

# Yale CANCER CENTER *answers*

WNPR Connecticut Public Radio



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## Breast Cancer Awareness Month 2013

### **Guest Expert:**

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## **Yale Cancer Center Answers**

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*Welcome to Yale Cancer Center Answers with doctors Francine Foss and Anees Chagpar. Dr. Foss is a Professor of Medical Oncology and Dermatology, specializing in the treatment of lymphomas. Dr. Chagpar is Associate Professor of Surgical Oncology and Director of the Breast Center at Smilow Cancer Hospital at Yale-New Haven. If you would like to join the conversation, you can contact the doctors directly. The address is [canceranswers@yale.edu](mailto:canceranswers@yale.edu) and the phone number is 1-888-234-4YCC. This week, doctor Chagpar is joined by Dr. Sarah Mougalian, an Assistant Professor in the Breast Center at Smilow Cancer Hospital. Here is Anees Chagpar.*

Chagpar Sarah, you came to Yale recently. Tell us a little bit about yourself. Where were you trained? How did you end up here at Yale?

Mougalian I am actually very new. I have been here for just a couple of weeks, but it is great to be back in New England. I spent a lot of my past and a lot of my training years in New England and specifically in Massachusetts. Most recently, I completed a fellowship at MD Anderson in Houston, but it is a thrill to be back in New England.

Chagpar So most of your interest is in breast cancer, tell us a little bit more about what got you interested in breast cancer and what your particular area of expertise is?

Mougalian I really enjoy taking care of breast cancer patients and I think there are three main reasons why I enjoy that particular patient population. One is that it is a very common disease. I think a lot of us have experience or have known someone who has been affected by the disease. Secondly, it is a fun population. We develop long standing physician-patient relationships because generally speaking, people with breast cancer do very well long term. So we get to know them and their families and get to be a big part of their lives. And thirdly, I think the biology of the disease, from the very indolent cancers that behave very well overtime, to those more aggressive cancers, is fascinating and so being exposed to the disease early on in my fellowship I really took a liking to the patients in this particular population.

Chagpar Let's talk a little bit about breast cancer, and as I'm sure all of our audience members know October is Breast Cancer Awareness Month and we see pink ribbons all over the place and people talking about getting a mammogram and getting screened for breast cancer. How important is that?

Mougalian I think it is very important. The specific recommendations in terms of screening are a bit controversial. There are a couple of major agencies that recommend different things. The United States Preventative Services Task Force (USPSTF) recommends that women start getting mammograms at age 50 and get them every other year; however, the American Cancer Society, and most medical oncologists that I know, suggest that the average American woman start

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receiving a mammogram at age 40 and have one every year, and I think it is important. How important it is that any individual woman get a screening mammogram, is not clear, but I think it is important.

Chagpar Why should women who are listening to us on Yale Cancer Center Answers and thinking about whether they should get in their car and go for a mammogram, it squeezes your breast. Why is it important?

Mougalian The key to successful screening is that you can catch a cancer when it is small, when it is not causing any problems and when it is readily treatable, fully surgically resectable, and at which point the prognosis is quite good where if you wait and have a mammogram at a time when you are having symptoms, generally speaking the breast cancer is larger and the prognosis is not as good. So that is the idea behind getting a good screening test and screening mammogram.

Chagpar The American public these days is really incredibly aware and very educated about breast cancer screening, and oftentimes have questions about, should I get a mammogram, should I get an ultrasound, should I get an MRI, what is the right screening test to find these cancers early when they are most treatable?

Mougalian That is a great question, mammogram has been studied the most and that is what is recommended by all of these various agencies. The role of ultrasound is a little less clear. It is not quite as good at picking up things and it picks up a lot of things that are not cancer and so to use it as a screening tool it is not quite as good. MRIs do have a use in screening, but generally in the high risk population, so patients that have a strong family history or genetic predisposition, for example, should probably get MRIs but that is to be discussed with their individual providers. Mammograms are what have shown to be the most beneficial.

Chagpar Let's suppose somebody goes for a mammogram, and one of the scariest things for many women is getting called back, you go for a mammogram and you think, I am going to make this a day trip, I am going to go and get my mammogram, get my nails done, grab lunch with the girls. You never expect the phone call that says Ms. Jones, we need you to come on back, we want to see you again. What is that like for patients and what happens next?

