

Heart Disease in Women: Risk, Prevalence, and Diagnosis

Episode 1 – Acute Coronary Syndrome: What is it, really?

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Guest

Joshua Weinstock, MD

- Dr. Weinstock is a graduate of Cornell University where he studied Human Biology.
- Dr. Weinstock studied bioethics at the University of Pennsylvania for a year before he was accepted as a charter student into the Cooper Medical School of Rowan University in Camden, NJ.
- After medical school, he completed Internal Medicine Residency at Cooper University Hospital.
- He was awarded Resident of the Year in 2019 and served as a Chief Resident in 2020.
- He subsequently stayed on for Cardiology Fellowship training at Cooper.
- He has published research projects investigating cholesterol-lowering medication as well as another studying implantable cardiac monitors for the detection of arrhythmia and presented these findings at the Heart Rhythm Society national meeting.

Host

Leana McGuire, BS, RN

- Over 30 years of experience in healthcare
- Teaching experience in leadership development and executive coaching
- Background in content development, visual performance, speaking and podcast hosting

Transcript

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LEANA MCGUIRE, HOST: Hello and welcome. I'm Leana McGuire, your host for this educational podcast, Heart Disease in Women: Risk, Prevalence, and Diagnosis by Elite Learning. Joining us is our subject matter expert, Dr. WEINSTOCK. Dr. Weinstock graduated from Cornell University, after which he studied bioethics at the University of Pennsylvania before attending medical school as a member of the charter class of Cooper Medical School, at Rowan University in Camden, New Jersey. During medical school, he served as a national leader of the American Medical Student Association and served multiple terms on the organization's board of trustees.

After medical school, he completed an internal medicine residency at Cooper University Hospital, where he was awarded Resident of the year in 2019 and served as a chief resident in 2020. He subsequently stayed on for cardiology fellowship training at Cooper. He has published research projects investigating cholesterol lowering medication and another studying implantable cardiac monitors for detection of arrhythmia. Presenting his findings at the Heart Rhythm Society National Meeting. Dr. Weinstock plans to work in the Philadelphia suburbs as a cardiologist, where he will continue to focus on cardiovascular disease management and prevention. Welcome, Dr. Weinstock.

JOSHUA WEINSTOCK, GUEST: Thank you so much. Thank you for the invitation. I'm honored to be here today.

MCGUIRE: Thank you. Before we dig deep into issues specifically related to women, can you tell our listeners exactly what coronary artery disease is?

WEINSTOCK: Sure. So coronary artery disease is one of the major diseases that kind of affects many in our population. It refers to atherosclerotic buildup of cholesterol within the heart arteries as we age and as we get older, the arteries filled up with cholesterol deposits, atherosclerosis. And eventually, when that progresses enough, it can cause symptoms and very deleterious effects down the road, things like heart attacks.

And so, you know, oftentimes in the health care setting, we're seeing patients presenting with either the symptoms or the unfortunate consequences of coronary artery disease.

MCGUIRE: And how does someone with coronary artery disease present in the clinical setting?

WEINSTOCK: So, the classic presentation, if you will, or that, you know, the typical symptoms that we oftentimes hear about or see dramatized on TV or the substernal center of the chest pain that we have when we refer to typical chest pain, we're really referring to that kind of central chest pain, substernal discomfort that's brought on, provoked by exertion or other physical or emotional stress can also bring it on.

And that typical chest pain is typically relieved by rest or medication such as nitroglycerin. So, when we talk about a kind of classic presentation, we're really referring to the typical chest discomfort that many people report. However, not everybody that is suffering from coronary artery disease or the, you know, the consequences of coronary artery disease like heart attack, for example, develops those same symptoms. And in fact, many people present with somewhat atypical symptoms, which I'm sure we'll touch on.

MCGUIRE: Yes. Okay, great. And sometimes it's I just wanted to differentiate before we move any further about angina. So, can you tell us what the difference is between stable angina and unstable angina?

WEINSTOCK: So, angina is that kind of typical discomfort that I just mentioned. So, it typically has those three features, meaning its substantial mid-chest pain provoked by exertion or other emotional stress, better with rest, better with medicines like nitroglycerin. That's what we refer to when we're discussing angina. And that angina is caused by basically inadequate oxygen delivery to the heart cells, the myocardium.

