

Vanderbilt Health DNA: Discoveries in Action
Season 2, Episode 3
Go Boldly: Stigma, the gut, and young adult colon cancer

Dr. Cathy Eng: I think the reality is that most young people feel invincible, right? So most of the time they've been healthy their whole lives. Some of them don't even have a primary care physician and many of them are either going into a higher degree or graduating from college or embarking on a new career. And so, things seem a little erratic in regards to their bowel habits, they don't probably think much of it.

Dr. Reid Ness: Once again, I want people to be bold in seeking care. At the same time, I don't want them to be reckless in how they live their lives. And denial is a form of recklessness when you think about it. Because you're again, denying the obvious road sign. I'm going to shut my eyes and say, "I don't see that, I don't see that," when it's obvious and it's there in front of you. So when life shows you something which is a real concern, crushing substernal chest pain, shortness of breath going up the stairs, blood coming out of orifices that blood should not come out of. You should seek immediate medical attention. And don't be fearful about what might be found. It's already there. It's not like it's going to go away because you ignore it. And we can help you in many times and hopefully let you get back to living your life to the fullest.

Dr. Maiana Byndloss: Things like the microbiome has emerged as an interest in human health, maybe in the past like 20 years, and it has exploded in the past 10 years. So for a long time, we didn't even consider that those little creatures that were living with us had any role in our health. But now we do know that by manipulating them or by understanding what they're doing in our body, we can actually create new treatments that will prevent human disease.

Clark Buckner: Today, we're going to dive into a topic that your parents probably told you wasn't appropriate for the dinner table. Not politics, poop. We're joined by four experts who think about gut health and colon cancer from different angles. An epidemiologist, a gastroenterologist, an oncologist, and a microbiologist. They'll talk about what you eat, what should raise alarm bells, and the shift in colon cancer that recently led to a lower screening age. One goal they all have is getting people to be aware of what's in that porcelain bowl and normalizing talking about, well, our bowel habits, especially if there's a change. Our first perspective is from epidemiologist, Dr. Andreana Holowatyj.

Dr. Andreana Holowatyj: There is a stigma associated with talking about colorectal cancer and that people sometimes think it's a disease for older people and that it can't impact young people. And that's a really important and urgent stigma to break because of the trends that we're seeing in the higher proportion. It takes like two seconds before you go and flush. So it's not like you need to write a journal or do a diary about it, but just that quick cognizant recognition of, okay, my body's doing okay. Or is this the change? You're looking for kind of an out of norm thing. And I think, yes, you can normalize talking about that because you're your best advocate. Go find that doctor, go to that clinic, talk to someone that you trust about it. Find just the way that feels safe to discuss it that doesn't make you go awkward.

Clark Buckner: Dr. Andreana Holowatyj is an epidemiologist with the Vanderbilt-Ingram Cancer Center who studies the gastrointestinal cancer burdens in adults under the age of 50 and the health disparities of those diseases. She and her team have mapped out hotspots for younger adults with colon cancer and like many others is working to understand what's going on.

You are listening to Season two of Vanderbilt Health DNA: Discoveries in Action. I'm your host Clark Buckner. And the reasoning behind the show's name is quite simple. The path to better health lies in our DNA. Discoveries in Action is about the big ideas and breakthroughs happening right here in Nashville, Tennessee, from Vanderbilt Health. Our drive to discover, care, learn and share is in our DNA. It defines who we are, just as your DNA defines you. And now back to Dr. Holowatyj. She shared with us that of those that get diagnosed with colorectal cancer, 1 in 10 are under the age of 50.

Dr. Andreana Holowatyj: So about one in every 10 patients diagnosed with colorectal cancer who are under age 50. Put that into perspective, for African-Americans, about one in every eight African-Americans is diagnosed before age 50. So I think that really illustrates that early onset course of cancer is not just one disease, that there are disparities, differences in patterns that could impact disease risk and outcomes that we continue to try and understand. So nonwhite races and ethnicities that have a twofold higher likelihood of being diagnosed with early onset colorectal cancer. Young men have an increased hazard of death or poor survival outcomes after an early onset diagnosis compared with young women. We don't fully understand these disparities or why different characteristics of these disease differs across some of these population subgroups. And so that'll be really important to understand in order to really shift into... You probably constantly hear of personalized medicine or precision medicine as a kitschy term. And to move into that kind of era of medicine requires us to understand what is actually underlying some of these different patterns to be able to optimize strategies and therapeutics to specific patients and not just to a disease.

