Hope, Hype or Harm? What We Know About New Cancer-Screening Tools

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Image from Prenuvo

Companies claim they can catch cancer sooner with new blood tests and full-body MRI scans. What are the risks and benefits?

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Dan Gorenstein (DG): Two new screening tools are promising to catch diseases earlier than ever before...

Montage: I had no idea I was at risk for cancer. // He was shocked when the results came back positive. // The Galleri test caught this for me in the nick of time.

DG: A full-body MRI scan [and] a blood test to detect more than 50 kinds of cancer — people are getting psyched!

News Clip: Take care of something early [and] you can nip it in the bud and then live forever. Isn't that our dream to live forever? Never die!

DG: But is knowing more about what's going on in your body always a good thing?

Today, a primary care doctor breaks down what we do and don't know about this new wave of screening tests — and the unintended consequences they could have.

From the studio at the Leonard Davis Institute at the University of Pennsylvania, I'm Dan Gorenstein. This is Tradeoffs.

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DG: The 1976 Western the Shootist, starring John Wayne, captures a near universally dreaded diagnosis.

***Doctor**: Every few days I have to tell a man or a woman or something I don't want to. I've been practicing medicine for 29 years and I still don't know how to do it well.*

***John Wayne:** Why don't you just say it flat out?*

***Doctor:** Alright, you have a cancer. Advanced.*

DG: For decades, scientists and doctors have been searching for ways to catch and treat cancer sooner. Yet 600,000 people are still dying from the disease every year. About 70% of those deaths are caused by cancers we have no way to screen for, says Harvard researcher and primary care doc Ishani Ganguli.

Ishani Ganguli (IG): It's understandable that people would want some tool to be able to find that earlier.

DG: That's exactly the allure of these two new tools — a full-body MRI and a kind of all-in-one cancer blood test.

The makers of these screening tests claim to deliver what's long been a medical holy grail. In fact, one of the companies has literally taken the name GRAIL — a promise to catch more kinds of cancers sooner. Both types of tools are starting to pick up customers.

Prenuvo Ad: My name is Marzia and this is my Prenuvo story...

DG: The first is full-body MRI scans...

Prenuvo Ad: At Prenuvo, we work to perfect whole-body screening...

DG: The companies selling these scans advertise they can catch a whole bunch of stuff.

Prenuvo Ad: Brain aneurysms, tumors...

DG: Even cycles of your life.

Prenuvo Ad: It let me know I was in menopause, and I was like, what?!

DG: They're not covered by insurance but companies like Prenuvo are offering them directly to consumers for around $2,000 bucks a pop.

DG: The second screening tool making waves is a kind of blood test that looks for cancer cells lurking in your body. One company claims it can catch more than 50 types of cancer with a single blood draw. The technology has even captured the attention of President Biden.

Biden: Imagine the possibilities: A simple blood test during an annual physical that could detect cancer early when the chances at cure are best.

DG: Medicare and a handful of private insurers are also giving this test a serious look. For now, though, most patients will pay the full cost — about $900 — out of pocket.

Given the buzz around these two technologies — and all the hope — we asked doctor Ishani Ganguli to sit us down and give it to us straight. What's good? What's bad? And what's still unknown about these new tests?

So okay Ishani, if you go get one of these MRIs or blood tests, what's the best case scenario? And what's the worst?

IG: Yeah, the absolute best case scenario is that the test catches a specific type and stage of cancer, or another problem that, if caught and treated early, could help you live longer and better.

But the tests are also likely to find imperfections that are inconsequential, ambiguous or outright false especially if you go looking in a big group — let's say, everyone over 50. And these imperfections often compel a cascade of extra scans, biopsies, even surgeries that can be costly, time consuming, stressful and possibly physically harmful to you. So that's the big downside. You go on a kind of wild goose chase, and in the end, you don't have cancer and you would have been better off not going down that path in the first place.

DG: We don't yet have much data on the pros or cons of these tests, but what we do know about the downsides is enough to worry Ishani.

For full body MRIs, she estimates at least 1 in 4 scans will find something — a cloudy lung, a funny looking liver. And for the leading cancer detecting blood test, based on the company's own data, nearly 2 out of 3 people who get a positive result won't have any cancer found on follow-up.

And trying to find those cancers — and then figure out which lumps are scary and which are fine to leave alone — can send docs and patients down a medical rabbit hole or what Ishani calls a "cascade of care."

IG: We want to have certainty about our health. We want a clean bill of health. We want to feel like we understand our bodies. But the truth is that there's a lot of uncertainty. And so one of the reasons why these cascades happen is that there's this sense that we should be certain and then you chase that

certainty even though there's no guarantee of it.