And when the myocardium is kind of starved of that blood supply due to the buildup within the coronary arteries, patients develop symptoms like angina. It becomes very worrisome when they present with symptoms of angina that are, you know, not relieved by the traditional measures, things like medications, like nitroglycerin or by rest. And when that when it gets to that point, we refer to them as having unstable angina.

And unstable angina falls under the same umbrella as what many would consider to be the heart attack or the STEMI or the non-STEMI. We call those acute coronary syndromes. When their patients develop acute discomfort, typically chest discomfort and have evidence of end-organ damage to their heart. We kind of place them in certain buckets.

Acute coronary syndrome is an umbrella term, but we further define acute coronary syndromes typically by the features that are seen on EKG and sometimes other. So many people have heard of STEMI, and that's kind of the classic heart attack you hear of ST segment elevation myocardial infarction. That's typically you know, the more serious presentation we see where it's acute at time is of the essence. They're somewhat easier to identify because when you see patients presenting like that with evidence of ST segment elevation on their EKG, we very quickly act.

The other kind of acute coronary syndrome is what we refer to as non-ST segment acute elevation, acute coronary syndrome or NCSTACS or N-STEMI is what many people refer to it as. That's where there may be signs of ischemia or inadequate blood supply to the heart on an EKG, but they're not showing that classic segment elevation that many of us are trained to identify. However, an N-STEMI is defined by elevated cardiac biomarkers.

And when I say that I'm really referring to troponin, which is oftentimes checked in a health care setting. And when we see elevated troponin, that's generally a bad sign. And it shows that there is damage to the heart muscle itself. And so, when you couple EKG changes that are not elevations with elevated cardiac biomarker like elevated troponin, that is kind of what we refer to as an N-STEMI or non-ST segment elevation acute coronary syndrome.

But going back to your original question of stable versus unstable angina, unstable angina itself actually is distinct from STEMI and N-STEMI, but also worrisome and also treated similarly where these patients, when they're declared unstable, meaning they're having the typical symptoms, they may have risk factors for coronary artery disease and their pain is not relieved in the traditional sense, in the typical sense, rather, those patients also, you know, are treated more urgently and manage kind of similarly to the way you would patients presenting with an N-STEMI or STEMI.

When we talk about stable angina, like I said, from the start, when you initially ask the question, stable angina is more predictable. So, there are many patients that we can manage who have, you know, known coronary artery disease that we see in the office and are labeled as what we call chronic stable angina, meaning they do get chest pain from time to time and it's predictable they are able to mitigate that chest pain with their medic with the use of medications.

So, things like long acting, nitrates and other medications to prevent the angina or to suppress it and when it's suppressed in that predictable manner and more of a stable state, we call that chronic, stable angina. So going back to your original question of kind of defining stable versus unstable angina, those are the way that's the way I generally think about it.

Unstable and or not very worrisome. Stable angina, not good, but can be managed chronically. And typically, you know, with cardiology providers, you know, we can manage that with medications in our, you know, at our disposal.

MCGUIRE: Excellent. Great answer. Okay. Now let's talk about how women differ from men when it comes to heart disease. Do we present differently as well?

WEINSTOCK: So, the interesting thing is that some people may have heard that women present entirely differently. And while some of that may be true, it's most common that women will present with chest pain like their male counterparts most commonly present. So, I don't want to paint a picture that women don't get chest pain because many do, but some don't.

And so, there are some other, you know, more common symptoms of heart disease that people generally don't want to ignore. So, some people develop dyspnea, shortness of breath, particularly when it's exertional in nature, unusual fatigue, overwhelming fatigue can often be a symptom of coronary disease. Some patients develop pain in their neck or jaw. You'll oftentimes hear pain running down the arm.

So, so many you know, some women will have those symptoms. And then, you know, also we've seen we do see patients presenting with GI symptoms. So, things like nausea, vomiting. Sometimes patients ignore their symptoms because they think, oh, you know, it's just indigestion or something when in fact, you know, it could be an acute coronary syndrome and it could be something more serious than just indigestion.

MCGUIRE: I've also heard of a silent episode. Can you explain that to us?

