

*Public Health Live!*  
Breast Density and Breast Cancer Risk, December 20, 2018  
Transcript

**Moderator Rachel Breidster:** Hello and welcome to *Public Health Live!* I'm Rachel Breidster and I'll be your moderator today. Before we get started, I would like to ask that you please fill out our online evaluation at the end of the webcast. Continuing education credits are available for a limited time after you take our short post-test and your feedback is helpful in planning future programs. I also want to let you know that the planners and presenters of public health live do not have any financial arrangements or affiliations with any commercial entities whose products, research or services may be discussed in this activity. And no commercial funding has been accepted for this activity. As for today's program, we'll be taking your questions throughout the hour by phone at 1-518-402-0330 or via e-mail at [phlive.ny@gmail.com](mailto:phlive.ny@gmail.com). Today's program is entitled Breast Density and Breast Cancer Risk and our guests are Dr. Michelle Azu, the Director of Breast Surgical Services and Associate Director of the Breast Disease Management Team at New York Presbyterian-Lawrence Hospital, Columbia University Medical Center, and Dr. Ralph T. Wynn, the Director of Breast Imaging in the Department of Radiology at the Herbert Irving Cancer Center at New York Presbyterian-Columbia University Medical Center. Thank you for joining us.

**Moderator:** Good morning. Welcome to you both. Thank you so much for being here.

**Dr. Michelle Azu:** Good morning. Pleasure.

**Dr. Ralph T. Wynn:** Thank you. Glad to be here.

**Moderator:** Glad to have this conversation. Dr. Azu, if you could you get us started today by reviewing our objectives?

**Dr. Azu:** We're going to discuss how breast cancer and density are related, we'll talk about calculating risk for breast cancer for individuals, and we will also look at screening recommendations and how to apply the clinical management guidelines.

**Moderator:** Excellent, thank you. So to start this conversation, can you tell me what do you think we should know? What does the audience need to know about breast cancer statistics in the United States?

**Dr. Azu:** It's common. So one in eight women will have a breast cancer diagnosis every year, and breast cancer is the leading cause of cancer for women. It's the second leading cause of cancer death for women and about a quarter million women will have invasive breast cancer in their lifetime, and about 50,000 women will have noninvasive breast cancer.

**Moderator:** So given those statistics, which are some hard numbers to sit with. One in eight women. Those are big numbers. What are some of the risk factors for breast cancer and what are some of the things that would lead you consider a woman to be high risk.

**Dr. Azu:** There are multiple factors. Breast density is one of them. We'll talk about that today. And weight is related to breast cancer risk, so the more obese a woman is, the more risk she has for receiving a diagnosis in her lifetime. Also, lifestyle factors like diet and exercise and her menstrual cycle, when she would start that, how many children she's had and other factors we'll get into during the show.

**Moderator:** Okay so quite a few different things to think about. So Dr. Wynn, she mentioned that breast density is one of the risk factors. Can you talk about does breast density increase the risk factor for breast cancer, and if it does, how?

**Dr. Wynn:** First of all, so that the audience understands, breast density is something that wasn't really discovered until women started having mammograms. This is not about how the breast feels on clinical exam. It's about how the breast looks on a mammogram and radiologists first started noticing in the '50s and '60s, that when they have a mammogram, women have a total spectrum of the appearance of the background breast tissue on the mammogram. So breast density that we're talking about is completely a mammographic finding, something that the radiologist knows and something the radiologist.

**Moderator:** That is very helpful information I think, to frame the discussion.

**Dr. Wynn:** Right and over time, after women started having mammograms done on a routine basis, statistical studies were done that showed that women that have increased density, which means their mammogram is more white than black, those women have a statistically increased incidence of developing breast cancer over time. So that was only an association that was discovered as large scale studies were done in this country and other countries about density and which group of patients developed breast cancer over time.

**Moderator:** Now I know you mentioned you're speaking about density from the perspective of doing the mammogram. Can you explain what exactly are dense breasts? What do we mean by that?

**Dr. Wynn:** So, a woman whose breast is not dense on a mammogram has a high degree of fat content in her breast. The breast tissue that was needed during her child rearing years for breast-feeding, that tissue regresses over time. So a patient whose mammogram is not dense is a patient whose breast tissue has regressed and has been replaced by fatty tissue. The other side of that coin is when women have the type of tissue that does not regress over time, stays dense on the mammogram over time, those are the women that we call higher breast density on the mammogram. And it has several implications for the patient. One of those being that there is an increased, slightly increased risk of developing breast cancer. There is also a slight increase in risk of the mammogram not revealing a breast cancer because of the background density, the whiteness of the image that is produced by mammogram machine.

**Moderator:** Sure. That makes sense. So given that difficulty, then how do you identify when someone has dense breasts?

**Dr. Wynn:** If you look at on the slide, I've basically arranged examples of mammograms from left to right. Which indicate on the right, on the left, sorry, on the left, the breast is almost entirely fatty and the overall image of the mammogram is dark. And then on the far right, there's much more density to the tissue, there's less fat in that breast and it's very white on the mammogram picture that we look at.

