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Take Control of Your Health

Cancer Treatment From a Metabolic Perspective

Analysis by Dr. Joseph Mercola | December 10, 2023

STORY AT-A-GLANCE

- Most chronic diseases affecting us today, including heart disease, dementia, obesity, diabetes and cancer are rooted in metabolic dysfunction
- October 10 is the International Metabolic Health Day. Celebrate by assessing your metabolic health and cleaning up your diet
- One of the best ways to identify metabolic flexibility and health is a fasting insulin test. Ideally, you want it to be below 3
- If you're already eating a healthy diet, exercising, and all of your metabolic parameters look good, yet you have an insulin level of 7 or 8, stress may be the culprit, because cortisol raises insulin. Cortisol release is actually a rescue mechanism to ensure you don't die from low blood sugar
- The Metabolic Terrain Institute of Health will be a truly integrated residential oncology hospital and metabolic research institute. Once funding has been secured, they expect to be up and running within 18 months

In this interview, Dr. Nasha Winters, a naturopathic physician who specializes in supporting patients with cancer, discusses the importance of optimizing your metabolic health because, as she notes:

> *"All the diseases affecting us today — cardiovascular disease, dementias and Alzheimer's, obesity, diabetes, cancer — all of these things have a common denominator, which is metabolic [dysfunction]."*

In July 2022, a study[1] in the Journal of the American College of Cardiology from Tufts showed that 14 out 15 Americans, over 93% of the population, are metabolically inflexible. While this is bad news, for sure, current statistics are likely even worse.

The study used data from 2018, prior to the pandemic, which radically worsened metabolic health, so, in all likelihood, well over 95%, or 19 out of 20 people, are now metabolically unfit.

Needless to say, the health care costs associated with metabolic dysfunction will eventually bankrupt us, both individually and nationally, if we don't begin to address metabolic health in earnest.

What Is Metabolic Health Really About?

As noted by Winters, conventional medicine pays lip service to metabolic health, but so many of the guidelines are misguided and miss the mark. The five conventional factors of metabolic health are blood sugar, cholesterol, triglycerides, waist circumference and blood pressure,[3] but what conventional medicine considers "normal" is often far from optimal.

> *"The ranges that our standard of care is giving are just too lax. They're still saying it's normal to have a blood glucose of 100. But that's kind of the highway to the next step of things. They're focused more on the overall cholesterol and overall LDL, but really the issues we want to look at are more the triglycerides and the HDL."*

Most doctors and laymen are also completely unaware of how **linoleic acid** (LA), an omega-6 fat found in seed oils and most processed foods, decimate mitochondrial function and metabolic health.

I suspect less than 0.5% of Americans have optimally healthy LA levels, and simply getting people to dramatically reduce their LA intake could go a long way toward improving metabolic health and lowering our chronic disease burden. So, we have a way to go when it comes to educating people on how to become metabolically healthy.

Key Metabolic Health Tests

One of the best ways to identify metabolic flexibility and health is a fasting insulin test. Ideally, you want it to be below 3. My last fasting insulin test was 1.4. I've been educating people on how to resolve their insulin resistance with diet and exercise for several decades now, but what do you do if you're already eating a healthy diet, exercising, and all of your metabolic parameters look good, yet you have an insulin level of 7 or 8?

In this case, the core culprit may be stress, because when cortisol goes up, insulin rises with it. Cortisol release is actually a rescue mechanism to ensure you don't die from low blood sugar.

To identify tease out if stress is a culprit, Winters typically starts with a complete blood count (CBC) test, because chronically depleted white blood cells is often a sign of chronic stress and high cortisol.

She also recommends getting an AM cortisol test after fasting for 12 to 16 hours. You don't want to fast longer than that, because after 16 hours of fasting, cortisol will naturally start to rise.

> *"That morning cortisol and that fasted state is going to tell us a lot,"* she says. *" [AM cortisol of] 15 to 17 is my happy place range. There is a problem if it's lower ... If somebody has low [cortisol, i.e., below 15, fasting], that could elude they've been in a long-term stress response ... I often see that.*
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> *I see that in folks who've really been through the wringer with a lot of conventional oncology therapies, for instance. It really wipes them out over time. In the beginning, cortisol will be elevated. If people are revving above the 17 mark, they're kind of in a 'run from the saber-tooth tiger' [mode] on a pretty regular basis.*
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> *[Using] an adrenal stress index (ASI) test, where you're checking [your cortisol] first thing in the morning, mid-morning, mid-afternoon and right before bed, you*

can see the pattern of the circadian rhythm, and a lot of people in our world today have what we call a switched circadian rhythm.

Cortisol and their insulin are actually really high at night, which makes it difficult to fall asleep and stay asleep ... The other thing that can happen is the diurnal rhythm starts to spike early.