Clark Buckner: A cancer journey is as individual as the person. No two are alike. But being a younger adult with cancer can throw milestone life events into sheer disarray. How do you date? Will you be around to have kids? Can you have kids? What about landing a new job or buying a house? Dr. Cathy Eng, an oncologist who specializes in colorectal, anal, and appendiceal cancers watched as her patients grappled with those questions and many more. Her experience treating and helping younger adults spurred her to launch the young adult cancers program at the Vanderbilt-Ingram Cancer Center. She and her colleagues want to help people diagnosed between 20 and 45 years old as they negotiate their lives. It's mentally exhausting. Several patients and people in headlines weigh heavy on her mind.

Dr. Cathy Eng: Some of the individuals looked very healthy. I do tell young individuals, because I have lectured at a few younger audience venues. And I kindly remind them, look at Chadwick Boseman. Extremely healthy looking. Black Panther, a wonderful movie that we all loved, right? And he had stage four disease and no one would have guessed that by looking at him. And that's the case. Many of them look very healthy, but they have had some symptoms for a few months. They were just either not

recognized or attributed to irritable bowel disease or hemorrhoids. And so once again, it goes back to the fact that people are being diagnosed in later stages because the symptoms are not being appreciated. And so I think it's just really important to know your body. If something is just not feeling right, you should discuss it with your parents, your best friend, your family member. Just bring it up.

Dr. Reid Ness: Well, so why would you not talk about it if you're having a problem? And the reason you wouldn't do that is because of fear, social stigmatization. And the question is, why should you live your life in fear? I'll have to paraphrase Helen Keller's famous line about safety is an illusion. It is not found in nature and is not common among the sons of men. Life is either a daring adventure or nothing at all. So if you see something that is abnormal, instead of being fearful about, instead of not talking about it because you're afraid that you might offend your friends or be rejected by others, the answer is, go forth boldly. Meet your enemies. Don't be afraid of what others may think. Don't be afraid of what may occur, what you might find. Denial is not a good defense. It just puts off or prevents you from getting the help and treatment that could be lifesaving.

Clark Buckner: Dr. Reid Ness is a GI specialist with the Digestive Diseases Center. He's on the advisory board of the young adult cancers program with an emphasis on prevention.

Dr. Reid Ness: The average colon cancer has been present for two to four years before it's diagnosed and has been symptomatic 6 to 12 months before somebody seeks care. It's interesting because minimization is a very healthy mindset until it's not. So throughout life you can get away with, I'll just not do that. I won't worry about that. I won't worry about that seventh chicken leg I just consumed, until you can't ignore it anymore. So there've been a lot of studies trying to look at changing people's diets to alter their colorectal cancer risk. It turns out that that's very difficult, if not impossible to do for an adult. We know that societies have higher cancer rates based upon their dietary practices, but it's hard for an individual to change course. So if you're going to really alter someone's risk of cancer because of their overall diet, you have to affect them as children. You have to start changing how they eat when they're very young.

And to be fair, to be honest, this was not a problem throughout most of history. People having any food at all was a plus thing, a good thing. And we are trained to eat food when it's available. Why would you not when you pass that tray of deviled eggs? Why would you not pick three or four of them off? There might be fewer later and you don't want anybody else to eat your deviled eggs, right? We are conditioned and genetically programmed to eat food when it's there. Who would have conceived of a time when food would be as plentiful it as is now? We are fighting our nature in not eating too much. You have to rigorously train people at an early age to be conscious of, don't eat too much. We're not going to tell you, you can't eat barbecued food, which is a risk factor for colon cancer. Because of course, cooking meat that's been cooked over smoke is going to have carcinogens in it. We're not going to say that you can't do that at all, but please don't subsist on a diet purely of that. All things in moderation.

Clark Buckner: Diet in the dictionary sense, meaning the foods that are habitually eaten, not a pop culture crash course to drop weight, is the focus of Dr. Maiana Byndloss's research. She's a microbiologist in the division of pathology, microbiology, and immunology, who is studying how what we eat starting from when we were kids, so long before we were planning meal preps on Sundays, impacts our microbiome, or colonies of microbes in our guts. And more long term, our health.

