



Opinion Article

Mitochondrial Problems and Possible Solutions

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Abstract

Mitochondrial dysfunctions are increasing in frequency, especially since the early 2020's. They are coupled with antibodies in the blood, one against RNA and/or DNA, the other against spike proteins. The spike proteins themselves cause damage to ACE2 receptors, e.g., the myocardium. The ATP production of the mitochondria decreases, fatigue and exhaustion states develop. Therefore, therapy of these conditions is of increasing importance. Several treatment options are shown.

Introduction

ATP means adenosine triphosphate and it is the main biological form of energy. The production takes place in the mitochondria, of which we have 1,000 to 5,000 in each cell. ATP fuels all our everyday functions like protein synthesis, muscle movements, and nerve impulse transmission. When our ATP is low, we can experience symptoms like fatigue, brain fog, muscle weakness, and muscle pain. In addition, we have hormonal glands that enhance the energy status in the body. They are the thyroid and the adrenal glands. So, the mitochondrial function in these glands is of high importance. When autoaggressive processes take place against the mitochondria in these glands, Hashimoto's and chronic fatigue syndrome result.

Of course, these hormonal glands must be seen in the context of their regulatory circuits, i.e. connected with the anterior pituitary and the hypothalamus. In our experience, there is also a connection between the two strong energy-activating hormones triiodothyronine and adrenaline. When one of these hormones drops, the other tries to compensate as long as it can. The pituitary hormones TSH and ACTH together with their releasing hormones from the hypothalamus form a context.

Unfortunately, a reduction in the function of this HPA (hypothalamic-pituitary-adrenal) axis has been observed in recent times, since toxic hydrocarbons such as glyphosate on the one hand and electromagnetic effects caused by WLAN, 5G, etc. on the other hand have been stressing and weakening these glands. Adrenal dysfunction and thyroid dysfunction can present with very similar symptoms including fatigue, brain fog, anxiety, depression, sleep problems, weight gain, feelings of overwhelm, dependency on caffeine, blood sugar problems, and digestive issues. Their

root causes can be similar. Problems like chronic stress, nutrient deficiencies, gut problems, and infections are wellknown to trigger both adrenal and thyroid issues. More recently, autoaggressive processes have been added by autoantibodies against RNA and DNA in mitochondria.

Adrenal function and thyroid function are both significantly impacted by HPA activity. The health of our HPA axis will directly impact the function of both of these glands, and imbalances in either gland can affect the other. They also manufacture all of the steroid hormones produced by the adrenals, and act as gatekeepers for pregnenolone production - the "mother prohormone" needed to make other adrenal hormones, including cortisol. More and more patients need pregnenolone, about 100 mg/day.

There are many things in our modern world that can damage mitochondria including poor nutrition, toxins like ammonia and mycotoxins, infections, lack of sleep, lack of sunshine, and of course — chronic stress. One can think of the mitochondria as enigmatic little creatures (in earlier times bacteria which were able to use oxygen metabolism instead of lactate).

What this means is that when we address the health of our mitochondria, we are supporting our body at the most fundamental level, while also supporting adrenal and thyroid function. Individuals with hypothyroidism often have mitochondrial issues, and this is in part because the thyroid hormone FT3 (free triiodothyronine) plays a large role in regulation of mitochondrial activity, and is responsible for activating the mitochondrial energy process.

When we have low T3 or are not converting our T4 to T3 in the liver well, our mitochondria slow down. But incidentally, even when a person's thyroid hormones are optimized, there's still an

inflammatory process that remains. Free radicals that are a result of the oxidative stress we see in hypothyroidism and Hashimoto's are a cause of mitochondrial damage.

Newer Problems and a Solution

For about two years, we have been noticing more frequently that patients have antibodies against mitochondrial RNA and/or DNA. There may exist a connection with the mRNA vaccinations. Unvaccinated persons also exhibit this phenomenon. One can think of « vaccine shedding ». In parallel, an infestation of the population with spike proteins is underway combined with antibodies against them. These affect the ACE2 receptors of many organs, including the myocardium. Cases of cardiac death are on the rise, especially in seemingly healthy younger men.

We have developed a treatment that has been known since 2,000 years. It is a tincture of frankincense, myrrh, and colloidal gold. We tested in all patients with positive antibody titers the follow-up taking the tincture. There was a significant decrease in the affected patients ($p < 0.01$). It seems that the autoimmune processes respond positively to these ingredients.

What else can be done?

1. Taking Benfotiamin

Benfotiamine could sometimes relieve Hashimoto's fatigue in just three days! I didn't realize it at the time, but this is because benfotiamine supports mitochondrial biogenesis, a process which increases the number of mitochondria and their function [1].