WEINSTOCK: Yeah. So, it's interesting. Sometimes we catch what we call silent myocardial infarctions or silent heart attacks. And, you know, that can be for a number of reasons, but sometimes patients will get an EKG and it'll show evidence of perhaps an old heart attack, maybe Q waves on an EKG, or they'll have a, you know, a nuclear stress test or something that shows an old area of infarction.

And we do know that some people, for whatever reason, don't develop symptoms and may have an episode that goes missed for a number of reasons, particularly actually in diabetic patients who, as we know, develop neuropathy in all parts of the body. So, patients with uncontrolled diabetes unfortunately many times will develop peripheral neuropathies, but you can also develop neuropathies that affect the innervation of the heart.

And so that may be the case for some of these silent myocardial infarctions. So I guess the point of having this discussion is basically to say that while some patients present with the classic heart attack that is, like I said, we see on TV where patients have that, you know, crushing chest pain in central the chest, some patients don't have any symptoms and some people have a very, you know, so to speak, atypical symptoms.

So, we always when we're evaluating patients need to have an antenna raise, you know, to think about coronary disease as even when patients present in a somewhat atypical manner.

MCGUIRE: Got it. Okay. And is it true that women are generally older than men when we present with symptoms or have this. Come on for us.

WEINSTOCK: Yeah. So, in general, you know, the way it's taught is that women in general present about ten years later than their male counterparts. And the reasons for that are interesting. So, women, unique to men, have some degree of hormonal protection from progression of coronary or development and progression of coronary disease from estrogen. So, women who are of childbearing age are protected a little bit by the estrogen that they have.

Estrogen itself is a hormone that does a lot of things to the body, some of which do affect vascular tone and pliability of the vasculature. Estrogen affects lipid metabolism and other things. And so, as women are going through their childbearing age years, they are offered some protection from, you know, from the hormones throughout the body as they enter menopause in the post-menopausal periods.

That protection can go away. And it's during those years where women tend to catch up to their male counterparts and, you know, are at further risk for coronary disease. So, in general, women we refer to premature coronary artery disease is kind of defined as somebody who has a male relative who develops coronary artery disease before the age of 55.

But for females, it's a little bit different in the sense that coronary disease is considered premature when it's before the age of 65. So, there's about a ten-year gap there where women eventually catch up to men. But so early on, there's some degree of protection. But overall, the burden of cardiovascular disease, particularly later in life, is high for both men and women.

MCGUIRE: Got it. So, would this speak positively in favor of estrogen replacement therapy?

WEINSTOCK: So that's a good question. Yes. So, the logical thought would be, well, if we were to give estrogen replacement therapy or hormone replacement therapy to women, would we be able to kind of stave off that? And this has actually been studied. There have been some initiatives to study this in the past. And what they found is that it was kind of a mixed bag in terms of the outcomes of giving replacement therapy.

So, what they found, I believe the Women's Health Initiative studied this. And what they found was that the incidence of things like myocardial infarction and stroke went up for a certain portion of the population who received hormone replacement therapy. And when they further looked at that data, it tended to be people who were later in the in the post-menopausal years as opposed to the early post-menopausal years.

But we also know that hormone replacement therapy affects not just the cardiovascular system, but the body in general. And we know that the incidence of things like stroke, but also venous thromboembolism can go up. And so, as cardiology providers, we do not in general, you know, routinely suggest that hormone replacement therapy is the answer here at all. There are there are indications for hormone replacement therapy, but for coronary artery disease, that's not something that is routinely done by any means.

MCGUIRE: Got it. Yeah. Let's talk about family history. How does that play into that?

WEINSTOCK: So, family history plays a big role, unfortunately, because there's a lot of risk factors that we can change and ways we can minimize or lower our risk. Genetics, unfortunately, we can't change. So, we know that patients who are predisposed to coronary disease need to be a little bit more cautious now. Now almost everybody can identify somebody in their family who's probably had coronary disease or had an MI, things like that, because it's so common.

It really affects us. You be hard pressed to find anybody who wasn't affected by this disease in some way, shape, or form, be it, you know, a close relative or friend. But what, like I said before, is worrisome when it's in a relative at a premature stage in life. And so, again, what is considered premature is a man before the age of 55 and a woman before the age of 65.

So, let's say somebody had a family history of, you know, a father having an MI at age 40 or a mother having an MI at age 50. That would be very concerning. And that would be somebody who would want to, you know, do whatever they can to minimize the risk, you know, and try and work on all the modifiable risk factors that they can to try and mitigate and minimize their risk.

