



The Beat - Episode 2: We can save more women

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[00:00:19] **Garima** I would also say for women to think about themselves. Often we're sick and we think, you know, I always think, what will my kids have for dinner?

[00:00:35] **Caroline** Chances are you or someone you know has been personally affected by heart disease and stroke. They can devastate lives, sometimes suddenly, but there's hope. I'm Caroline Lavallée and you're listening to The Beat, a podcast by Heart & Stroke with support from our generous donors. In each episode, we're joined by Canada's leading physicians and experts to discuss the most pressing issues related to heart and brain health, and you'll be inspired by the real stories from people living with heart disease and stroke. Thanks for listening. Now let's get into the episode.

[00:01:17] **Karen** I think my heart stopped right there, and I I couldn't believe what I was hearing. So he went on to tell me that there were six blockages in my coronary arteries all over 80% and the left interior descending artery, which is what feeds the ventricles was 95% blocked.

[00:01:41] **Caroline** That was Karen. We'll meet her later. Her story is just one example of why we need to learn more about women's heart and brain health. I'm really passionate about today's episode because I'm a woman living with heart disease. And because I was shocked to learn that heart disease and stroke are the number one cause of premature death for women in Canada. Women are dying unnecessarily, and that affects all of us.

If you're a man, this episode is for you, too. The more we know about women's heart health, the more everybody benefits. And you could be the one to pass on the vital life-saving information to a woman you care about — a woman like Karen or Garima, who share their incredible stories. We'll also hear from two researchers who are helping to close the research gap in women's heart and brain health. We're all here to save more women and improve their quality of life. Karen Narraway was in her early 50s when she started to feel some discomfort in her abdomen. Was it stress or something else? As a nurse, Karen knew she should get it checked out.

[00:02:57] **Karen** I started feeling pressure, some discomfort in my upper abdomen area, just under my sternum. I kind of put it down to some stress because there was a lot of stressful things happening in my life at that moment didn't really click that it would be heart related. Several months later, the pain was still coming and going, and I decided to tell my family doctor about it. Because of my family history she decided to get me in to see a cardiologist and also at that time, besides

the pain, my resting heart rate had gone up to about 110, 120. So she started me on a beta blocker. I got in to see the cardiologist within about six weeks, and she did a stress test echo rate right there. And then she could see that I did have this high heart rate. So she just adjusted my my beta blocker medication. But she said the echo was showing that my heart muscle was healthy and strong, so that was probably in the fall of 2015. This pain would be very persistent and it could last for hours on end. But because I had been told that it wasn't related to my heart and it was probably anxiety or indigestion, I thought maybe if I tried to get out and do some more walking, that would help with the stress.

[00:04:37] **Caroline** Karen did everything she could, but the pain didn't go away. She eventually went back to the E.R., but nothing showed up on her electrocardiogram or blood work. It must have been a frustrating experience. She kept trying to do the right thing, but answers were still a mystery. Karen's family doctor recommended an abdominal ultrasound and a colonoscopy to see if the pain was related to gastrointestinal issues. Again, the results came back clean. Now what? Karen committed even more to her exercise routine, but the pain was still there.

[00:05:20] **Karen** I got back in to see my family doctor again and told her again what was happening. She said, OK, even though they've ruled out that it's heart related, I think you need to go back to see the cardiologist again. And I got in to see her on July 6, 2017. She repeated the stress test and echo. She was quite alarmed. She said that there had been significant changes with showing on the echo, and she was showing me the screen where there was a huge lack of oxygen getting to my left ventricle. She wanted me to go to emergency right away, so I did go and they did an angiogram the very next day. But I was really in denial at that point. I was like, This can't be in my heart.

But even the cardiologist that was doing the angiogram, he said, I don't think we're going to find anything and if we do, we could probably do a stent right here if that's needed, he said. Sometimes these results from the stress test echo come back as a false positive and he's like, You look good. You look healthy. You don't have a lot of risk factors. So anyways, they did the angiogram, and I just remember him leaning down next to me and saying, I'm so sorry, this isn't what we expected to find. I think my heart stopped right there, and I I couldn't believe what I was hearing. So he went on to tell me that there were six blockages in my coronary arteries all over 80% and the left interior descending artery, which is what feeds the ventricles, was 95% blocked and that I would be awaiting the bypass surgery. There was too many blockages to try to stent, and they were too extensive. So on July 12th of that year, I had a quadruple bypass. They weren't able to get all of the blockages bypassed because my vessels were very tiny and they were just having a lot of bleeding issues and couldn't continue to risk doing more surgery at that point.