Dr. Maiana Byndloss: What we're interested in and interested in understanding is the reasons why there is an increase in colorectal cancer, specifically in a younger population. And we're very interested in this idea that things that happen during your life may increase the risk. And when I say that, we're thinking about the diet that you eat, or if you've had previous antibiotic treatments, we think that those things interfere with the health in your gut and make you more prone to have colorectal cancer early in life.

And one of the ways that we think this is happening is through the changes that those factors have in the microbes that live in your gut. So in the bacteria that live in your gut. We think that the disruption of those healthy, those good microbes that live in your gut, because of a bad diet, when we're seeing a high fat diet or previous use of antibiotics, may be increasing your risk for colorectal cancer early in life. And it turns out that when you disrupt that, how you increase their chance of getting diseases, such as colorectal cancer, inflammatory bowel disease and other diseases like that. If you think about ants in the context of the whole earth, they're so small that you may not think that they have a big impact in the whole ecosystem, but they actually do help. And they're actually trying to fix the whole ecosystem, which is your body and your gut, from the inside.

Clark Buckner: Talking to Dr. Byndloss was the first time I'd ever thought about having little creatures in my gut. And not to mention that it could be working for me or even possibly against me. She and her team are exploring the connection between a high fat diet, the gut and cardiovascular disease, antibiotics in the bloom of colon cancer associated enterobacteria CA, and the impacts of long-term weight gain. It's changed the way I think about food and what it does once it's in your body.

Dr. Maiana Byndloss: What I'm most excited about, the idea of using microbes to cure cancer or to both prevent and cure cancer, that is farfetched, but can you give people beneficial microbes or products or things that those good microbes produce and use that as a treatment against colorectal cancer, or use that as a way to prevent colorectal cancer. It's kind of the idea of probiotics, but probiotics designed specifically to prevent or to treat people that are at a higher risk of developing early onset cancer. We say that the gut microbiota is like an organ in our body. The way that we think is those microbes are another organ in your body. So you need the heart to pump blood. You need the liver to clean up toxins and you need your microbes to activate your body in a healthy way to help you become healthy. So they're just another organ, just like any other ones we have.

I think the takeaway from all of this is that decisions that you make early in your life may impact your health in the long run. And it's important to think what you're eating and if the medication that you're

taking is really necessary and start to think how that may affect your health through the small creatures or the microbiota that live in your gut. And the way that I think about it is, I'm from Brazil so we have a saying in Brazil that is saying, a soft water in a hard rock will hit long enough that will poke a hole. Because when you think about water, it's so soft compared to a rock that you think that the rock will always be strong enough to withhold water, but we know that that's not true.

We know that through rains and through storms, it molds and shapes the water. And I think that's the same thing that I think about diet. Every time you eat something bad or you're creating a little bit of a hole on your health, and as you keep doing it for a long period of time, that hole gets bigger and bigger, and then it gets harder to fix. That's why everyday decisions in terms of diet and in terms of the environment around you, not just diet like exercising and minimizing medication, that are not necessarily needed, all those things together will have an impact on your health and long term.

Dr. Cathy Eng: The origin of colorectal cancer I think is still multifactorial. But I'm very, very intrigued by the consideration of thinking about not only dietary habits, but what were you exposed to? What kind of antibiotics were you exposed to as a child? Were you obese as a child? How does that impact your natural flora? Once again, it's a hypothesis, but we all know that colorectal cancer stems from a polyp, which may take 5 to 10 years to grow. And that's why a colonoscopy is so important because if a polyp exists, you can remove it before it has the time to change and mutate. So if you think about it, if you have a patient like in my clinic where they're young, they're mid twenties to early forties. So that means that polyps started off maybe in their teenage years up until their mid thirties.

But I think that people are just raised in a different fashion. And I'm not exactly sure what it is specifically environmentally that's occurring, but I think something is definitely occurring that may have an impact on our young adult patient population. We just haven't pinpointed it. Once again, it can be completely multifactorial. I'm sure Dr. Byndloss discussed obesity and potentially impacting in children and as they develop and the impact on the microbiome. And currently we only have identified certain microbiome flora, but I'm sure there are others that she's analyzing. There's just not been a lot published that have been determined to be definitive as causality for colorectal cancer in young adults.

I think the most important thing is number one, their parents should also recognize the symptoms because that would help because many of them are obviously still under their parents' insurance provider. Number two, we really need primary care physicians to recognize that this is an issue and what are the symptoms. And I think they shouldn't just presume that that young individual in front of them is invincible and there's no way that they can not have cancer. Because in fact, many of my patients, which you've also said some of the individuals you have seen pass away, looked very healthy. And that's the case. Many of them look very healthy, but they have had some symptoms for a few months. They were just either not recognized or attributed to irritable bowel disease or hemorrhoids.

