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Welcome to Yale Cancer Answers with doctors Anees Chagpar, Susan Higgins and Steven Gore. I am Bruce Barber. Yale Cancer Answers is our way of providing you with the most up-to-date information on cancer care by welcoming oncologists and specialists, who are on the forefront of the battle to fight cancer. March is colorectal cancer awareness month and this week our guest host, Dr. Howard Hochster welcomes Dr. Harry Aslanian. Dr. Hochster is a Professor of Medicine in Medical Oncology, Associate Director for Clinical Sciences at Yale Cancer Center and an expert in Gastrointestinal Cancers and Dr. Aslanian is Assistant Professor of Medicine and digestive diseases and Associative Director of Endoscopy at the Yale School of Medicine. Here is Dr. Howard Hochster.

Hochster People really do not like to think about colonoscopy, right? And especially about getting cleaned out for colonoscopy, can you describe what is involved and especially what people need to do to prepare for a good colonoscopy?

Aslanian Yeah, most people do find the prep to be more cumbersome than the actual test, so we usually tell people after completing the prep that they have already been through the most difficult part, but typically the prep involves having clear liquids for the day before their procedure and then ingesting a liquid that draws fluid into the colon and then clears out the colon by inducing multiple bowel movements, so that is typically taking the evening before the test and then more and more when we were able to, we try to have half of the preparation take in the evening before and then half either later that evening or the morning prior to colonoscopy, so it appears that when the prep is taken as close to the start of the procedure, the prep will be better. So just to kind of summarize, you can take the liquids the day before and then you spend the night before and the morning of on the toilet. Yeah, usually a few hours after starting the liquid preparation, bowel movements are induced and then there is sort of frequent liquid bowel movements, so I suppose this is not because you do not like your patients, there is a real reason behind this, so what is it about doing all this preparation and why it is necessary.

Hochster The colon is typically about 5-6 feet long and there are many folds and turns and the idea of colonoscopy is to visually inspect the entire surface area of the colon, so the quality of the exam is highly dependent on the prep. So if we cannot see through solid or liquid stool contents, that can limit how well the actual test performs for that patient. The stool is kind of sticky and it sticks to the wall, so unless you flush it a lot, so it is kind of basic idea.

Aslanian During the procedure, we have the ability to rinse the colon wall with water, the scope has a little foot pump where water can spray against and we can suction content, so it is expected that you know to get optimal visualization, we will do that kind of rinsing,

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suctioning, and inspection. We insufflate air or more often now carbon dioxide to blow up the tube of the colon, so that we can see behind all the folds, but it is very important that the prep be as optimal as possible. If the prep is not good enough, then sometimes we have to repeat the test or repeat the test sooner than we normally would.

Hochster When I had my last colonoscopy, they hooked up to an IV and that was it, the next thing I knew, it was over. Most people find the test to be a breeze, working through the prep is a bit of chore, but I think you are exactly right if you keep in mind the value of that day of preparation, the actual test will be very straightforward and most of times, it is going to be at least 5 years until you need to get it done again.

Aslanian That is most common, so when we are looking at after say a screening colonoscopy and you know for individuals who have no family history of colon polyps or colon cancer, it is recommended to have colonoscopy for everyone at age 50, so the important thing that you know very well is that even if there is no family history about 30-50% of people will have polyps detected at a screening colonoscopy by age 50.

Hochster We focus a lot on this polyp stuff. What is a polyp and why it is important?

Aslanian In the colon, almost all cancers develop initially as a polyp. A polyp is an abnormal thickening of the lining of the colon. Some polyps are sort of mushroom shape and more and more were also aware of polyps that are flatter, but it is basically a precancerous lesion, so by identifying these precancerous lesions and then removing them with colonoscopy, we can prevent them from ever having a chance to progress and take away the possibility that they could have ever become a cancer.

Hochster Sometimes what I see is that people think they have polyps and I look at the pathology report, it is really not a polyp at all, it is some kind of hyperplastic thing, but if you take the people who actually have adenomas, so that is the kind of abnormal growth phase that eventually can become a cancer if left. Just because you find an adenoma in me, it does not mean I am going to have colon cancer.

