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SCIENTIFIC

HORMESIS 101: ACTIVATING YOUR LONGEVITY GENES NATURALLY

Sirtuins are your body's foundational longevity genes. They go hand-in-hand with this month's energy powerhouse NAD+. In fact, sirtuins, a family of proteins responsible for regulating cellular health and homeostasis, can only function when NAD+ is present.



But as NAD+ levels decline with age so can the functions of sirtuins — DNA repair, cell metabolism, and healthy aging. Guess what? You can support both NAD+ production and sirtuin activation with supplementation and some simple lifestyle hacks.

In your QRP Month 3 nutraceutical protocol we've included some amazing co-agent compounds (NMN, resveratrol, quercetin, riboflavin and vitamin B12) perfect for supporting NAD+ building and sirtuin activity. But there are complementary actions you can take to up level these important age-defying compounds, too.

Everyday Hormesis: Small Exposures, Big Benefits

One way to enhance your body's sirtuin activity is through hormesis, which refers to the surprisingly positive effects of an activity or food at low doses that at high doses would otherwise be harmful. Call it a biohack of sorts, but hormesis works. Individual health and environmental factors come into play, but generally here are few safe ways to test hormesis and activate those longevity genes.

Regular, Moderate Exercise:

Physical activity can have a hormetic response. While long-term, high-intensity exercise can have negative effects on health and may speed the rate of aging, regular doses of moderate exercise are tied to big anti-aging benefits, including increasing stress resistance. Check out the research [here](#).



Dietary Additions:

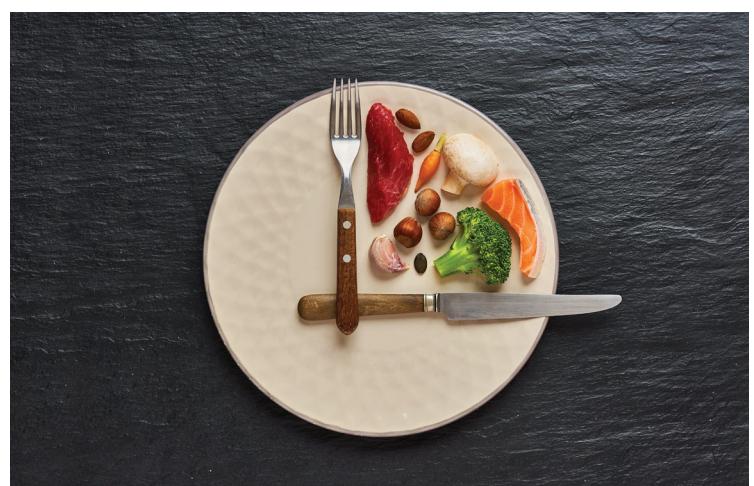
The same can be said with the foods you include in your diet like berries. These little gems are abundant in vitamins, minerals, antioxidants, and polyphenols. Evidence is showing that many of the polyphenols, phenolic acids, and other bioactive phytochemicals within these colorful plant foods [exert some of their health effects via hormesis](#). It's nature's way of protecting these foods from bugs and pests - natural pesticides if you will.

And when we eat them, there is enough irritation to activate a cellular response offering healthful benefits..



Calorie Restriction and Intermittent Fasting:

Long-term calorie restriction can lead to malnutrition, deficiencies, muscle wasting, and weight loss. However, the idea of eating during a certain time frame throughout the day or week has been practiced for centuries. The benefits tied to calorie restriction and intermittent fasting are big: weight regulation, cyclical detox, and sustained energy, among others. Additionally, fasting can trigger autophagy, your body's way of recycling old cells to make room for new ones.



Alternative Heat Therapy:

Incorporating moderate practices of cold showers and/or heat exposures in the form of saunas can also trigger hormesis. Long-term or intense subjection to either can be dangerous; however short-term exposure to cold showers or cold water plunges can trigger important anti-aging pathways, as well as increase the production of antioxidants and cold-shock proteins. Likewise, a hot sauna a few times a week may support exercise recovery, flush toxins through lymphatic drainage, cleanse the skin, and engage your metabolism.



Sunlight:

Sun exposure can also trigger hormesis. In over exposure, UV rays can cause sunburn, cancer, and all kinds of damage, but in small doses, sun exposure has a beneficial, hormetic response. It can make your cells stronger, protecting them from dysfunction. An appropriate dose of sunlight also drives cells to produce more vitamin D, which affects more than 1,000 biochemical reactions throughout your body.



Overall, to reap the deep cellular benefits of hormesis, moderation is the key. Too much of any of these actions can start tipping the scales in the wrong direction. So as you continue to elevate yourself in month 3, mindfully give one of these natural longevity activities a try. You'll be on your way to biohacking optimal wellness!