

## Surveilling Hereditary Colon Cancer

Webcast

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### **Introduction**

#### **Andrew Schorr:**

If there is a history of colon cancer in your family, as there is in mine, it is something that is very important to pay attention. There is a risk factor there. Learn what first-degree relatives diagnosed with colon cancer mean for you coming up on Patient Power.

#### **Andrew Schorr:**

Hello and welcome to Patient Power sponsored by the Seattle Cancer Care Alliance. I'm Andrew Schorr.

Well, all of us have our family histories. In my family my father would find that he would grow polyps in his colon and he would have colonoscopy and they'd snip them out, and fortunately they never developed into cancer. My mother was not so fortunate. She didn't have colonoscopy. She developed bleeding, didn't tell anybody. Developed pain, didn't tell anybody. Finally, when she went to the doctor and it was checked it was colon cancer that had advanced not just in her colon but spread to her liver. She lived four and a half years, but what if that had been checked earlier, had been discovered or if she had been having screening exams? Well, I think about this because obviously I wonder does this run in my family and do I need to be checked often. We're going to learn all about that, but as we said this happens in families, not all the time but some of the time.

For Navid Taaid, who is 40 years old from Renton, Washington, he kind of lived this story and to a greater degree than I have. So, Navid, your mother had a stroke, and then as she was recovering from that just a few years ago had blood in her stool. That turned out to be advanced colon cancer?

### **Navid's Story**

#### **Navid:**

Yes. I believe it was a stage III colon cancer. It hadn't spread that much yet, but years later it spread even further.

#### **Andrew Schorr:**

Now, then you noticed blood in your stool.

**Navid:**  
Right.

**Andrew Schorr:**

You go to the doctor. And we should mention your father is a physician as is your brother.

**Navid:**  
Right.

**Andrew Schorr:**

So your brother urges you, get checked. You get checked. They have colonoscopy. What did the colonoscopy for you show?

**Navid:**

For me it showed there was a rather large tumor in the colon, pretty much into the end of the colon. It was colorectal cancer, basically.

**Andrew Schorr:**

And so with that typically if it hasn't spread you cut it out, and hopefully if it hasn't spread there's not a need for systemic therapy, chemotherapy, and that's what happened to you, right? You had the surgery. For a while you had an ostomy and for a while your whole digestive tract was reconnected. You're feeling okay or not?

**Navid:**

Yeah, it took a while to recover because there was a large surgery, but, like you said, I was given the option. If I wanted to get chemo it might be an option, but it's not necessary, and so I obviously didn't choose it because nobody, like you said, ever chooses to go for chemo if they don't have to.

**Andrew Schorr:**

But you're recovering from the surgery, and obviously there's recovery in anything, but you're bowel movements were not getting back to normal, and that worried you.

**Navid:**

Exactly. For a whole year it was going nowhere. I had a lot of difficulty. I had to take laxatives all the time, and so I kept going back to other doctors and also the same doctor to see if there was anything he could do, and that's where we found about a year later that it was a polyp growing again that was cancerous.

**Andrew Schorr:**

So you get to be what I call a powerful patient, a yet more powerful patient, getting a second opinion. Eventually that brought you to the Seattle Cancer Care Alliance where they have a whole team devoted to GI cancers, of which colorectal cancer is among them. And that brings us to the man who became your doctor, a GI oncologist there, and that's Dr. Sam Whiting. Dr. Whiting is well known as being a colon cancer specialist. He's an assistant professor at the University of Washington

and also an assistant member of the Fred Hutchinson Research Center, a part of the Seattle Cancer Care Alliance.

Dr. Whiting, so first about the family connection, and then we're going to go on more with Navid's story. So mother, first-degree relative, discovered with colon cancer. So young man, really, like 40 years old, blood in his stool, that's more of a reason for concern or not?