DG: And chasing that certainty, right Ishani, can get pretty expensive pretty fast. You've done research in this area that makes the point really well. I'm thinking about your paper on tests related to cataract surgery. Can you break that down?

IG: So we've looked at a heart tracing called an electrocardiogram (EKG) that [is] often done before cataract surgery. Now cataract surgery is a quick procedure, very low risk. So there's really good evidence that doing these what we call preoperative tests, like electrocardiograms, before these low-risk surgeries do not help with lowering your risk during the surgery or help improve your outcomes after the surgery. Yet it's just really commonly done out of this sense that it may help.

And so what we found when looking at the downstream consequences of these tests is that the EKGs themselves cost Medicare on the order of $3 million a year, but the money spent on the care that follows — the cascades is 10 times that. [It's] about $35 million in our estimates.

DG Wow! 10 times? $35 million?

IG: Yeah, just for this one example. So that gives you a sense of just how big a ripple effect one little test that sounds harmless can have. So you can imagine the cost that could follow if something like a cancer-detecting blood test or a full-body MRI were approved by Medicare. It could be really massive in terms of cost.

DG: Yeah, I mean, that's like billions in extra spending. Ishani, I'm wondering about the mental toll this takes on people. Have you seen that play out for patients?

IG: Yeah, I think it just changes your outlook on life. It gives you an added layer of worry, of anxiety, as you move through the world. I do have a number of patients who have had a finding that's likely harmless but can be terrifying to somebody who has it in their body — like a tiny brain tumor that doesn't grow or a brain aneurysm — and I've seen how this knowledge can color their decisions about seeking care or triggering worry about, you know, a headache that they have. So it's a very real burden that it places on patients.

DG: What about for you as a doc, Ishani, like, how hard is it to navigate these test results with patients? I've got to think there's so much emotion and fear plus there's, like, the complicated statistics stuff going on — what's a false positive or what's not? And then just a whole lot of stuff we still don't know like will this lump grow or not?

Is there any research out there that gives us a sense of how well equipped doctors are to have these sorts of conversations? I mean, these are tricky about the tradeoffs of these sorts of tests.

IG: So I would say that the big factors here are the time to have the conversations and then the information to have the conversations. So, you know, we did a study recently that looked at this. We were trying to improve the quality of conversations about medical testing between primary care doctors and their patients.

So we tried a number of ways to encourage these conversations. We showed doctors how their test ordering compared to their peers, and we also gave them scripted language about what to say about tests. On the patient side, we sent a link to a website right before their annual with a video, with a quiz — various ways to teach them about medical tests, you know, what the upsides and downsides are.

DG: And so basically what you're sort of setting up in this test, it sounds like, is you're trying to improve patient literacy around tests and you're trying to help doctors think more deliberately about tests. So what ultimately did you guys find?

IG: Well, the results were disappointing. In the end we found that our intervention didn't work. There was no difference in the conversation quality between the folks who got the materials and those who didn't.

DG: So you're telling us you give doctors information. You give patients information. It doesn't really make a difference. So connect that finding to these newer crop of tests that are making all of these promises.

IG: Yeah, so it's concerning, right? We know that primary care visits are already too short. There's so much packed into these visits already. So it's hard to imagine how doctors are going to fit in the nuanced conversations that are so critical about yet another test that has serious downsides to consider, let alone handle the downstream tests and other cascade services that are likely to follow.

DG: To underscore the point: A paper from the Journal of General Internal Medicine found that it already would take a primary care doc 27 hours — more than a full day — to discuss and act on all the best-practice guidelines out there.

After the break: the burning questions Ishani still has about these new tests and some far less sexy ideas for cutting cancer deaths.

MIDROLL

DG: Welcome back. We're talking with Ishani Ganguli, assistant professor at Harvard Medical School and a primary care doctor at Brigham and Women's Hospital.

Ishani, you've made us a nice kind of pro-con list for us. The con side, I'll say, is definitely a little longer at this point but I just want to ask: Is there a single patient right now, today, that you'd order either of these tests?

IG: Full-body MRI, no. I don't think it's good for patients. I don't think it's good for doctors.

DG: And what about the blood tests?

IG: For the blood tests, I think this is a more nuanced conversation. I think if you have a number of cancers in your family, it may be worthwhile to pursue it in a sort of really highly supervised way. I think when it gets more complicated is when you're thinking about using these for a general population, and there, we just don't have the evidence yet. And there's a lot of reasons to think that the downsides might outweigh the upsides.