**Moderator:** Thank you. I think that's a really helpful illustration. Now is the mammogram experience, is it significantly different for women who dense breasts?

**Dr. Wynn:** It is not, it's not significantly different. However, if you look at the picture on the left, a patient that has a fatty breast and very little residual breast tissue may find the mammogram less uncomfortable when the compression is done. A woman that has the mammogram on the right may have cysts her breasts that are creating some of this density and those patients can be quite tender as far as the compression. So the experience of just the compressions in the mammogram may be different between the two patients.

**Moderator:** So really it might be an issue of sensitivity?

**Dr. Wynn:** Sensitivity is a phrase we use which indicates it basically is a measure of how accurate the mammogram is at detecting cancer. So when the sensitivity is high, it's easy to see a cancer, which is the example that I have here on the left. A cancer is developing in the lower part of that image of the breast and it shows up as a white mass against a dark background. So the sensitivity drops in the patient that's pictured on the right because the tissue is so dense the cancer cannot be seen.

**Moderator:** Sure.

**Dr. Wynn:** This is another phenomenon that radiologists only found out about by doing mammograms on a lot of patients who would basically started in the 1980s and when there were large scale studies done, it was found that cancers are missed in patients that have dense breast tissue at a higher rate than women who don't have dense breasts.

**Moderator:** I think even from a layperson looking at those images, it's easy to see why that would be the case.

**Dr. Wynn:** Right.

**Moderator:** So Dr. Azu, as it relates to dense categories three and four and we're going to talk about different categories, what is the increased rate of breast cancer?

**Dr. Azu:** Well, if you look at one of the most dense categories, which is four, there is almost a twofold increase risk of breast cancer in patients with that diagnosis of dense breasts. In category three, there's about a one-half fold increase risk of developing cancer.

**Moderator:** So earlier in the show, I believe you said one in eight women? So, twofold, you're saying one out of every four or two out of every eight essentially when you're in that category?

**Dr. Azu:** Yes, that's right.

**Moderator:** Wow. Okay. So what happens when a woman is identified as having a dense breast? What's the next step?

**Dr. Wynn:** Many years ago, we standardized the mammogram report that was structured so that the referring physician got a report that said at the very beginning of the findings of the mammogram, how dense the breast tissue is. And that's when patients started being categorized as density one through four. That alerting of the referring physician was felt to be helpful for the referring physician so that they would understand that this mammogram report may say this is normal, however, if there's dense breast tissue, then there's a slightly increased risk of us not seeing a cancer that's developing. The thought at the time was if we alerted the physician about the density of the tissue, they would not ignore a palpable finding that developed in a patient that had dense breast tissue just because they had a normal mammogram report just a few months before. So it was felt to be information that the referring physician could use to understand that if they're feeling a lump in a breast and the patient's just had a normal mammogram that they need to investigate the palpable lump further.

**Moderator:** That makes sense. So is the patient also informed of her breast density category? Or is that the responsibility of the physician?

**Dr. Wynn:** The patient that is in New York State, is alerted by in their result letter about their mammogram. When we standardize mammogram reporting originally, almost 30 years ago, we started the part of that process was a letter that goes to the patient that's in a lay person language that says the mammogram's normal or it's not, to alert the patient about their results because there was this phenomenon of reports going to their physicians and the patient never being told that there was an abnormality. There was that issue involved so we started creating lay language letters to patients that alerted them that either their mammogram was normal or it was not. And over time, laws were passed across the country including in New York State, which required that the letter that goes to the patient about their mammogram include a description of how dense their breast tissue is. Which means that patients who have category 3 or 4 density increased density in their breast on the mammogram should see a statement in their letter that says they have dense breast tissue is. And the thinking behind that requirement is so that the patient is also is informed if you have dense breast tissue, having a normal mammogram doesn't mean that you can ignore a palpable lump that develops.

**Moderator:** So we're making sure the physician is aware and know what is to do and that the patient is aware as well and I think that's really helpful information. So, once we have that information that the woman has more dense breasts, does it mean that the woman needs to have additional tests done as well? I know you talked about ignoring palpable lumps, but are there other tests?

**Dr. Wynn:** Well, let's say that a patient has just had a normal mammogram that's dense and she develops a palpable lump in her breast. There's breast ultrasound, which is typically done on the area where the lump is, to make sure that something's not hiding or being hidden on the mammogram by the dense breast tissue. There are other strategies for imaging patients that

have dense breast tissue that increase the number of cancers that can be detected on a routine screening in patients that don't have any palpable lumps or asymptomatic.

**Moderator:** Thank you. So Dr. Azu, what is the most common way for doctors to really calculate risk?

**Dr. Azu:** Well, the first thing is family history. So you at least want to have a sense of her background and personal risk factors. So a nice way to calculate that is something called a Gail model. It's the breast cancer risk assessment tool. You can find it online, the National Cancer Institute has a website with that on it. It takes into account multiple factors about the patient and gives you a risk calculation that you can apply to her management plan.

