

# Yale CANCER CENTER *answers*

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## Advances in Colorectal Cancer

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*Hi, I am Bruce Barber and in this week's Yale Cancer Center Answers, our hosts Dr. Edward Chu and Dr. Ken Miller will discuss the recent advances in the treatment of colorectal cancer. Dr. Chu is the Deputy Director and Chief of Medical Oncology at Yale Cancer Center and an internationally known expert on colorectal cancer. Dr. Miller, a medical oncologist is Director of the Connecticut Challenge Survivorship Clinic at the Yale Cancer Center and specializes in pain and palliative care. Yale Cancer Center Answers is our way of providing you with the most up-to-date information on cancer care every Sunday evening on WNPR. Dr. Chu and Dr. Miller welcome some of the nation's leading oncologists and cancer specialists who are in the forefront of the battle to fight cancer. They want to provide you with help and hope from Yale Cancer Center and they are available to answer your questions. If you would like to submit a question about cancer to the show please email your question to [canceranswers@yale.edu](mailto:canceranswers@yale.edu) or call 1888-234-4YCC. The doctors will answer your questions on the air or in a future broadcast. If you are interested in listening to past editions of Yale Cancer Center Answers, or if you would like to learn more about a specific kind of cancer, all the shows are posted in audio and written formats on the Yale Cancer Center website, [www.yalecancercenter.org](http://www.yalecancercenter.org). This evening Dr. Chu and Dr. Miller will discuss colorectal cancer. Colorectal cancer is the second leading cancer killer in the United States and affects both men and women. Early detection and regular screening can detect the cancer early and lead to an excellent prognosis. Dr. Chu will review the screening, detection, and treatment for colorectal cancer today on Yale Cancer Center Answers.*

- Bruce            Good evening doctors.
- Miller            Good evening Bruce. Today Ed and I are going to talk about colorectal cancer. Typically Ed and I are the co-hosts, but today it is a pleasure to have him as a guest. Ed is the Chairman of the International Colorectal Congress and is the editor of a well-known journal called Clinical Colorectal Cancer. Ed, thanks for being here today.
- Chu                Thanks so much for having me as your guest to speak about my favorite subject, which is colorectal cancer.
- Miller            What is colon cancer?
- Chu                Colon cancer, or colorectal cancer, is a cancer that involves the lower part of the GI tract and the large bowel and the rectal area.
- Miller            Why doesn't the cancer develop more often in the small intestine, which is a lot longer than the large intestine? What is the difference?
- Chu                It is interesting because we are now beginning to detect cancers of the small bowel

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with increased frequency. In many cases, cancers that involve the large bowel can also involve the small bowel. I think one of the problems with small bowel cancers is that they are very-very difficult to diagnose. We still do not have great techniques to detect cancers that involve the small bowel.

Miller What causes colon cancer and why is it so common now?

Chu That is a very good question. Just to place things into perspective, colon cancer is the third leading cause of cancer in the United States; each year there is going to be about 150,000 new cases. Here in Connecticut, about 5000 new cases are diagnosed each year. It is the second leading cause of cancer death with approximately 50,000 deaths attributed to this disease each year. We are seeing that the main cause of colon cancer is related to age. We always think about family history as being the No. 1 cause of cancer, specifically with colon cancer, but by and large the vast majority of colon cancers, I would say greater than 90%, occur in individuals over the age of 50.

Miller Does diet affect this risk, or other things that we're exposed to?

Chu It is multifactorial, but there is no question that diet plays a very key role in leading to colon cancer. A so-called western style diet that is rich in red meats, high in caloric content, low in fiber vegetables and fruits, leads to a situation that can lead to colon cancer.

Miller What are your recommendations in terms of diet?

Chu The dietary guidelines for colon cancer hold for general well being as well. Have at least 5 daily servings of different fruits and vegetables, ideally ones high in fiber content such as green leafy vegetables which presumably have a lot of antioxidants that can prevent the development of cancer. Also try to stay away from alcohol which we know can contribute to colon cancer, and refrain from smoking. In general a good healthy lifestyle will help to prevent colon cancer and other diseases as well.

Miller I want to take the opportunity to ask you about a couple of myths out there. Are women at less of a risk of developing colon cancer than men?

