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The Metabolic Approach to Cancer Treatment

Analysis by Dr. Joseph Mercola Fact Checked | August 06, 2023

STORY AT-A-GLANCE

- Dr. Nasha Winters is a naturopathic physician who specializes in supporting patients with cancer. She also trains clinicians and consults with those treating cancer patients
- Winters requires five specific tests before she will conduct an initial consultation with a patient. They're markers to assess the health of the whole body and whether cancer is progressing, stable or regressing
- The first is a blood chemistry panel, an inexpensive blood test showing complete blood count (CBC). Importantly, it shows your neutrophil-to-lymphocyte ratio (NLR), which is prognostic for overall survival. A chem panel (CMP) is also required, which assesses organ function and electrolyte status
- The lactase dehydrogenase (LDH) test is a widely underutilized yet most important test as it is a marker of metabolic function. If LDH is elevated, your mitochondria are functioning poorly
- When high-sensitivity C-reactive protein, LDH and erythrocyte sedimentation rate measurements are within functional ranges, the patient has a good handle on their disease and prognosis is good

Editor's Note: This article is a reprint. It was originally published June 30, 2019.

Cancer kills an estimated 1,600 Americans each day. In China, 8,100 people a day succumb to the disease. It's so common, it's a rare individual who does not know someone who has been diagnosed with cancer — which is why the topic of this

interview is so important.

Dr. Nasha Winters is a naturopathic physician who specializes in cancer treatment. While she has treated cancer patients in the past, she's developed a more efficient model where she now focuses on training clinicians and consulting with those treating patients.

I've been very impressed with her work. She has embraced the **ketogenic diet** and integrates it as a strategic tool in the therapeutic planning. She also uses many other, less well-known strategies. If you're affected by cancer and believe her skills may be helpful, you can have your clinician consult with her to fine-tune your treatment.

I believe if you catch the cancer early enough, most are likely curable. But you need to catch it early, and you need to have the proper know-how. It's also important to avoid strategies that are going to set you back.

> *"My life's goal is to eventually be able to … make a tiny little dent in that statistic,"* Winters says. *"Where we can be effective is with the folks who … are in a position where they're still well enough and motivated enough to explore beyond their standard of care options, because that's often not enough, frankly, in today's time.*
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> *And then also, I think the biggest impact that we can have … is we can help people look under the hood long before it's a problem. Because really, the only true cure is prevention. We've got sort of layers of this.*
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> *We've got the folks who don't yet have cancer or don't yet know they have it. We have the folks who are already diagnosed or in a relatively good state of health, whether it's a Stage 1 to a Stage 4. Then we have some of the folks who are really damaged from years of unsuccessful treatments that have left their bodies broken and maybe not as responsive to this approach."*

The Facts Speak for Themselves

Almost without exception, people will say they thought they were healthy up until they received their cancer diagnosis. However, that's simply impossible. Cancer, like many other diseases, does not manifest until you're about 80% of the way down the proverbial hole.

The first symptom is not the cancer diagnosis itself. Most cancers take years to progress to the point of being diagnosable. Cancer is a res ipsa loquitur factor, meaning "the facts speak for themselves." In other words, you, in some way, shape or form, were not leading a **healthy lifestyle** — or you simply failed to counteract the inevitable toxic exposures we're all subject to in today's modern world. As noted by Winter:

> *"No matter how much you try, we are being exposed to many things that we don't see, that we are not aware of, that are definitely damaging our container in a way that our cells are having a harder and more difficult time … to respond and repair the way they should.*
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> *That's one of the strategies I'm helping physicians understand. Because our medical system is not geared towards prevention … We're very much waiting for a house to be engulfed in flames before we decide to spit a little bit of water on it, right? My strategy has always been 'Test, assess, address and then adjust accordingly and repeat as often as needed.'"*

Test, Assess and Address — The Complete Blood Count Test

Winters recommends, and in fact requires, five specific tests before she will conduct an initial consultation with a patient. They're markers of how advanced the cancer is and how well you're doing as you're progressing through treatment.