**Moderator:** And are there any other models that are currently in use or widely used besides the Gail model?

**Dr. Azu:** There are. There are several. Some of the others are more extensive and the factors that you have to input. But one of the more common ones of the extensive group is called the Tyrer-Cuzick, and we'll get into that a bit later.

**Moderator:** How does the Gail model determine a woman has a high five-year risk?

**Dr. Azu:** We plug in multiple factors. Age, how old she was when her period started, has she had children, a family history of breast cancer in a first degree relative. And then it gives you a five-year risk that can be over 1.7 or higher. Means that she would fall into a high risk category and it also calculates a five-year risk of breast cancer, excuse me, lifetime risk in addition to the five-year risk.

**Moderator:** So it's giving you two different kind of forecasts.

**Dr. Azu:** Right, because a lot of the time, we talk about over 20% lifetime risk of breast cancer is helping us understand whether or not she's high risk. So looking at both can be helpful.

**Moderator:** What factors are accounted for in the Gail model?

**Dr. Azu:** So age. What age she was when her period started. Has she had children? Has she had biopsies? Does she have first-degree relatives with breast cancer? So that would be a mother or sister. Importantly, we'll talk about this, it looks at her maternal side of the family history. Not so much the paternal side, so that is one of the limitations. It's certainly a nice easy calculation that can be done. Not just by clinicians who are physicians. Many different types of providers can plug this into a calculator. So physician extenders who maybe are seeing that patient in the office are just as able to plug that calculation in as a physician.

**Dr. Azu:** Excellent. Now you mentioned some of the limitations, you mentioned one of the limitations, can you talk about some of the other limitations from using the Gail model?

**Dr. Azu:** Well importantly, breast density is not captured in the Gail model. So no model is perfect and they have their benefits. So not calculating breast density is a major one. It also doesn't take any account BMI or body mass index. We know that's linked to breast cancer risk.

**Moderator:** Are there any other limitations, for example age limitations or things of that nature?

**Dr. Azu:** Yes. So extremes in age are not captured well in the Gail model. So if you're under 35, it's not an appropriate tool to use or if you are over the age of 85, it's also not an appropriate tool to use to calculate her risk.

**Moderator:** And do you have an example of a typical case that you have seen?

**Dr. Azu:** I do. So if we look at a 50-year-old woman, for example who has a family history in her mother, who is BRCA negative, had one biopsy that showed a high risk feature like atypia, her period started at 13, and she's had no children. We can talk about how would we apply a Gail model to her.

**Moderator:** Okay. And where can one find the Gail model?

**Dr. Azu:** if you look at the National Cancer Institute, they have a nice website and if you just google Gail model, you'll come up with that calculator and it's a great tool for the office practitioner.

**Moderator:** And so, can you walk us through it a little bit and what makes someone ineligible for using the Gail model calculation?

**Dr. Azu:** So you cannot have a history of breast cancer. It makes sense. We're trying to calculate her five-year risk or lifetime risk of developing breast cancer, so if she already has it, her risk factors have changed dramatically. This is really to capture women who need to be screened further for breast cancer risk. So also if you've had a noninvasive breast cancer like ductal carcinoma in situ, also known as DCIS or having a marker for risk factors, not actually a cancer, but does exclude her from being calculated with a Gail model.

**Moderator:** Thank you so much.

**Dr. Azu:** In this patient, by the way did not have that factor, so she's still eligible to be calculated.

**Moderator:** Excellent, thank you. Now I just want to pause for a moment to remind the audience that if you have questions for either of our speakers, you may e-mail them to us at any time during the webcast to [phlive.ny@gmail.com](mailto:phlive.ny@gmail.com) or call us at 518-402-0330. So what kind of demographics are taken into account in the scenario you presented?

**Dr. Azu:** So age for this particular patient, she's 50. So we would plug that into the Gail calculator. Also, her race or ethnicity. She's Caucasian and so there's a drop down box for

ethnicity. One other limitation I want to mention is that the Gail model has not have been known to be as comprehensive outside the ethnicity of Caucasian. So it has some limitations with extending to other groups of patients

**Moderator:** Interesting. Okay. And what other factors does the model consider?

**Dr. Azu:** In this particular patient, she's had one biopsy, so we would plug that in. We also talk about did it identify atypia, a high risk factor. So we would put that in for this patient so that's a yes. What age she was when her menstrual cycle started. Which would be 12 to 13 for this patient, so we plug that in. Then also her age of first childbirth. This particular patient has not had children so it would be non-applicable. And then what first degree relatives have had breast cancer and for her, it's a mother. So we'll plug that in as one.

**Moderator:** So when you take this data, what does her calculation look like?

**Dr. Azu:** So one moment. I just want to mention that when you're looking at all the factors, at some point, they'll be listed on your screen so you can see them. I think it's important to run back through what you've calculated or plugged in. Because sometimes, you may miss a factor or you know, and you want to make sure it's as accurate as it can be.

**Moderator:** Absolutely. So her calculation once everything is plugged in, is there anything to share regarding what that looks like?

**Dr. Azu:** There is. So her lifetime risk of breast cancer ends up being 11% or so. So she falls just under being called high risk.