Chu That clearly is a myth but unfortunately that misperception is out there, both on women and men's part, but also on the part of physicians. It is important to emphasize that men and women are at the same level of risk for developing colon cancer. About two years ago during March, which is colorectal cancer awareness month, I worked very closely with the Women's Alliance for Health which is a major women's organization trying to reduce heart disease and lung disease. During that month we were focused on getting the message out to women that they are at

the same level of risk for colorectal cancer and that screening and detection are absolutely critical for both men and women.

Miller Another myth is that if there is no family history of colon cancer, then you can delay screening colonoscopy to age 70.

Chu Again that is false. We know that family genetics do play a role in the development of colon cancer; about 15% of all the colon cancers that we see can definitely be attributed to some type of genetic abnormality. It is interesting that as we understand the biology and the genetics of colon cancer, we realize that the remaining 85% still have some genetics that have to do with environment and lifestyle issues. As I mentioned at the start of our show, age really is the critical issue. In individuals who have no family history of colon cancer, the recommendation, that I think is absolutely appropriate and reasonable, is to start screening for colon cancer at the age of 50.

Miller What is the appropriate screening for colon cancer?

Chu In my view the gold standard for screening and detection of colon cancer is colonoscopy. A gastroenterologist, a GI specialist, will put a tube that has a light into the rectum and that tube and scope will basically go throughout the entire large bowel and look to see if there are abnormalities; namely polyps or perhaps cancer.

Miller If the patient has a polyp, how does that change the screening guidelines and is that person at a higher risk of developing colon cancer?

Chu Well, we know that polyps generally take somewhere between 8 to 12 years to develop into a true cancer. If any polyp is visualized by the endoscopist, in general, that polyp is removed and then examined by the pathologist. In most cases those polyps are benign. If there is some concern that there may be some type of familial history associated with polyp formation and colon cancer, then one might need more frequent colonoscopies. If there is an occasional polyp that is removed and none of them are found to be cancer, then I think the general guidelines would apply and a colonoscopy would not be required for at least another 10 years.

Miller So in a sense, the colonoscopy can be both diagnostic and therapeutic.

Chu Absolutely, because a colonoscopy can remove the polyps, and in many ways that is prevention because polyps can form into cancer; it usually takes 8 to 12 years. If the colonoscopy identifies an abnormality that is in fact cancer, in most cases it is detected at an earlier stage and we know that if we catch colon cancer at an earlier stage we can cure up to 90% of those individuals.

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- Miller So potentially, with very-very good screening, the rate at which people are developing colon cancer and the death rate from colon cancer could drop.
- Chu Absolutely, but the big issue that we face as healthcare providers is that even in the United States, which is a wealthy and highly educated society, at most 40% of the entire US population undergoes some type of screening, and in women that rate is actually cut half. Only about 20% to 25% of women undergo at least some form of screening.
- Miller Mammography has obviously been well promoted and still unfortunately is not 100% accurate, but colonoscopy really could be preventative and is utilized so little.
- Chu Absolutely. That is why having a discussion like the one we are having this evening is critically important. When I was working with the Women's Health Alliance from Washington DC, they did a number of quick questionnaires to see why women were not getting screened and the No. 1 reason was that women did not want to go through the cathartic preparation that is required to cleanse the bowel before the colonoscopy procedure is performed.
- Miller Tell us about the preparation for colonoscopy. Is it as terrible as everyone thinks?
- Chu Yours truly has undergone three colonoscopies over the last 15 years because in my own family there is a very significant risk of colon cancer. I have to say that the very first colonoscopy I had, which was probably over 15 years ago, the preparation was not so pleasant. The whole process has improved dramatically and there is nothing to worry about in terms of the preparation. One takes what is called Fleet Phospho-Soda and they actually have different flavors now. You go in and take the preparations and then basically expel your bowels. You go to the GI suite the next morning, they give you a medicine and then the next thing you know you are in the recovery room.
- Miller I would like to take this opportunity to remind our listeners that if you have not had a colonoscopy and are supposed to have had one, please do because it is very important and tell your family and friends as well. We would like to remind you to e-mail your questions to us at [canceranswers@yale.edu](mailto:canceranswers@yale.edu). We are going to take a short break for a medical minute. Please stay tuned and learn more information about colorectal cancer with Dr. Ed Chu from Yale Cancer Center.

