

Healthline with Yale Cancer Center

Hosts

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WTIC Newstalk 1080

Radiation Therapy for Women's Cancers

Guest Expert:

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Sunday Mornings at 8:30*

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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, and I am the Director of the Cancer 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. Our program features some of the nation's leading oncologists and cancer specialists, who are in the forefront of the battle to fight cancer right here in our state of Connecticut.
- Miller Each week, Ed and I are joined by a different expert from the Yale Cancer Center. If you would like to submit a question about cancer to Healthline, please e-mail us at healthline@yale.edu, also if you are interested in listening to past editions of Healthline, or if you would like to learn more about a specific type of cancer, all of our shows are now available on the Yale Cancer Center website which is, www.yalecancercenter.org.
- Chu Today, our special guest expert is Dr. Susan Higgins, a radiation oncologist here at the Yale Cancer Center. Susan specializes in the care of women with both breast and gynecologic cancers. Susan, thanks so much for being with us today on Healthline.
- Higgins Thanks so much for having me.
- Miller Let's begin by explaining to our listeners what radiation is.
- Higgins Many patients are familiar with diagnostic radiology, where the physicians use low energy x-rays to image the body. In radiation oncology, we are using high-energy x-rays to treat cancers.
- Chu Why is it that radiation works on someone who has been diagnosed with cancer?
- Higgins Basically, the effectiveness of radiation is based on the damage that it causes to the genetic material of the cells, which is known as the DNA. The damage can potentially lead to cell death and the whole idea here is that normal cells are much more effective at repairing that damage than

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tumor cells are.

Miller So, you take advantage of the difference in that ability to repair?

Higgins Exactly, we call that our therapeutic advantage.

Chu Typically you work very closely with the medical oncologists and the surgical specialists to come up with a team-based approach. When is the decision made to treat someone with radiation therapy as opposed to other modalities?

Higgins As you mentioned, we have a team approach and usually a patient will come into our center and see various specialists. They will see a gynecologic oncologist, a radiation oncologist, and upfront they will also see many of our support specialists; like our nurses and our dieticians. Once we get to know the patients and their history, we will share all their information and often times go to the Tumor Board. Here, their case is presented and the pathologist reviews their pathology and we review their films. We basically discuss their case in detail and come up with a management approach together. Then we often see them again and implement our treatment strategies.

Miller Women being diagnosed with cervical cancer has been a very big topic recently. What would be some reasons why a woman might receive radiation instead of surgery, or receive radiation after surgery?

Higgins Thankfully, in this day and age due to the Pap smear, many women come in with early-stage cervical cancer. For the most part it is treated by our gynecologic-oncology associates, but we as radiation oncologists often deal with the tumors that cannot be treated surgically. In that case, the state-of-the-art treatment consists of radiation therapy and cisplatin chemotherapy. We work very closely with the GYN-oncologists who administer the chemotherapy and we administer the radiation therapy together. It is a team effort and a team approach.

Chu When you consider radiation therapy for a patient, there is a great deal of planning that goes into how to actually administer the radiation therapy.

Higgins That's right, and this process involves first determining which areas are going to be important to treat. Part of this process is doing an examination under anesthesia, done with our gynecologic-oncology associates, and then doing the proper imaging and deciding the extent of the disease. I then come back to my department and do a simulation. This is a mapping procedure where we do a CAT scan and get a three-dimensional view of their body. That information goes into a computer and then I work with very complicated and sophisticated software to decide how many beams I am going to use and the configuration and shape of the beams to optimally treat that patient's cancer.

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tumor cells as possible to achieve that therapeutic ratio that we talked about before.