Mougalian I think it is terrifying. Anytime any abnormality is found on any sort of imaging test that is just terrifying to a patient. The reason we call people back is because mammograms, especially when there have been no prior studies, we see all kinds of different things, women have dense breasts. That dense breast tissue shows up as white on a mammogram. Cancer shows up as white on mammograms and sometimes it is difficult to distinguish between the two and it is important to be able to get additional imaging, additional views, different ways of squeezing the breasts, so to speak, to really get a sense of what that woman's breast looks like. This is particularly true in

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MRIs. I have told patients that if you do not get called back after your first breast MRI I would be surprised, you almost expect to get that call back and just because you get a call back, that does not mean there is anything wrong, that is the important thing to remember, but I can fully imagine that it is downright terrifying and it will ruin your day and your manicure.

Chagpar What happens if you are called back and they say, I was concerned about this white on white, but that white looks like something that I want to take a piece of. Why is it that we can't just skip the biopsy and tell based on the mammogram what something is?

Mougalian A lot of things look the same on a mammogram and it would be great if we had a noninvasive way of telling what exactly was going on in anybody's individual breast; however, the only way to tell for sure what we are dealing with is to take a piece and look at it under the microscope. There are lots of so called benign breast diseases that can show up on a mammogram or show up on an ultrasound that do not require any further treatment, may not even require any additional imaging, but there is really no way of knowing for sure, so the best way to do it is to take a piece of it and look at it under the microscope.

Chagpar So after the mammogram, they get the call back, they have a biopsy done, now what are the options? One option is absolutely nothing, it does not require anything further, you get the call that says 'live long and prosper' we will see you next year for your annual mammogram. What if the call is different than that? What are the options that happen then?

Mougalian If, for example, it shows cancer or something that needs to be dealt with, I think the first step if this is something that is caught only on mammogram, is that they would go and see a breast surgeon, for example you Dr. Chagpar over at the breast center and the breast surgeon would talk to the patient about the possibilities of what this particular diagnosis seen on the biopsy means and recommend a surgery. Surgery can have a couple of different forms and it can be just an excisional biopsy if something is not particularly concerning, or if it is something that looks more likely to be cancer or a relative of cancer, a surgical and oncologic surgical operation. Which can be a lumpectomy, just taking a piece of breast, it can be a full modified radical mastectomy, taking the entire breast, or it can be just a regular mastectomy taking the breast tissue itself and depending on what is seen on the biopsy, and looking at some of the regional lymph nodes where the cancer could theoretically have spread, and that is done through a variety of different procedures. The most common of which there is no obvious cancer in the lymph nodes is something called a sentinel lymph node biopsy.

Chagpar So they go and they see a surgeon, which is a little bit scary, but we are all very nice and we talk about various surgical options and surgeries these days has come a long way and as you say, people can get breast conserving surgery where we can just remove a tiny little piece of the breast where the cancer is plus a rim of normal tissue all the way around or we can remove the whole breast and frequently our plastic surgeons can reconstruct the breast right at the same time and we

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tests lymph nodes. But one of the most common questions that I get asked as a breast surgeon is, doctor the surgery does not bother me, but will I need the dreaded chemotherapy? So who needs chemo?

Mougalian In breast cancer there are a lot of different tools that we can look at to examine a particular patient's risks for developing a recurrence and that recurrence can be both in the breast or in the lymph nodes or somewhere else in the body. The role of chemotherapy is to reduce the risk of cancer coming back someplace else in the body. Something called metastatic disease or metastases. We are trying to prevent metastases. When people die of breast cancer it is because they developed problems with the cancer going elsewhere in the body and their organs are affected. That is what really kills people and that is why we give them chemotherapy to prevent that. There are a lot of different ways that we can counsel a patient in terms of her need for chemotherapy. We can look at the specific features of the cancer itself and look at things that might make it more aggressive or high risk. We can look at the woman herself and her particular medical problems. We can look at where the cancer is, whether or not it spread to the lymph nodes, and come up with a best guess in terms of how high her risk is for developing distant metastases. Now, chemotherapy is not without risk itself, and so we have to weigh those risks and benefits. If someone has a cancer that does not have a high risk of spreading and it is felt that the chemotherapy, the risks of having chemotherapy, outweigh those benefits of receiving the chemotherapy, we would not recommend chemotherapy. In other cases, it is a little less well defined and you have to have an individualized conversation with the patient about what her risks and benefits are, and what risks she is willing to accept.

Chagpar It sounds like it is a complicated decision process where you are having this conversation with the patient, and I am justified in saying, it is complicated, talk to the medical oncologist about that.

Mougalian Yes, and I think there are definitely some clear cut cases where it goes one way or another, yes or no, but in some of those less well defined cases, it can be a process.

Chagpar We are going to pick up this discussion right after we take a break for a medical minute. Please stay tuned to learn more information about breast cancer with my guest Dr. Sarah Mougalian.

