal: Good sleep

Important for overall good health. Interventions: computer programs Twilight and f.lux, avoid alcohol several hours before bedtime. The computer programs

block light in blue wavelengths and dim overall light; I consider them essential now, and my sleep noticeably improved after starting to use them. I make my bedroom as dark as possible. I sometimes take 12.5 to 25 mg of diphenhydramine (Benadryl) to help me sleep.

Goal: Optimal glutathione levels

Glutathione is the body's most important and most abundant internal antioxidant, and low levels are associated with aging and oxidative stress. Interventions: whey protein, n-acetylcysteine (NAC). Whey is abundant in cysteine, and NAC is a cysteine pro-drug. I take NAC maybe a couple times a week. Nrf2 activators (see above) also increase glutathione levels through hormesis.

Goal: Optimal mitochondrial function

Function of the mitochondria, the cells' powerhouses, declines with age, and keeping them performing well is critical. Interventions: exercise, ketosis, resveratrol.

Goal: Low inflammation

Inflammation increases with age, and is associated with cancer and heart disease. Intervention: good body composition through diet and exercise, aspirin, curcumin, resveratrol. Adipose (fat) tissue is a source of many inflammatory cytokines (signaling proteins), so keeping body fat minimal is important. The supplements mentioned also lower inflammation.

Goal: Good nutrition

Good nutrition is important both for what it gives you and what it omits. Adequate micronutrients also ensure that all cellular systems can function optimally – see Bruce Ames' triage theory. Interventions: low-carb paleo diet, vitamin D, K, and B vitamins. I avoid processed food, anything with flour and/or sugar. I take 5000 IU of vitamin D daily, about 1 mg vitamin K, B vitamins a couple times a week.

Goal: Youthful testosterone levels

Low testosterone is associated with many maladies of aging, including heart disease, diabetes, obesity, and depression. Interventions: aromatase inhibitor, high-fat diet. I take anastrozole (Arimidex), a prescription aromatase inhibitor – blocks estradiol production and increases testosterone; 0.5 mg twice a week. High-fat diets increase T.

Goal: Prevent thymus degradation

The thymus gland deteriorates with age, and this is central to the decline of immune function. Intervention: zinc. Some research holds a lack of zinc to be the cause of thymus deterioration; zinc transporters decline with age, so even a zinc-sufficient diet (which I probably have) won't stop it. On top of that, zinc deficiency is common in older people. I take 50 mg zinc gluconate

twice a week.

Goal: A functioning brain

Declining brain function is a signal sign of aging. Interventions: fish oil, resveratrol, exercise, etc. Fish oil contains omega-3 fatty acids, which are important for brain health. I take one teaspoon, which contains ~ 1 gram omega-3, several times a week. As for the other interventions, anything that improves physical health also improves brain health.

Goal: Contact with nature

Being in a natural setting can improve mental health. Intervention: walking. I walk several times a week in a natural setting – trails, parks – mainly on off-gym days. Bonus: I live in a leafy suburb.

Goal: Social interaction

Social interaction – friends, church, etc. – is associated with improved health and longer life. Intervention: frankly, I need to work more at this. I find conversations with most people boring and avoid them. Maybe I should just set aside expectations and try to enjoy it more. However, I do like happy hour.

Goal: More anti-aging interventions

I'm always on the lookout for new ideas and research and like to see what other are doing, especially if that involves a novel pathway for anti-aging. For instance, I'm not doing anything in particular right now for telomere shortening. A few things I've been looking at lately, but have not implemented, are Deprenyl (selegilene, preserves and protects dopamine neurons), C60 (buckminsterfullerene, greatly extends like in lab animals), and 7,8- dihydroxyflavone, a BDNF (brain-derived neurotrophic factor) mimic (has potent neurotrophic activity).

P.S. You can find all the supplements mentioned in this post on my supplements buying guide for men page.