*It is estimated that over 2 million men in the US are currently living with prostate cancer. One in six American men will develop prostate cancer in the course of his lifetime. Yet major advances in the detection and treatment of prostate cancer have dramatically decreased the number of men who die from the disease. New treatment options now provide hope for men diagnosed with prostate cancer. Screening for prostate cancer can be performed quickly and easily in a physician's*

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*office using two simple tests, a physical exam and a blood test. With screening, early detection, and a healthy lifestyle, prostate cancer can be defeated. Clinical trials are currently underway at Yale Cancer Center, Connecticut's federally designated comprehensive cancer center, to test innovative new treatments for prostate cancer. The patients enrolled in these trials are given access to experimental medicines, which have not yet been approved by the Food and Drug Administration. This has been a medical minute brought to you as a public service by Yale Cancer Center. More information is available at Yale Cancer Center data work.*

- Miller Welcome back to Yale Cancer Center Answers. This is Dr. Ken Miller and I am here with my co-host Dr. Ed Chu and we are discussing the latest information on colorectal cancer. Ed, let us talk about treatment. If someone has a colonoscopy and colon cancer is found, how is that usually treated?
- Chu Typically colon cancer is approached in a multidisciplinary fashion. Once the diagnosis of colon cancer is made, typically the first person that individual would go to would be a surgeon who specializes in GI malignancies. In addition, that individual would probably see a medical oncologist such as myself and a radiation oncologist to get different perspectives on how to approach an individual patient.
- Miller A concern that a lot of patients have who are about to undergo surgery is that if they have surgery and the tumor is exposed to the area, it spreads. Is that true?
- Chu Yes and no. The important point to emphasize is that cancer, by nature, is usually a systemic disease even at the time it is diagnosed. Even though we believe that colon cancer, if it is caught early, is only locally involved, we are now finding that patients who have early stage colon cancer can benefit from what we call adjuvant chemotherapy. After the surgery is done, we generally wait four to five weeks for the patient to recover, we give them up to six months of chemotherapy. The reason for that is to prevent the cancer from coming back; what was originally found and also to prevent the cancer from recurring at other sites throughout the body. Those tumor cells have a pretty nifty way of getting into the blood stream and even before the surgeon goes in they can find their way to different parts of the body.
- Miller Is it the surgery itself that causes the cancer to spread or the nature of the cancer?
- Chu It is really the nature of the cancer and how it has a way of making new blood vessels that then leak out into the system and proliferate to different places; this process is called angiogenesis which we now know is critical for colon cancer and for other cancers.
- Miller With that understanding of angiogenesis, what has happened in terms of our treatment options for patients?

- Chu It is really quite remarkable and I am glad you asked that question. Over the last three years, because of our understanding of the biology and the genetics and our understanding of what turns on these colon cancer cells, targeted therapy has developed. Agents are used to target specific pathways that we now know are critical to maintain the growth of colon cancer tumors. A few years ago a very novel antibody called Avastin was developed which actually targets blood vessel formation.
- Miller These drugs have been used in patients with advanced colon cancer and have been found to be very helpful. Are any of them being moved into the postoperative setting to prevent recurrence?
- Chu When we develop treatments for colon cancer and for other cancers, we generally start when the tumor is in an advanced stage. About four years ago Avastin was shown to significantly improve the clinical benefit of traditional chemotherapy. We are now doing a number of clinical trials in patients who have had colon cancer removed to see if the addition of Avastin has any effect. There is another very interesting targeted therapy called Erbitux. It targets a different pathway, the epidermal growth factor pathway. Both of those agents have now been combined with standard chemotherapy drugs in the adjuvant setting. Unfortunately it is still going to be at least another two or three years before we have the data to tell us whether or not those treatments are in fact effective.
- Miller In your opinion do you think these things will help?
- Chu My hope would be that they will help because if they can help in situations where the tumor is more advanced, the feeling is that they should be more effective when the tumor size is much-much smaller.
- Miller On a day-to-day basis, when you see a patient who has already undergone surgery, what do you think about in terms of making decisions regarding postoperative treatment; the type of chemotherapy, length, etc?
- Chu We have to base our decisions on the data. We have to look at the patient's characteristics; what their overall performance status is, do they have any associated illnesses that might make it more difficult to treat or make them more susceptible to toxicity. Different treatments have different side effects and now that we have more treatment options it is critically important for patients to tell us what type of side effects they are willing to experience.
- Miller I know that you have a particular expertise in terms of working with some of the new compounds and trying to reduce toxicity and increase effectiveness. Tell us about that.