Aslanian That is correct. There are, as you mentioned, different types of polyps. There are precancerous polyps or termed adenoma whereas a hyperplastic polyp typically has no risk of ever progressing to a cancer, but not every polyp would ultimately ever grow or progress to cancer, but the high risk adenomas are those that over 1 cm in size are larger polyps, it is thought that the larger flatter polyps also may be higher risk. So once a polyp is detected that tissue is then sent to the pathologist. They evaluate it

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under the microscope and then can tell you what type of polyp it is and if it is a type of polyp that has any precancerous potential, so that would typically be an adenoma and then if there is any other high risk features that indicate the polyp was progressing onward closer towards a cancer, but most polyps we find tend to be on smaller size, so under 5 mm and these are overall very low risk, but it is thought that most polyps would progress over 7-10 years or longer and so by clearing the colon out of polyps and particularly those are larger and flatter polyps, that is what actually reduces the risk of colon cancer from developing.

Hochster Actually we know that from large randomized studies where tens of thousands of people were enrolled and have got screening colonoscopies and have got regular follow up and the incidents of colon cancer was reduced substantially.

Aslanian Yeah, it is kind of similar to what a dermatologist does. If you find a funny looking mole, you typically would be able to take that off and then prevent that from ever having a chance to progress, so with colonoscopy we have visually identifiable precursors to cancer that we can effectively remove through the scope and then take them out of the picture so that they never have a chance to cause trouble.

Hochster So let us just say that every 50-year-old in the country went to get colonoscopy and there were enough gastroenterologists to do it and everybody got screened this way, what percentage of colon cancer could be avoided if we actually had 100% compliance with this?

Aslanian That is a good question. I think the vast majority of colon cancer could be avoided.

Hochster What 90%?

Aslanian I think so, I think close to probably 90%, so there may be some very rare scenarios where there is genetic predisposition to rapidly a polyp taking off and turning bad and colonoscopy itself is not 100% accurate just like you know, any tests there is factors of their preparation and you know the ability of see the entire colon, so it is not typically possible to have 100% accuracy and identifying every single polyp, but this is you know remarkably preventable disease and it is a really great opportunity to reduce a cancer that I think is still a third leading cause of cancer death.

Hochster I really want to emphasize that colon cancers are largely preventable and this test even though we do not like to think about our colons and colon health and what is involved in a colonoscopy compared to mammography, almost every woman goes for

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mammography. This test is a lot better because you are doing the biopsy at the same time and you are preventing cancer at the same time, I mean it is so much, does so much more for the person than just getting a mammography, either because we not only know that we have got the tissue that shows that it is premalignant, but it also will prevent that premalignant polyp from eventually becoming a colon cancer.

Aslanian Yeah, now this is really a huge opportunity to take the third leading cause of cancer off the table by you know getting a colonoscopy typically for most people at age 50. If you do have first-degree relative that has had advanced polyps or cancer, we typically recommend the test 10 years before that family member had advanced polyp or cancer.

Hochster So, like if my father, brother, or sister had colon cancer, I should really start at 40 or 10 years earlier than the age they were when they got colon cancer.

Aslanian Correct and that is a very important thing to know that we know in certain families, you can get colon cancer at a younger age and it is important to take that into account when you are planning your screening.

Hochster So is colonoscopy like people need to worry about getting covered by insurance, screening colonoscopies, I mean clearly if you have a medical indication, you had bleeding, whatever, then it is going to be covered without any question, but for just screening purposes, do people have problem getting that covered by their insurance?

Aslanian I do not think so in the United States it is typically accepted that screening colonoscopy for an individual that is healthy and has no family members with colon cancer is appropriate and recommended screening option.

Hochster There are some other ways of screening in addition to colonoscopy, I mean we like it because as I said before it is diagnostic and preventative and some of the other things are just you know able to give us an indication of detection, but you want to kind of review what other options besides colonoscopy are available today.

Aslanian Sure, year, you know there are other options and the take-home message is that some degree of screening is going to highly benefit you, so they can check the stool for blood which can be an indication of a polyp or cancer that is intermittently bled. There is recently improved DNA stool tests where they can look for shed DNA from an advanced polyp or cancer. There is also options of sort of doing CAT scan based screening where they do what sometimes termed a virtual colonoscopy where they try to get pictures of the entire colon to identify if polyps are present and there is ongoing work for perhaps a blood test or a mini capsule that can see the colon. So these are all

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important. I think the take-home message is that you know get yourself screened,

look your colonoscopy, look at the other options. The think with these other tests is if they find something, then it is likely that a colonoscopy would be recommended because they are basically indicating that a polyp may be present and it is actually the removal of that polyp that leads to the prevention of the colon cancer.

Hochster Well thank you, we are going to take a short break now for a medical minute. Please stay tuned to learn more information about colonoscopy and the treatment for colorectal cancer with Dr. Harry Aslanian.

