

What the Heck are Mitochondria?

(Mark Hyman, MD)

Mitochondria are key energy sources for our bodies. They are tiny factories housed within our cells that take the foods we eat and the oxygen we breathe and convert them into energy.

That energy is called adenosine triphosphate, or ATP, and it is used to support every function in our bodies. Each cell holds hundreds or thousands of mitochondria; they are found in greater concentrations in active organs and tissues like the heart, brain, and muscles.

In fact, we have more than 100,000 trillion mitochondria in our bodies, and each one contains 17,000 little assembly lines for making ATP. Mitochondria are where metabolism happens.

So, when your mitochondria aren't working properly, your metabolism runs less efficiently and can even practically shut down. Problems occur because these powerful energy producers are VERY sensitive and easily damaged. When they are damaged, we suffer from low energy, fatigue, memory loss, pain, rapid aging, and more.

Fatigue is the most common symptom of poorly functioning mitochondria, and it is the reason we tend to feel pooped as we age.

Mitochondria are really important, but unfortunately many things can damage them, mainly through uncontrolled oxidative stress. That may sound complicated, but in reality we are all familiar with "oxidative stress", even if some of us don't know what the term means.

Oxidation is the rust on our cars, the brown color that appears on an apple when cut and exposed to air, the rancid vegetable oil in our cupboards, even the wrinkles that form on our skin. What most of us don't realize is that our own tissues are rusting, our own fats are going rancid, and our brains are melting as we go about our daily lives.

What starts this process is some sort of insult — things like too many calories, smoking, a sunburn, exposure to toxins, anti-nutrients, and sugar. The insult leads to injury by tipping the balance and starting a chain reaction of damage to cells and tissues, that leads us down the path to weight gain and chronic illness.

So how do we care for our mitochondria? There are several easy steps to follow.

1. Provide the mitochondria with the correct environment to thrive in ... to do this we need to practice the following:

- Eat less processed food, junk food, sugar, and empty calories. In fact, you should really avoid these things altogether.
- Detoxify your body by getting rid of environmental and internal toxins.
- Cool off the inflammation in your body.
- Balance your hormones.

2. Next, you need to get moving. Try interval training, which increases the efficiency and function of your mitochondria, and strength training, which increases the amount of muscle and the number of mitochondria.

3. Add real, whole, colorful plant foods to your daily diet. These foods are full of antioxidants and phytonutrients which nourish your mitochondria. Aim for 8 to 12 servings of fresh vegetables, fruits, beans, nuts, and seeds, every single day.

4. Incorporate the following nutrients into your daily regimen by including the following, to support your mitochondria and boost energy: Acetyl-L-carnitine, Alpha-lipoic acid, Magnesium aspartate, Resveratrol, D-ribose, NADH, Coenzyme Q10, and N-acetyl-cysteine.

5. Increase your intake of omega-3 fats to help build your mitochondrial membranes. Be sure to include things like salmon, mackerel, sardines, anchovies, chia seeds, flax seeds, hemp seeds, walnuts, and egg yolks.

Taking care of your mitochondria can make you leaner and smarter. It can help prevent aging and increase your energy.