

Healthline with Yale Cancer Center

Hosts

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WTIC Newstalk 1080

Complementary Medicines for Cancer

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This is Healthline. A joint venture of WTIC NewsTalk 1080 and Yale Cancer Center. Yale Cancer Center is a resource for cancer programs throughout Connecticut, developing new advances in prevention, screening, diagnosis, and treatment. On Healthline, you will hear from some of the leading doctors in the country. Healthline is not intended to provide medical advice. Yale Cancer Center urges you to consult with a qualified physician in your community for diagnosis and for answers to your medical questions. And now, our co-hosts Oncologists Ken Miller and Ed Chu.

Miller Good morning and welcome to Healthline. My name is Dr. Ken Miller. I am the director of the Survivorship Program at the Yale Cancer Center in New Haven. I am here in the WTIC studios with my colleague and co-host, Dr. Ed Chu, who is the Chief Adult Oncologist at the Yale Cancer Center. Good morning Ed.

Chu Good morning Ken. Healthline, with the Yale Cancer Center, is our way of providing you with the most-up-to date information on cancer care every Sunday morning at 8:30 a.m. Healthline features some of the nation's leading oncologists and cancer specialists who are on the forefront of the battle to fight cancer right here in Connecticut.

Miller Each week, Ed and I are joined by a different expert from the Yale Cancer Center. Our goal is to give you help by sharing the latest information and also to give you hope. If you would like to submit a question about cancer to Healthline, please e-mail us at Healthline@yale.edu or call 1-888-234-4YCC. We will answer your questions on the air today or in a future broadcast. If you are interested in listening to past editions of Healthline, or if you would like to learn more about a specific kind of cancer, all of our shows are posted in audio and written format on the Yale Cancer Center website, www.yalecancercenter.org. Today, Ed and I are going to be talking about research and the role of complementary and alternative medicines for the treatment of cancer. I'd like to take a minute to say a little about my co-host Ed Chu, who is the Chief of Medical Oncology. He is also the Deputy Director of Clinical Research and co-director of a program here at the Yale Cancer Center called Developmental Therapeutics. Ed has a very specific interest in the research into and the development of Chinese herbal medicines. Ed, it is a great opportunity to have you as not only a host, but also as a guest on this show.

Chu It is great to be here with you as always, and to have the chance to talk about a subject that is near and dear to my own heart.

Miller Could you explain what complementary and alternative medicines are?

Chu Complementary alternative medicine is broadly defined as a medical system, or product for treatment, that is not thought of as standard of care and not viewed as part of mainstream western medicine.

Miller What are the differences between complementary and alternative medicines?

- Chu We tend to lump them together, but they are a bit distinct. Complementary medicine includes all practices and treatments that are not considered standard of care, but are used along with standard western-style medicine. Alternative medicine is used entirely in place of the standard therapy. So for instance with cancer, alternative therapies may include the use of acupuncture, yoga, meditation, or massage, in place of traditional chemotherapy, surgery, and/or radiation therapy.
- Miller We do hear stories, and I have had one or two patients myself that say to me, “I know you have recommended chemotherapy, or you have recommended radiation, but I am not doing that. I am going to go to Mexico to get Laetrile, or I am going to New York to receive injections of minerals.” What is your feeling about that kind of approach?
- Chu It is a very relevant question because we have all taken care of patients who have not accepted the more traditional western style therapies and have gone to various countries, or have taken herbal medicines. In my own particular case, we have had a number of very close family members go into the Orient to take Chinese herbal medicines. There is no question that a number of these herbal remedies and nutritional supplements may in fact have very positive effects; not only on cancer but for a broad variety of diseases. The concern that I share with many of my colleagues who are focused on trying to study the role of complementary herbal medicine, is that one cannot be sure that the products have been well controlled in terms of how they have been prepared and whether or not they are free of any type of contaminants or impurities. While we always assume that these herbal remedies and medicines are completely safe and won’t have any ill effects, we are actually now beginning to experience that these medicines are not so well prepared and that they can have contaminants and impurities. In fact they can cause serious harm to patients, and people need to be well aware of that. What I would say for cancer, and as well for any other type of disease, is that the standard therapies are the only treatments that have been well documented and investigated in terms of clinical trials. All of these complementary alternative medicines have not been so thoroughly and rigorously investigated.
- Miller If these medicines were well investigated and prepared meeting Federal Regulations, could you envision the day that they might be helpful in the treatment of people with cancer?
- Chu Yes, absolutely. In fact, that is why here at the Yale Cancer Center, and in particular my very close friend and colleague Professor Tommy Cheng, are focused on trying to control the consistency and the preparation of these herbal medicines, and also bring scientific rigor to clinical studies. One of the things that worry a number of us in this field is that it is still a black box. It is a mystery as to how these herbal medicines work, or don’t work. What we would like to do is bring the same type of scientific rigor and discipline to herbal medicines, as we do to the study of any drug that we want to bring into clinical trials and everyday clinical practice.

