

Immune Health in Fibromyalgia

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Tara thank you for joining us to talk about the topic: immune health considerations in fibromyalgia.

Before we delve in, can you please share with us, what is your background?

Certainly and thanks for having me. My first degree is as a Pharmacist and I also hold a Masters Degree with the College of Medicine with a special focus on metabolic and nutritional medicine. I also have an Advanced Fellowship in Regenerative Functional Medicine.

To summarize what this entails, I like to call it ‘treating the person, not just the disease’ and also ‘treating the underlying causes - the root causes - not just masking symptoms’.

So at my practice Vitality Integrative Medicine, based here in Winnipeg, we focus on this personalized and comprehensive approach.

We’ve heard the term integrative medicine before. How would you define it?

To summarize, Integrative Medicine ultimately means combining and the scientific understanding of both conventional (e.g. prescription) and complementary therapies (e.g. nutrition, stress reduction and lifestyle). It is not in one camp or the other, but the best of both.

Our goal has been to help patients with a personalized and comprehensive approach, empowering people to understand their health and ensure their voices are heard.

To do so, we start by conducting an in-depth review that usually takes two hours. We then work together in collaboration with other members of their healthcare team helping them to navigate and make the most out of the healthcare system too.

Thank you so much for sharing that background. Do you find that people have had more health concerns or difficulties amidst the pandemic over the last year?

Yes, and interestingly I’m hearing many of my patients with fibromyalgia describe how the new feelings of isolation and unpredictability described during covid-19 may actually help people get a glimpse of what some fibromyalgia patients experience on a regular basis.

Especially for any of our patients with chronic health challenges - and fatigue or pain such as in fibromyalgia - we have always accommodated telehealth consultations. We’re able to connect via phone and video for convenience and to help them in a timely way, which has become particularly important during this time.

Of course, the events of the last year have also led to many new questions about immune health specifically. And for everyone, but especially those with health concerns like fibromyalgia, this is something we’ve always worked to best support.

There is obvious importance for supporting immune health as a whole. So Tara tell us are there specific immune strategies we should explore in fibromyalgia?

Although each case is certainly individualized, the answer is yes.

Although it's not a quick fix, taking the time to understand your own unique needs and be proactive can go a long way to improved health.

Of course, the best way to understand your personalized needs is to have a proper assessment by a qualified healthcare professional who is managing your care so they can develop your best regime.

OK, so where do we start?

There are 10 key considerations we will focus on:

1. Vitamin D
2. Cortisol & Stress Hormones
3. Melatonin
4. Gut Health
5. Oxidative Stress & Antioxidants
6. Energy Production
7. Amino Acids
8. Thyroid
9. Immune Dysfunction
10. Vaccine questions

How does Vitamin D play a role in Fibromyalgia and Immune Function?

Vitamin D deficiency has been shown to be linked with depression and anxiety in patients with fibromyalgia. One study demonstrated that 50% of patients with fibromyalgia were vitamin D deficient. Another study of 150 patients with chronic musculoskeletal pain showed that 93% were vitamin D deficient.

In addition to multiple effects on hormones and systems in the body, Vitamin D acts as an immune system modulator, even reducing inflammation by preventing the excessive expression of inflammatory chemicals called cytokines.

So what dose and type of Vitamin D is best?

Since Vitamin D is a fat-soluble vitamin, it can build-up in the body and become toxic if too much is taken. The dose should ultimately be measured and personalized for greatest safety and efficacy.

A good starting point is 1000-2000 IU daily, and an excellent form to aid in absorption is a concentrated liquid, e.g. 1000 IU per drop. This oil-based formulation can help optimize absorption without the need to take multiple pills and can be take with or without food.

That's helpful to know. What is the impact of Cortisol and Stress Hormones for us?

Fibromyalgia is often associated with lower cortisol, a key stress hormone produced in our adrenal glands that is involved with many functions including energy, pain and sleep cycles.

Interestingly, decreased adrenal function has also been found in auto-immune disorders, infections and is linked with impaired immunity.

How can one know if they have lower cortisol, and if so, can something be done about it?

The gold standard for measurement is a specialized test called a four-point cortisol which is conducted by collecting a saliva sample four times in one day, though other methods including urine and blood can be used as well.

And absolutely, multiple strategies can be used to support adrenal function. This primarily involves non-prescription interventions such as targeted vitamins and minerals, nutrition to aid digestion and intake, and life strategies to reduce stress and improve sleep quality.

Speaking of sleep, the third consideration you've identified is Melatonin. Tell us more.

Yes, patients with fibromyalgia often have decreased melatonin levels in the evening. Poor sleep hygiene itself can contribute to fibromyalgia. Paradoxically, many of the medications used to treat fibro may themselves deplete melatonin, including acetaminophen, benzodiazepines and even sleep medications, believe it or not!

Melatonin is a natural hormone that decreases with age and can definitely help someone deficient in melatonin get to sleep and stay asleep. I'm often asked about the reasons why melatonin has been brought up in management of certain immune issues, and the fact is it strengthens the immune system. Because of this, we do need to exercise caution in auto-immune conditions as it can be over-stimulatory, but in an interesting model of respiratory syncytial virus infection, treatment with melatonin resulted in a reduction of reactive species with an increase in antioxidants including glutathione and reduction in inflammation.

And what role does Gut Health play in patients with fibromyalgia?

