



## Understanding Cancer Diagnostic Blood Tests

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**Tamara Lobban-Jones:**

Hello and welcome to this Ask the Expert webinar, "Understanding Cancer Diagnostic Blood Tests." My name is Tamara Lobban-Jones. We've received your questions, and we're going to do our best address them.

Our featured guest has taught hospital training programs, graduate programs, medical school students all over the world. In her 35 years as a professor, she has taught over 10,000—yes, you heard me right—10,000 non-science majors, and she also serves as Editor-in-Chief at the American Society of Clinical Laboratory Science taking time out of her busy schedule to personally answer—dozens upon dozens of questions submitted by patients daily.

**Dr. Leclair:**

It's a privilege to talk to everybody today, Tamara. Thank you.

**Tamara Lobban-Jones:**

Dr. Leclair, in our ongoing lab test series featured on Patient Power, we've learned about dozens of cancer diagnostic blood tests, and there are various things that the values are impacted by, whether it's dehydration, running up and down stairs, extracurricular activities, these can cause the values to fluctuate. And I know we've also—you've also taught us that timing is everything.

Can you give us a brief overview of the cancer diagnostic tests you use today and kind of help us understand why they're so critical to a cancer diagnosis?

**Dr. Leclair:**

Okay. That's a good three-credit course in graduate school, but we're going to try and do this a little bit more tersely. Try and think of laboratory tests in three different levels. The first level would be introductory or screening test. The second one would be more of a let's follow this down for a little bit, see where it leads us. And then finally, typically the more expensive, the actual diagnostic tests.

So if we start with that first bunch, the general screening, we've all had them, we all know them to a certain extent, and that would be things like a common liver panel or the common metabolic a panel that you might have in a chemistry setting or a CDC. And the things that a physician is looking for generally at that level is, is there anything that looks really odd? Is there something that I need to really look at more closely?

For example, a lowered white cell count or a lowered hemoglobin count or an increased enzyme in the chemistries would cause a physician to say, gee, do I have an explanation for this? Oh, yes, they have a viral disease. Oh, yes, they had recent surgery, something like that. Can I explain these anomalies? If I can't, then I need to go to slightly more specific second-level kinds of tests.

And the one probably that everybody knows the most about is LD, lactic dehydrogenase. It's an enzyme that's found in every cell in the body. It should be inside the cell, not in the bloodstream. But if there's a lot of cell turnover, if there's a lot of cell damage or death, then more of it's going to leak out into the bloodstream, and that would be an indicator to a physician that something somewhere is definitely going on. You have to look further or more deeply into the situation. So you've got screening tests and then secondary tests.

And then finally you've got typically the ones that take the longest, typically the ones that are the most expensive, typically the ones that most people are nervous about, which would be the genetic tests or the flow cytometry tests or tests that are specific for maybe only three or four different kinds of diseases. So you have to kind of think about these in terms of layers of thinking or of process.

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