

# FIND YOUR MBC VOICE

## Science of MBC

### Episode Title: Research Readout

**Guest: Heather McArthur, MD, MPH, Medical Director, Breast Oncology – Cedars-Sinai Medical Center**

**DR. COMEN:** Hi, I'm Dr. Elizabeth Comen, a medical oncologist specializing in treating breast cancer patients. When someone is diagnosed with metastatic breast cancer, they're often in a state of shock, especially when they find out it is the most advanced stage of disease. But we want to help you feel both informed and empowered. We are here to help you, find your MBC voice.

#### **PATIENT:**

**CATHERINE:** I think a real challenge for the newly diagnosed is you don't know what you don't know, and you are really... your head is spinning. You know, this is a lot to get your head around and you know, you really for, I would say the early days of your treatment or diagnosis, you're more acted upon than acting. And what was powerful to me, and I couldn't do it right away, but as I educated myself I wasn't just, you know, passively accepting and listening to the doctor. I was able to ask questions about my care and I was able to understand what my options were and why something might be recommended. The real challenging thing when you're first diagnosed, you have to trust the doctor, and you hope that you can trust the doctor but if you can educate yourself, it's very, very helpful.

**DR. COMEN:** As patients with metastatic breast cancer learn to cope with their disease, I often receive questions about the progress we're making to better treat it. Join me as we speak with Dr. Heather McArthur, Medical Director of Breast Oncology at Cedars Sinai in Los Angeles. In our conversation, Dr. McArthur will share the latest in metastatic breast cancer research, and how we are focusing this research to improve the quality of life and quantity of life for people living with this disease. This is Science of MBC. Heather, welcome. It's so great to see you. We used to work together, it's a pleasure to see you today, and we're so honored to have you here.

**DR. MCARTHUR:** Thank you.

**DR. COMEN:** So to kick things off, I think it would be great if you could share with us a little bit about why you became an oncologist, why breast in particular and what motivates you to do your job every day.

**DR. MCARTHUR:** Yes. Thank you. So, I think when I was in my fellowship, and I was moving through the different tumor types, I was really struck by the men and women who were faced with breast cancer, their stories, often young women and new mothers, and, I just found it emotionally very gratifying to step in when women were at their most vulnerable and be able to educate, inform and treat and make them feel better about their diagnosis and give them back the control that the diagnosis often takes away. So that really inspired me to get involved in breast cancer. And also I became involved in the research

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related to breast cancer and I saw the things that people were doing to innovate and improve outcomes, both quality of life and survival for these patients. And it got me really excited that we could actually make real improvements for this kind of disease.

**DR. COMEN:** So excellent. And, you know, one of the things I think we could say we both see in our practices - so many patients who are diagnosed with metastatic disease actually may have had the diagnosis come up in an incidental fashion, meaning they don't have any pain. They didn't even know that it was there. Could you talk a little bit about some of the ongoing studies and efforts, particularly from a research standpoint that we're trying to do to enhance the screening for breast cancer, both in early stage breast cancer patients, but also detecting it earlier before it becomes an advanced stage?

**DR. MCARTHUR:** There are so many interesting things going on in early detection. First, in early detection, in early stage breast cancer, the modality of choice for identifying and screening for breast cancer has been mammography. But there have been such amazing improvements, technical improvements in mammography. Now with radio tomosynthesis mammograms. So that's been an incredible innovation. There's also improvements in contrast enhanced mammograms and in MRI technology. So, there's been a lot of great technical innovation in early detection. There's also been a lot of really great research going on, looking at what we call liquid biopsies. This is where we take a blood sample and we look for circulating tumor cells. So tumor cells that may have escaped from a tumor that could indicate early, small, micro metastatic disease. So they'll look for either circulating tumor cells or the DNA. It's called cell-free DNA that can be released from tumor cells. And there's a lot of exciting research ongoing using these tools to detect early metastases before they become macro or larger metastasis. So I think it's a really exciting time. They're still on - They're still being explored in research environments but my hope is that they will come to primetime to our clinics very soon.

**DR. COMEN:** And speaking to primetime in clinic and some of the newer research breakthroughs that are out there, you are involved in a lot of those breakthroughs and a lot of those trials. What, in your opinion, are some of the most promising trials now in ongoing research in the setting of metastatic breast cancer?