- Miller I want to ask you a little bit about the history of radiation, even going back just 20 years, how was all that planning and simulation done?
- Higgins We now have a process that's known as three-dimensional planning and it is aided by the state-of-the-art CAT scanners, also known as CT simulators. Back in those days we had fluoroscopy; we would do our examination under anesthesia and had two dimensional planning. We only had x-rays and used bony landmarks which were a lot less sophisticated. This has been an advance not only with regard to cure rates, but with regard to sparing normal tissue and improving quality of life.
- Chu What are the typical side effects that are associated with radiation therapy, especially for women with cervical cancer radiation treatments?
- Higgins When we treat gynecologic malignancies including cervical cancer, the thing that we are usually concerned about is the effects on the bowel because we are treating the pelvis. People usually experience diarrhea during the course of treatment, and also some nausea and sometimes a bit of vomiting. We also have some bone marrow in there, quite a bit sometimes, and because we are giving chemotherapy we often watch their cell counts very closely. We do this with the help of our gynecologic oncologists.
- Chu Is fatigue usually a problem with these patients?
- Higgins That's a very good point. Fatigue is actually a common side effect during radiation. It is the kind of fatigue one would experience when they want to take a nap in the afternoon. It is not overwhelming to the point where they can't make it to treatment or they can't do any activities that they would like to do, but it is part of it.
- Miller You mentioned this will potentially occur for women who can't have surgery but are able to have radiation. Is cervical cancer, when treated, curable, and are the treatments tolerable?
- Higgins The good news is that in many cases it is curable. In fact, one of the advances that we've seen over the past 10 years that has been extremely important is the implementation of concurrent chemotherapy, which came along in the 1990s. This raised cure rates for each stage of locally advanced cervical cancer by about 10% which has helped tremendously. We have very good cure rates even with locally advanced cervical cancers that are relatively large. We find it very worthwhile and gratifying as radiation oncologists to do this kind of treatment.

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Miller We would like to remind you to email your questions to us, and Dr. Susan Higgins, at healthline@yale.edu. We are going to take a short break for a medical minute. Please stay tuned to learn more information about radiation oncology in women's cancer with Dr. Susan Higgins from the Yale Cancer Center.

Medical Minute

This is a medical minute brought to you as a public service by the Yale Cancer Center. Breast cancer is the second most common cancer in women. In Connecticut alone approximately three thousand women will be diagnosed with breast cancer this year. But there is a new hope for these women, earlier detection, non-invasive treatments and novel therapies provide more options for patients to fight breast cancer. In 2006, more women are learning to live with this disease than ever before. Women should schedule an annual mammogram beginning at age 40 or earlier if they have risk factors associated with the disease. With screening, early detection, and a healthy lifestyle breast cancer can be defeated. Clinical trials are currently underway at Federally designated comprehensive cancer centers such as the Yale Cancer Center to make innovative new treatments which have not yet been approved by the Food and Drug Administration available to patients, for more information visit their website at www.yalecancercenter.org.

Miller Welcome back to Healthline, this is Dr. Ken Miller and I am here with my co-host Dr. Ed Chu and our guest Dr. Susan Higgins, an expert in radiation oncology at the Yale Cancer Center. Susan, I want to start the second segment by asking some of the myths that you hear about radiation.

Higgins Much of what people are concerned about with radiation is fear of the unknown. They may have several friends and loved ones who have been treated with surgeries such as hysterectomies, but they don't necessarily have a lot of friends who have been treated with radiation. Sometimes they will relate their experience with radiation, and GYN cancers in particular, with grandmothers or older people who were treated with cobalt therapy. In cobalt therapy the skin received a lot of the dose and there were skin "burns," but now we have skin-sparing beams where the skin tolerance is much better and therefore we do not have those kinds of side effects. We also have much more sophisticated types of delivery of radiation therapy with a lot fewer side effects.

Chu In medical oncology we try to reduce the incidence of fatigue associated with chemotherapy by giving growth factors such as Procrit. Do you ever consider using growth factors in patients who are receiving fairly protracted courses of radiation therapy to see if that can help to diminish the incidence of fatigue?

Higgins We use number one support measures and the dietician helps. We use Procrit in a case where it is needed for hematologic indications; that has been our primary use for it.

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- Miller There is also the concept of adjuvant therapy. Can you explain what adjuvant therapy is in radiation and how it is different than other treatments?
- Higgins Many of our gynecologic cancers are treated by our gynecologic oncologists, hopefully definitively with surgery, but in many cases we find out that there are either gross tumor cells left behind, meaning that unfortunately there was some cutting right through the tumor, or that there is an area on a lymph node or some area that we feel we need to "clean up" with the radiation. Radiation is very helpful in this case because we can go in and basically attack the small amounts of tumor cells that may be left behind. We are sort of considered helpers to the surgeon in that respect.
- Chu You have also been a very big proponent of a special form of radiation therapy called brachytherapy. What does that mean and in what situations would you consider using brachytherapy?
- Higgins Brachytherapy has been an essential part of treatment for gynecologic cancers and the reason for that is that in addition to what we call the external-beam therapy, or the x-ray therapy where you can address a large area, we have to then also address the central portion of the pelvis, for example with cervical cancer, with a very high dose of radiation. Large volumes of normal tissues will not tolerate that type of dose but if you are able to place radiation sources, or pellets, right in or on the tumor, you can achieve very high and curative doses. They have to be applied in a very specific way so the brachytherapy techniques have to be mastered. We have a long experience with brachytherapy at our institution. It is used for both head and neck cancers and gynecologic cancers with great success, and it plays a tremendous role in the curative treatment of cervical cancer. In our particular case when we talk about locally advanced cervical cancer, we could not cure it without brachytherapy.
- Chu So typically you would combine and integrate it with the more traditional external-beam radiotherapy?
- Higgins That's right, in the standard course of treatment you would receive daily radiation therapy Monday through Friday. During the course of that week you would have one day of chemotherapy. You would have approximately six weeks of that type of therapy and two-thirds of the way through we would do the first implant. At the end we would do another implant using the brachytherapy to treat the tumor; it takes about 48 hours and the patient stays in the hospital with the implant and then they are able to go home and people tolerate it quite well.
- Miller Will the time come when brachytherapy won't be necessary, or will it always have a role?