**Moderator:** So what does this tell us about eliminating risks for developing cancer both in the short-term, long-term, lifetime risk, what information do we have here?

**Dr. Azu:** I just also want to mention her risk calculation actually is not 11%. That's the average woman. So my apologies for that. She's being compared to the average woman. She's over 30% risk for breast cancer. And so obviously in the office you're going to need to have a conversation about what that means, what's the next step for the patient in this situation. So the Gail model really helps you have an idea what conversations to have about how would you follow somebody who's higher risk. We can't tell you what to do, it's individual planning, but it gives you a sense of what her risk factors could be.

**Moderator:** Sure. I think that's a lot of times a helpful, I would imagine that everything is on a case by case, individualized scenario, but giving you that guideline for here are the things you want to think about as your planning this conversation, planning the treatment and planning the way you want to address this patient based on the risk category. So talk to me about what we know about estimating risk for cancer based on the information you've shared this morning. I'll start with you, Dr. Azu.

**Dr. Azu:** Well, you know, every woman should have some thought process that's being applied to her in the office in terms of what her risk factors could be. So while some of these

calculations may seem very complicated, they're not. And the two we discussed today, the Gail model and the Tyrer-Cuzick one that we'll get into, really are nice models for the practitioners in the office because they can be done with some experience with quickly in the office. That's important.

**Moderator:** And is there anything you'd like to add?

**Dr. Wynn:** We have discussions with patients all the time when they have their first mammogram and they first find out that they have dense breast tissue we get asked lot of questions and we try to individualize our recommendations as much we can for that individual patient. And certainly, the risk calculation for patients or having the patient evaluated with a risk management tool is very helpful in alerting the patient there could be additional imaging studies that are done. We'll get into that in a little bit.

**Moderator:** Sure, I would imagine those conversations are very important to have. Just to help somebody understand the process. When you're outside of the medical world, sometimes anything related today a mammogram or lump can be so unnerving, so having those conversations I imagine are a very valuable thing. Dr. Azu, you mentioned earlier, there was another model, the Tyrer-Cuzick, and I wonder if you can talk about that particular model.

**Dr. Azu:** Yes. So the great thing about this model is that it takes into account more risk factors for the patient. Which is important. There are so many risk factors that we cannot account for that the ones that we can account for, it's important we plug those in. So importantly, breast density is applied to this model and obviously for this talk it helps us give you an idea of why breast density can result in a higher breast cancer risk. And we'll look at that with calculating a model during this conversation.

**Moderator:** Obviously that's a major advantage that it accounts for breast density into account. Are there limitations to this model that are worth discussing?

**Dr. Azu:** There are. Much like the Gail model, you cannot have a history of breast cancer and use this model. And then one nice thing about the model is that it takes into account your gene status if your BRCA 1 or 2, but a limitation is there are other genes that exist that could result in a diagnosis and it doesn't look at those genes.

**Moderator:** Okay, now can you describe for us what are the key elements of the Tyrer-Cuzick model and how does that differ from the Gail model?

**Dr. Azu:** So this is, you see on your screen, this is a picture of what the Gail model looks like, the Tyrer-Cuzick it's more daunting. You'll see in a moment because there are a lot more factors that plug in. But a key future is breast density. So it does allow you to say whether or not you know if they're dense.

**Moderator:** What factors does it account for regarding personal history?



**Dr. Azu:** So personal history, age, but the weight is important and Gail model doesn't allow us for weight or height. So body mass index is applied to this Tyrer-Cuzick model. Also hormone replacement therapy is applied in this model and that is not applied in the Gail model.

**Moderator:** And what other key data points are included?

**Dr. Azu:** So, in addition to weight and height, as I said, the gene status of BRCA-1 is applied. Also if she has a history of ovarian cancer which can be linked to breast cancer risk. And also whether they have an Ashkenazi Jewish background, which can confer higher risk for breast cancer.

**Moderator:** So it certainly seems like a fairly comprehensive model. Now what if it is determined based on doing this that a woman is at high risk.

**Dr. Azu:** Well, we then decide how she should be followed for her high risk status. Much like the Gail model, this is giving us a calculation of whether or not she has a lifetime risk of breast cancer over 20%. And for the Tyrer-Cuzick, it's looking at a ten-year risk and lifetime risk. Gail model is looking at five-year and lifetime risk.

**Moderator:** And just for my own curiosity. Do you think there's an advantage between five-year versus ten-year or just one looks at it one way and one looks the other way.

**Dr. Azu:** One looks one way, one the other. Having a ten-year risk may feel more accurate to patients because in the next ten years, perhaps I would have a risk of X. So I think that can be useful.

**Moderator:** Okay. So Dr. Wynn, what are the additional tests that can be done for women with dense breasts?

**Dr. Wynn:** The traditional mammogram is referred to as a 2-d mammogram. Over the last five to eight years, 3-d mammography has become available and is available at some, if not most breast centers imaging. So 3-d mammogram is something that women that have dense breasts can benefit from because it increases the detection rate of cancers that could be hidden in dense breast tissue. Also, women that have dense breasts have and get a notification of it and have a discussion with their primary doctor often come to us with referrals for both having the mammogram done and having a breast ultrasound exam done of their entire breast on both sides, which also adds to the cancer detection rate in those patients. And then breast MRI is a third way of screening patients predominantly those patients that Dr. Azu referred to that have a lifetime risk of greater than 20%.

