

Yale CANCER
CENTER

answers

WNPR Connecticut Public Radio



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Lung Cancer Awareness Month Update

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Yale Cancer Center Answers

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Welcome to Yale Cancer Center Answers with Drs. Ed Chu and Ken Miller. I am Bruce Barber. Dr. Chu is Deputy Director and Chief of Medical Oncology at Yale Cancer Center and Dr. Miller is an oncologist who specializes in pain and palliative care. If you would like to join the discussion you can contact the doctors directly. The address is canceranswers@yale.edu and the phone number is 1-888-234-4YCC. This evening we take a look at the prevention and treatment of lung cancer with Dr. Frank Detterbeck, Professor of Thoracic Surgery at Yale, along with his colleague Dr. Lynn Tanoue, Professor of Pulmonary Medicine.

Miller I want to start out with a question about cigarette smoking and lung cancer. Obviously they are related, but how are they related?

Tanoue There is no question that cigarette smoking is a major risk factor for lung cancer. The majority of patients who have lung cancer do smoke. In the United States about 5% of lung cancers in men occur in nonsmokers, and in women, about 15%. Smoking is clearly not the only risk factor, but it is the most important one.

Detterbeck There are a number of things that are changing though. 50% of people that we diagnose with lung cancer now are former smokers who have quit many, many years ago. In many ways we sort of put blinders on and did not really focus enough on the family history and history of other cancers that predispose people. We focused so much on smoking that we ignored some of those things. We are starting to realize that these other factors are also very important and we need to take notice of them.

Chu Picking up on that point, if an individual stops smoking, is there any point when the risk goes completely to zero, or is there always a baseline risk for developing lung cancer?

Detterbeck That is a common misconception, that if you stop smoking your risk eventually goes down to as if you had never smoked. That does not happen. Your risk goes down a lot compared to those who continue to smoke, but whatever risk you have built up from the period of time that you started smoked, you maintain that risk, you just don't continue to build it up. Smokers will always carry a higher risk than that of someone who never smoked at all.

Tanoue Having said that though, there is no question that if you stop smoking the risk declines. There are very good studies done in the United States and abroad showing that when you stop smoking your risk progressively decreases. It is true that it never goes down to that of a person who has never smoked, but there is no question that cigarette cessation at any age is very helpful. So even if you are smoking into your 50s and 60s and then

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quit, there is benefit to that.

Miller Is there any benefit to cutting down how much a person smokes? People say, "Oh I'll cut back."

Tanoue You really need to quit. There are so many good ways now to help you quit smoking that everybody really should try.

Chu What about this issue of second hand passive smoke? We hear a lot these days in the news about it. Could this account for that 15% of women that you mentioned Lynn, that have never smoked but maybe their husband, loved one or family members were big smokers?

Tanoue It is absolutely true that environmental tobacco smoke exposure is carcinogenic. It is much less so than in people who smoke themselves, but it does contribute to risk. That is why there are now laws to protect people from passive smoke exposure, but it is probably one of the factors that contributes to the incidence of lung cancer in people who do not directly smoke.

Detterbeck That is clearly a risk factor, no question about that, but I think it is an example of how we have put blinders on and focus so much on smoking. If someone who does not actively smoke gets lung cancer we tend to blame it on second hand smoke when there are other factors such as family history and prior history of cancer that carry a much higher risk for that individual than if they were exposed to a lot of second hand smoke. We put too much emphasis, I think, on second hand smoke.

Miller Let me ask you more about that, and hope that we aren't focusing too much just on smoking. Tell us a little bit about family history. If someone has had a mother or father with lung cancer are they at a higher risk?

Detterbeck Absolutely, there is about a 300% to 400% increased risk of lung cancer, if you have a first degree relative with lung cancer; corrected for any second hand smoke exposure or other exposures like that. It is clearly an independent factor and just to put it in perspective, if you are exposed to a lot of second hand smoke, you have about a 40% increased risk of lung cancer, with a first degree relative you are talking 300% and 400%. Second hand smoke is real, but other factors are also very real and are often forgotten.

Miller You also mentioned having had another cancer. How does that relate to the risk of developing lung cancer?