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- Higgins It's a controversial issue right now. We have a special form of radiation called intensity-modulated radiation. There is a controversy in our field as to whether this could replace brachytherapy. The issue here is that intensity-modulated radiation is used in cases where there is an immobile target. It has very sharp beam edges so you have to be very careful to make sure you are inclusive of all of the tissues you want to treat.
- Chu We have talked for the most part about cervical cancer. What about some of the other gynecologic cancers such as endometrial cancer? Is there any role for radiation therapy there?
- Higgins Yes, we have had a tradition of treating patients with endometrial cancer with adjuvant therapy. Most of our patients that come in with a diagnosis of endometrial cancer, and have been treated by their surgeon, have had a hysterectomy and done well. They are usually patients with early stage disease, but there is about a 10% risk that they could have disease recur at the top of the vagina. We have a special treatment called the high-dose ray treatment where we place a cylinder in the vagina and with three treatments we can reduce the incidence of recurrence from 10% to about 1%. This is one of the treatments where people come in with a fear of the unknown, but after the first treatment they realize that it is relatively straight forward and has a tremendous benefit.
- Miller One of the things I have been impressed with here at Yale is that when people come with a fear of the unknown, they do become quite comfortable. This has to do with your work and also your team and the nurses. Can you say a little more about the role of the supportive parts of the team?
- Higgins We have a tremendous support network and I have to give credit to all the nurses in our support network who give a tremendous amount of attention, along with the social workers looking out for the patients' welfare while they are going through these treatments. In the initial consult, we as physicians try to give them the factual information and consult them, then on a day to day basis, especially in our department, there is a lot of continuity. There is always a physician in the department. I meet with my patients once a week, which is essential for GYN-oncology patients because everyday something is happening to them.
- Miller Let me take this a step further, I think the people that have never been through treatment, or had relatives that were treated a long time ago, picture this to be a very sad environment. Is that the case when someone comes for radiation?
- Higgins It's interesting. Sometimes we have the opposite reaction, where for people it becomes a sort of small part-time job. They are in crisis mode when they come in and really get into their role as a patient and have the support there for them. We have had patients say in the past that after they are done, they get into a funk because they stop doing things and do not have that same support. We are working with survivor groups to address some of these issues.

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Miller We are going to take a break for a survivor story. Please stay tuned and join us for more information about radiation oncology and women's cancers with Dr. Susan Higgins.

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 the 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. Then I met Dr. Tom Duffy at the Yale Cancer Center. He told me about the new procedure called a 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 the 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 the terrific staff at Yale Cancer Center. They literally saved my life.

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

Miller Welcome back to Healthline. This is Dr. Ken Miller and I am here with my co-host Dr. Ed Chu and our guest Dr. Susan Higgins, who is an expert in radiation therapy for women with both breast cancer and gynecologic cancers here at Yale. We are going to talk a little bit more about the actual treatment with radiation, but I want to ask you what acceptable screening is because we want to get the word out there.

Higgins We feel very strongly that Pap smears are so important. With proper use of Pap smears we could potentially eradicate locally advanced disease in this country because most cervical cancers can be found very early on with Pap smears. For this reason, we advocate that women go at least every two years, and if they are high-risk patients, on a yearly basis.

Chu How about for endometrial cancer and also ovarian cancer; are there any effective screening measures that have been developed?