DG: Okay, let's set aside the full-body MRIs, which you seem convinced aren't not going to catch on in a serious way and focus on the blood tests. What other evidence, Ishani, would you want to see in order to begin ordering these tests? Like what's on your wish list?

IG: The first piece of information that is not yet clear is whether these cancer detection tests improve cancer outcomes or overall patient survival. That is the goal of them and that would be the first question I'd like to see answered.

DG: Okay, do these tests actually lead to more people with cancer living longer — or at least happier, healthier — lives.

IG: The next piece is to have more information around if there's a positive signal on a potential liver cancer, for example, I would want to understand — based on evidence — what series of steps I should take as that patient's primary care doctor to get them the fastest, most accurate final diagnosis.

DG: Because if you don't have that information, then [what]?

IG: Then we're floundering, right? So let's say, you know, the test is positive, you do an MRI to follow it up and there's nothing there. What do you do next? What's the right interval for follow-up screening? All of that's not clear yet.

DG: Also on Ishani's list: more data on the cost effectiveness of these tests and all the care that comes after them, plus more info on other measures that matter to patients like their quality of life, anxiety [and] how much more time they spend in hospitals and clinics doing follow-up because of these tests.

Ishani, I just want to take a minute to talk about equity. We know, for example, Hispanic and Native people are 15% less likely to get screened for colorectal cancer. And screening rates are also much worse for people with low incomes. If these tests prove to be valuable — catching cancers early — do you worry disparities will only get worse?

IG: Yes. I think that the upside of a blood test is that it may be more accessible to some folks than a more involved invasive test for a certain cancer — for example, a pap smear, which requires a full office visit or a colonoscopy, which requires a lot of preparation and having a home to prep in and things like that. However, overall I would worry about equity and that these new tests would worsen disparities in that they're likely to be disproportionately used by the folks who already have greater means to begin with, who are already better linked into care. And so the people who are being left behind with traditional cancer tests are likely to be left behind the same way with these new tests.

DG: Right, and that seems even more likely to happen if a positive test requires a bunch of costly follow-up care that might not be covered by insurance to confirm the results.

IG: Absolutely.

DG: Okay, last question, Ishani. President Biden, with his Cancer Moonshot initiative, has set a high bar.

President Biden: The goal is to cut the cancer death rate in half in the next 25 years...It's bold. It's ambitious but it's completely doable.

DG: Let's say we get more evidence and it confirms your fears that these new screening tests do not save much money or that many lives. Where should docs and insurers be putting their attention instead if we want to hit that Moonshot?

IG: I think it's all about the implementation of existing measures, right? The existing cancer screening tests like pap smears have lower rates of completion than we'd like. So there's a lot of patients who aren't getting those evidence based tests. I would want to see us hammer away at those, you know, 40, 50, 60% completion rates of what we already know to be beneficial for patients and bring that up. Like, those are low hanging fruit, but we're still far away from doing that reliably across the population so I'd start there.

DG: Yeah, let's do the blocking and tackling. Let's do the stuff we know works. Let's stop looking for the magic wand.

IG: Yeah, I will say I do appreciate the need for a little bit of both, right? You need to advance the field through some of these Star Trek-y kinds of innovations with the hope that one day if you study it thoughtfully enough and with enough evidence, you can make it helpful to patients. But we also need to double down on some of these non-sexy but really important ways of helping patients.

DG: Ishani, thank you so much for taking the time to talk to us on Tradeoffs.

IG: My pleasure.

DG: When it comes to full-body MRI scans the American College of Radiology agrees with Ishani, saying on their website that, "To date, there is no documented evidence that total body screening is cost-efficient or effective in prolonging life," and that these tests will "result in unnecessary follow-up testing and procedures, as well as significant expense."

As for the cancer-detecting blood test, a couple of serious studies are underway, including a randomized trial of more than 100,000 patients being run by the UK's National Health Service.

One way or another we will know a whole lot more soon. I'm Dan Gorenstein. This is Tradeoffs.

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Episode Resources

Additional Resources and Coverage of New Cancer-Detecting Tools:

Will a Full-Body MRI Scan Help You or Hurt You? (Dhruv Khullar, New Yorker, 1/12/2024)

How a Cancer Screening Blood Test Could Backfire (Soleil Shah, Tradeoffs, 10/10/2023)

Full-Body MRIs Promise To Detect Disease Early. Do They Work? (Science Friday, 10/6/2023)

Blood Tests That Detect Cancers Create Risks for Those Who Use Them (Gina Kolata, New York Times, 6/10/2022)

Episode Credits

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