### **Understanding the Family Connection**

#### **Dr. Whiting:**

Hi, Andrew and Navid, hello, nice you talk to you over the phone. Andrew, the patient who has symptoms that would be at least compatible with polyps or cancers in the colon who has a family history is absolutely more concerning than one who does not have a family history, and it's an important lesson that we learn over and over again with young people getting cancers that is are unexpected and then it turns out that there is a family member who had already kind of gone through the same thing before.

We look at the risk of an individual of developing colon cancer himself or herself, and if we set that risk at one for the average person, and that would be somebody with no family history, no particular risks, colon cancer is still of course very common so that would be roughly a six percent lifetime risk of develop colon cancer for this average person.

And then we say that they have a first-degree relative like their mother, as Navid did, who had colon cancer, that risk just like that jumps from one to two and a half. So a person is now two-and-a-half-fold more likely to get colon cancer because one first-degree relative had cancer herself.

And it actually goes up from there, as you can imagine, so we believe that cancers that develop early in life are a higher risk than those that develop later in life and are probably more associated with genetic characteristics that a person is born with rather than simply random events that occur over decades of living. So if your first-degree relative had colon cancer that was diagnosed early, say age 45 or younger or 50 or younger, we kind of debate that range, then your personal risk would be as high as three-and-a-half-fold greater than the normal. And if we're starting at six percent and we multiply that by three-and-a-half-fold, we now know that we're over 20 percent chance of a person developing colon cancer in their lifetime.

And then if it's more than one relative, so it's not just your mother but your mother and your father or your mother and her mother, then the risk can really go up into the four-fold or more range. And these are all for family histories where there is no known genetic problems. So we know that there are genetic syndromes that run in families where cancer is much more likely to occur, and those their risk of cancer can be extraordinarily high. But in this case we're talking just about people who there is nothing unusual about the family, there's no hereditary cancer syndrome

that's been diagnosed or known about, they just happened to have relatives who have had colon cancer and what it does to their own risk.

**Andrew Schorr:**

Well, I'm listening to this, and as I said my father had these precancerous polyps. His father had rectal cancer. My mother died of advanced colon cancer, so I'm listening carefully. Now, I want to just complete Navid's story for a minute because he became your patient. So you mentioned, Navid, that another polyp was found, and actually on further scan a spot was found on your liver where it was believed that colon cancer had spread there, and you ultimately had a laparoscopic procedure that I understand sort of ablated or burned that and had gone through some chemo before and a lot of chemo after, which you've just completed, right, Navid?

**Navid:**

That's correct. I just went through my 13th session of chemo.

**Andrew Schorr:**

And you're engaged and your fiancée is planning, Amanda is planning the wedding, so the hope is you can go on to a bright future. I know that's your hope and that cancer can be put, as I like to say, in the rearview mirror. But you've been through a lot.

Dr. Whiting, so we'll get to the latest in treatments in a minute, but so here's a man, and he was just 40. And so, you know, the guideline I always hear is like colonoscopy at 50. You wouldn't necessarily think to do it at 40, so how do we know, especially when you don't really have genetic tests like a blood test to say, oh, you've got this colon cancer gene?

**Genetic Tests and Screening**

**Dr. Whiting:**

Yeah, well, so it's imperfect, and even if we all follow the guidelines explicitly unfortunately I think cancers are going to be missed. But the general rule now would be that if you have a first-degree relative who had colon cancer that your own screening, rather than start at age 50, which is the recommendation again for the average person with no risk, your own screening should start ten years before the diagnosis of colon cancer in your relative and certainly no later than age 50. The tricky thing is, so sometimes, Navid, how old was your mother when she was diagnosed?

**Navid:**

I was just calculating. I think she was about 50 because it was ten years younger than me, so it was 60, and it was ten years ago so.

**Dr. Whiting:**

So she was 50 when she was diagnosed, so Navid would have been recommended, interestingly, for colonoscopy at age 40, and arguably that would have been too

late because he did have a colonoscopy at age 39 and he had cancer already. Which is a lesson I guess that even our conservative estimates are sometimes not conservative enough.