[00:07:51] **Caroline** Mystery solved. It may have taken time and a lot of tests, but Karen's experience was not the fault of her doctor, her cardiologist or the hospital. We know that healthcare providers need better tests and tools to diagnose women. That's why a women's heart and brain health is such an urgent matter. For Karen, finally having answers brought on a storm of emotions, and she couldn't help wondering what if the diagnosis had come sooner?

[00:08:22] **Karen** I wanted to stay strong and brave for for my kids. I wanted to not let them know how much I was actually struggling and how awful I felt. I felt extreme relief, surviving the surgery because I was so afraid that going into the surgery would be the last time that I would see see my kids. It's an awful surgery to have. I went in feeling pretty OK to the surgery and came out feeling like I'd hit a brick wall or something. It was quite devastating. I felt extremely vulnerable in the ICU. I had a lot of fear. There was guilt that I had let my kids down to some degree that I was supposed to be their mom. They're not supposed to be looking after me or worried about me.

There was grief that I had lost the life that that I'd had before. Fear of what was lying ahead. And then it was all mixed in with like this deep love for my kids and such gratitude for all the people that were helping us out at that point and, you know, gratitude for our health system and that I was able to have this surgery and survive. You know, so it was a whole mix. And on top of it all, just absolute extreme anxiety. So the anxiety lasted and lasted and lasted once I got home. I did not have anxiety before the surgery, but I sure had it afterwards.

[00:10:16] **Caroline** Karen's story helps to illustrate just how difficult and painful it can be trying to reach an accurate diagnosis for heart disease in women. Many women don't know about signs and symptoms that are unique to them. The most common heart attack sign is chest pain or discomfort. But women can experience a heart attack without chest pressure. They may experience shortness of breath, pressure or pain in the lower chest or upper abdomen, dizziness, lightheadedness or fainting, upper back pressure or extreme fatigue. Despite the differences in the way heart disease may present itself in men and women, two thirds of clinical research on heart disease and stroke is being done on men. But why and how can we change this? Dr. Kara Nerenberg is a clinician scientist in the area of obstetrical medicine at the University of Calgary. Her research focuses on women and cardiovascular disease after pregnancy. She has a lot to say on the subject of women and research.

[00:11:24] **Dr. Nerenberg** Years ago, it was thought that women's reproductive biology changed the metabolism of drugs, or that a woman might become pregnant during a study, and therefore they were excluded. We now realize the importance of studying all biological sexes, as well as a wide range of genders, so different social constructs of gender and a person's responsibility within their own family and community. Because the more we include people of diverse backgrounds — whether it's sex, gender, ethnicity — we'll be able to develop better treatments for all people with heart and brain disease out there. Research, though, has lagged, and there still are some barriers to research in females that can be addressed.

So making sure that researchers do include about 50% of women in order to receive funding is a basic one that can markedly increase the recruitment of female participants in the study, but also making it easier for females to participate. We do know that there's some barriers potentially related to language or how it's communicated to them to participate in the study. We also know that there's other gender roles that may affect a female's participation in a study, such as childcare responsibilities if there were additional visits for a study, and parking or driving, as we know that the rate of driving is a bit lower in females. So as a scientific community, we need to be proactive and address some of those barriers. We need to change our recruitment strategies of how we recruit females, specifically trying to recruit half of the study as being female. And we may need to give different incentives, different times of followup visits that accommodate childcare responsibilities or parking stipends and whatnot. But there truly are ways around all of this, and I think as a community, we need to work together to figure out how to get more women into studies.