Like I said, unfortunately, it can't change the family history. We can't change our genes, but we can work on other ways to lower them.

MCGUIRE: And what are some of the modifiable risks for women? Well, for either. But women would be the same.

WEINSTOCK: Sure. So, there are a lot of modifiable risks. You know, we can go into detail on many of them, but as a lot of them are obvious, we'll review. So, number one, smoking is very bad. I don't really have any. That's not going to come as a surprise to anybody listening to this.

But smoking obviously is bad for the heart, bad for bad for the body. So, for smokers, you know, cutting back on smoking, lifestyle, lifestyle plays a role. So, if you're somebody who leads a sedentary lifestyle, building physical fitness then is paramount. You know, that's something we can work on to improve, you know, improve outcomes. And then other co-morbidities, things like hypertension, hyperlipidemia, diabetes.

We can work to optimize those conditions. So, patients who may have risk factors for coronary disease, if they have high blood pressure, we can work to optimize their blood pressure. If they have hyperlipidemia, we can work to lower their lipids to get them more controlled and the same for diabetes. We can work to lower blood glucose and hemoglobin A1C levels and doing all of that will lower long term risk of coronary disease or for patients who have known coronary disease.

We'll work to improve outcomes. Let's see. So, we touched on smoking. We talked about lifestyle. We talked about, you know, some of the diseases that we can work on. Weight plays a role. So, trying to be, you know, at a normal or healthy weight is important and then diet plays a role as well. So, there's a lot of modifiable risk factors that we can work on.

Unfortunately, you know, genetics is something we can't change.

MCGUIRE: Good point. Now, if the incidence increases after the age of 65, is it still worth modifying at, say, 60 or 62 or three or 65? You know, is it still worth it? Is it going to make a difference?

WEINSTOCK: Absolutely, 100%. So, for our patients who are at the highest risk, those who you know, we're working more on secondary prevention for, so a patient who may have already had a had a heart attack, who has known coronary artery disease, those are the patients that need to be paid the closest attention to. And we don't raise the white flag and say we're giving up here.

Those are the patients that need strict control of their lipid, strict control of their blood glucose. They need strict control of their hypertension. They need to, you know, for patients who are post MI enroll in, you know, cardiac rehab work to become more active. Those are you know; we can improve outcomes regardless of age, and regardless of how far along people are in their disease process.

MCGUIRE: Good to know as well. Excellent. Now, let's talk about prevalence. Where do we stand as women in heart with heart disease being a cause of death?

WEINSTOCK: So, sure. So interestingly and unfortunately, the number one cause of death in this country for both men and women are cardiovascular disease. And so that's staggering. And, a lot of women, you know, don't even men and women don't realize that. But, you know, I think it's important to say that out loud and acknowledge that coronary disease is the number one killer of men and women in the United States.

For women in particular, the numbers vary on a population level, but in general, at least one in five women will die from coronary artery disease. And I've seen statistics that suggest even one in four or as high as one in three will die of coronary artery disease. And so, it is really staggering the burden of cardiovascular disease in this country.

And so, it's something that we need to acknowledge and work on to educate our patients as providers. You know, to make sure that everybody understands how important.

MCGUIRE: Okay. I'm going to throw this question at you as a clinician, as a nurse. And obviously, that's who's listening to our podcast. Oftentimes we get the response when we do bedside teaching about coronary artery disease and the risks and changing their lifestyle. Inevitably, someone will say, well, I had an uncle who jogged two miles a day and did everything right and dropped dead at 70.

So, what difference does it make? What's a good response for someone like that? Is that more of a genetic you can go the genetic route or.

WEINSTOCK: It's tough to say. I mean, you know, unfortunately, some people do all the right things and have a bad outcome. We've all seen that. And sometimes we don't know the exact cause of someone's, you know, demise. But, you know, like I said before, that doesn't mean we give up on kind of working on all these things.

I think it would be the wrong thing, you know, to suggest that, you know, we know that we have a good a very solid evidence base for all the things that we do in cardiology to know that there are benefits to, you know, all the treatments that we provide our patients. And so, you know, unfortunately, the people that do all the right things, you know, do have heart attacks.