The first is a blood chemistry panel. This is a simple and inexpensive blood test showing complete blood count (CBC) with differential. That includes things like your white blood cells, red blood cells, hemoglobin, hematocrit and platelets.

Most importantly, it shows your neutrophil-to-lymphocyte ratio (NLR), which is prognostic for overall survival. One of the reasons why immunotherapies are seeing such a low response rate — only about 20%, according to Winters — is because of this neutrophil-to-lymphocyte ratio.

As explained by Winters, when your neutrophils are too elevated and your lymphocytes too low, you do not have a normally functioning immune system. As a result, treatment with some of these new, innovative immune therapies used in oncology may "tilt the teeter-totter of your immune system into a dangerous place of overreactivity," she says, adding "For a $12, paid-out-of-your-pocket, walk-in lab test, you get a really good sense of where your immune system lies."

Overall, you want a 2-to-1 ratio or better of the neutrophil cells to the lymphocytes. If you go much higher than that, that bigger divide between neutrophils and lymphocytes becomes problematic. Conversely, if you have a "switched NLR," where the lymphocytes are more elevated than the neutrophils, that's often a symptom of blood dyscrasias and blood cancers "that are not uncommon after standard of care therapy," Winters says.

Additionally, you want your white blood cell count to be between 5 and 7. Anything lower than that, which is common in conventional therapy, makes the situation more challenging. Platelets elevated above 250 is also prognostic. The sweet spot for platelets is between 175 and 250. Below 175, immune function and blood clotting are compromised; the same is true for levels above 250.

"Oftentimes elevated platelets can be a good example of a cancerous process. In fact, that's one of the alarms that we'll see in early-stage cancers," Winters says. Elevated platelets are also related to viral patterns, and may be indicative of a co-infection causing immune dysregulation.

> *"The other piece we often forget about is things like the hemoglobin. If the hemoglobin is low and you happen to be someone who's monitoring your ketones or your blood counts, your hemoglobin A1C, you're going to get some erroneous numbers because you have to have enough hemoglobin*

to actually get a true result.

They are simple little tricks that we can use with a basic CBC just to see how somebody's immune system is during treatment, after treatment and prior to treatment. It's worth running on your own and paying cash for it just to look under the hood."

Sadly, most oncologists have never even heard about the NLR ratio or the fact that platelets are a prognostic factor for progression of disease or even early warning signs of cancer, Winters says. In the world of conventional oncology, the CBC is primarily used to make sure the white blood cell count and neutrophils are high enough for you to be able to receive another dose of chemo or targeted therapy.

The Comprehensive Metabolic Panel and Lactase Dehydrogenase

The second test Winters routinely recommends is a comprehensive metabolic panel (CMP), sometimes known as the chem panel, which is another inexpensive test. This test will provide you with information about your electrolytes, organ functions and cardiovascular function, as well as kidney and liver function.

"This is also a super important clue to see what's going on," she says. *"For instance, if your creatinine is moving above 1, we know that your kidneys are struggling. They're not filtering properly. Or if your liver enzymes are starting to move above 20 or 25, we know there are some issues around how your liver is processing things along the way.*

If alkaline phosphatase is raising, that can often show us first signs of bone loss or bone metastasis. These are some really powerful ways to assess people's response to the medications, because those enzymes will often go up when they're being beaten up by some drugs. But it's also a really good way to get a sense that there are other organs involved in the overall cancer process."

In the past, the chem-20 and chem-24 tests included two important tests that must now be ordered separately. One of them is the lactase dehydrogenase (LDH) test, "which is probably the most underutilized and most important test across all chronic illness patterns," Winters says. It is a marker of metabolic function. If LDH is elevated, your mitochondria are functioning poorly.