**Moderator:** So starting with that first one you mentioned, you talked about the tree dimensional mammogram, can you explain to us how that works?

**Dr. Wynn:** Well if you think about the two dimensional mammogram as being two snapshots of the breast, of the entire breast, the 3-d mammogram is acquired as multiple images that are taken as the X-ray tube swings across an arc over the breast. What that allows for the computer

to do, is to generate very thin slice images through the breast much like a CAT scan takes slices through the abdomen. So the breast thin slices that we look at can reveal a small speculated mass that's hiding in dense breast tissue. In this particular example, which was one of the early success stories from this modality, is that there are actually two small cancers in this breast that are being hidden on the 2-d images, on the left, that show up on the thin slices with the 3-d mammogram.

**Moderator:** And, looking at those images, it's easy to see why these different tools for detection are so important because even just in that PowerPoint slide, what you can see in the one image versus in the other is really dramatic. Now you mentioned another tool for screening the breast ultrasound. Can you tell us about how that works?

**Dr. Wynn:** There are certain features of breast ultrasound that I think patients and their doctors need to be aware of. An ultrasound exam that's done by hand which is much like an ultrasound that a woman who have had when she was pregnant with the gel, transducer on the skin, when they're done by hand, it's completely in the hands of the person who is performing the study. And there are issues about how operator dependent it is and how carefully the scan is done by hand.

**Moderator:** I see.

**Dr. Wynn:** And the one of those issues is, has the entire breast been evaluated with ultrasound. And it takes a steady hand and a good eye for the person who's performing the study, which can be a technologist or a radiologist performing the study. It takes a routine that creates a consistent exam in that setting. It something else that patients have to understand is when their doctor sends them for their images to get both studies done, that there's a greater chance with the ultrasound that we're going to find something that's actually benign but that looks semi suspicious that needs to be biopsied, so when a patient brings a prescription for both studies, the mammogram and the ultrasound, they encounter, especially the first time, they encounter the ultrasound picking up things that don't show on the mammogram. Then a decision has to be made at that point about whether a biopsy needs to be done. These two images are pictures of cancers that were detected by ultrasound only in a large multinational study that we performed about a decade ago.

**Dr. Azu:** I just also wanted to mention, the point of confusion sometimes for women in the office is what type of ultrasound they had. So we're discussing screening ultrasound as a tool which is, as Dr. Wynn said, reviewing the entire breast tissue. When you're working up a problem, that ultrasound is diagnostic. So the sonographer, they're looking at a specific location, but not necessarily the entire breast. So when patients come into my office and they have a concern about their imaging study and they have dense breasts, I'm always going back to my notes to see did they have a comprehensive ultrasound done of both breasts, as opposed to a diagnostic ultrasound solely. And I might actually order a screening ultrasound of both if she has not had that, and if she's very dense.

**Moderator:** Sure and that's a very helpful clarification. Again, those of us who aren't as familiar with your world, sometimes you hear ultrasound and think it's the same process, but it's

really important distinction to make. Now depending on the results of these test, would we end up going down the road of a more invasive test such as a biopsy for example?

**Dr. Wynn:** Yes. Not infrequently, when we have found a small mass as the one that's pictured here on the screen. When we find a small mass that has slightly irregular margins or lobulated margins, when we see a mass that's very dark on the ultrasound, like this one is. We can use the ultrasound probe to guide a needle under local anesthesia, a needle into the mass and take very small snippets of tissue from the mass that go to the pathologist and under the microscope, these small pieces of tissue yield a lot of information and the pathologist can get back to us within 48 to 72 hours with a diagnosis of either we're all in the clear and this is benign, which is a huge relief for the patient, or this is a small cancer that needs to be surgically addressed.

**Moderator:** It's great to hear they're able to get the results so quickly. I imagine that's a great relief for the people waiting for the information.

**Dr. Wynn:** It's an extremely anxiety provoking experience for the patients that we see.

**Moderator:** I'm sure. So you mentioned a third screening tool, the breast MRI. Can you tell us about that one as well?

**Dr. Wynn:** And again, this is a different modality it's using a large magnet and an injectable solution that enhances in areas where there's high blood flow. So again, it has a much greater sensitivity than a mammogram and the ultrasound. And again, like ultrasound, it finds areas that are incidentally enhancing that are actually benign, so the benign, the benign and the overall biopsy rate goes up with an MRI.

**Moderator:** Sure.

**Dr. Wynn:** This is a case from several years ago of a patient who has the gene, is BRCA positive and is deciding, she's in her 40's. She's been having an MRI done every year and just in between one MRI one year to the next year, there's a new area that looks irregular and kind of linear in the upper part of the image on the right. She is working with her gynecologist to kind of manage the surgical and prophylactic approach to the fact that she has the gene. And when we find a new cancer in her breast, that indicates that the breast prophylactic surgery is going to take priority over the ovarian resection that is part of her prophylactic management.