Higgins With uterine cancers, one of the reasons that they are so highly curable is that for the most part they occur in postmenopausal patients. When these people have postmenopausal bleeding, you know right away that something is not right. Most present to us with stage I disease, or at the most early stage II disease, which are both extremely highly curable. We are still working on the best screening test and early detection method for ovarian cancer. Dr. Rutherford and Dr. Schwartz have been working very hard to elucidate some of the factors that can be used in that regard.

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- Chu Following up on ovarian cancer, is there any role for radiation therapy for treating women with ovarian cancer?
- Higgins There are two ways that we have used radiation. One of the techniques that we have used in the past, which has somewhat fallen out of favor, is whole abdominal radiation therapy. The issue with whole abdominal radiation therapy is that because you are treating such a large volume of tissue, it has a certain amount of morbidity; the effectiveness was called into question so it has fallen out of favor in the recent past. With regard to ovarian cancer patients, we are playing a role in palliation, especially since we have found better chemotherapy and patients are living longer. We see that there are areas where the disease has spread that we can help with; for example, painful bony lesions or a soft tissue mass in the pelvis. In these instances we can provide a lot of pain relief and increase the patient's quality of life.
- Miller We have covered a lot of information talking about curative therapy, adjuvant therapy and also symptom management. In terms of symptom management, if someone has areas of pain, what are the things you have to think about in terms of pain relief versus side effects of the therapy?
- Higgins In many cases, luckily, we are able to control the symptoms with a relatively short course of radiation, so the investment of time on the patient's part is relatively reasonable. The benefit to them in many cases is tremendous because the side effects of their narcotic pain pills can be very significant. We can reduce their need for narcotics, and in many cases if you are treating a bone, ten treatments will do it and you are done in 2 weeks. Approximately 80% to 90% of those patients never need to come and see us again and do very well.
- Chu Susan, I know you have a special interest in Chinese herbal medicines. Perhaps you could tell our listeners what you have done in that area and what some of your future plans are?
- Higgins We have a group with a special interest in this area. We know that there are certain Chinese herbal medicines that have been used for treating GI symptoms. We have a product that has been purified in one of our collaborator's labs called PHY906. One of our goals is to use this to protect the GI tract while we are giving radiation so that we can decrease some of the side effects inherent in our treatment.
- Chu From what we have discussed, it sounds like there are some very interesting animal studies that have already begun to show that this herb can reduce the toxicity, and perhaps the GU and the GI toxicity, associated with radiation therapy.
- Higgins Yes, drawing from some of the previous studies that have been done including those with chemotherapy agents, there have been some promising results.

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Miller Susan, we received a couple of emails. The first one is from Marsha who lives in Manchester. She writes,

My mother just underwent a hysterectomy for treatment of early stage uterine cancer and they have recommended radiation. Could this be something that is genetic? Do I have to worry that there is a risk of my daughter or myself developing uterine cancer?

Higgins That's a very good question. For the majority of patients with uterine cancer, the risk factors have nothing to do with genetics and she does not need to worry about that. She needs to worry about getting her mother to the doctor and getting her the proper treatment. The risk factors associated with endometrial cancer, for the most part, have to do with lifestyle; other risk factors include diabetes, etc.

Miller In another email someone asks what your thoughts are on the vaccine for cervical cancer.

Higgins That is a very interesting question. There are two things that concern me as an oncologist. The first is that many of the patients I see are there because of a lack of access to healthcare; access to the vaccine will be a limiting factor. The other issue that people have expressed is the complacency issue. When people see that they have a vaccine, they still need to realize that this vaccine does not cover all types of HPV and it does not protect against other STDs.

Miller Good point. There has been more about this in the newspaper and the literature which encourages women to have Pap smears and talk to their doctors about the vaccine. If you have questions for Dr. Susan Higgins, or for Healthline, I encourage you to go to our website, www.yalecancercenter.org for more information about cancer and the resources available to you. Susan, I want to thank you for joining us on Healthline.

Higgins Thank you.

Chu Susan, thank you for being with us today. Remember, tune into WTIC NewsTalk 1080 every Sunday morning at 8:30 for Healthline with the Yale Cancer Center. Please join us next week when our special guest expert will be Dr. William Sledge. He will focus on coping mechanisms to help patients with cancer. Until then, this is Dr. Ed Chu and Dr. Ken Miller from the Yale Cancer Center wishing you a safe and healthy week.

You have been listening to Healthline, a joint venture of Yale Cancer Center and WTIC NewsTalk 1080. Join us next Sunday morning from 8:30 to 9:00 am for another edition of Healthline on WTIC NewsTalk 1080.