That 3 a.m. wake up call, when you're waking with a busy brain, that's going to shoot up your cortisol and insulin levels as well and create this dawn effect with elevations in your blood glucose and insulin levels. So we can get a little bit detective-like with this and really understand the pattern of the individual so we know where to best support them."

Carbs Help Normalize Cortisol

Importantly, if you've been on a strict low-carb diet long term, you're much more likely to have elevated cortisol. Low-carb is technically anything under 150 grams of carbs a day, but some people take it below 50 grams or even 20 grams.

Provided you're generally healthy, you need carbs to minimize your cortisol response. I detailed the reasons for this in "**Important Information About Low Carb, Cortisol and Glucose**."

As mentioned, most people are metabolically inflexible and could definitely benefit from a temporary low-carb approach. The key word there is "temporary." Provided you don't have cancer, once you've regained your metabolic flexibility, I recommend raising your carb intake to about 55% or so, and lowering your fat intake to 30% or less of your daily calories.

"If you have dealt with a cancer diagnosis and you have a different metabolic process than you do in a non-cancer environment, you may need to restrict carbs in that window," she says.

"People like myself and the folks that I train, we know to watch for when we need to alter the diet to the individual's needs. I recognize the differences in the metabolism of somebody who's dealing with cancer and the metabolism of somebody who's not. And so when you get yourself flexible in the healthy state, you have and should be able to tolerate carbohydrates."

Should You Stay on Low-Carb, or Transition Out?

That said, certain cancer patients may benefit from staying on a low-carb diet relatively long term to avoid recurrence and/or metastasis. Winters explains:

"There is biochemical individuality, epigenetic individuality. So for instance, some of the phenotypes such as the ADIPOQ gene, the ACSL1 gene, those basically wire you to be diabetic ...

In the oncology world, if we see PIK3CA 3-kinase issues, that is 100% pushed by glycolytic [metabolism] and it's in 70% of cancer types. It also makes for a much more aggressive and progressing cancer and a much higher recurrence rate. So we're very, very careful with folks [who have] that ...

You can also retest, because over time, when you're treating that body, it may no longer express that in its tissues. So we check that periodically ... A lot of people think that it is static and forever, but you can change that with whatever therapies you're introducing into the system. And if that changes, then you can obviously change the way you're going to feed it or not feed it ...

My husband has a lot of those SNIPS around the diabetes. Everyone in his family dies of diabetes, complications of diabetes and cancer. He loves protein. He is incredibly active. He's incredibly fit. But if he gets too much red meat, his insulin goes sky high. So he has the genes for that.

We have this belief system that, 'I'm not taking any carbs in [so my insulin will be low]' but gluconeogenesis can come from even too much protein in certain phenotypes ...

> *I would love to be a vegetarian, that's what my palate wants, but my body says no way. And as I'm moving into perimenopause, my body needs different things. I know I need more protein now ... my body then uses the gluconeogenesis of the protein to fuel me versus that of the simple carbs."*

So are there any signs to look for that might indicate it's appropriate to add more carbs back in? Winters suggests checking your heart rate variability (HRV), "because that's going to show you the interplay between stress and insulin."

> *"If it starts to drop below 70, you've got some issues. You really want it above 70 to show that you've got optimal regulation of your nervous system and of your metabolic system. It's a very elegant, simple [test] ...*
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> *One other clue is, if you have a difficult time falling asleep, that's a metabolic insulin issue more often than not. And if you have a hard time staying asleep, if you wake often after you've gone deep into sleep, that often suggests a cortisol problem.*
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> *So, that's where we start to go, OK, your cortisol is spiking, you might need a little more carbohydrate into your evening meal to help you keep that cortisol down throughout the night."*

How to Improve Your HRV

As for how to improve your HRV, Winters offers the following suggestions:

Eat your last meal at least two hours before bed.	Take a walk after each meal, even if it's only for 10 minutes, to help your body process the food.
Optimize your sleep — Sleep in pitch darkness and eliminate all electronic devices from your bedroom.	Watch the sunrise and sunset.

Turn the Wi-Fi off at night.	If you're exposed to electronic screens before sunrise or after sunset, mitigate the blue light by wearing blue blocking glasses or install blue blocker software like IRIS.

Linoleic Acid Is a Metabolic Saboteur

In July 2023, I published a peer-reviewed paper on LA. In the process of getting it published, one of the peer-reviewers brought up a really good point. Initially, my coauthor and I suggested the reason why LA is so inflammatory is because it's converted into arachidonic acid, which is a classic proinflammatory omega-6 fat.

As it turns out, that's not the case, and the reviewer supplied good data showing that. Now, LA does cause inflammation, but not by way of arachidonic acid. LA has two double bonds, and these double bonds are highly perishable and susceptible to oxidative damage, and when those double bonds are damaged, they produce oxidative metabolites and toxic reactive aldehydes that damage the tissues.