In my fibromyalgia patients, I find it is particularly important to support healthy digestion, absorption, metabolism and excretion of nutrients due to the links fibro has with leaky gut syndrome, IBS (irritable bowel syndrome), and SIBO (small intestinal bacterial overgrowth) as well.

There is a strong connection between the gastrointestinal and immune systems - 70% of the immune system is actually in the gut. We need proper function here to take in the important nutrients we need for energy, mood and pain control.

Not to mention that 90% of our main happy brain chemical, serotonin, is also found in the gut and may play a role in regulating pain and sleep quality in fibromyalgia too.

And the gut is a major area of detoxification as well. There is no coincidence why disturbances in this area can then lead to multiple chemical sensitivities, such as those we see in fibro.

This Gut-Immune connection is fascinating. Is this why we often hear about probiotics for immune health?

Yes, and leading data is showing us that specific strains of probiotics can be useful for different functions, so we do well to heed this evidence when selecting which ones might be best. There are particular strains that has specifically demonstrated evidence in reducing frequency and severity of viral symptoms in cold and flu, and can impact the immune resilience we depend on for efficacy in vaccine response too.

We also hear a lot about the importance of Antioxidants in fibro, is that right?

Studies have shown that fibromyalgia patients generate more free radicals. They also have a diminished antioxidant capacity. This can result in what we call Oxidative Stress.

Does this Oxidative Stress play a role in immune function as well?

In viruses such as covid-19, the evidence suggests that excessive inflammation, oxidation, and an exaggerated immune response very likely contribute to its destructive mechanism.

Are there certain antioxidants that everyone could benefit from taking?

As with most things, there is no one-size-fits all treatment, so it's always best for your clinician to develop a plan that is best for you.

Fortunately, we do have evidence on potential priorities in fibromyalgia, that centre upon energy production.

Certain antioxidants, such as Coenzyme Q10 (a powerful immunomodulator) and Lipoic Acid (which increases the free-radical-quenching glutathione and improves the immune system), also help our mitochondria in cells produce this energy called ATP.

Energy production does seem important when it comes to fibromyalgia.

Studies have found a 20% reduction in the level of ATP in muscle biopsies taken from patients diagnosed with fibromyalgia.

Other nutrients that help the body produce this energy molecule may also improve symptoms in fibromyalgia as well. For example, a study of fibromyalgia patients using D-ribose revealed an improvement in energy, sleep mental clarity, pain intensity, and well-being.

Another fibromyalgia study in patients treated with L-carnitine saw improvements in depression, musculoskeletal pain, number of tender points, and total symptom scores as well.

Magnesium deficiency can make the symptoms of fibromyalgia worse by decreasing the production of ATP. And reduction in certain B vitamins, whether from stress or genomic predispositions, can result in mental and physical fatigue and impaired immune function too.

Are there other insufficiencies that are sometimes found in fibromyalgia?

Symptoms of Amino Acid deficiencies are commonly found in fibromyalgia, and even insomnia and conditions of immune dysfunction as well.

Carnitine as we mentioned above is one example. In addition, Cysteine, which helps to regenerate the powerful antioxidant glutathione, as well as Arginine and Lysine which need to be in balance may be particularly important as well.

Eating a variety of proteins and ensuring optimal gut health is important to take in the amino acid sources we can from foods. In some cases, amino acids can even be measured and supplements targeted to the person's unique needs as well.

Now our next point is thyroid - can this possibly impact immune health in fibromyalgia?

Yes, optimal thyroid function helps our immune system to work at its best. Alterations in the levels of thyroid hormones can significantly impact the function of the immune system.

In fact, both fibromyalgia and chronic fatigue can be associated with a low T3 thyroid hormone, something we also see in physical and mental stress and infections as well.

Inadequate thyroid supplementation or cellular resistance to thyroid hormone may be an underlying cause of chronic pain and increased tenderness. And lower levels of hormones such as estrogen, testosterone and DHEA may play a role in fibro too.

Since thyroid hormones can exert responses in multiple immune cells such as monocytes, macrophages, natural killer cells and lymphocytes, we can beneficially impact inflammation and autoimmunity by optimizing thyroid hormones.

Wow - that's an interesting connection. Are there other Immune strategies we can investigate in fibromyalgia?

Immune dysfunction is common in patients with fibromyalgia, and linked in the literature with a number of mechanisms.

With this in mind, it is important to address two of the most commonly asked about nutrients in immune health - Vitamin C and Zinc.

Vitamin C is an antioxidant that aids in the healing of wounds, benefits the immune system by increasing the number of WBCs and interferons (that fight viruses) and supports a number of the above areas we talked about including: adrenal health, carnitine synthesis, the production of serotonin and the energy-producing capacity of mitochondria.

Zinc is an antioxidant with anti-inflammatory effects that can boost immune defences, enhance the biochemical actions of Vitamin D, promote thyroid activity and reduce oxidative stress. Since it can cause lower copper levels if used improperly, the dose should be tailored to each person's needs and monitored to avoid myoneuropathy or anemia.

It's important to know that these need to be used wisely, and at personalized doses. Do you have any tips on the current covid vaccines for those with fibromyalgia?

Since information is fluid and eligibility is changing rapidly, it is always best to talk directly with your providing clinician and bookmark the Manitoba Covid site directly for updates: <https://www.gov.mb.ca/covid19/vaccine/eligibility-criteria.html>

Thanks Tara. If we have other follow-up questions on nutrients, testing steps, or guidance on formulations, how can we each out to you?

Thank-you and I wish readers all the best on their road to improved health and vitality!

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