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- Tanoue Another cancer clearly identifies patients with higher risk. The type of cancer also matters. People who have had cancers of the throat and head and neck, we certainly appreciate that they are specifically at higher risk for the development of lung cancer. There are some families who clearly have cancer risks, multiple cancers in single families. It points out that the genetic piece of cancer risk is something we do not understand really well for lung cancer and many other tumors. All of these things are very important parts of assessing an individual patient's risk of developing lung cancer.
- Chu For colon cancer, breast cancer and ovarian cancer, there have been specific genes identified as the cause of those particular cancers. Has any such gene been identified as of yet for lung cancer, or is it still a very active area of research?
- Detterbeck It is an active area of research but there is data, for example, that the BRACA gene that is associated with breast cancer actually is also a risk factor for lung cancer. There are probably a lot of common themes that we need to pay more attention to.
- Miller Are there any prevention strategies? Obviously quitting smoking, but any medicines or vitamins?
- Tanoue There is a lot of interest in what is called chemoprevention, other medicines, vitamins or herbals you can take to diminish your risk. The unfortunate answer is that we do not know of any that work. There have been several large trials looking specifically at one vitamin that was thought to be preventive against lung cancer, beta-carotene, but unfortunately those studies, which were very large and well done studies about 10 years ago, demonstrated that there was actually harm associated with excessive use of beta-carotene. That was not what was anticipated. Everybody thought that this was a slam-dunk. It points out that when you disrupt the balance of what is considered the normal intake of any vitamin, it can actually cause harm. There is a lot interest in minerals and vitamins and I tell my patients that there is no data right now to support it. I encourage them to eat healthy, balanced diets, and that what their mother told them to do is probably still the best advice. There are some studies that suggest that diets rich in carotene, orange and vegetables for instance, and diets rich in lycopene, which you can get from tomatoes and ketchup, actually are beneficial. But again, those are dietary studies, not studies done of specific supplementation. Eat your fruits and vegetables, is the best message.
- Chu Where are we right now in terms of methods or strategies for early

detection screening of lung cancer?

Detterbeck Certainly CT screening has been the thing that has received the most attention. It is still a very controversial area and there is data that suggests that perhaps it does more harm than good. We do not know the answer to that question because there are a lot of things that we do not know, but it is pretty clear that broad based CT screening is not as simple an answer as we might have thought years ago. There are a number of things that are ongoing. The way to approach this is to have a multifactorial approach where we first look at risk factors of smoking, second hand smoke and family history. We pick out certain people that we think might be at higher risk, then we look for markers that indicate they may harbor a genetic defect, for example, that puts them at higher risk. Then we look for changes in their genetic makeup in the lung that suggest that they are developing a premalignant lesion. Those are patients that may then need to undergo screening. It needs to be a multi-tiered approach. We have ongoing projects in a number of areas to try to develop that sort of an approach in the future and there are certainly other people working on this as well.

Chu If there is a concern or controversy about the role of CT scan screening, what is the role of the good old fashion chest x-ray, which I think most people listening are more familiar with?

Tanoue There were very large studies done back in the 70s and 80s looking at chest x-ray as a screening tool for lung cancer. Those studies, like the studies done on CT screening, show that you can find early cancers when you use these screening interventions. The problem, as Frank points out, is that there is potential harm when you mass screen because you find lots of abnormalities that are completely meaningless, but trigger workup that can be invasive. They also cause a lot of emotional stress when people are worried about abnormalities that end up being benign. Right now none of the major societies or the US Preventive Services Task Force recommends screening by any modality. An individual patient needs to sit down with their physician. We do this all the time in the thoracic oncologic program to assess risk, which right now has to be individualized. You two are experts in colon and breast where screening modalities are reasonably safe. We just do not have that yet for lung cancer and it is an area that really merits more research.

Detterbeck A major point I want to make is that if you do a CT scan you will pick up a small nodule in 50% to 75% of people.

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- Miller In anyone that has it done?
- Detterbeck Yes, in anyone who receives a CT scan. The finding of a small nodule is extremely common and you pick up a lot of noise. It is very difficult to sort through that noise and figure out what is something we need to chase.
- Miller As an example, what type of patient might you send down for a screening with CT scan? Is there a typical situation?
- Tanoue The recommendation is to not screen because there is clearly so much potential for harm by indiscriminate mass screening. If a patient has multiple risk factors, if they smoked, if they have a family history or if there has been an occupational exposure, then they may be tested. The more risks they have the more concern we have; in that case it is not just a mass screen, it is a focused evaluation. I see many, many patients where that is what happens in the visit. They come to me with concerns about lung cancer and we talk about what the risks are. If they really want a screening study, or if I feel that the risk is so high they need one, we talk before the study about the likelihood that we will find something and the likelihood that it will be nothing, but it still merits evaluation.
- Miller We would like to remind you to e-mail you questions to www.yalecanceranswers@yale.edu. We are going to take a short break for medical minute. Please stay tuned to learn more information about lung cancer with Dr. Frank Detterbeck and Dr. Lynn Tanoue from the Yale Cancer Center.