Miller If we lived in China now, what would be the approach to treating someone with colon cancer, for example, in a patient where the cancer has spread elsewhere in the body?

Chu Well, that is evolving, but I would say that up until about 5 or 10 years ago, many patients would go see a so-called Chinese traditional medicine doctor; which would mean a physician trained in herbal eastern style medicine like acupuncture, meditation, and Yoga. Herbal remedies would be quite integral to their therapy. I have had a chance to actually visit a number of herbalists in Taiwan and in China, and what is quite fascinating to me is that these herbal physicians and herbal stores are actually embedded within the everyday markets where people go to buy their meats, fish, and their vegetables. They can go to the herbal store to get their herbal remedies, and can either get a concoction that is brewed as a tea, or actually a couple of years ago when I was visiting, they put different roots and extracts into a blender, mixed it up, and then have you drink it. It really is very different than here. As things have evolved, there are now a number of physicians in China, medical oncologists like us, who are trained not only in western-style medicine, but eastern style medicine as well, and they combine the two.

Miller In China now, there is also a move to standardize the herbal remedies in terms of how they are put together.

Chu That is right. There is no question that the highest priority right now is quality control and understanding what the constituents of each of the herbal remedies are.

Miller We would like to remind you to e-mail your questions to us at Healthline@yale.edu. We are going to take a short break for a medical minute. Please stay tuned to learn more information about complementary and alternative medicines with Dr. Ed Chu.

Medical Minute

This is a medical minute brought to you as a public service by The Yale Cancer Center. Cancer patients become cancer survivors the first day they are diagnosed. There are over 10 million cancer survivors in the US, and the numbers keep growing. However, there are long-term side-effects of cancer including heart problems, osteoporosis, fertility issues, impaired growth, and an increased risk of second cancers. Ending cancer treatment can be both exciting and scary. Most people are relieved to be finished with the demands of treatment, but many also feel concerned about whether the cancer will come back, and what they can do to prevent a relapse. Cancer survivors require long-term specialized care and support. For more information, log on to www.yalecancercenter.org.

Miller Welcome back to Healthline. This is Dr. Ken Miller, and I am here with my co-host, Dr. Ed Chu, discussing the latest research into the use of complementary and alternative medicines. Ed, how commonly are complementary or alternative medications used by patients?