And some of that is not completely understood. But we do the best we can to optimize our patients. And, you know, the hope is that in optimizing them that we lower the risk, you know, the risk, you know, for anybody is never zero, things happen. But, you know, we would like to lower those things.

MCGUIRE: We can always fall back on the evidence and research. Excellent. Yeah. Okay. Now, let's talk about diagnosis. What's the best practice when it comes to women, starting with, say, a stable patient comes in with chest pain?

WEINSTOCK: Sure. So, first of all, it's very important that, you know, women and men, you know, establish with good, good providers. They need to, you know, especially when they're having symptoms be evaluated, particularly when they're having symptoms like chest pain. But also, you know, as we discussed some patients have atypical symptoms. So, if something's not right, you need to be evaluated.

And that's really the starting point. You know, we like to, of course, focus on prevention. But if you're if you're, you know, not feeling well, we need to, you know, to address that. But for a stable patient in general who may be having symptoms, a lot of the initial management is done with things like getting a set of vitals and in the clinic doing a physical exam, getting an EKG.

Those are really all the way we kind of start to go about working up coronary artery disease. for patients who may have some risk factors and if they are having symptoms, that may be an indication to proceed with a stress test. And so oftentimes those stable patients will proceed with things like stress testing.

That may be an exercise stress test. You know, by exercising on a treadmill for patients who can't exercise, that may involve a pharmacologic stress test where, you know, we give medication to accomplish, you know, ischemic workup. And for other patients especially nowadays, you know, we're using CT actually has been a good modality, coronary angiography to look in a noninvasive way at the coronary arteries or calcium scans to assess the calcium burden in the arteries.

Those are all ways for our stable patients that we can work them up. Taking a step back, other things like checking a lipid profile, checking an A1C, you know, for patients, those are ways we can focus on, you know, diagnosis and prevention and all of that. That's really key. The unstable patients, you know, when it gets to that point at diagnosis is a little bit trickier and unfortunately, a little bit more risk.

There's a little bit more risk involved because when you're presenting with things like an acute coronary syndrome, then, you know, we really oftentimes are committed to doing coronary angiography on those patients through means. You know, often like a cardiac catheterization where we which is the gold standard to kind of go in and look at the coronary arteries and assess them.

We also we also you know, can use noninvasive modalities in that setting as well. But most commonly, you know, especially for STEMI or in STEMI, those patients are in most cases going to go to the cath lab where they will know, assess their coronary arteries. And oftentimes if there's a problem, can then be addressed if they're found to have it.

MCGUIRE: I want to go back just for a second to the genetic factor, and I think I already know the answer to this, but I'm going to ask it. I think it, you know, begs being asked. But one way or the other, when you're when you have a genetic risk factor as a woman, are you more susceptible if you're if you inherit that from your mother's side or does it matter which side it comes from?

WEINSTOCK: It's a great question, actually. In general, it doesn't really matter. A lot of these conditions are inherited irrespective of whether it's a mother or a father side. So, I would say it's important that we identify a family history, but it's less so important for most cases, which relative it came from.

MCGUIRE: Now, another question, and this may be something that you're aware of or not, but I know that I remember seeing a billboard one time that said the biggest killer for men is denial. You know, it's like a stereotype typical in a way that they don't want to go to the doctor, and they deny what's going on.

Do you find the same thing with women or are they more open to, hey, I'm not feeling well, I need to go now.

WEINSTOCK: I think I think so. I've seen patients' kind of both, you know, hopefully patients, when they don't feel well, will present to their doctors, and be evaluated appropriately. Some patients, though, make mistake. I've seen many times where patients again, using indigestion as an example, where they thought they had a stomach bug and then they present late and then they're found to have an MI.

And then that can subject when you present late in general, the outcomes tend to be a little bit worse as opposed to being addressed early on. And so, the stereotypical, you know, I guess men being reluctant to seek care, I think we see it, unfortunately, with both men and women sometimes. But the outcomes in general tend to be worse when symptoms are ignored.

So, the whole point is we need to be chatting with our patients about really, if something doesn't feel right, being evaluated.

MCGUIRE: Well, that's all the time we have for episode one on heart disease in women Risk prevalence and diagnosis with our subject matter expert, Dr. WEINSTOCK. Thank you for joining us. And we will be back with episode two, where we will look more deeply at diagnosis and talking about how to reduce those risk factors and interventions

This is Leana McGuire for Elite Learning by Colibri Healthcare.