Arguably, it's never too early to have your first colonoscopy if you have a risky family setting, and there are certain times when I sit down with a patient and their brother or sister are in the room or there are children in the room and the patient is young and has had cancer and I just say to the relative, you might as well go do it now. Just get it out of the way and know you're clean or know you have polyps, and then you can set up your subsequent screening based upon the findings of the first screening. But again the normal guideline would be at least ten years before the diagnosis in the relative, so in Navid's case that would have been age 40 would have been his recommended first colonoscopy.

### **Andrew Schorr:**

I've got to tell a story. I had recorded some years ago programs on colon cancer for the American Cancer Society and we had a patient on who told the story of the six brothers and sisters in Pennsylvania at the graveside burying their dad who had died of advanced colon cancer. And as they were standing, surrounding the graveside, they kind of whispered from one to another, have you been checked, no, have you been checked, no, none of them had. And they made a pact, the brothers and sisters that they would then be screened for colon cancer. And guess what. Two of them were found, one with precancerous polyps, another one with colon cancer that had not yet spread outside the colon, and that was this man. So are you telling me your father's death, in a way, and the pact that came out of it may have saved your life? And he said absolutely. So I'll never forget that story of that family.

So, Dr. Whiting, carrying forward now. So we don't have a blood test to say I know there are conditions, more rare conditions and you kind of alluded to one, family polyposis, I think it is, just a whole raft of polyps, and you know that that can lead to colon cancer, or maybe somebody has had Crohn's disease, might be at higher risk, things like that. But apart from that you don't have blood test or anything now.

### **Technology for Screening Blood**

#### **Dr. Whiting:**

Correct. Although I will say there is a lot of work obviously going in that area, and where the success is going to come I'm not certain. It may well be that as the technology for screening blood, for either abnormal cells or for products that are made by abnormal cells, as that technology gets more and more accurate we may be able to find evidence of precancer in people who are heading down the road towards it. And there is certainly lots of basic science work that's going on towards, in a sense, kind of fishing through the bloodstream of people over time and then, particularly in high-risk individuals who then go on to develop disease, to go back and look at the blood samples and then try to fish out what could we have found early on that would have predicted this.

At the same time there is a lot of work going on in evaluating stool, which as you can imagine is passing right by a cancer that is forming, for evidence of cancer that either is there or will occur later, and they range from looking again for cells to looking for the DNA, the nucleic acid that is abnormal in cancer cells. I think they're probably, I'm fairly certain that some form of testing to detect colon cancer either early on before it even happens when adenomas are growing will come about, and it will improve our ability detect cancers early over colonoscopy, which is still considered the gold standard at this time.

**Andrew Schorr:**

Okay. We have so much more to talk about, including what's been going on in your family, now, Navid, your brother, your sister, surveillance for them, for your mother who has had colon cancer, you too. So lots of questions and more for Dr. Sam Whiting from the Seattle Cancer Care Alliance when we continue Patient Power right after this.

**Andrew Schorr:**

Welcome back to Patient Power. Andrew Schorr here with our Seattle Cancer Care Alliance GI oncologist, a specialist particularly in colon cancer, Dr. Sam Whiting, and his patient, Navid Taaid, whose mother was diagnosed with colon cancer and then just a few years later he was having blood in his stool, and it turned out to be more advanced colon cancer. He's gone through surgery. He's gone through ablation of a spot on his liver. He's gone through lots of chemotherapy.

Now, Navid, I know you have a brother and a sister, your brother is a physician, as is your dad, so with two, if you will, first-degree relatives for them, mom and you, have they been checked for colon cancer?

**Navid:**

Yes. In fact as soon as I got the results from the colonoscopy the doctor who did the colonoscopy told my brother to get a colonoscopy right away, exactly as Dr. Whiting was saying. And then my sister got hers too, and they both came out negative.

**Andrew Schorr:**

Thank god. But they were worried.

**Navid:**

And also one thing I missed to tell you was my mom's sister, so one of my aunts, who I hadn't really met actually had also colon cancer and died from it.