[00:13:18] **Caroline** As more women are included in clinical research, the medical community will have a clearer picture of how to identify and treat heart disease and stroke in women. These studies will help women like Garima Dwivedi, who was 55. After developing a severe headache one Sunday, Garima headed to her doctor's office, where she was given a prescription for a sinus infection. But that didn't help. Eventually, her symptoms became so severe that she found herself waking up in the ICU, floating in and out of consciousness. As it turned out, the sinus infection wasn't a sinus infection at all. She had suffered a stroke. After a lengthy hospital stay, Garima began the long road to recovery, which involved months of therapy and rehabilitation. Now that it's been eight years since her stroke, Garima has had plenty of time to reflect on the experience. Like Karen, Garima learned that as women, we need to advocate for our health and arm ourselves with as much knowledge as possible.

[00:14:33] **Garima** What I want women to know is that stroke doesn't only happen to someone much later in life. It can happen to you when you're younger; that you know your body best, if there's something that's not feeling right, go back, talk to your doctor. Don't always accept the diagnosis. So in my case, it was, you know, initially it was a sinus infection. But I knew with the antibiotic it was just getting worse. It wasn't getting better. To go back and to say, Hey, this isn't working. And to challenge. I would also say for women to think about themselves. Often we're sick and we think, you know, I always think what will my kids have for dinner? But think about yourself as well. You know, we get sort of caught up in the day to day and sometimes we need to take a step back and look at the bigger picture.

[00:15:38] **Caroline** Hearing Karen and Garima share their stories brought me back to my own experience with heart disease. At the age of 36, I was diagnosed with a condition called supraventricular tachycardia, which made my heart race out of control at times. Thankfully, it was corrected with surgery within a few months. While my experience was different from Karen's and Garima's, for all of us, cardiovascular disease came as a surprise. I want to stress that healthcare

providers like doctors and specialists are not to blame. They simply don't have the tools to fully investigate all the ways heart disease and stroke can impact women. But researchers are learning more. Here's Dr. Sharon Mulvagh, a cardiologist and professor at Dalhousie University and the chair of Heart in Stroke board in Nova Scotia. She explained why a women's risk factors are an important part of research today.

[00:16:39] **Dr. Mulvagh** So I look at it as in two ways. One is that women actually have differential impact of our traditional risk factors. For example, our traditional risk factors that we think of for heart disease would be smoking, diabetes, hypertension, high cholesterol and obesity. And it's been recognized for quite a long time that women that have diabetes are two to four times more at risk for developing heart disease than men with diabetes. Similarly, women that smoke are up to two times more likely to develop heart disease than men who smoke. Stroke is a significantly more impactful disease process in women and does relate to more likelihood of having hypertension as they age. And particularly because, as they age, they also tend to be less well treated for their hypertension than men do. There's more of the metabolic consequences of poor diet, sedentary lifestyles and obesity related complications, which lead to poor metabolism, metabolic changes, metabolic syndrome, which then increases risk in women. So those are just the traditional ones. But then on top of that, of course, women have sex unique risk factors that men don't have, and this occurs across a woman's lifespan. Since we physiologically experience different hormonal impacts and hormonal physiologies, as well as the consequences of those different physiologic states, i.e. pregnancy would be one of the most unique ones for women.

[00:18:22] **Caroline** Dr. Nerenberg is well-versed in the complications that can arise during pregnancy. She explains all the ways that pregnancy can increase a woman's risk of heart disease and stroke.

[00:18:34] **Dr. Nerenberg** So there are a whole range of pregnancy complications that do affect the heart during pregnancy. One of them might be a condition called SCAD, where there can be a tear in the blood vessels to the heart. Similarly, stroke is a lot more common during pregnancy, particularly around the time of labour and delivery and that first three months after delivery, where women are more predisposed to developing blood clots in their brain or what we call cerebral vein thrombosis, as well as other types of stroke too. So certainly, pregnancy is a very high risk period. We also know that the early postpartum period up to three months is quite a high risk time for both strokes and heart conditions. And my real interest is following women further out after the pregnancy. We now know that there is a wide range of conditions that occur in pregnancy that do increase a person's risk of future heart and brain diseases. These conditions are pretty common, occurring about one in five of every pregnancies in Canada. And they include a range of conditions from high blood pressure disorders of pregnancy. We often use the word pre-eclampsia. It previously was known as toxemia. Gestational diabetes is on that list, as is preterm birth, and there's a really large growing list of other conditions that send a signal that this woman or person may be at an increased risk of a broad range of heart and brain diseases down the road.