Episode 2 – Minimizing the Risk When Possible

(Sound bite of music)

MCGUIRE: Welcome back to episode two of our series on heart disease in Women Risk, Prevalence and Diagnosis. Joining us again is Dr. WEINSTOCK. He's our subject matter expert. Welcome back.

WEINSTOCK: Thank you. Pleasure to be here.

MCGUIRE: Great to have you. Last episode, we talked about some really important things when it comes to women's health and heart disease. We talked about risk factors and how they present and diagnosis. And we're going to continue that conversation now. So, Dr. Weinstock, referring to estrogen, we talked about estrogen in

the first episode and how it can have a protective factor with women in heart disease and solely responsible, from what I gather, or is it partially responsible for the fact that we generally don't have issues until about ten years after menopause right around the age of 65?

Is that correct?

WEINSTOCK: In general, yeah. Women have some degree of protection from hormonal protection from estrogen during the childbearing age up until the point of menopause, from those post-menopausal years, that kind of drops off. Yes.

MCGUIRE: Okay. And so, let's talk about hormones a little bit here. You stated there were more at risk after menopause, like you just said. But what about pregnancy? Anything that fluctuates, the hormones. Is that a risk too?

WEINSTOCK: Sure. So, pregnancy itself is a very vulnerable period for females and a lot of things that can unfortunately a lot of the problems there can be a lot of cardiovascular things that can complicate a pregnancy. Things like pre-eclampsia, things like gestational diabetes. All those cardiovascular things that can affect a pregnancy are a set up not only can they be dangerous during the pregnancy itself, but actually increase the risk of cardiovascular disease for those women later in life.

And so, you know, that's a very vulnerable period of time. And, you know, it's also important that, you know, when taking a history and you know, that patients understand that, that they need to be a little bit more careful. And as providers, you know, we need to be aware of those things.

MCGUIRE: And if there's an increased risk with pregnancy, is it multiplied by having a genetic factor or family history?

WEINSTOCK: Yes. I mean, I would say the more kind of strikes you have, you know, all those things can kind of compound. And so, you know, if you already have, you know, diabetes and now you have pre-eclampsia and maybe you have a family history, certainly all those things in combination can, you know, pretend a bad outcome later in life.

And so, again, going back to prevention and disease mitigation, you know, these are all things that, you know, we want to be aware of so that we can lower the risk for our patients.

MCGUIRE: There's also I wanted to also ask you about spontaneous coronary artery dissection or SCAD for short. Where do women stand when it comes to that?

WEINSTOCK: SCAD Spontaneous Coronary Arteries section is actually a very interesting topic and very pertinent to our conversation here in the sense that it's a disease that actually predominantly affects women. So, we see it most commonly and I mean, it can affect men, but mostly women. And when it affects women, it tends to affect younger women. So, we tend to see it in women in their forties and fifties.

So, you know, and it can be very concerning. So spontaneous coronary artery dissection, actually what that is, is a pathologic process whereby the coronary arteries are the, you know, the going back to your anatomy, the coronary arteries are the blood vessels that come off the aorta and feed the heart tissue itself so that the heart can do its job in pumping blood to the rest of the body.

When you disrupt the coronary artery, the intimate layer of the coronary artery and cause disruption of that intimate layer so that you cause what's called a false lumen or a false channel. Down that artery, you can actually impede blood flow to the end organ. So, it impedes blood flow to the heart. And actually, the symptoms

can mimic a traditional heart attack that we see, you know, from patients who have ruptured plaque or from atherosclerosis or through thrombus.

So, the symptoms patients can develop chest pain, kind of a lot of the same symptoms. And it can be you know, it can be worrisome because when the blood is not flowing down that normal coronary artery, you can ultimately have areas of infarction where the heart is not getting nourished adequately. And so, it can be very problematic. And it's difficult to manage.