**DR. MCARTHUR:** Gosh, there are so many great things going on. And I can just say it's really an incredible time of optimism and hope for those of us who treat breast cancer, because we've had so much innovation in the metastatic breast cancer space with numerous drugs approved by the United States FDA within the past few years. So there are really a lot of exciting things going on. My research focus is on immune therapy and trying to figure out how to harness the immune system to better recognize and attack cancer. We have done a lot of research combining immune therapy strategies with local strategies like radiation or tumor freezing with the idea that, if you can break down the tumor into tiny pieces, that's more easily digested by the immune system and then give immune boosting medications, your immune system is more primed to respond to that tumor-specific information and remember it. Now, what does that mean? It means that if you were faced with that information again or if you had other sites where that information was present,

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your own immune system would recognize it and attack it and eradicate it. So that's the incredible power of immune therapy, potentially, and we're just trying to figure out how best to apply it and how best to apply it across multiple different tumor types.

**DR. COMEN:** And what's so exciting now is that there was for so long the idea that immunotherapy wouldn't necessarily work for breast cancer patients but, as you said, you're developing all sorts of innovative strategies to help enhance the immune system for breast cancer patients.

**DR. MCARTHUR:** We are identifying a lot of new mutations or changes in cancer that we can use to our advantage. These are so-called actionable mutations where we have drugs that we've developed that can target these mutations and exploit that unique biologic information so that we can use the tumors' unique DNA to our own therapeutic advantage. So that's been a really exciting area as well.

## **PATIENT:**

**KARIMA:** I was very fortunate and blessed that my oncologist had a vision, or the insight, and he goes to me, "I want you to consider doing the trial." To me, it was like, "okay, I'm stage four. What more else can I lose by?" So we decided to go on that trial and it's six years and I'm still considered to be part of the trial. And I feel very blessed and very fortunate to have been part of that trial. For clinicians to understand that, apart from medication, there are other aspects to that. Sometimes they don't know what the end result will be but some of us are here to say 'thank you, your research does make a difference.'

**DR. COMEN:** One of the things that patients may not know about is what does it really mean to sequence their tumor, understand the genetics of their tumor? Sometimes people get confused about the genetics that they may inherit, like whether they have brown hair, brown eyes versus the genetics that may have evolved in their tumor. And we know that understanding what the genetic changes that have evolved in their cancer may impact treatment options available to them, either standard of care or clinical trials that may be available.

**DR. MCARTHUR:** Right. That's exactly it. So there are mutations that you can potentially be born with. The most common ones that we talk about in breast cancer world or the BRCA1 and BRCA2 mutations and those are now tested really ubiquitously in metastatic breast cancer so, we're doing a lot of testing for...

**DR. COMEN:** Hereditary.

**DR. MCARTHUR:** For hereditary mutations that people are born with. Separate from that are the mutations that you test in the tumor. So cancers become cancers by developing mutations. That's how they transition from normal tissue to cancer tissue. So they acquire these mutations or changes in the DNA over time. And so what we often do in the metastatic setting is send a piece of tissue from a biopsy, perhaps, or even sometimes the primary tumor that was collected at original diagnosis, and send it to a lab. There are a

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number of different labs that do this kind of work and we'll look at the differences in gene status or mutations in the tumor itself. So it has nothing to do with the genes that you're born with, it has to do with how the tumor has evolved in the process of becoming cancer, and then ideally we'll identify mutations or changes in the tumor DNA for which we have drugs that actually target those mutations. So, those are very distinctly different reasons for genetic testing or different kinds of genetic testing.

**DR. COMEN:** Thank you for that very thoughtful and comprehensive response. I think one of the things that when we're talking about all this research and your patients are so lucky to have you because you're on the cutting edge and you have so much available to you. But one of the things I think we can both say in our practice is sometimes patients will get information from the news about something that they read happening in a lab. And it may not really be ready for primetime. It may not even have ever been tried in a human. And yet patients are worried that even if they're on a treatment that they're getting for their metastatic disease and it's working, that they need to jump to the next thing. So, how do you handle when a patient comes in and they may actually be on something that's working, but there's either something that came up at the news or perhaps even a clinical trial that resulted that shows that a new drug is better, but yet what they're on is working? How do you advise patients when, when they come in with this sometimes half-pieced together information?