**Dr. Azu:** I just want to mention for breast MRIs, it becomes part of the conversation when she has the lifetime risk of over 20% and so it's why we do the model calculations, to have an idea whether or not adding a screening tool like an MRI is useful for her. Every patient does not need to be screened with a MRI. Some do.

**Dr. Wynn:** And on this slide, you can see that the area of enhancement, the white area on the MRI, frequently leads to going back to the ultrasound room and scanning the breast with ultrasound to see if we can find this new small mass that has developed on the MRI. And if we can find the corresponding area on an ultrasound, then the biopsy can be performed with the ultrasound machine.

**Moderator:** Seems like a lot of different tools exist to try to really get the clearest picture and each one has its advantage and use this one to help inform the next step and so on and so forth.

**Dr. Wynn:** exactly.

**Dr. Azu:** Right, and we work together to make the best management decisions for our patients.

**Moderator:** So how should a primary provider counsel a woman after completing a risk assessment and is there agreement within the medical community on how this should be done?

**Dr. Azu:** Well, the mammogram letter often will allude to whether or not she's dense and what to do about it. So that's a good thing. But sometimes, it can be confusing, it certainly is for patients and so if you're not certain, we can always reach out to the imager and ask the questions. You also want to consider other risk factors. So if she's dense, plus has a family history of breast cancer, then you may want to take a step further like calculating her risk in your office.

**Moderator:** Is there anything you'd like to add?

**Dr. Wynn:** I think the messaging from the imaging standpoint obviously comes through in the letter that the patient receives. Language is fairly nonspecific and not completely directional about what it is that the patient is supposed to do about this. The main thing that we tell patients is to counsel them to go back to their primary care physician. Generally, it's their gynecologist or internist that are referring them for their mammogram and to talk to them about their experience with sending patients for ultrasound examinations in addition to the mammogram and discuss with their doctor whether it's really appropriate for them. And as I said earlier, we also supplement those discussions almost every day with patients that talk to us and want our opinion also about them. It's something that's important for patients to understand that there are no set guidelines. We're moving into the era of individualized medicine in so many different areas and nowhere is that more true than tailoring individual screening recommendations for patients, which has become a topic of great conversation between patients and their doctors and radiologists as well.

**Moderator:** Which I would imagine is probably a good thing?

**Dr. Wynn:** I think it is. I think a patient being involved in the decision, actively being a participant in the decision about how far she wants to go with discovering something that could be going on in her breast. I that's the proactive approach we encourage more patients to be involved in.

**Dr. Azu:** I agree. It's a conversation. So this Gail Model and the Tyrer-Cuzick, they don't tell you what to do. It just gives you a template for discussion.

**Moderator:** So you're having an informed conversation.

**Dr. Azu:** Exactly, if you're hovering over the 20%. Say you're 20.1%. Does that mean she has to be followed with special screening? It's a discussion because maybe some other factor would make her 19.9%. It's really in many ways, a collaborative decision between the patient and provider. The other point of interest, is that the annual visit for a patient, that might be a good time to review family history. Because over time, you may develop a new family history or personal history and not share that with your provider, but it can make all the difference between what your risk factors actually are and how to calculate you.

**Moderator:** Now once a woman is notified, what comes next? What are the next steps?

**Dr. Azu:** So to read that letter and having a clear understanding of what it may mean, then reaching out to your provider to ask about the next steps. We don't want patients to have to be in the position of deciding what they are supposed to do. We'll guide you as professionals.

**Moderator:** So before we take questions from the audience, can you tell us any resources specifically that you might recommend for our viewers on this topic if they want to learn more information?

**Dr. Azu:** The Gail model. And the website. You can look for the National Cancer Institute. That's a nice site that helps you apply the Gail Model. The Tyrer-Cuzick also, is a free download. So these are not tools that require purchase, which is very nice. Also another tool I want to mention in the Journal for Nurse Practitioners, the October 2016 edition that shows how to calculate the Tyrer-Cuzick model. It doesn't have the density factored in, but it's a nice explanation for physician extenders or physicians who don't have comfort levels with doing this every day.

**Moderator:** Terrific. Thank you so much. Going to take a moment to take questions from our audience at this point, so thank you for everything you guys have shared in the discussion so far. We've got a few that have come in here so far. The first one that I have is for you, Dr. Wynn. Is 3-d mammography helpful if a woman has extremely dense breasts? I thought sensitivity decreases as breast density increases even for 3-d mammography.

**Dr. Wynn:** That is absolutely a true statement that the patients that benefit the most are the dense patients, but every density group shows at least some increase in cancer detection rate if a 3-d mammogram is performed. But it's particularly seen with patients that have level three or level four even the extremely dense patients still benefit from having the 3-d mammogram.

**Moderator:** Excellent, thank you. The next question that we have- One of our local mammography offices does TC risk with any patient that has higher breast density. The other office does not. Would it ever be appropriate for a patient to look up their own risk model and put in their own information, or is it better to let a medical professional do it?