- Chu It is estimated by the Office of Complementary and Alternative Medicine at the National Institute of Health, that up to 40% of all adults here in the United States are using some form of complementary or alternative medicine. In terms of expenditures, that is more than \$25 billion a year spent on these various forms of medicines. Interestingly enough, the highest fraction goes towards herbal remedies, natural products, and nutritional supplements.
- Miller If 40% of patients are taking these types of medications, what percentage of them tell their doctors about it?
- Chu That is a very good question Ken. In fact, there have been some questionnaires that have looked at that very question. Probably only about 5% to 10% of cancer patients have openly acknowledged that they are taking nutritional supplements or herbal remedies. If one takes a more detailed history and focuses it down, what we are finding is that 40% to 50%, at a minimum, are in fact taking some of these complementary medicines.
- Miller What are some of the reasons why people wouldn't tell their doctor?
- Chu I think they are afraid that the physician will say that they need to stop taking herbal remedies. The feeling for why they may want to take those remedies has a lot to do with the control it gives them over what they are doing. There is this belief that these products are completely benign with no side-effects and that they can boost their immune system and improve their overall quality of life. However, it is important to emphasize that at least with cancer therapies, we are now beginning to appreciate that a number of the common herbal medicines like Gingko Biloba, Ginseng, Kava, and St. John's wort, can in fact negatively effect how the chemotherapy is working. There is another herbal remedy called black cohosh that is from the buttercup family and is used to treat hot flashes. A number of studies done both at the University of California, San Francisco, and studies done here by our own Dr. Sally Rockwell and Dr. Susan Higgins, have found that black cohosh can also negatively impact how chemotherapy works in women with breast cancer.
- Miller This is very important information; let me ask a little bit more about it. If one of our patients is taking black cohosh, or another herb along with chemotherapies, how might that affect the outcome?
- Chu I can give you a perfect example. In my own field of colorectal cancer, there were studies that were done that showed that St. John's wort, which is again very commonly used to treat mild depression and anxiety, can reduce the metabolism of one of the key drugs that we use for colon cancer, namely irinotecan. Also, the same St. John's wort can adversely affect the metabolism of a number of drugs that treat HIV, AIDS, and also a drug that is widely used in the transplant setting. We just have to be very-very careful. I think it is critically important, at least for cancer patients, that before they embark on traditional western style chemotherapy, it is absolutely imperative to

have an open discussion between the physician and the patient as to what type of nutritional supplements, herbal remedies, or over-the-counter drugs that one may be taking or plans to take.

Miller As a reference for patients and also for doctors, there are many different herbs and many different chemotherapy drugs. I would be afraid that a lot of the oncologists may not know of the interactions. How would an oncologist or a patient get that information?

Chu It is clinically important that we, the physicians, educate patients. I know that every time I see a new patient who is about to start chemotherapy, I warn them about the potential negative harm of using various nutritional supplements or herbal remedies. In fact I say that if they are going to embark on chemotherapy, either standard therapy or a clinical trial, that during that time frame they cannot be on any type of other supplements.

Miller There is the concern that it will change the effectiveness and also may change the side effects.

Chu That's right. It can not only impair the potential positive benefit of chemotherapy and traditional standard therapy, but can potentially lead to side effects that we may not be aware of. What we are also finding is that just like drugs interact with other drugs, there is no question that herbs may also have funny interactions with both over-the-counter drugs and also chemotherapy drugs.

Miller You personally have been very involved in the development of a new herbal formulation called PHY906. Can you tell us a little bit about how that developed and where your studies are at this point?

Chu Yes, this actually developed about 6 years ago now. Professor Cheng and I got together and talked about trying to focus our scientific efforts on studying Chinese herbal medicines, and because my own area of clinical interest is in colon cancer, and one of the main side effects in the treatment of colon cancer is diarrhea, we thought we would look for a Chinese herb that might be able to alleviate the diarrhea, abdominal cramps, nausea, and vomiting associated with chemotherapy. So, being the good scientist that Professor Cheng is, he went into Chinese literature and found an herb. It was not called PHY906 but had a Chinese name, and it is an herbal formulation made up of four main ingredients that have been used in the Orient for well over 2000 years to treat nausea, vomiting, abdominal cramps, and diarrhea. We thought, let's give it a shot and see if this herbal remedy might in fact be able to reduce the diarrhea associated with the drug irinotecan. We started off by doing animal studies, which were done in Professor Cheng's lab. It was shown very clearly that the herb could in fact reduce the side effect profile associated with chemotherapy. We then went on to do the clinical study. It was a phase I/II clinical study looking at this herb in combination with irinotecan. What we found was very consistent with what we had found in the animal studies. The herb could in fact reduce nausea, vomiting, and diarrhea associated with chemotherapy.