> *"You can even break down that overall LDH into its five constituents of these five isoenzymes and really know precisely where the hiccups are happening in that metabolic process, whether it's at the level of the bone, the lung, the kidney, the liver, the red blood cell. Pretty fascinating, and again, very inexpensive,"* she says.
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> *"This is also the main way to monitor things like lymphoma, most leukemias, multiple myeloma and even melanoma. It is considered sort of the cancer marker for those. Yet it's a very misused and even misunderstood and forgotten lab test. I can't tell you how many times I've asked doctors to run an LDH for the patient and I'll get back a low-density lipoprotein (LDL). It would happen 2 out of 10 times."*

What LDH Can Tell You About Your Mitochondrial Function

So, what exactly is the connection between LDH and mitochondrial function? Winters explains:

> *"This is where we're looking at how we are processing lactase dehydrogenase — the process of how we're fermenting or processing our energy through our Krebs cycle … to produce adenosine triphosphate (ATP). It's intimately in relationship to the dehydrogenases, whether it's pyruvate or lactate dehydrogenase.*
>
> *This starts to give you some clues that all is not well in the mitochondrial building when that level starts to rise. Interestingly enough, one thing I neglected to mention as we started talking about the labs is that labs, of course today, are based on the average of the population in the region in*

which they're being run. For instance, if you live in Alabama and you're running a glucose level, they're still saying you're fine in 120 fasting glucose.

If you're in Colorado, they're saying that 90 is fine. It even varies from region to region. But overall, you don't want to be average today with regards to your lab values. When I'm talking about my functional ranges or ideal ranges — for instance, the lactase dehydrogenase through, say, LabCorp — it should be ideally under 175.

I believe the cutoff is around 263. If you run it through Quest, that's a different metric that they run and should not be under 450. It has a higher cutoff at around 600 or 650. You want to be well under the top end on lactase dehydrogenase for optimal ranges.

When you're too low, that's often a major indicator of extreme malnutrition, often muscle breakdown, muscle wasting, sarcopenia, cachexia, which is also a very dangerous place to be in the pendulum of an oncology or chronic illness process."

The Erythrocyte Sedimentation Rate Test

The second test that used to come standard with the chem panel, but no longer is included, is your sedimentation rates, also known as the erythrocyte sedimentation rate (ESR). "This is a really powerful simple test that just looks at how fast your cells are falling out of solution, falling out of the plasma," Winters says.

Ideally, you'll want an ESR rate below 10. Above 10, it suggests it's more difficult for your cells to exit the thick, fibrinolytic, sticky webbing or scaffolding associated with chronic inflammation, autoimmunity and increased risk of metastasis.

"You don't typically die from primary cancers unless they're strategically placed in some valuable real estate in the body," she says. *"However, we do have a higher incidence of death from metastasis. When I look at that*

[ESR] number, it tells me how smoothly things are flowing through the system of the body."

The High-Sensitivity C-Reactive Protein Test

The fifth test Winters routinely recommends is the high-sensitivity C-reactive protein (hsCRP) test. While this test is typically used as an indicator of cardiovascular health, it's also a widely underutilized prognostic factor for cancer. Elevated CRP, no matter what kind of disease or condition you have, suggests a poor prognosis and lower survival rate.

CRP differs from ESR in that it is a general marker of inflammation. It doesn't show you the location of the inflammation. Ideally, you want a CRP below 1. If the lab uses a cutoff of 0.3, you'll want a value below 0.1. Be sure to get a quantitative hsCRP — i.e., one that specifies your level and not just tells you whether you're in, under or above range — as this will allow you to monitor your progress more closely.

Common Cancer Pattern

"Here's where the interesting pieces come together," Winters says. While all of those five tests, individually, have good studies backing their role in monitoring the cancer process and other inflammatory processes, what Winters has learned, through 25 years of looking at them, is that when CRP, LDH and ESR are within functional ranges, she knows the patient has a good handle on their disease. When all three are off, the prognosis weakens. Again, the functional or ideal ranges would be:

- ESR below 10
- CRP below 1 (or 0.1 depending on the measurement used)
- LDH below 175 (or 450 depending on the measurement used)

"No matter what the scan, no matter what the tumor markers tell me, I

know that patient's terrain and mitochondrial metabolic health is still robust enough that no matter what the tumor burden, we can still move this vehicle down the road," she says.