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Chu As you know, I have had a longstanding interest in developing Chinese Herbal Medicine and bringing it into the mainstream. My colleague, Professor Tommy Chang, co-director in the Development Of Therapeutics Program here at the Yale Cancer Center and a leading pharmacology professor here at Yale and throughout the world, had a group that was the first to show that a Chinese herb, used for over 2000 years in the orient to treat everyday diarrhea, could in fact reduce the side effects associated with a number of different cancer drugs. At the same time, in animal systems at least, it could enhance the tumor killing effects of chemotherapy. We have done three different clinical trials in patients and in one study, looking specifically at colon cancer, we found that this Chinese herb could indeed reduce nausea, vomiting and diarrhea associated with chemotherapy. We are about to embark on two additional studies, one in colon cancer in combination with chemotherapy, and the other is being planned by one of our colleagues in radiation oncology, Susan Higgins. She is planning a study that combines this Chinese herb with radiation therapy to treat patients with advanced ovarian and cervical cancer. The idea is to try to reduce the diarrhea associated with radiation therapy.

Miller I found it very interesting to hear about fingerprinting, which sounds criminal, but tell us about fingerprinting in the laboratory.

Chu What Professor Chang's group has done is made it possible to do a fingerprint analysis or profile of all of the ingredients within this Chinese herb and others. The big issue we have to deal with, with respect to herbal medicine in general, is the quality of preparation and the consistency of the preparation. What we are hoping to do is to bring this type of Chinese Herbal Medicine into mainstream medicine and ensure the high quality of the product and the safety. Within this main Chinese herb that we are dealing with there are four key products, and within those four key products there are up to an additional 90 to 100 individual ingredients. Through this fingerprinting profile we now know what each of the ingredients are.

Miller We received an e-mail from Barbara in Stamford. She wrote that her father has metastatic colon cancer and she wants to know what is available now, or on the horizon, in terms of treatment. Also, what is available at the Yale Cancer Center?

Chu We are very excited about how we approach patients with metastatic colorectal cancer and the advances that we have seen have taken place just over the last six to eight years. There are now a number of very active treatment options available that include traditional chemotherapy along with targeted therapies, either Avastin or Erbitux. In fact, I just came back from a big annual clinical oncology meeting in Chicago, and at one of the symposiums there was a very fascinating talk reporting on the study in Europe which shows that chemotherapy combined with Erbitux, which targets the epidermal growth factors, can actually result in increased shrinkage of tumors.

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- Miller Has the prognosis for patients with advanced colon cancer improved?
- Chu Yes, the median survival is upwards of 30 months which is really quite remarkable. Back when I started as a fellow and as a junior attending, our median survivals were only in the order of 8 to 10 months. We have seen a significant improvement in our ability to treat patients. Colon cancer is now a chronic disease and there are many different types of treatment options in different settings.
- Miller It is very encouraging and it sounds like things will continue to improve. How can someone listening access this kind of cutting edge treatment at Yale and elsewhere?
- Chu If anyone is interested in clinical trials, we do have a number of very interesting clinical trials here that are about to open or colon cancer. They involve the combination of targeted therapies and to learn more they can go to our website [www.yalecancercenter.org](http://www.yalecancercenter.org). People can also visit the NCI website, which is [www.cancer.gov](http://www.cancer.gov), and that will give a complete listing of all the trials in colon cancer.
- Miller As we are wrapping up, any last recommendations you want to share with our listeners?
- Chu Colon cancer is highly preventable, highly curable and it is highly treatable. The take-home message is that if we can detect colon cancer at an early stage, we can cure it. Again, for those out there, get your colonoscopy; it is absolutely critical.
- Miller For those people who have been diagnosed recently, what is the outlook for them?
- Chu The outlook is really tremendous. The key would be to go to physicians who know how to take care of colon cancer.
- Miller Ed, I want to thank you for joining us and talking about this very important issue of colorectal cancer.

Until next week, this is Dr. Ed Chu and Dr. Ken Miller from the Yale Cancer Center wishing you a safe and healthy week.

*Thank you Dr. Chu and Dr. Miller. If you have questions for Dr. Chu, I encourage you to go to [www.yalecancercenter.org](http://www.yalecancercenter.org) for more information about cancer and the resources available to you. You can also listen for past editions of Yale Cancer Center Answers and audio and written formats on the Yale Cancer Center website at [www.yalecancercenter.org](http://www.yalecancercenter.org) and remember tune in to WNPR every Sunday evening at 6:00 for Yale Cancer Center Answers for the latest information on cancer care and treatment. On next week show, Dr. Chu and Dr. Miller will discuss screening, detection, and treatment of sarcomas.*