Medical Minute

Here in Connecticut the American Cancer Society estimates that almost a thousand people will be diagnosed with colorectal cancer every month. The good news is that you can detect it early and colorectal cancer is easily treated and highly curable. That means that if you are over the age of 50, you should have regular colonoscopies to screen for this disease. In the case of patients who develop colorectal cancer there are more options than ever before thanks to increased access to advanced therapies and specialized care. Clinical trials are currently underway at federally designated comprehensive cancer centers like the one at Yale, to test the innovative new treatments for colorectal cancer. The patients enrolled in these trials are given access to medicines not yet approved by the Food and Drug Administration. This has been a medical minute and you will find more information at www.yalecancercenter.org. You are listening to the WNPR Health Forum from Connecticut Public Radio.

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- Miller Welcome back to Yale Cancer Center Answers. This is Dr. Ken Miller. I am here with my co-host Dr. Ed Chu and our guests Dr. Frank Detterbeck and Dr. Lynn Tanoue. We are discussing the latest in lung cancer diagnosis and treatment.
- Chu Before the break we were talking about various screening and early detection methods. Frank, I know that you have been working very closely with Susan Mayne and the folks in epidemiology to try to develop some new strategies and new approaches. Can you tell our listeners what you are focusing on?
- Detterbeck We have several ongoing projects. One is to use the data that we have about certain risk factors and put them all together so that we can apply that to an individual person and give some prediction of what their risk is for developing lung cancer in the next 10 years. We then use that as a basis for further investigations. We also have some interesting laboratory projects looking at genetic defects that we think are early markers that would lend themselves to a blood test to identify genetic changes that lead to lung cancer. We have a number of ongoing projects such as that.
- Chu I would like to spend some more time now talking about treatment. How is the outlook now for a patient diagnosed with lung cancer as opposed to 20 years ago when we were all starting our training?
- Tanoue In general the outlook is better. There are so many more treatment options for patients at all stages. Clearly patients who are diagnosed with early stage cancer do better than people who are diagnosed with advanced stage, that is true for most cancers, but the message should be that there are many, many more options for all patients with lung cancers, early or late stage, than there were years ago.
- Detterbeck Let me follow up on that. As a surgeon, we tend to treat early stage lung cancer with surgery because there are a lot of options there. We do a lot of minimally invasive resections with the videocamera and very small incisions. In fact, the majority of lung cancer operations that we do at the Yale Cancer Center are minimally invasive. There are other treatments that are sometimes appropriate with taking out less than a lobe. The traditional treatment is to take out a part of the lung or the lobe of lung that the tumor is in, but there are certain situations where patients are well treated by doing a sub-lobar resection. Then there are some other treatment options that I think are very exciting that do not involve surgery at all; radiofrequency ablation is one and stereotactic radiosurgery is another. Both are treatments that we have available at the Yale Cancer

Center. We do not know quite as much about these treatments so we need to be careful and not just jump to saying that this is the greatest thing since sliced bread, but it certainly is appropriate for some people and there is a broad spectrum of options.

- Chu What would be a situation, or in what conditions, would you think about these new kinds of noninvasive surgical approaches?
- Detterbeck There are two main points here. One is that there are people who have limited reserve in their lungs and they are not a candidate for a traditional approach so we need to think of an alternative. In those people, these are very good alternative options. The other aspect is that lung cancer is really a spectrum. We have tended to view lung cancer as black and white; it is bad or it is benign. However, the spectrum of lung cancers have different levels of aggressiveness or growth, and that is something that we do not fully understand, but we are getting better at understanding; which ones are less likely to spread and more amenable to a very localized therapy like stereotactic body radiosurgery or radiofrequency ablation.
- Chu When one is thinking about doing surgery and ablation with newly diagnosed lung cancer, what are the diagnostic evaluations that need to be done before surgery is considered to make sure that the cancer is limited to the lung and has not spread to other parts of the body?
- Tanoue What you are bringing up is that the evaluation of an individual patient is one that requires the input of many different physicians; that is what we do in the thoracic oncology program. For patients who have very early stage disease and we think that they are an operative candidate, their tumor can be removed surgically, that typically requires collaboration between Frank and myself. We decide if the pulmonary function is adequate and what the medical situation is and whether they will allow anesthesia in surgery. For patients like that evaluation is often quite minimal. Maybe a CT scan and then there would be no need for further evaluation, noninvasive or invasive, but for patients where we are considering stereotatic radiosurgery because of limitation of lung function or medical limitations, we need our radiation oncology colleague who is sitting at the table with us. Many more patients now are offered multimodality therapy which is the combination of surgery, radiation therapy and medical treatment chemotherapy, or biological therapy. It requires a team to make these assessments about what the appropriate evaluation and treatments are.
- Miller It is fascinating, a couple of minutes ago you mentioned that basically lung cancer is not all one disease, there are different types of it. Let me

pose a different scenario, a patient who is not early stage but has a large tumor, or lymph nodes that are involved. How are the team members involved and what treatments are involved to shrink that tumor and perhaps allow that patient to have surgery?