"If I see for instance a thrown-off ESR [alone], I know they're likely having some type of autoimmune response. We see this a lot in rheumatoid arthritis (RA), Sjogren's [and] Hashimoto's flares …

Or if we have, let's say, a CRP that's really out of range but the other two are perfect, that could be that you just had dental work or had a really intense workout or stubbed their toe or stepped on their child's Lego.

The LDH might be that they had a bender, drinking with their friends for the weekend, or have been taking some steroids and their bones are breaking down very quickly, or just went and did a humongous hike and broke down some muscle very, very quickly.

But collectively? That's the key. When all three are in the functional range, the body is still in control. When [all three] start to rise, that's when we know we're on a slippery slope … That basically means the cancer stem cells are lining up to take action. That's what we don't have very good success with in Western medical treatment strategies."

Biopsies Will Likely Become a Thing of the Past

Thomas Seyfried, Ph.D., a leading expert on **cancer as a metabolic disease**, is of the strong opinion that biopsies should be avoided, as they may trigger metastasis, i.e., spread, of the cancer. The reason for this is because it isn't so much cancer stem cells spreading the disease as it is hybridized, morphed macrophages that fuse with cancer cells.

Because it's a macrophage, it spreads through your blood and could seed into other tissues. You can learn more about this in my **interview with Seyfried**. Winters notes that concerns over biopsies spreading cancer have been in circulation for decades.

> *"We've seen many times that depending on the timing, let's say, of your cycle when you have a mastectomy or the type of anesthesia used at a time of a biopsy, or the state of the overall health, or even the size of the core biopsy chamber, that we definitely have that potential to seed,"* she says.

Despite such risks, clinicians still had to do the biopsy, no matter what, to help guide the treatment. That is now changing, she says. Blood biopsies are improving, allowing a diagnosis to be made without puncturing tissue. From the research and work summits she's attended on circulating tumor cells and circulating stem cells, Winters is convinced it won't be long before biopsies will no longer be used.

Tools for Optimizing Surgical Success

While radiation and chemotherapy are rarely an ideal option, surgery may be indicated in some cases, and your success rate can be optimized by implementing nutritional ketosis. **Fasting** for a few days before surgery can help define and demarcate the margins of the tumor. Cancer cells will also be less aggressive as they'll be relatively debilitated.

An important point to be made here is that undergoing conventional treatment — radiation, chemo and/or surgery — first, before adopting a holistic approach, is going to massively set you back and will more or less eliminate any real chance of success. In other words, you need to be brave enough to address the terrain of your body first, before doing any of these invasive and highly toxic interventions. According to Winters:

> *"If it's a particular tumor that came on fast in a part of the body that's blocking something like a vessel, or obstructing the colon or whatnot — those become medical emergencies [requiring immediate treatment].*
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> *However, the vast majority of cancer diagnoses are nonemergencies. The real emergency is the diagnosis itself, and the way you react or respond to that emergency will often dictate your success at overcoming or*

maintaining this process. I'm really thankful for the opportunity to say this on a much larger platform because it's very important …

I always encourage people, 'Take a breath. Dive deep into your terrain. Really understand what's making it tick right now before you choose any intervention. And then you will likely not have to see me again because you won't likely be in that 70% recurrence rate … [J]ust take a moment and reframe and get clear on what is specifically right for you …

That being said, if I know someone is getting ready to prepare for a surgery or a biopsy — because I treat them the same, whether it's just a tiny little punched lesion … to look at if this is a melanoma, or something that's opening up the body cavity … — we like to spend at least a couple of weeks prepping the body.

We like to start things like modified citrus pectin. We start to get them into a fasted state or a metabolic flexible state for the weeks leading up, and a fasted state going into the surgery itself. If we are lucky enough to have their single nucleotide polymorphisms (SNPs), we can really help them decide on the best strategy for pain management.

