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Thyroid, Adrenals, & Immunity

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The myopic public health machine is clinging to their anti-viral drugs and future experimental vaccines as their great hope for minimizing a potential Swine flu pandemic. It is a paradigm of assistance that woefully falls short. What the public really needs is credible immune system information that not only helps overcome the fear of this flu, but also provides tangible steps to take in addition to hand washing, hygiene, and reducing potential exposure. In the case of a pandemic, everyone will be exposed. The million dollar question is: What determines immune system fitness?

Our bodies are used to fighting infection and we have very advanced weaponry or we as a race would not have survived earlier battles. Your body is the superpower, not the virus. Do you know how to unleash your potential?

Fundamental to any aspect of health is energy. You must have energy to do anything and you must have lots of energy to effectively prevent an infection or to mount an efficient immune response. Your immune system in a time of need is an energy intense operation.

Your brain coordinates your deployment of energetic resources during a time of infection, as commander and chief. The language it uses is heavily reliant on a system of short-lived immune system signals called [cytokines](#)¹. Cytokines are communication molecules that share connections between your nervous system, your immune system, your thyroid function, and your adrenals.

Cytokines are involved in inflammation and anti-inflammation. Those who have so far died from this new Swine flu have suffered from a “cytokine storm” leading to mortality – meaning that this critical system of natural function was unable to keep up with the demands of the infection. Why?

Intruder Alert

Just as you would be somewhat panicked by a stranger entering your home, your body sends out 911 signals to the command and control center of your brain ([hypothalamus gland](#)²) once an infection has been identified. In essence, your body is preparing for battle and is going on high alert. This initial process is highly inflammatory and is a vital part of ramping up your defense system. It is initiated by cytokine signals cross-talking between immune cells and your hypothalamus gland.

Because this process is highly inflammatory your brain knows that it will need an extra supply of anti-inflammatory lubrication to keep things cooled off, like making sure you have enough oil in your car engine to keep it running faster without overheating. In your body, this function is performed by your adrenal glands. Thus, cytokines directly talk to your hypothalamic/pituitary/adrenal axis and tell it to ramp up production of inflammation-quenching lubricant (cortisol).

What happens if you are already low on adrenal lubricant? In other words, what if you are already stressed out, tired, fatigued, anxious, irritable, and in a general trend of wear and tear? Answer – there is no way you will make lubricant in the proper amount because your system is either out of shape or already running on a credit card that is overdrawn.

This problem is what would set you up for being more at risk for a cytokine storm. During an intense infection your body must balance the need to make highly inflammatory compounds with the need to protect your body from the inflammation. If the infection is intense, you must make a lot of inflammatory compounds. If you don't have an adequate supply of relaxation reserves because you have already spent them on day-to-day living, you could be in trouble.

This may be a wake up call for many people to find better balance in their lives, especially at the time of a potential pandemic flu. Depleting yourself from stress or pushing it too hard in general, especially when combined with a lack of quality sleep, puts your immune system at a significant disadvantage.

The best way to test the health of this system is to do some aerobic exercise. In this case the stress of the exercise actually activates the same higher need for anti-inflammatory reserves – raising your cortisol up to five times normal resting value. Cortisol at this level then activates endorphins and you get a runner's high (or at least feel refreshed). Too much exercise will tire you out and those who aren't fit enough to exercise are also of questionable fitness to fight an infection.

By the way, if you feel on the verge of fighting a bug, cut back on intensity or eliminate aerobics until you are done fighting the infection. This is because the aerobics demand is too intense when your body needs to also activate an immune response.

There are many nutrients you can use to boost adrenals, including a high protein breakfast, pantethine, Q10, magnesium, B complex, and vitamin C. There are also numerous nutrients that can help your adrenals quench inflammation, including quercetin, bromelain, and curcumin – to name a few. Of course, there is no making up for a lack of sleep.

Energetic Competence

The next issue of great importance is the function of your thyroid system, as it facilitates the pace at which energy can be produced by your body. Many individuals struggle with poorly functioning thyroid and this is a clear weakness that can handicap available energy, especially during a time of increased energy need such as fighting an infection.

Relatively new science has pinpointed how the toxins coming from infections are a major challenge to your [thyroid function](#)³. This information shows that when toxic infectious particles are sensed by your hypothalamus gland, thyroid function is progressively turned down in response to the initial [inflammatory gene signals](#)⁴ that are needed to fight the infection. This is most likely a survival system in and of itself, as energy needs to be diverted to immune function and away from general metabolic needs. However, it appears a line can be crossed where too much toxicity can simply crash your thyroid function – creating a major problem for immune function. Additionally, infections directly inflame the thyroid gland itself.

This inflammatory problem will be magnified by pre-existing [thyroid problems](#)⁵, especially in those with pre-existing elevated thyroid autoantibodies. Even sluggish thyroid issues are a problem, as they will handicap general energy production. By the time a person has elevated thyroid autoantibodies (5% of the population), it means that the anti-inflammatory [reserves of the adrenals](#) are also already lacking.

Leptin resistance causes a similar thyroid problem in your brain, as your body gets the false notion you are starving and so turns down your metabolism by deactivating TRH (thyrotropin releasing hormone). This means that following the Leptin Diet is a really good idea so as not to be placing your thyroid function in a state of pre-existing stress based on how you are eating.

The infection anti-thyroid response targets the same TRH signal in your hypothalamus, but is orchestrated by non-food signal inputs. There are special glial cells called [tanycytes](#)⁷ that line key areas within your hypothalamus gland. These cells sense the infection particles and actually producing extra T3 within your

hypothalamus gland only, which makes your brain think your body has enough T3, at which point your brain turns down TRH production and consequently reduces thyroid output for the rest of your body. Interestingly, this is one reason why people with sub-clinical or chronic low grade viral infections typically have sluggish thyroid problems.

Another significant thyroid stress is the toxicity of the drugs used to fight viral infections. While no specific studies exist on Tamiflu and thyroid, the fact that Tamiflu causes mental derangement in a percentage of children is evidence that it interferes with normal adrenal and thyroid function. We know that other viral therapies, as applied to [HIV⁸](#) or [hepatitis⁹](#), can be very toxic to the thyroid.

This means that viral drug treatment is likely to take a toll on the thyroid anyway, so it is a good idea to ideally have your system working so well that you don't get sick and if you should have to battle the flu you want to keep your thyroid as functional as possible.

Strength training exercise helps to condition your thyroid to work better, as one final end point of thyroid metabolism is to combine smoothly with growth hormone to rejuvenate muscle recovery. It is an especially good idea to have fit muscles going into any potential flu pandemic, as your muscles act as a bank account of protein that your body will use in a time of need to make antibodies. The more muscle you have, the better chance of survival. I have noticed for many years that when people keep their muscles fit they are much less prone to getting sick.

Summary

Your immune systems need to activate various germ-killing troops in order to defend you. Fundamental to this task is having energy on demand, much like having money in savings for a time of need. You help promote this savings by living in harmony with your hormonal systems.

Eating in harmony with leptin helps your adrenals, thyroid, and immunity. If you aren't aerobically fit or muscularly fit, then there is no better time to get started. Even if the U.S. is spared the Swine flu this summer, there is a high probability it will be back next fall. This might give you a little extra time to be better prepared.

Maintaining optimal function of your adrenals and thyroid are key to many aspects of health, including immunity.

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