**Andrew Schorr:**

Oh, wow. Well, Dr. Whiting, okay. So we're painting what might be a genetic picture of a family. Let's talk about genetics. Are there certain conditions where it's very obvious that someone is at high risk? And then also how do you test someone if you can observe it to see if they're in any of these groups.

### **Dr. Whiting:**

Yeah, so it's a very good question, and there are indeed hereditary cancer syndromes where cancer runs in families and we actually know what the cause is and we know how to check for it. One of the goals of doctors is to not miss those and not miss the opportunity to really help a family by finding out a risk that may be just run rampant through a family history and put people at risk. Not just necessarily of colon cancer, but it turns out that a lot of the true hereditary cancer syndromes the risk is severe enough that lots of other cancers can result from the same process, not just colon.

So the two that we look for most commonly in colon cancer are a disease called hereditary nonpolyposis colorectal cancer, HNPCC, it's abbreviated, and it's also called Lynch syndrome, named after a physician who described it first. And a second condition called familial adenomatous polyposis, or FAP.

The FAP is the easier one to start with because it's so classic that you generally do not miss it. So patients are born with a mutation in their what we call germ line, so in all of the cells of their body, that leads to a pronounced increased risk of developing adenomas, which are precancerous polyps. And it's actually thousands of them, so the colon can be just strewn with polyps.

The process, because the patient is born with it, starts very early when they're a child, so a person can be 12, 13 years old and already have hundreds or thousands of polyps. Because each individual adenoma is a risk to go on to get cancer, you can imagine if you put together thousands of them that at least one of them is it going to become cancer, so the probability of colon cancer or rectal cancer developing in this case is essentially a hundred percent. And in most people it develops quite early, like in the patient's 20s or sometimes even teens.

It's the profuse polyposis that leads to the light bulb that tells you what is going on, and there is a genetic test, a DNA test that can be performed in a patient who presents like that to find the mutation. And this is inherited in an autosomal dominant fashion, which means that 50 percent of offspring are going to inherit it and 50 percent are not. And then you note there and you start testing all the family members to look for the same thing.

Usually these patients present with a history of roughly 50 percent of each generation having cancer because of the way that the genes are passed from generation to generation. But, interestingly, it doesn't have to be that way, and I actually had a young woman who was diagnosed with a stage IV rectal cancer when she was 25 years old, and she had a what we call de novo mutation, or it happened only in her but a mutation in that particular gene that caused FAP in her. And she was a wonderful young woman who was pregnant at the time of her cancer diagnosis and delivered a healthy boy, and she lived for about seven or eight years with her stage IV cancer and was able to watch her boy grow up for those years. So he was tested, and he didn't have it. So in her there was no family history until her case.

**Andrew Schorr:**

Dr. Whiting, so I understand let's say that if you had a child with that that ultimately the treatment would be removal of the colon.

**Dr. Whiting:**

Yes.

**Andrew Schorr:**

Okay. So let's move on to that other one though, HNPCC.

**Dr. Whiting:**

Yes.

**Andrew Schorr:**

If I've got it right. What do you do in that case? I think maybe I would imagine maybe Navid was tested for that.

**Dr. Whiting:**

He was because he fit one of the blanket criteria for testing, and that is he was less than 50 years old when he was diagnosed. So these cancers, the HNPCC cancers, tend to occur later in life, so not in the 20s and 30s but in the 40s and 50s. The probability of developing colon cancer is about 50 to 60 percent if a person is born with HNPCC. Patients present not with thousands of polyps but maybe with tens or dozens of polyps, but still oftentimes a number of polyps.

And there are certain characteristics. So they're younger when they are diagnosed. They tend to have cancers that occur in the right side of the colon, what we call the ascending colon. They tend to have tumors that look a particular way under the microscope, called poorly differentiated. And when we see young people with cancer or cancers that are in the right side of the colon rather than on the left side or that are on the right side and fully differentiated we kind of basically tick off risk points and then recommend testing for HNPCC. And that single characteristics of cancer before 50 has now been generally accepted as reason enough to do the testing in people.