We do our best to have them avoid opiates at all cost because it's really related to slowing down wound healing, increasing cancer cell proliferation and destroying the microbiome, as well as all the issues that it has around addiction and at really not helping the pain in the way it needs to be helped …

We also do post-surgical intervention to help them heal up from that wound as quickly as possible. Maybe a bit more protein is needed at that time, maybe a little bit less sodium …

If they're a woman who is still menstruating, we will try and schedule their surgery where the estrogen levels in their menstrual cycle are at their lowest. That's an interesting strategy we've used for better outcomes … Testing is a very powerful tool, as are some homeopathic remedies … like

phosphorus to help with drug reaction and bleeding issues …"

High Glucose and Insulin Resistance Worsen Your Prognosis

As noted by Winters, when you look at the statistics across all tumor types, all stages and demographics, chemotherapy has about a 3% success rate across the board. Radiation has about a 12% success rate and surgery, about a 50% success rate, with "success rate" referring to debulking or making the tumor smaller — not eliminating evidence of the disease.

She also points out evidence showing that when your glucose and insulin are elevated, radiation becomes ineffective, as cancer cells are desensitized to radiation when they're being bathed in sugar.

> *"I think about all the patients who are metabolically unstable, metabolically inflexible, prediabetic … [Treatment at this time] basically means you just created a lot more damaged environment, a lot more possibility for mutating cells and a lot more possibility for recurrence and progression, simply because someone didn't take the time to just do a simple finger stick or blood draw just to see what your glucose levels were,"* she says.

Another factor that makes radiation ineffective is elevated vasoendothelial growth factor. Again, a simple blood test can help you assess how likely it is that treatment with radiation will be successful. Winters recommends patients undergoing radiation to spend a few weeks or months preparing their body for radiation, focusing on lowering insulin growth factor (IGF), hemoglobin A1C and glucose.

She may also add in certain radio sensitizing agents, such as melatonin or astragalus, to improve therapy response. Radiation combined with hyperthermia done on the same day has also been shown to dramatically improve results. With regard to chemotherapy, Winters is a strong advocate against the conventional maximum tolerated dose approach.

"When you do it at that level, you not only create a cytotoxic direct cell kill, but you actually simultaneously enhance an immune response. The way we do chemo today obliterates the immune system. And the only way you can really overcome cancer and stay in … remission … is with a functioning immune system."

Instead, she recommends using chemo at metronomic or fractionated levels, giving it at about a tenth of what would normally be given, which can be done with great effect provided the patient is sufficiently prepared through nutritional ketosis and other aids.

"We don't guess," Winters says. *"We actually put together a very precise, bullseye approach to each and every individual. We continue every three months while they're in the cancering process.*

Until their trifecta is perfect, we continue to assess and we continue to tweak the treatment because those cells, once they've been exposed to a new treatment over a short period of time, typically three to six months, they will have morphed and mutated into an entirely new animal. We have to be a few steps ahead of that process each and every time …

We can't hit every single pathway with chemotherapy, or it will kill the patient outright. But there are things like the ketogenic diet, which impacts all 10 of the hallmarks of cancer simultaneously, thereby enhancing the effect of whatever therapy you overlay on it.

None of these therapies should ever be considered individually, nor is there ever going to be such a thing as a single magic bullet for cancer. That is where we get seduced by the pharmaceutical industry and even the nutraceutical and alternative medical industry, to think there's one cause and one cure for this process. It is just that. It is a process and it's just as unique in each of us as our fingerprints."

Addressing Cachexia

Now, when a cancer patient experiences cachexia (loss of weight and muscle mass), testing becomes crucial. As noted by Winters, "being skinny will not kill you, but being cachectic can," and you cannot tell whether someone is cachectic or not simply by looking at them.

> *"We do that when we start to see the weight come off on a scale and folks go in for their chemotherapy. Doctors freak out. Their team starts to tell them, 'No matter what, don't lose more weight. Eat, eat, eat, eat, eat.' Yet, cachexia is an inflammatory, cytokine-driven process. It's very much driven by sugar. It's inflammation and metabolic imbalance.*
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> *The worst thing you can ever give a patient with cachexia is Boost, Ensure or total parenteral nutrition (TPN). Actually, on many cancer wards, TPN is basically known as the beginning of the end. When you look at the first ingredients of all of those … it's highly synthetic, highly toxic, four different types of sugars … gluten and all types of things that kick up that inflammatory process even more."*

To assess whether a patient is in cachexia, Winters uses a metabolic panel that shows protein, creatinine, calcium and albumin. Specifically, if protein is below 7 and albumin below 4, then the patient is slipping into sarcopenia and metabolic wasting, which is part of the process of cachexia.