**Dr. Azu:** it's definitely better that a professional provides that information to her. Because the professional can then counsel about what the next steps could be. It's also easy to plug in information that may not be accurate or have a misunderstanding of what the question actually is. We don't want to create hysteria. And as I said if you're someone who was calculated at 20.3,

you may be seeing oh my goodness, my whole trajectory is changing, I'm really nervous now, I'm definitely high risk. But in the conversation, my spin on it would be different. Like well, it's an approximation. It is not individual, like this is your absolute risk because it's impossible to calculate your absolute risk with these factors. Doing genetic testing is different, we can have a better understanding. But you may not necessarily be a gene carrier, but you may be high risk. So these are better conversations to have in the office.

**Moderator:** That makes perfect sense to me. I can only imagine myself filling it out and misunderstanding one of the questions, you think you're speaking the same language, but medical professionals have different training. The next question that we have, it says- on one of the slides on the Tyrer-Cuzick risk, there were four different breast tissue measurements. Can you explain the differences in four, is one better than another?

**Dr. Azu:** There's different ways to, based on the reporting that you may have from your mammographer that you can plug in what has been said on that report. So one isn't better than the other.

**Moderator:** So just different options. Our next question, is it inappropriate to routinely send women for follow up studies after a screening mammogram indicates dense breast tissue without doing a risk assessment?

**Dr. Azu:** No, it's not inappropriate. I think that every practitioner isn't always doing a calculation, but I think most practitioners are doing a risk assessment. You know what her family history is, you know what her personal history so you're thinking about it. Calculating a number in your office is an extrapolation of what we do every day with patients. It's another tool that you have in your toolkit that you can use.

**Dr. Wynn:** I think that the appropriateness of sending someone just based on the breast density in the report for say for another ultrasound, I think the appropriate way to manage that is not necessarily to have your risk calculated in advance, but to understand the benefits and the risk of just having ultrasound done. That, there's a higher likelihood that something might be found that leads to a biopsy. So I think it's very appropriate to have that discussion in advance when the referring physician decides to send a patient for an ultrasound just based on the mammogram report.

**Dr. Azu:** And having breasts that are dense alone, independently, don't make you high risk. It's one of many factors.

**Moderator:** Sure. That makes sense. Now, are there racial or ethnic differences in women that have dense breasts? Do disparities exist in terms of these screenings and risk assessments? And I know you alluded a little earlier but I don't recall if it was Gail or Tyrer-Cuzick that one was a little less reliable. But can you talk about are there differences in terms of having dense breasts and do disparities exist in the screenings?

**Dr. Azu:** It's an interesting question. One thing I'll say is that that Tyrer-Cuzick is known to underestimate risk in women who are not Caucasian and simply the study, had more Caucasian

patients, and it's important to consider that when you're looking at tools for your patient population. You want to make sure it's applicable to the group that you are working with.

**Dr. Wynn:** Specifically, it's a very good question and a question I don't think has really been answered as far as ethnicity and density. Those two things together. We have lots of studies that show disparities among different ethnic groups as far as the types of breast cancer, the severity, the aggressiveness, the survival from breast cancer, there have been lot of those studies. But not one that I'm aware of that specifically links density. The ethnicity plays more into risk factors when, say for example, you know you're of Ashkenazi Jewish decent. And I think something for African-American women to be aware of is that in general, there's a disparity, or there's a, there are trends toward different types of cancer. And survival rates that are lower, actually.

**Dr. Azu:** That's right. So women who are African-American are less likely to be diagnosed with cancer, but are more likely to have mortality from it. So it's important to tailor you discussion to the person sitting in front of you. You know everything we talked about today, is sort of broader comments about density and even the calculations are approximations. But the person sitting in front of you, needs you to individualize that conversation for her. I also want to mention that when I say that breast density does not mean you're high risk, I mean high risk like over 20% lifetime risk. Yes, you have an increased risk of breast cancer, but that doesn't necessarily throw you into the, I'm high risk over 20% risk group just because you're dense. It's just a factor that plays into whether or not you're a high risk patient, which is over 20% lifetime risk of breast cancer.

**Dr. Wynn:** Another important thing to mention is that when women get that letter, maybe have just had their first mammogram and they get that result letter that says your mammogram is normal, however, you have dense breast tissue. You're not destined to develop breast cancer because you have dense breast tissue. We certainly want to make that as clear as possible. That it's just a small piece of the puzzle about risk for breast cancer and the vast majority of women that have dense breast tissue even into their 70s and 80s that still have dense breast tissue, the vast majority live their lives out without developing breast cancer. Just keep that many mind.

**Moderator:** To your point, I think you've both done a really good job of illustrating exactly what you're saying that you're trying to help people understand. From my standpoint sitting here across the desk from you, I think you've done a great job of making that point.

**Dr. Wynn & Dr. Azu:** Thank you.

**Moderator:** We have another question- What techniques would you recommend to the patient who has extremely dense breasts to perform self-breast exams and what findings should she be concerned about?