2. Eating Good Fats, Less Sugar

The mitochondria require fatty acids from fats to make ATP, so a fat deficiency can actually cause energy deficiency. Essential fatty acids like omega-3s are especially important, as they help build up your mitochondria's protective membranes. Wild-caught fish like salmon, sardines, and mackerel are great sources of omega 3s. Nuts, seeds, avocados, grass-fed beef, and egg yolks also supply necessary fatty acids for mitochondrial health.

3. Taking B Vitamins

B vitamins keep the mitochondria running, acting as cofactors or coenzymes for all of the processes that occur in the mitochondria [2]. Since the activity of mitochondrial enzymes is regulated by the spectrum of B vitamins, it's important that we get enough of them, to support the production of ATP, as well as all the other functions of the mitochondria. Most people associate B12 with energy levels, but we need the full spectrum of B vitamins - thiamine (B1), riboflavin (B2), niacin (B3), pantothenic acid (B5), pyridoxine (B6), biotin (B7) folate (B9), and B12 – for optimal energy production. As an autoaggressive gastritis can go ahead with other autoimmune processes, B12 can often not be absorbed. Here injections are necessary.

4. Taking Vitamin C

Vitamin C is needed to break down fatty acids and turn them into energy [3]. It's also a powerful antioxidant that can neutralize the free radicals that are a by-product of the production of ATP in the mitochondria. Vitamin C can also help the oxidative damage done to the mitochondria themselves, as a result of toxins, disease, chronic stress, and certain medications. Vitamin C can be given as infusion in high doses of 15 to 30 g.

5. Taking Magnesium

Magnesium is an extremely important mineral, and plays a role in more than 300 enzymatic reactions in the body. It is essential for mitochondrial function, and especially for the production of ATP. Magnesium also acts as an antioxidant for mitochondria, and helps repair cell damage caused by stress, optimizing the production of energy [4]. Together with magnesium selenium should be taken.

6. Taking Adaptogens

Adaptogens are plant compounds that are known for helping to increase the body's resilience to stress, and can help balance the HPA axis. Ashwagandha, eleutherococcus, and rhodiola rosea in particular have been found to enhance mitochondrial function and support the mitochondria by strengthening their antioxidant status [5-7].

7. Taking D-ribose

D-ribose is a naturally occurring monosaccharide found in our cells, and is essential in energy production. It's been shown to improve cellular processes in mitochondrial dysfunction, and increase ATP production [8]. Our body manufactures d-ribose from our blood glucose, so the best way to increase levels of d-ribose is through a supplement. Galactose can be used, too.

8. Taking Carnitine

Carnitine is a key mitochondrial nutrient with multiple benefits, that can help turn the corner on exhaustion and cloudy thinking [9]. Carnitine optimizes the body's ability to burn fat for energy by transporting fatty acids into the mitochondria, where they can be burned and used. It also supports energy and mental clarity by assisting in the removal of toxic by-products from the gut, like ammonia, and promotes gut motility. Even with a balanced diet rich in animal proteins we may end up short on this nutrient, especially those of us with adrenal issues or thyroid conditions. L-carnitine is the form that is viewed as being most beneficial to the muscles. In research, it has been shown to resolve muscle weakness and soreness [10]. Acetyl-carnitine, on the other hand, is the form that is viewed as most beneficial for the brain; it crosses the blood-brain barrier and has been found in the research to potentially benefit those with various neurodegenerative diseases [11].

9. Taking Melatonin

Beyond diet and supplements, the mitochondria also benefit from lifestyle changes that support circadian balance. When people hear about the circadian rhythm, they may think about sleep, but daytime exposure to natural outdoor light and darkness at night supports our energy levels in other ways. It allows us to make more of the hormone melatonin, which helps preserve mitochondrial function by maintaining mitochondrial membranes and biogenesis, and increasing production of ATP. Melatonin is not only a hormone necessary for sleep and healthy mitochondria, but also a powerful antioxidant, which can further protect and support mitochondrial function.

10. Taking intracellular enzymes

All body cells contain intracellular enzymes to repair DNA and RNA. These can be supplied orally (www.citozeatecsrl.ch). Thus, genes damaged by autoantibodies can be repaired and normalized [12].

Conclusion

When we support our mitochondria, we support the adrenals, and this often results in improved thyroid symptoms. Addressing the adrenals can help us move from surviving into thriving. Healing the adrenals requires prohormones, sleeping 12 hours a day, and quitting caffeine for several months. The other means mentioned above can be recommended.

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