So, that's one mechanism. But there's an even more fundamental component, and that is that PUFAs, LA in particular, are antimetabolic. The fat gets integrated into your cellular machinery and decimates your mitochondrial function through reductive stress.

Yet another mechanism is that PUFAs increase intracellular calcium concentrations, which in turn increases superoxide and nitric oxide, which when combined forms into peroxynitrite — one of the most damaging free radicals we know of. So, I believe excessive LA consumption is a primary driver of chronic disease, including cancer.

The main source of LA is processed food, which is probably why sugar got the blame, as processed foods are notoriously high in both sugar and PUFAs. Sugar is not the culprit, however. LA is. So, cutting out LA is, I believe, one of the most effective ways to improve your metabolic health.

Keep in mind that this can take years, as the half-life of LA is in your body is 650 days. That said, you'll likely start feeling better within a few weeks or months. If you are diligent about limiting your LA intake to 5 grams or less a day (mine is below 2 grams), you could in less than three years get your LA to a healthy level.

Ambitious Goals

Winters has several ambitious goals, one of which is to develop a sophisticated commercial assay to assess mitochondrial function, because we really don't have a good tool for that as of yet.

> *"We've got some good surrogates, but we think we're on the right track to get something more tangible ... that can really help elucidate what's happening with the patient, to actually show us if we're being effective with whatever therapies we're using, and also give us an early warning sign if we need to change gears,"* Winters says.
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> *"I think that's one of the big things, especially in the oncology world. By the time it's big enough and loud enough to capture our attention, that can be life-taking for many people. So, we want to be ahead of that."*

Winters suspects mitochondria are nonhomogenous, in that they may be tissue specific, and some of the novel delivery systems they're investigating can, in fact, target mitochondria in specific tissues.

> *"I think we're going to get to a very intricate and specific approach here,"* she says. *"We've got a lot of interest and passion to get some answers to know how to individuate the therapies in a way that's meaningful, and stop that confusion of 'Why does it work in this person, not in this person, and why does this diet work here and not here?' I think we're going to get much closer to those answers."*

Winters is also building a research institute in Arizona, which will be funded entirely by private donations and research grants. It'll be housed in an Arizona State University

complex. They've also acquired a 1,200-acre piece of land an hour and a half further south, which will be the home of a regenerative farming project and the Metabolic Terrain Institute of Health, which will be both a hospital and a research center.

> *"It'll be the first of its kind — a truly residential, truly integrative oncology hospital and research institute,"* Winters says. *"There are places where you can go and stay and get 'alternative therapy,' but most of them are separated out.*
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> *You cannot also get your metronomic chemo, your biopsy, your tissue assays, along with your hyperbarics, hyperthermia, mistletoe, along with dietary interventions that are specific to your [case].*
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> *You have to go to multiple places to get all of that taken care of today, and maybe even multiple countries, because we're limited in some of the things we can access here in the United States. So, we want to have a place where people can come, do a deep dive assessment and actually start their treatment, and then be able to go back home.*
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> *We are envisioning folks staying with us two to three weeks to get the full workup, initiate the program, and then getting them sent back home to the growing number of clinicians we are training worldwide in how to support patients with this metabolic approach.*
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> *So it's more than just a hospital or a clinic. It's more than just a lab. It's a movement. It's about changing health care as we know it, and it's about impacting oncology outcomes in a way that we've never been able to do before."*

Once the funding is secured, they expect to be up and running in as little as 18 months. The institute will not accept any kind of insurance. Instead, they are fundraising for patient grants so that patients who don't have the financial means can still get the care they need.

As noted by Winters, "Right now, truly integrative oncology care is only available to those with resources, and that shouldn't be the case." If you feel so inclined, consider making a

donation to the **Metabolic Terrain Institute of Health** instead of throwing your money away at Pink Ribbon fundraisers.

More Information

You can learn more about Winters' approaches in her 2017 book, "**The Metabolic Approach to Cancer: Integrating Deep Nutrition, the Ketogenic Diet and Nontoxic Bio-Individualized Therapies**."

If you would like to engage her services, or more specifically, have your clinician consult with her, visit website, **drnasha.com**. At the bottom of the homepage, you'll find a patient resource section with free tools. Go ahead and download the free guide describing the five steps to take when diagnosed with cancer.

Your clinician will need to go to the doctor section to sign up for a consultation. Should your doctor refuse to consider a consultation to learn about some of the options, Winters may be able to help you find a local physician that is receptive to collaboration.

Sources and References

- [1] Trends and Disparities in Cardiometabolic Health Among U.S. […], J Am Coll Cardiol. 2022 Jul 12;80(2):138-151. doi: 10.1016/j.jacc.2022.04.046
- [2] EIN Presswire August 31, 2023
- [3] January AI Metabolic Health