It turns out that HNPCC is going to be present in maybe three to four percent of patients with colon cancer, so it's not a dominant cause just in terms of numbers, but we know what the cancers look like, we know when they occur, and then it turns out we can do some simple testing to detect it. So in Navid's case a testing was done on his tumor to look for proteins that normally fix mistakes in DNA, and if those proteins are missing mistakes that accumulate in DNA and HNPCC can result. So he was tested for those proteins, and his were all normal, which was a good sign.

And then he was also tested for the DNA effect of proteins, these proteins not doing their job, and that is what's called microsatellite instability where little stretches of

DNA accumulate a bunch of changes and then proliferate, basically, and he didn't have that either. So he went through all the testing to look for HNPCC, did not have it, and that is a good thing for him and his family.

**Andrew Schorr:**

Wow. I can see how specialized this is. So a few other questions I want to get in before we, our time is short, and that is first, so Navid was treated for his colon cancer, no chemo, go about your business, and then later he had a polyp. So was this cancer that had spread and nobody knew that was going on, or can somebody who has colon cancer the first time be treated, be treated successfully but yet they're at higher risk for having a new colon cancer later on.

**Dr. Whiting:**

It's the second. It's the second, and actually the cancer that was found last year in Navid was tested, and it's different from the cancer that occurred in 2007. So we know that it was a different cancer, not the same one. And the lesson there is one we all know in cancer medicine, and that is, particularly in organs like the colon where they're lined with cells that are all the same, that when a cancer occurs in one spot all the other parts of the colon are still at risk for having the same problem. In fact, a person's risk of developing another colon cancer goes up four fold from baseline just because they've had one.

And we believe that the average person who has colon cancer treated curatively or with curative intent, like Navid's first surgery, has about a three to four percent chance of developing another colon cancer just in the next three to four years, and for that reason we have screening programs set up for patients who have surgery for colon cancer where they get their first colonoscopy nine to 12 months after their initial surgery, and then they get another colonoscopy really no later than three years later and even a single year later if there is any polyps found in the first one. And we pay very close attention to people who have a personal history of colon cancer because of the risk of developing a second one.

**What is the "Field Effect?"**

**Andrew Schorr:**

All right. So I want to make sure I've got this right for everybody because I don't believe we've talked about this before. And that is so we cancer patients worry about the cancer coming back, and we think of it as being the cancer we had that spread or was hiding somehow, but this is really for whatever reason our immune system couldn't fight off these abnormal cells the first time. Those cells were treated, maybe cut out or treated with medicine. Hopefully they're gone, but because our immune system and our cells were sort of susceptible the first time we are sort of set up for a high risk of a second cancer.

**Dr. Whiting:**

Yeah, that's actually a pretty good description. We actually have a name for it. We call it the field effect, where an organ that has a large surface area like the bladder is one, the colon is one, the esophagus is one, the cells are actually all similar, and

in many cases they have the same changes or precancerous changes that occur just because of exposure to time or exposure to carcinogens and chemicals or to the wrong diet, whatever it is. So they're all very, very similar. So one may become cancer but actually all the others are still at risk.

**Andrew Schorr:**

Wow.

**Dr. Whiting:**

And we normally take out the cancer and then we leave all the other cells there, and we have to pay attention to that and the fact that they may change again.

**Andrew Schorr:**

Okay. One other thing I want to ask you about is where are we now. So in the case of Navid's case, his cancer, well, another one developed, and I believe from what you told me when we took a little break is that the spot on his liver was something that had spread from the original cancer from a little while ago. But at any rate where are we now in treating what I guess you described as stage IV? We have a friend who works with Patient Power who is in that situation who is doing well. Where are we now with giving people in that situation hope?