Medical Minute Support for Yale Cancer Answers in provided by AstraZeneca, working to change the cancer paradigm through personalized medicine. Learn more at astrazeneca-us.com. The American Cancer Society estimates that more than 60,000 Americans will be diagnosed with head and neck cancer this year, although the percentage of oral and head and neck cancer patients in the United States is only about 5% of all diagnosed cancers, there are challenging side effects associated with these types of cancer and their treatment. Clinical trials are currently underway at federally designated comprehensive cancer centers such as Yale Cancer Center to test innovative new treatments for head and neck cancers. In many cases, less radical surgeries are able to preserve nerves, arteries, and muscles in the neck enabling patients to move, speak, breathe, and eat normally after surgery. This has been a medical minute brought to you as a public service by Yale Cancer Center and Smilow Cancer Hospital at Yale, New Haven. More information is available at YaleCancerCenter.org. You are listening to WNPR Connecticut's Public Media Source for news and ideas.

Hochster Welcome back to Yale Cancer Answers. This is Dr. Howard Hochster and I am joined tonight by my guest, Dr. Harry Aslanian, a gastroenterologist at Yale Cancer Center and we are discussing colonoscopy and the surgical treatment of colon cancer. So, we were just talking about different ways of screening, mostly we were focusing on colonoscopy, but there is a test for looking at DNA in the stool, like I have seen this advertised and they have got little boxes dancing around, but you have to collect your stool and send it off to lab right? So how does that test work and how that is compared to colonoscopy.

Aslanian The developers of that test look at the genetic mutations that are typically found in a colon cancer or an advanced polyp which would be a polyp that is sort of grown and progressed to just up to a cancer and then we know that the cancers or polyps will shed some DNA shed cells into the stool, so basically they are looking for cancer DNA in the stool and looking for the mutations in those cells that identify that a cancer was releasing them.

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Hochster And how accurate is that test, is it going to be pretty good about picking up the big polyps and will it miss some?

Aslanian It seems to be about 80-85% accurate in identifying cancers and very

advanced polyps. So it is quite good, it is by no means 100% accurate and if it does find something, then your doctor would recommend a colonoscopy to see if there is something there that needs to be removed or treated if there is something more advanced.

Hochster So the idea behind that kind of test is we do it lower the number of people who actually needed colonoscopy, but if your test comes back funny, you are still going to need a colonoscopy because we want to remove the polyp and get the diagnosis of the polyp or even hopefully not, but you are even an early cancer.

Aslanian That is correct, yes, so these tests are basically sort of like a prescreening to say is colonoscopy going to benefit this patient and we call the fecal occult blood test so is similar idea, so it is looking for small amounts of blood in the stool that you know may be invisible to the eye but can be detected on a test. These fecal occult blood tests are done more frequently, typically on an annual basis and then if positive, would warrant evaluation with colonoscopy, but you know as we talked about sort of everyone who is healthy and what we call asymptomatic, so having no trouble with the bowels, it is advised that they have a colon cancer screening at age 50, but it is also very useful to look out for symptoms as you know, so the symptoms to look out for would be blood in the stool, which can be red blood or sometimes maroon in coloration, if there is abdominal pain, weight loss, if someone has anemia, so low blood counts or low iron counts than can be a sign of chronic blood loss that could indicate cancer or polyp that is bleeding and also if there is a change in bowel habit, so if your bowels have been regular throughout your life and then you suddenly have a lot of constipation or diarrhea that is very unusual and an ongoing symptom, then that can be an indication that there is a change in the colon that might warrant evaluation if you are below age 50. Hochster So any of those symptoms, you should really go to your doctor and you should make sure you get a colonoscopy. Unfortunately, I have heard the story more of than once of young people even in their 30s who have some of these symptoms and their doctors just do not take it very seriously, and they do not get worked up appropriately.

Aslanian Yeah, you know it is important to be in touch with what is happening with your bowels and to report to your doctor any changes and also to be aware of your family history, so we talked about history of colon cancer, colon polyps, but sometimes other types of cancer can also be related to a risk of colon cancer, so it is helpful to gather that

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information from your family and then regarding abdominal symptoms or blood in stools, so it is correct that the most common cause of seeing red blood say on the toilet tissue or on the surface of the stool would be hemorrhoids, but it is important not to just assume that all bleeding is hemorrhoidal and to review that with your doctor, particularly if it is an ongoing or progressive symptom.

Hochster Yeah, I think we have all seen that scenario way too many times where people thought it was a hemorrhoid for months or years even and then they landed up having more advanced colon cancer. So the colonoscopy again, it is a little bit to go through, but it does not have to be done that often, it is going to remove tissue for diagnosis at the same time, so you do not need another procedure for a biopsy and we know if we remove polyps, it is actually preventative. So colonoscopy is really a very effective and cost effective way to do colon cancer screening even though there are other tests out there, they still have more false positives and false negatives and less accuracy than a colonoscopy.