*Medical  
Minute*

*It is estimated that nearly 200,000 men in the U.S. will be diagnosed with prostate cancer this year and one in six American men will develop prostate cancer in the course of his lifetime. Major advances in the detection and treatment of prostate cancer have dramatically decreased the numbers of men who die from the disease. Screening for prostate cancer can be performed quickly and easily in a physician's 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 federally designated comprehensive cancer centers like the one at the*

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*Yale to test innovative new treatments for prostate cancer. The da Vinci Robotic Surgical System is an option available for patients at Yale that uses three dimensional imaging to enable the surgeon to perform a prostatectomy without the need for a large incision. This has been a medical minute and more information is available at [yalecancercenter.org](http://yalecancercenter.org). You are listening to the WNPR Health Forum on the Connecticut Public Broadcasting Network.*

Chagpar Welcome back to Yale Cancer Center Answers. This is Dr. Anees Chagpar and I am joined today by my guest Dr. Sarah Mougalian. We are talking about breast cancer and Sarah, right before the break, we were talking a little bit about who needs chemotherapy and the fact that this is a personalized decision where you have a conversation with a medical oncologist, tell us a little bit more about the different kinds of chemotherapy. A lot of us hear about different markers, estrogen receptors, and this thing called HER2. What are these and why do they matter?

Mougalian Breast cancer is a very different disease depending on what some of these markers show. I think I alluded to the biology of breast cancer earlier in the show and the biology is very different. Estrogen receptor and progesterone receptor are hormone receptors that I think of as kind of like a catcher's glove that captures the circulating female hormones estrogen and progesterone. They capture those hormones, they take them inside and they feed off of them. So, I think of those hormone receptors as gloves and tumors that express those estrogen and progesterone receptors tend to be a little bit better. They tend to be a little bit more favorable and they also respond to hormone therapies, so some of your listeners may have heard of drugs like tamoxifen or Arimidex, some of these hormones that we can give patients that can starve the tumor cells of their ability to feed off the circulating hormones. HER2 is a very exciting protein, previously, maybe 10 to 15 years ago, tumors that expressed the HER2 protein were thought to be very, very bad. In fact probably the worst kind of breast cancer that someone could have. With the advent of a drug called Herceptin, this HER2, which is a protein similar to the estrogen receptor in that it sits on the surface of the cell and kind of acts like a glove, we are not really sure what binds to it, but Herceptin is a drug that binds to the HER2 protein and effectively causes the cancer to die for a lot of different reasons. Herceptin has revolutionized the treatment of HER2 positive breast cancer and now it is thought to be almost a good kind of cancer to have. Some cancers have none of these features and unfortunately those are so-called triple negative phenotype or the triple negative kind of breast cancer. These tend to be more aggressive cancers. They tend to respond poorly to chemotherapy or less favorably and have a worse prognosis.

Chagpar Does that mean that if you have a triple negative breast cancer, you are doomed and you cannot be treated?

Mougalian Absolutely not, we have many, many different types of chemotherapies that have been FDA approved to treat triple negative breast cancer and it is the subject of a lot of clinical trials. This is an area that lots of different scientists and physicians are working on to improve the treatment and lots of different exciting drugs are coming down the pipeline in terms of clinical trials to treat that

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particular type of breast cancer. Now I am speaking very broadly, I am speaking of very late stage disease, now if something is caught as just a mass in the breast and it is taken out and the patient has radiation and perhaps has some chemotherapy, a lot of those patients do well and we never hear from the cancer again, but once it has spread, if it does spread, we have to rely on some of these other types of therapies and some of these novel types of therapies.

Chagpar Some people have talked about using genomics and markers to figure out whether people will respond better to chemotherapy or better to this hormonal therapy that you were talking about in people who have the gene called estrogen receptor?

Mougalian Right.

Chagpar What exactly is genomics and how does that work and how does that influence your decision making when you are sitting across the table with somebody trying to decide whether or not they need chemotherapy?

Mougalian Genomics is the study of a cancer's genes and the mutations that are found in the cancer itself and there are a lot of different people across the country that are very interested in looking at the genes that the cancer itself has and finding agents, finding pharmacologics, drugs, that can combat particular mutations within the breast cancer itself. It is not considered standard of care to do a full genomic profile and then target using targeted agents, but it is something that shows a lot of promise that we are moving toward. And we use it to get kind of a feeling of how the cancer is going to react. Is it going to be more responsive to endocrine therapy like tamoxifen or Arimidex or is it going to be more sensitive to chemotherapy?

Chagpar Some of our audience may be a little bit confused between genomics such as looking at the genes in a cancer and genetics because a lot of us heard pretty recently about Angelina Jolie who had a pretty radical mastectomy, not that it was a radical mastectomy, but she underwent a pretty radical procedure by removing both breasts because she was genetically predisposed. She had a genetic mutation in BRCA, can you tell us with the difference between genetics and the genomics assays that you look at for chemotherapy are and how we use both of them?