Importantly, if you are in cachexia, sudden refeeding with sugar after not having eaten anything for some time can literally kill you. This is known as "refeeding syndrome." It's a very dangerous medical condition that can rapidly shut down your organs. Cachexia itself is also very concerning, and actually kills about 40% of cancer patients, according to Winters.

> *"We see this a lot in cancer wings around the world. My patients, interestingly enough, patients who have come out of cachexia the best were those who we were able to safely fast or safely kick into ketosis, whether it was exogenous ketones, or start to slowly increase their fat intake to what was tolerated, because the nature of cachexia is an*

absolute loss of hunger," Winters says.

"Thanks to things today, such as medical marijuana, we can often restart their endocannabinoid system and re-up their ability to have hunger and kick in that part of the brain that has been shut down with a state of cachexia and actually stabilize them and then reverse it. This is a condition that is not reversible by Western standards …

I try to keep patients between 0.8 and 1 grams of protein per kilogram in cancer patients normally. But when cachexia hits, we start to go up by a couple of tens of a point every few days. We might go 1.2 grams, 1.5, 1.8 or 2 max. I don't go above 2 [grams]."

More Information

This extensive and detailed interview contains far more information than I can provide here, so if this is a topic of interest to you, I strongly recommend listening to it in its entirety. In closing, Winters says:

"You know, a few years ago, I would not have even had an opportunity to sit down with a general family practitioner and have this conversation. And yet, today, every week I'm speaking with conventional oncologists all over the world that are being, frankly, kind of pushed, coerced or forced by their patients to have a consultation with me on their behalf.

At first, they're a bit resistant, until they realize that I'm simply trying to enhance their outcomes. That I'm not trying to do an either/or. I'm trying to help them understand that the tools in their toolbox can be used differently and can be used a bit more effectively and even more safely.

It's taken things like some of these tumor cell assays and blood cell assays, like Biocept, Guardant360 or FoundationOne, to help them start to have a common language to understand that there are more targets to address than simple standard of care chemotherapy radiation or surgery …

[It] has really changed the conversation. We're all more in-dialogue versus an either/or process … I think that it's becoming a pretty cool, accessible, appreciated strategy among my colleagues.

It's a lot of fun to see lightbulbs go off and to see them put together all the pieces of their life and education, coming together at once to realize they actually do know this stuff. They just have never quite forayed it or put it together in this way that can really change how their patients are being managed …

No. 2, the limiting factor. For instance, I have a doctor I speak with a lot from University of California San Francisco [who is] very up in the field of this. The problem is, ironically, if he recommended metronomic, which is the lower fractionated dosing of chemotherapy, to his patients, it would not be covered by insurance.

How insane is that? That is considered off-label drug use … It is not considered standard of care; therefore, it is not covered by insurance.

Unfortunately, where we are in this moment, which I am on a mission to change, is that you will likely have to track down people out of network, out of pocket, to get the proper treatment, to actually test, assess and address your cancer to your biochemically unique self to have a good outcome. That sucks, but that's just the way it is right now."

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**," which outlines her process in some detail.

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. It gives a lot of the information shared in this interview.

Your clinician will need to go to the doctor section to sign up for a consultation. “It breaks down exactly what’s required — those five labs we discussed,” she says. “Any other relevant data, testing, imaging, anything, I would get it all.” As the patient, you would also be asked to create a chronology of significant events of your life that led to your diagnosis.

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. Even if you don’t do anything with your consultations, it certainly would not hurt to do that first. It’s relatively inexpensive, and will give you a firm base of understanding of where you are and what’s going on in your body.