Aslanian It may change you know the test may get better and hopefully, we can cut down on number of people who need colonoscopy, but we are not there yet today. Yeah, I think like we were saying before the break, this is a really a huge opportunity to take the third leading cause of cancer death off the table and it is really among the great successes of cancer prevention that we have seen in modern medicine.

Hochster So you do the colonoscopy, so you know basically the patient gets sedated, I have had Propofol twice, so I did not even remember anything, I woke up, I went back to work, so it is really pretty short acting and you can continue doing everything pretty normally by the next day for sure, possibly the same day. So if you take out a polyp, then you send it off for pathologic examination, what happens with that and the results?

Aslanian Yeah, so then the pathologist would identify what type of polyp it is, so if it is a polyp like an adenoma that has some degree of cancer potential, then based on the size and number of polyps that you had and if you have any family history, your gastroenterologist would recommend when to repeat the test, so if there is no polyps that are adenomatous detected or have an precancerous potential and there is no family history, then you would not need to repeat test for 10 years and if there is a couple of small polyps less than 3, then typically is roughly a 5-year repeat. So we factor all this in to see if additional sort of more frequent checkups would be warranted, but it does appear clear that the very first colonoscopy is probably the highest value that you will encounter. So getting that first one done at age 50 or sooner if you have family history is really get the most benefit.

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Hochster Again, I am not talking about people who have had colon cancer or have polyps. Is there an upper age limit where you stop doing screening colonoscopies?

Aslanian Yeah, the US Preventive Task Force suggested that perhaps for some individuals after age 75, the risks/benefit ratio might favor discontinuing surveillance colonoscopy, but as you know, age is such a relative factor that it needs to be individualized, but there probably is at some point in the 70s or 80s where the benefits of additional colonoscopies are minimal.

Hochster So you get the report back from the pathologist if these are adenomas or not and you use that to guide when the next colonoscopy is needed. What happens if it is you know more advanced polyp like what we call dysplasia or early cancer, then what happens?

Aslanian Yeah, so whenever we find something that is advanced that could be just shy of a cancer or very superficial cancer, we want to ensure that complete removal has been achieved, so there are some polyps that are identified just before they become a cancer going deeper into the wall and many of these, we can successfully treat with colonoscopy and remove them completely through the scope, but with a more advanced polyp, in some cases if it is uncertain if it was completely removed, particularly with these sessile polyps which are more carpet-like instead of mushroom-like, if complete removal is not certain, may be recommended that a repeat check occurs within roughly 6 months, but you know these are polyps where there is really a remarkable benefit because they are fully treated through scope and clearly would have become a cancer if they had sat there for additional couple years.

Hochster And if it is more like the mushroom type and it is just in the head, you can cut off the bottom of the stalk and that is 100% effective pretty much.

Aslanian Yes and all of this is confirmed under the microscope, so microscopically the pathologist will be able to tell us that if everything is completely removed, if a more advanced lesion has been identified, so if there is a cancer where it is gone deeper into the wall, typically colonoscopy can remove things that are on the inner surface, what we call the mucosal layer of the tube of the colon. If the cancer is gone into the deeper layers or through the wall of the colon, then additional treatment what you are extremely expert in would be required.

Hochster But most of the time even if you find something that is an early cancer, it is still pretty likely to be an early stage, that is not going to require anything more than surgery at the most, you know optimally you would remove it completely

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with the colonoscopy and no surgery would be needed, but even if it is an early cancer that is not causing you symptoms, then you might need some surgery, but surgery today is not like it used to be.

Hochster And we do know that people undergoing colonoscopy, if a cancer is found, it is going to be in an earlier stage than in those that just wait for symptoms to develop right and so what kind of surgery they land up doing for these kind of early colon cancers.

Aslanian Typically they will remove a segment of a colon and then sample lymph nodes around that area, in some cases it can be done laparoscopically, so it really has become much more straightforward operation and the recovery time has really been minimized.

Dr. Harry Aslanian is Associate Professor of Medicine and Digestive Disease and Associate Director of Endoscopy at the Yale School of Medicine. If you have questions, the address is canceranswers@yale.edu and past editions of the program are available in audio and written form at YaleCancerCenter.org. I am Bruce Barber reminding you to tune in each week to learn more about the fight against cancer here on WNPR, Connecticut's Public Media Source for news and ideas.