- Miller I want to go back to the issue of quality assurance. There are four components to this drug and it is not just a matter of putting them together; there really is a very scientific way of doing it. Could you share that with the audience?
- Chu One of the big differences between western medicine and eastern-oriental medicine, is that in western medicine we are always trying to look for the active ingredient, whereas in traditional eastern-oriental medicine, you want to have a mixture or a combination to work more effectively. What was shown in the lab by professor Cheng's group, was that two of the herbs were critically important to have so the herb could reduce the toxicity associated with the chemotherapy, and two different herbs were critically important to enhance the antitumor activity of this herbal formulation. Also, different herbs have different biochemical molecular mechanisms by which they work. It really is much more complicated and you need to have all four herbs working together.
- Miller Chemotherapy drugs typically are a single compound that focuses on an enzyme or something in the cancer cells. How many chemicals are there in these four herbs?
- Chu Even though we say there are four main ingredients in this herbal formulation PHY906, it is estimated that there are up to 150 individual components. A hundred of those individual components have now been characterized. We're now well on our way, using very sophisticated western technologies, to be able to identify all 150 of those ingredients.
- Miller Would this drug eventually go to the FDA; is it in the process?
- Chu We are approaching PHY906 just like any other drug, and even before we began the clinical study professor Cheng and I met with the FDA to talk about the clinical development plan. All along we have worked very closely with the FDA, and one of the things that has been quite exciting and encouraging for us is that the FDA has viewed our program here at the Yale Cancer Center as the model for developing Chinese herbal medicine as a real clinical drug.
- Miller I imagine this will be the first of many more to come, both here and elsewhere.
- Chu Well, to date, there have been no Chinese herbal medicines or any other type of herbal medicine that have been approved for use in cancer therapy. As far as we can tell this herb has undergone the most mature studies to date.
- Miller Here at Yale, what clinical trials are going on using PHY906?
- Chu We currently have a phase II study that is looking at PHY906 in combination with an oral fluoropyrimidine called capecitabine, also known as Xeloda. This clinical study was based on laboratory findings, which showed that in fact, this herb could enhance the antitumor activity of

Xeloda. We have one study for liver cancer, and we have another study that is looking at the herb PHY906 in combination with Xeloda for the treatment of pancreatic cancer and a wide range of other solid tumors.

Miller You have been actively involved in something called the Global Consortium for Chinese Herbal Medicine. Can you tell us what the consortium is?

Chu It is a very interesting group that was founded by Professor Cheng. He is the chairman of this consortium and I chair the clinical working group. The whole idea of this consortium is to bring together the major centers and institutes from around the world that are entirely dedicated to focusing on developing Chinese herbal medicines as real drugs.

Miller We would like to remind you to e-mail your questions to us at Healthline@yale.edu. We are going to take a short break to listen to a survivor story. Please stay tuned to learn more about complimentary medicines with Dr. Edward Chu.

Survivor Story

A few years ago, the diagnosis of cancer was a death sentence for many patients, but today, thanks to advances in clinical research, we are turning the corner in the battle against cancer. There are over 10 million cancer survivors now living in the US. They are the true heroes in the war against cancer. Here is a story of a hero from Hamden.

Ten years ago, when I was diagnosed with aplastic anemia, there was no cure. After teaching math for 35 years, I was forced to retire. Dr. Thomas Duffy at the Yale Cancer Center told me about a new procedure called mini stem-cell transplant. He encouraged me to put my life in the hands of Dr. Stuart Seropian, one of the few doctors in the country doing this procedure. On January 17, 2004, I had a stem cell transplant at the Yale Cancer Center. At age 70, I feel like a new man. I owe a great debt of gratitude to my anonymous stem cell donor and to the terrific staff at the Yale Cancer Center. They literally saved my life.