Detterbeck One of the hallmarks of how we practice, and how we think things should be done, is that it takes a team. Every patient that comes in to the Yale Cancer Center TOP program, thoracic oncology program, may not see all members of the team, but there is a team discussion of the scans, the tests that are needed, what treatments are going to be most appropriate and how we optimize them, and there are a number of things that this accomplishes. We streamline the approach by minimizing tests that they do not actually need. At the same time we try to anticipate what tests they do need so that we can get those done the same day and minimize the number of visits back and forth and the amount of time it takes to get to a final diagnosis. We are much more accurate at figuring out what the actual stage is and we can optimize the treatment plan by having multiple people weigh in on it. To put it in other terms, if you have a hammer you think everything looks like a nail, but by having a person with a screwdriver and someone with a glue gun all there together, you are really not limited by that. You put your best efforts together and I think that is what really makes the difference.

Miller So your group has gotten together and you have talked about an individual patient. What might you do for that patient with stage III disease for example?

Tanoue We meet with a tumor board twice a week to discuss these cases. It is very important for patients with advanced disease, where surgery is not going to be an option, that there be a discussion between all the people who might be involved in their treatment. We look at the pathology and the stage and we decide what the clinical stage is, the clinical stage defines what the treatment options are. We will discuss at that point, with the medical oncologist and radiation oncologist in the room, multimodality therapy for many patients; chemotherapy plus or minus, biologic therapy and radiation therapy. We will also talk about whether there are advanced treatments available, meaning clinical trials. We will look to see if there is a trial looking at a new treatment that the patient might be eligible for; the criteria for eligibility for many of these trials needs to be discussed, because not all patients will qualify.

Miller One of the really exciting advances in the treatment of lung cancer has been the development of these target therapies. Perhaps one of you could

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let our listeners know where things are these days with respect to this use of target therapies with lung cancer.

Detterbeck One of the things that I am particularly excited about is that for people with lymph nodes involved, as you just mentioned, it used to be thought that if we cannot do surgery than there is not much hope. That clearly is not true. We can cure many patients without surgery using chemotherapy and radiation. The other thing that I think is changing quite dramatically as well is that it used to be with advanced lung cancer that you really did not have a whole lot you could do, but that has changed a lot over the last 10 to 15 years due to first line, second line and third line chemotherapy. We have targeted agents and we see things now that we never used to see. We see people that are many years out from having advanced stage lung cancer and we are entering an era where we can not perhaps cure advanced stage lung cancer, but we can manage it as a chronic disease as is done with many other types of cancers. They have been transformed to something that you can live with and have a good quality of life.

Chu There are now oral pills that patients can take to help transform this disease into a chronic illness, as you called it Frank.

Detterbeck Absolutely, and one of the exciting things with targeted therapy is that if you understand what the genetic defect is in that cell that drives it, and you have a very focused intervention against that, which is the pill that has very few side effects, it can dramatically keep that disease in check for many, many years.

Miller Our time is running short, but can you tell us a little about some of the clinical trials that are available for patients?

Tanoue There are clinical trials available for nearly every stage of lung cancer, particularly for the advanced stage where there is so much interest in prolonging quality of life. Again, the specific criterion for entering a clinical trial needs to be discussed with physicians at the thoracic oncologic program. They are based on stage, and to some extent on identifying appropriate targets for treatment, but there are a number of clinical trials open at the present time and if there are people out there who are interested in those trials they should feel free to contact us.

Miller There is a conference coming up November 10; it is called *Frankly Speaking about Lung Cancer*. A quick question Frank, does that have anything to do with your name?

Detterbeck No, no it doesn't

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- Miller Who is that conference for?
- Tanoue The Frankly Speaking conference is for patients, their families and anyone who is interested. It is a multidisciplinary program designed to provide education and information about lung cancer to anyone who is interested.
- Detterbeck This year in particular, we wanted to focus on a number of the ongoing developments in research that are changing the face of lung cancer from diagnosis to treatment.
- Chu For those listening out there who are interested in going to this symposium, *Frankly Speaking about Lung Cancer* on November 10, you can go to www.yalecancercenter.org for more information.
- Miller I want to thank Dr. Frank Detterbeck and Dr. Lynn Tanoue for joining us on Yale Cancer Center Answers.
- Chu Until next week this is Dr. Ed Chu
- Miller and Dr. Ken Miller from the Yale Cancer Center wishing you a safe and healthy week.

If you have questions, comments or would like to subscribe to our Podcast go to www.yalecancercenter.org where you will also find transcripts of past broadcasts in written form. Next week we will examine new developments in the prevention and treatment of breast cancer.