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### Advancements in Cancer Screening Technology: Multicancer Early Detection

#### Announcer:

You're listening to ReachMD, and this episode of Project Oncology is sponsored by GRAIL. Here's your host, Dr. Charles Turck.

#### Dr. Turck:

This is Project Oncology on ReachMD. I'm Dr. Charles Turck. And joining me to discuss unmet needs and cancer screening is Dr. Lincoln Nadauld, an oncologist and the Vice President and Chief of Precision Health and Academics at Intermountain Healthcare. Dr. Nadauld, welcome to the program.

#### Dr. Nadauld:

Thank you, Dr. Turck. It's a pleasure to be here.

#### Dr. Turck:

To start off, Dr. Nadauld, would you give us an overview of current cancer screening methods?

#### Dr. Nadauld:

Sure, there are currently four cancer screening methods as recommended by the U.S. Preventive Task Force. Those include breast cancer with mammograms, colorectal cancer with colonoscopies and other tests, lung cancer with low-dose CT scans, and cervical cancer with pap smears. Some of our colleagues may wonder about prostate cancer and the PSA test. And currently, that is recommended to be an individual decision between patients and their provider.

#### Dr. Turck:

Are current screening methods contributing to early detection? Or can they result in missed or delayed diagnoses?

#### Dr. Nadauld:

These screening methods are effective in detecting cancers. Mammograms, colonoscopies, Pap smears, low-dose CT scans are all capable of detecting their respective cancers. And that's why they're recommended. That said, they all are imperfect. They don't always detect cancers as early as we would like them to. They're not 100 percent sensitive, they don't detect all the cancers out there. And unfortunately, we have all seen cases where some of these screening tests have missed cancers, and patients have had a delay in diagnosis because of that. So, it would be ideal to have a screening test that can detect multiple cancers instead of just one and can detect them at the earliest possible stages in a minimally invasive fashion.

#### Dr. Turck:

Taking a look at some of the limitations of current screening methods, what more could you tell us about unmet patient needs, the burden the patients face, and the risk of false positives?

#### Dr. Nadauld:

You know, there are a lot of unmet needs currently. For example, access to screening tests is a real challenge. Patients all over the country live in locations where they don't have ready access to mammogram or colonoscopy or low-dose CT scans. So, while those methodologies work, they're not ubiquitously available.

An additional challenge is the associated sensitivity and performance of those tests. We find at times that they can produce false-positive results which can be very stressful for patients. So, I would like to see an improvement in testing technology that lends itself to broader access that is easier to implement and has lower false-positive rates. That would I think benefit patients in the end.

**Dr. Turck:**

For those just tuning in, you're listening to *Project Oncology* on ReachMD. I'm Dr. Charles Turck, and I'm speaking with Dr. Lincoln Nadauld about current cancer screening methods, unmet needs, and missed or delayed diagnoses.

Dr. Nadauld, let's talk about some of the multicancer diagnostic technology and development. What can you tell us about multicancer early detection, or MCED?

**Dr. Nadauld:**

Multicancer early detection refers to a whole emerging group of technologies that are capable of detecting cancers at a very early stage, typically through a simple blood draw. And this takes advantage of recently understood scientific principles that cancers will shed their DNA into the peripheral blood. So as a tumor is growing, and some of those cells are dividing or dying, excess DNA will show up in the peripheral blood. And we now have the ability to distinguish between DNA that has come from a cancer and DNA that is a patient's normal DNA. The end result then is that we can draw blood in an individual and take advantage of these distinctions and see if a patient has DNA circulating in their peripheral blood that has come from a cancer.

Some of these, the emerging tests, even have the ability to predict the tissue of origin. So, in one version of this technology, you can draw blood on a patient receive a result that says cancer is detected or cancer is not detected. And in the case where cancer is detected, you can even receive a prediction that says this cancer is predicted to be arising from the colon, the breast, or the lung, etcetera. So, it's very exciting. Many people refer to this technology as liquid biopsy, which again just refers to the notion of drawing blood, and then coming to predict the diagnosis of cancer based on analyzing the DNA in that blood. This is unprecedented. It's absolutely exciting. And I believe it holds the potential and promise of completely transforming the way we screen for and diagnose cancer.

**Dr. Turck:**

Are there any other benefits of early detection? What are the effects of adding MCED technologies to traditional methods of screening?

**Dr. Nadauld:**

You know, if we can add MCED to traditional methods, and in fact, that's how these technologies are currently being studied. I was a principal investigator on one of the clinical trials evaluating one of these technologies. And they are meant to be used in addition to the currently recommended screening modalities. So, for example, if a patient is indicated to have a mammogram or colonoscopy or Pap smear or low-dose CT scan, they should continue to have those. In addition, the current clinical trials are evaluating the use of these multicancer early detection technologies in addition to those standard methods. And we're finding that, in fact, these liquid biopsy methodologies, these multicancer early detection tests can detect cancer earlier, and that results in more saved lives. It reduces the costs associated with treating cancer. And we can detect more patients that have cancer.

For me, as an oncologist, that is extraordinarily exciting. I grow tired at times of having to talk to patients about their metastatic advanced incurable cancer for which we can only provide palliative care. Instead, with this kind of technology, we are now facing a reality where we can detect cancer at early stages where it's curable. And to me, that is thrilling.

**Dr. Turck:**

And finally, Dr. Nadauld, what recommendations do you have for oncologists considering MCED technologies for their practices?

**Dr. Nadauld:**

Well, first I recommend that all oncologists, and really all primary care providers, become very familiar with this kind of technology and these tests. These, I believe, will be broadly adopted. I work in a health system where we are currently developing pathways to adopt these technologies for application to our population of patients. We anticipate that our oncologists will be seeing patients where their cancer was detected using these tests. Our primary care providers will be prescribing these tests to their patients as an additional screening modality to be used in combination with currently recommended screening tests. So just developing familiarity, understanding them, and recognizing these, I believe, will become part of standard practice very soon. Those are important principles for our colleagues in oncology in primary care and across medical disciplines to understand.

**Dr. Turck:**

Well, what are those thoughts and recommendations in mind, I want to thank my guest, Dr. Lincoln Nadauld, for joining me to discuss unmet needs and developing technologies in cancer screening. Dr. Nadauld, it was great having you on the program.

**Dr. Nadauld:**

Thank you, Dr. Turck. My pleasure.

**Announcer:**

This program was sponsored by GRAIL. To revisit any part of this discussion and to access other episodes in this series, visit [ReachMD.com/ProjectOncology](https://ReachMD.com/ProjectOncology) where you can Be Part of the Knowledge. Thanks for listening.