This survivor's story has been brought to you by Yale Cancer Center.

Miller Welcome back to Healthline. This is Dr. Kenneth Miller, I am here in the WTIC studios with my co-host Dr. Edward Chu, who is also our guest today. We are talking about complementary and alternative medicines. Ed, I wanted to ask you about the setting in which a patient might think about using one of these drugs, or when might the doctor recommend it, or you might recommend they go onto a trial?

Chu Certainly for the general broad definition of the use of complementary alternative medicine, one can conceive of using them to try to alleviate the side effects associated with the underlying disease. Also, in the case of cancer therapy, I think there is greater use of these complementary

medicines to try to alleviate and reduce the side effects and negative consequences that are associated with the therapies.

- Miller You talk about side effects of these medicines in combination with chemotherapy. How about the side effects of herbal medicines in general?
- Chu Yes, it is really a mistake for our listeners to think that herbal medicines and nutritional supplements are completely benign and do not have any ill effects. What we are now finding is that they can be associated with what are called hypersensitivity allergic reactions, and also autoimmune reaction that can lead to liver failure and kidney failure. I will tell you a very poignant story that I was involved with. A very close family friend, about 5 years older than myself, was diagnosed with metastatic colon cancer. He is of Chinese descent. His father went to China to one of the main herbalists to get a Chinese herb that was touted to treat colon cancer. They were told it cured up to 80 to 90% of all patients with widespread metastatic colon cancer. It cost \$20,000 for this herbal remedy. Within 4 days of taking that herbal remedy, my friend went into profound coma, liver failure, kidney failure, and lung failure. Probably what happened, and we're actually now trying to study the consequences of this herbal remedy, is that a massive cytokine release took place that caused these massive negative consequences on his body, and within one week, he was dead. Not to say that he would not have had the same consequence, because he had very significant disease, but I do believe that in this case, the herbal remedy clearly did not help, and may have actually caused his death. We have to be very, very careful about this.
- Miller The drug that you have developed has a lot of quality assurance and it sounds like you really looked at the side effects step-by-step with different dosages.
- Chu I think that the FDA is looking to us here at the Yale Cancer Center for guidance because Professor Cheng's group has developed a sophisticated fingerprint profiling so we know exactly what we have in the mixture; if the profile is not the same from batch to batch, we will not use it clinically. The other thing is to develop very rigorous clinical studies because many of these herbal remedies may also have placebo effects. We want to set up rigorous clinical studies, so that we know exactly what we are dealing with.
- Miller If the patient or their family wants to look into participating in a clinical trial, who would they call?
- Chu The best thing would be to go to our website, www.yalecancercenter.org. Also, anyone can call my office at 203-785-6879.
- Miller Terrific. Ed, before we close, are there any other key points that you want to share?
- Chu Complementary medicines can be helpful in cancer patients, but special caution and care must be taken. I strongly encourage careful discussion with your physician and health care team before

starting any type of herbal medicines and/or nutritional supplements while on active chemotherapy. We firmly believe that clinical trials are critically important to investigate what the potential role of herbal medicines will be as adjunctive therapy to traditional chemotherapy.

Miller If you have questions for Dr. Ed Chu, or for Healthline, I encourage you to go to our website www.yalecancercenter.org for more information. I want to thank Ed for taking the time to discuss complementary medications here on Healthline.

Chu It has been great having this discussion with you. Remember to tune into WTIC NewsTalk 1080 every Sunday morning at 8:30 a.m. for Healthline with the Yale Cancer Center. Until then, this is Dr. Edward Chu and Dr. Ken Miller from the Yale Cancer Center wishing you safe and healthy week.