[00:20:03] **Caroline** While pregnancy can increase risk, Dr. Nerenberg points out that it's only one piece of the puzzle. In truth, there are multiple factors at play.

[00:20:14] **Dr. Nerenberg** It's really important to emphasize the whole life course of a female because we do know that there are certain biological periods that start to introduce cardiovascular risk. And if we think all the way back to even in utero when developing in the uterus, there are some risk factors there. But we do know that in early teenage years or adolescence, that polycystic ovarian syndrome obesity can contribute to a woman's lifetime cardiovascular risk. We also know that certain medications over a female's reproductive journey can increase their risk of heart disease. So birth control pills have been a little bit controversial, but certainly do increase blood pressure. We also know that later in the years of menopause, following menopause, there's an increased risk in cardiovascular and brain diseases in females as well. So certainly components of biological or the reproductive hormones may contribute. But again, we need to be thinking when we see women about their whole reproductive health from their teenage years all the way to menopause and identifying what might have placed them at a higher risk so that we can better individualize care for each woman.

[00:21:30] **Caroline** What does it take to beat heart disease and stroke in women? The answer includes more research, better diagnostic tools and treatments, and more awareness, both among healthcare providers and among women themselves. Dr. Mulvagh points out that there's a greater urgency to address the need of Indigenous women and women of colour.

[00:21:52] **Dr. Mulvagh** The issue of cardiovascular disease in women is one that has only recently been recognized. There are many, many aspects to it, and there are many not only scientific, physiological and research avenues that we have to pursue. But there are also many aspects to how a woman interprets her symptoms, how she can understand that those symptoms might be different or more in certain ways than a man, and how her communication style might totally be misunderstood by the healthcare professionals that she may be seeing when she's concerned about those symptoms. I think the largest groups that we have to reach now are really are women of colour, are Indigenous women and are women of different ethnic backgrounds because we really find that they particularly are under served in awareness for cardiovascular disease issues and risk factors. In particular, very much social determinants of health are disadvantaged in these women. And this plays a huge role in increasing their individual risk for cardiovascular disease.

[00:23:11] **Caroline** Fortunately, Dr. Mulvagh sees lots of reasons for hope.

[00:23:16] **Dr. Mulvagh** This is a big problem. It's multifaceted and it's complex, but we're making progress, and it's because of the people that are involved across the board, particularly our patient partners and the courage of our women with heart disease and stroke that have spoken out and shared their stories. And also the healthcare providers that are listening to their stories

and that are seeking more information to be able to give the best care that they can. But it's been really an exciting journey for me to actually have seen how much and how far we have come in our work increasing awareness of heart disease in women. The 2018 Heart and Stroke Report was seminal in being able to trigger that, and then the work again with the Canadian Women's Heart Health Alliance has taken that forward from the standpoint of advocacy, education and training, knowledge, translation and mobilization and health systems and policy. We're now on a new horizon of being able to really move the needle forward. But I think one of the most important things that Heart & Stroke is going to be able to focus with all of their wonderful infrastructure is in increasing the research work in cardiovascular disease in women in particular. And that is going to make a huge promising difference for cardiovascular outcomes in Canadian women.

[00:24:46] **Caroline** Thank you, Karen and Garima, for sharing your inspiring stories. And thank you, Dr. Nerenberg and Dr. Mulvagh for offering your expertise. This is a difficult and complex problem. Now that we've recognized it, we can't turn away. I'm passionate about this cause, and I hope you are, too. If you'd like to learn more, go to heartandstroke.ca/women. I hope you enjoyed this episode. Stay tuned for upcoming episodes on being a caregiver, surviving cardiac arrest and more. Thanks for listening to The Beat and a special thanks to our donors for making this podcast possible. Subscribe now to stay informed, get inspired and rediscover hope. Don't forget to rate and review the podcast so we can reach even more listeners. Stay tuned for our next episode. Until next time, I'm Caroline Lavalee.