**Dr. Whiting:**

I have to say I'm a fundamental believer in hope always in every context. But in the setting of stage IV colon cancer the way I look at the disease is every patient, we search for the way that maybe we can change what's supposed to happen with the disease, and that basically with stage IV cancer is we search for a way to make it go away permanently. There are settings where that can happen in colon cancer, and we're learning how to combine therapies, how to use chemotherapy in the right way and, in my opinion, most importantly how to combine different ways of treating cancer together in order to eradicate a disease that individually any of these treatments wouldn't be good enough.

So when we look at colon cancer today we look at the liver and we look at the lungs as organs where cancer can grow, it can spread and grow to, but we have sometimes the opportunity to completely cure it in that organ, just like the tumor, the early-stage in the colon can be sometimes completely cured by removing it surgically.

In the case of the liver we have a wide variety of options really to treat, to try to eradicate cancer. But the two most definitive, the two most potentially curative at this time are to remove the tumor surgically or to heat sterilize it with a procedure called radiofrequency ablation. Navid had the second. He had the radiofrequency ablation procedure because his tumor was positioned in the right place and it was the right size where there was a pretty good probability that when the heat ablation was done there would be nothing left of the cancer. And so in one stroke, in a sense, this supposed terminal diagnosis of stage IV cancer might be changeable by eliminating a focus of systemic disease.

And then the lesson I hammer home over and over with patients is that cancer that has spread has to be considered to be a disease that could be anywhere in the body. It could be in places we see it and in places we don't see it, and therefore effective chemotherapy is a critical part of long-term survival and cure of advanced cancers. That's where we're lucky enough now where we're getting better drugs and we're getting better combinations of chemotherapy drugs and we're getting better targeted therapies, and it's putting all of these together, I think, that can be so rewarding sometimes in eliminating cancers that are affecting people.

### **Multidisciplinary Approach at SCCA**

#### **Andrew Schorr:**

Well, it is an exciting time. I think you have more tools, and I know in a program that we've recorded with one of your colleagues, Dr. Veena Shankaran, she talked about really understanding the biology of a patient's specific colon cancer. We talked in that program about KRAS. We won't talk about that today, although what I would say I urge people to listen to our library of programs, so many with Seattle Cancer Care Alliance experts and with your colleagues, Dr. Whiting, also talking specifically about colon cancer and treatment.

But we've talked mostly about families today. And what I take away from this, and certainly for me very personally is you've got to take this really seriously. You've got to know what's going on in your family. Ask questions. Be screened. Have an active dialogue with your doctor. And if things are lining up, and I think you did this, Navid, you then eventually beat a path to in this case the Seattle Cancer Care Alliance, not just Dr. Whiting but a whole team there that's devoted to this. You feel good you did?

#### **Navid:**

Absolutely. It's incredible how everybody works together to make this work. Without the team and the people that take care of the insurance, I mean, just all the paperwork on top of the chemo and everything else you have to think about can be completely overwhelming, and the SCCA really, really does a great job. To this day I'm not sure how they do it, but they do it very well. And of course the doctor being so good and really knowing how to approach the patient with all these therapies and convince them that that's the way to go, that was really key right there.

#### **Andrew Schorr:**

Well, sounds like you're in good hands, as they say. Dr. Sam Whiting from the Seattle Cancer Care Alliance, University of Washington and Fred Hutchinson Cancer Center and a specialist in colon cancer, thank you for being with us, Sam. We really appreciate you're sharing your very specialized expertise today.

#### **Dr. Whiting:**

My pleasure, Andrew. Thank you.



**Andrew Schorr:**

Okay. And Navid Taaid, wedding coming up and chemotherapy hopefully behind you, recovery. We wish you all the best.

**Navid:**

Thank you very much. I appreciated it.

**Andrew Schorr:**

Thank you so much for being with us, gentlemen. This is what we do on Patient Power is really connect you with leading experts, and I've learned a lot, and we've covered some unique ground today for so many families where there's someone where there may be colon cancer in that history and you really want to get checked. And I'm going to get checked again.

I'm Andrew Schorr. Thanks to the Seattle Cancer Care Alliance for sponsoring our whole series of programs. Remember, knowledge can be the best medicine of all.

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