Mougalian Cancer genetics looks at the patient overall, and all of the patient's genes. What the patient was born with. Genomics looks at the genes that are mutated or that are found within a cancer that may be mutated; mutated meaning broken, not functioning, or perhaps working too much, perhaps not working at all. Genetics is the study of what genes the patient was born with. What that patient inherited from his or her mother and his or her father. In terms of breast cancer and breast cancer genetics, there are a number of genes that increase a patient's risk for developing cancer and the most notable of these is the BRCA family of genes and mutations in BRCA1 or BRCA2 make that patient have a very highly increased risk of breast cancer. Angelina Jolie was found to have a

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BRCA1 mutation. She came out with this very publically, and I have no inside information about her treatment, but just what I have gleaned from the popular media. She underwent a prophylactic or preventive double mastectomy to reduce her risk of developing breast cancer, which is one way of not entirely reducing, but 95% to 99% reducing her risk of developing breast cancer.

Chagpar You said one way, are there other ways to reduce risk if you are at increased risk?

Mougalian There are, there are also pharmacologic ways. There are drugs called tamoxifen or raloxifene, that can be used in particular patients at increased risk of developing breast cancer and then there are also increased screening guidelines for people that are at particularly high risk. We mentioned MRIs before and those are patients who might receive an MRI on an annual basis. Usually every six months with the mammogram staggered throughout. Generally speaking with those patients who are at high risk of developing breast cancer, they should be followed very closely by a physician, either their primary care doctor, or an actual specialist who specializes in genetics and breast cancer.

Chagpar We talked a little bit about imaging. We talked about mammograms, ultrasounds and MRIs and we talked a little bit about genetic screening for those people who are at increased risk, particularly with a family history, but are there other warning signs, other things that people should be looking for that might be the first signs of cancer in the breast?

Mougalian Great question, we have talked a little bit about genetic predisposition but we should say that three quarters of breast cancers happen just because they happen and not because there was any obvious risk factor. Things that women should know about or should take note of and speak to their physicians about are any new lumps or bumps, anything new, and women should start out by knowing what their breasts feel like and being familiar with them and be able to report any changes. Other concerning things might include swelling of the breast, redness of the breast, skin changes such as a dimple that was not there previously or a rash that does not go away, any nipple discharge that is not milk should be evaluated and this is one of the common complaints seen by primary care doctors, so it is not something that they will never have heard of and should be something that you seek care or seek advice about.

Chagpar It seems seems to me that we have come a long way in term of breast cancer and picking up cancers early, such that breast cancer mortality has been declining but still, breast cancer is the second leading cause of death in cancer, at least among women. Why is that?

Mougalian I think the best way of thinking about that is we are not successful all the time and once cancer, once the breast cancer has spread, it is no longer considered curable and it is at that point that we are really focusing on trying to extend someone's life. It is that point, that I think it is really important to think about clinical trials, clinical trials are our way of learning about the disease, learning about the patients, and learning about new pharmacologic agents as they come down the

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pipeline and how they interact with patients and the breast cancer itself, or with any cancer. Our goal is of course to eradicate cancer and to make every patient that comes into our clinic with breast cancer a case of cure, we are not there yet but we are going in that direction.

Chagpar     Yeah.

Mougalian   And with clinical trials and the research that is being done across the country and across the world in breast cancer I hope that we get there.

Chagpar     I want to touch on what some of the exciting areas of breast cancer research are, because truthfully I think that we have really come a long way in terms of making surgery more minimally invasive, making therapies less toxic and more targeted, and really improving survival rates, finding cancers really early, what do you think are the hottest areas of research that are going to get us to those cures?

Mougalian   Some of the most exciting therapies that I have encountered on studies are some of these immunotherapies, using a patient's own immune system to fight cancer. We have a clinical trial at Yale that is looking at one of these immune therapies in early stage triple negative breast cancer as well as some for late stages. It is really exciting to think that we can harvest our own immune systems to combat something that is as deadly as cancer and I think that is one of the most exciting things. Targeted therapies are also very exciting to be able to personalize the treatment of cancer based on a particular cancer from a particular individual's cancer genomics, and that is exciting as well and then there are some bigger picture research topics on how do we involve the patient in their care? How do we make our care more personalized and more patient-centered?

*Dr. Sarah Mougalian is an Assistant Professor in The Breast Center at Smilow Cancer Hospital. If you have questions or comments, we invite you to visit [yalecancercenter.org](http://yalecancercenter.org) where you can also get the podcast and find written transcripts of previously broadcast episodes. You are listening to the WNPR Connecticut Public Media Source for news and ideas.*