**DR. MCARTHUR:** It's so challenging because, yes, there can be so much misinformation in the media. And I actually recently had a friend who's a scientist who published in Nature Magazine a piece about asparagine, which is an amino acid, and its relationship to breast cancer. And this came back to us as, 'are there limitations in the amount of asparagus that I can be including in my diet?' I can't tell you how inundated I was by these questions. So it was very interesting to me that that information could have been so misconstrued, and part of that was a media misunderstanding about the science.

**DR. COMEN:** So, what is asparagine?

**DR. MCARTHUR:** It's an amino acid, a building block for proteins.

**DR. COMEN:** Excellent. Thank you, so, it's like that game where you're whispering from, you know, like that game you play in camp when you're whispering from one ear to the other?

**DR. MCARTHUR:** Telephone.

**DR. COMEN:** Telephone. But when it gets translated through the media, asparagine becomes asparagus.

**DR. MCARTHUR:** Asparagus. Exactly. So it was a really poignant reminder for me that there's so much opportunity for misunderstanding and misinformation. So a lot of what I do in my clinic is around education, about demystifying, looking at actual source

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documentation. So I actually often review graphs from studies so that people can get a visual understanding because not everybody is an auditory learner and some people just really need to see what the improvements look like and what the conditions are. So it's just a lot of time spent providing well-sourced information and that's a key part of our job.

**DR. COMEN:** Developing that relationship so that patients can have that dialog with you to help make informed decisions.

**DR. MCARTHUR:** Right. And always going back to the science and going back to the data is, I think, critically important.

**DR. COMEN:** So, Heather, there's so much research going on that we're hearing about from around the world.

**DR. MCARTHUR:** Absolutely. It's an incredibly exciting time to be in the area of breast cancer research because we have so many promising new strategies and I'm really excited on behalf of my patients.

**DR. COMEN:** And then, you know, from a personal point of view, I know we work very hard in our fields to better tomorrow. What do you feel are some of the - your own personal goals about how we can make this landscape of metastatic breast cancer even better? I know both of us look forward to the day when we are out of a job, for sure, we've plotted our next lives.

**DR. MCARTHUR:** That is my personal goal to cure breast cancer so that we are pushed into an early retirement. That would be a terrific outcome. I think we have a lot of goals. I think, professionally, my goal is to provide excellent care. Patients diagnosed with metastatic breast cancer can be vulnerable. They can be so many things and they rely so much on our therapeutic relationship, often friendship even, so providing that source of comfort and information and good quality care is critically important. So, being a good physician, first and foremost, and then there's the research piece, of course. We're hoping through innovation, and the only way one can achieve innovation is through clinical trials and research, that's the only way we're going to move the bar forward. It is my hope that through continued therapeutic innovation that we will be able to A. improve survival, if not cure metastatic disease, but at a cost that's palatable with good quality of life. So that's really our overarching goal.

**DR. COMEN:** Here's to that. I second it.

**PATIENT:**

**STEPHANIE:** Right out of the gate I wanted to know, first and foremost, I'm sure, like every person thinks about may not ask, but, "Am I gonna die soon?" At that time, I had a daughter that was pregnant and I wanted to see my grandson born so my goals was to live, to be able to see them, meet the milestones. So I had those questions just basically to make sure that

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the doctor and I were on the same page and I was a little cocky about it. I had told my physician that I don't want to die. I want to live. And your goal is to get me there.

**DR COMEN:** Heather, thank you so much for joining us in our conversation today, and thanks to Pfizer for sponsoring this conversation. As Dr. McArthur shared, there's a lot of exciting research going on to investigate how to prevent, detect and better treat metastatic breast cancer, and improve the quality of life of our patients. But there's a lot left to do. It's important that doctors keep their patients informed about ongoing research, as well as potential future treatment options, so patients feel prepared for when they have to make the next decision about their treatment plan.

Visit Find Your MBC Voice dot com for an interactive discussion guide to help you have an informed conversation with your doctor.

**END**