**Dr. Azu:** It's always difficult honestly to perform the self-breast exam in the dense patient. I will also say that many clinicians also have a tough time when the woman's breast are very, very dense. Because you feel that fibro glandular tissue and it's hard to differentiate whether there's a concern or not. Every woman who is performing a breast exam should be consistent. So either start in the middle then circumferentially work your way around and make sure that

your fingertips end up in the under arm or axillary tail of the breast because the tissue goes that high or the converse. So start with the axillary tail or the armpit area and work your way towards the breast in making sure to cover all of the breast tissue. So you're looking for firm masses that are distinct from the rest of the tissue. When we're examining a patient, we're looking for a change in the architecture of the breast. Then you would go back and forth in that region if it feels a little bit different. If she's ever uncertain, there's really no harm in calling your providers and asking for a breast exam. We'd rather be absolutely certain there's nothing wrong than assume that it's nothing or assume that it's just because she's denser.

**Dr. Wynn:** Another comment I hear patients very frequently that have dense, lumpy breast tissue on both sides. When I ask them if they examine an area that I'm looking at on ultrasound, they raise their hands and say I don't do a self-breast exam. I say it's okay. If you feel uncomfortable because the tissue on both sides is so lumpy, I say it's okay to just let your doctor do a clinical breast exam about once a year. There's debate about that as well. About how effective that is. My only advice to women that have decided to like keep their hands off and not do their self-breast exam is if they feel a focal area of pain, just to check that one area. And if they have a question about it after they put their fingers in that area that seems be different than the rest as far as where their pain is, we can put the ultrasound transducer on that one spot and check it out to make sure. We spend many hours every week reassuring patients that an area that got painful for them just out of the blue is okay. That it's not a cancer. It's not a lump. I would encourage women to get it checked. If they have a focal area in one breast that seems to be bothering them even if it's just pain, and then they can be reassured instead of worrying about it until their next annual exam with their doctor.

**Moderator:** Get answers right away. That way at least you have the information to know what you need to do or if you don't need to do anything.

**Dr. Wynn:** Right, and again. It's totally okay if you're a person who does not examine their own breasts. I see patients across that spectrum as well.

**Dr. Azu:** There's a guideline that supports that and it is a topic of debate. I's also want to mention that if you feel there's a problem, pain or a mass, provider or patient, it's important to communicate that to the imager because again, a screening tool or screening ultrasound or mammogram is looking at the broad regions of the breast tissue, it's not hyper focused on one area. So if you have a concern, it's no longer a screening tool. You're now look at diagnostic work to make sure we're not missing something. It's very important to mention that and for providers, to be as specific as you can in your prescription. So I feel something right upper outer quadrant. What size? How far up the nipple might the problem be? More information is better.

**Moderator:** Absolutely.

**Dr. Wynn:** Yes, amen. From a radiology standpoint.

**Moderator:** So I think we have time for just one more question. Is there any downside to finding small cancers?



**Dr. Azu:** I can't say there's a downside. The earlier you identify a cancer, the earlier we can treat it. That said, the reason I have a thought about this is just that just because you find a cancer, say at five millimeters, doesn't mean her outcome would be different if it was a centimeter or ten millimeters. The outcome is the same. She'll do just as well. Because you find something earlier, doesn't mean that it would have hurt you had you not found it at that time. It's called lead time bias. But I'm of the school of thought find it as early as you can and we can get started as early as we can to help her do the best possible.

**Moderator:** Sure.

**Dr. Wynn:** Yes. And the more efforts that we make towards finding early cancers, that means we are decreasing the number of patients that come in with a very advanced cancer. Those are the situations that are really heartbreaking, when it's already too late. So my philosophy of 30 years of doing this has always been the earlier is better than later and almost in any situation as far as breast cancer is concerned. And there is, there is a toll on all the biopsies that we do and even earlier, early stage diagnosis of cancer, there's a chance for perhaps over treatment of something that wasn't ever going to develop into one of those advanced cancers, but every, every case of an advanced cancer that we can prevent is worth so much less heartbreak.

**Moderator:** Certainly. Well, I think we are out of time for our questions for today, but I want to thank you both for such a great discussion. I really think you provided really clear explanations to help people understand how breast density really does factor into breast cancer risk and explaining what tools are available and when the use them. Thank you so much for being here this morning.

**Drs. Azu and Dr. Wynn:** Thank you very much.

**Moderator:** As always, thank you very much for joining us today. Please remember to fill out your evaluations online. Your feedback is always helpful to the development of our programs. Continuing education credits are available for today's program for a limited time. To obtain nurse continuing education hours, CME and CHES credit, learners must visit [www.phlive.org](http://www.phlive.org) and complete an evaluation and post-test. This will be available on demand on our website within two weeks of today's show. Our next web cast on January 17th is focused on the indispensable role of pharmacists on health care teams managing chronic disease. Information on *Public Health Live!* and relevant public health topics can be found on our CPHCE Facebook page and Twitter feed. Don't forget to like us on Facebook to stay up to date. You can also let us know how you use *Public Health Live!* by taking a brief survey at [phlive.org](http://phlive.org). I'm Rachel Bredtster Thanks for joining us on *Public Health Live!*