So once again, it goes back to the fact that people are being diagnosed in later stages because the symptoms are not being appreciated. And so I think it's just really important to know your body. If

something is just not feeling right, you should discuss it with your parent, your best friend, your family member. Just bring it up. I guess the question that I would like to have an answer to when I wake up in the morning is, are we going to be able to find a cure for these young patients with surgically unresectable disease? That's what I would love to have an answer for because I see so many of these young, amazing individuals that I've developed relationships with and come to know their family, their spouses, their whole life story. I think if we could diagnose them earlier, as soon as they have some initial symptoms and they are aware of what the symptoms can be, then obviously they're going to have earlier stage disease and I could cure them. That's what I would like to see.

Clark Buckner: We all have to go number two. And what I've learned from our guests is that it's vital to know how you go and find the courage to ask questions of people you trust. Campaigns made it a lot easier to talk about breast cancer. And we're seeing movements across the world to break down the stigma around periods. Health is personal and it shouldn't be a taboo.

Dr. Andreana Holowatyj: It's easier said than done to break this stigma. You're exactly right. It can be super awkward. Nobody wants to be eating and discuss bowel function whatsoever. However, there is an urgency to it. The majority of colorectal cancers if caught early are curable. And so the idea of increasing awareness on this topic, making it more comfortable to discuss, or just finding ways to kind of educate even younger folks that if you're seeing a change in your bowel habits, if your stool looks different or something is wrong, do something about it. Find someone you're comfortable to talk to, have that conversation, find a provider that you trust because that conversation could save your life. And what we're actually seeing in the literature, in the science is that younger patients are actually diagnosed with more aggressive disease than folks diagnosed before age 50. If you think about it, right now the screening age is shifting down to 45 to if you're at average risk to get your routine colonoscopy because of this urgency in increasing incidents, but are very younger than that and have no indications to get a colonoscopy sooner.

You may be diagnosed later if you don't present with symptoms or signs as quickly. If you maybe think that that just was a fluke and nothing to worry about if you have that change in bowel habits or see blood in your stool or something like that, I think it's really important to educate that population as well, because for those who may not be eligible for this routine screening, that's part of the rationale for why they're being diagnosed at later stages and then may have poorer outcomes. And the one thing that often resonates with me when talking with survivors and those just newly diagnosed, they want to understand, why did it happen to me? I was healthy. I was exercising. I don't know of a familial history of cancer. So why did this happen to me? So you're right. It's an accumulation of exposures in different health behaviors over the life course.

This isn't something that just happens overnight and it's important to contextualize and consider. So think of it as kind of different tiers or layers. You have biology and genetics, which we've talked about, then you kind of spoon out or span out a little bit to individual factors. This is your health behaviors, physical activity, maybe the impact of stress, sex, but then that is also influenced by what we call your

built environment. So what's your neighborhood look like? What community resources do you have? Healthcare access? Where are you located? Even the potential impact that systemic racism can have in this case, in your built environment. And then step out even one level larger and now you're looking at the quality of care, the healthcare system, et cetera.

Dr. Reid Ness: We've also noted that there's an increased risk of colon cancer being ignored or obvious symptoms not being followed up on in certain minority populations, usually because of the stigmatization of having something put into your bottom to help find something. And once again, I would go back to what I said earlier. Don't be afraid of what might happen. Don't be afraid of social stigmatization. Go out and be a strong advocate for yourself. Live life boldly.

Clark Buckner: We're glad you tuned in to this episode of Vanderbilt Health DNA: Discoveries in Action, and we want you to come back for the next one. We're going to explore what being trustworthy can achieve when you're a research pharmacist, the director of the program for LGBTQ health, and when you're Vanderbilt University Medical Centers most senior health equity and inclusion executive.

For links to information about the guests, research and the young adult cancer center and colon cancer screening, go to listendna.com. You can also find us on Twitter, @VUMC_Insights and all of your favorite platform at Vanderbilt Health. And of course, don't forget to follow, rate and review the show anywhere and everywhere you get your podcasts like Apple Podcasts, Google and Spotify, we're there. Until next time, Vanderbilt Health, making healthcare personal

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