And it primarily does affect we see it mostly in women and it tends to affect, you know, women early, you know, early to mid-midlife like forties and fifties or so. Why it occurs is a little bit you know, there's not exactly one specific way that it can occur, but it's thought that women, especially women who are have had recent childbirth or kind of in that pregnant or in that postpartum period of recent childbirth, you know, due to the hormonal shifts associated with pregnancy and due to the demands on the cardiovascular system, with that period of time, maybe a little bit more vulnerable to having, you know, disruption of the blood flow. People who have underlying connective tissue diseases, who have underlying vascular issues tend to be at greater risk. And so that's an important topic because I think, you know, a lot of people aren't aware of SCAD, but we do see it. It's not all that uncommon. And in fact, for women who present with an acute coronary syndrome before the age of 50, SCAD, the statistics are about a quarter of those patients will be found to have SCAD.

So, it's not, you know, for providers who work in a cardiology setting, this is something you will see. It's not all that rare.

MCGUIRE: That's interesting. Yeah, it's not something that wouldn't be your first go to when someone comes in and presents like that. But that's excellent information. Now, we did talk about risks a bit in quite a bit in the first episode, but I really would like to go back to those. I was thinking that there was something that I wanted to ask you related to risk and or just have you clarify, because I think most of us know that it is a risk, but there is illegal drug use like heroin or cocaine that makes people more susceptible to. Right.

WEINSTOCK: Yeah, of course. Cocaine can cause coronary Vaso spasm and that can basically it can induce spasm of the coronary artery to the point where when the artery spasms, it can cause a heart attack and cause myocardial infarction. So that's something we see.

So, you know, all of those illicit substances, things like cocaine and heroin, you know, they're all bad for the heart, for sure. Cocaine, especially, is a bad actor.

MCGUIRE: So, let's talk about some of the risk factors that we spoke about. So smoking cessation. Are there any methods of quitting that are more successful than others that you found?

WEINSTOCK: Sure. So, it won't come as a surprise to anybody that smoking is bad for the heart and the cardiovascular system and in general, bad for the body. So, we need to work with our patients on, you know, getting them to successfully cut back and quit smoking to lower their cardiovascular risk. In fact, you know, people who smoke are anywhere from 3 to 6 times at increased risk for coronary disease.

So, it's a tremendous increase for smokers. And so, we have to work to help them. It's easier said than done for anybody who, you know, counsels patients on smoking cessation. It's a challenge and it's certainly an addiction. And so, patients and providers need to work together to build an alliance to help them successfully quit.

You know, for some patients, they're able to do it cold turkey, but the majority, overwhelming majority are not. And so, things like nicotine replacement therapy, patches, gums, all those things, you know, are in our armamentarium to use. You know, working with behavioral health care providers and counselors and therapists is a big role. And lately, you know, we do have some pharmacologic options.

There are medications like varenicline and bupropion on that. You know, you'll see patients on in an attempt to assist them with quitting smoking. The medication options are things that, you know, patients need to discuss on an individual basis with their providers because they do have side effects. And one in particular, you know, has as a black box warning for thing.

So, you need to be aware of the patient's history. And it kind of has to be an approach that's tailored to an individual with an understanding of their past medical history. But for me, I think the approach that works best is actually not any one of these things. These things all work best, I think, in combination. So, we need to work with our patients when we're addressing them, you know, making sure they understand their disease process and their increased risk.

But they also need to work with ways, healthy ways to cope with their addiction and perhaps a medication, perhaps, you know, a therapist. When you take a multifaceted approach like that, I think, you know, patients tend to be more successful.

MCGUIRE: Excellent. That's interesting about Nicorette or nicotine replacement, in a sense. But I guess it's more the smoke that causes the vasoconstriction and all the side effects. Or is nicotine actually okay?

WEINSTOCK: So, the nicotine itself is not that it's okay. You know, it can, it's in itself is not really the best, but it's better than, you know, smoking. You're basically inhaling, you know, hundreds of thousands of different particles. You know, you're not just inhaling tobacco. You're inhaling a lot. And it's tough to say on an individual with those thousands of chemicals which chemicals doing what.

So, but we know that if patients are able to cut back, quell some of their cravings with nicotine replacement, that is a better option than picking up a cigarette. But ultimately the goal would be to get them off of nicotine supplementation, you know, and ultimately, you know, to quit.

MCGUIRE: Yeah. Excellent. Good. Now, we mentioned physical activity. A sedentary lifestyle is definitely a risk, is a simple walk daily enough or should we be getting our heart rates up as much as we can?

WEINSTOCK: That's a great question. So, it is important to be active, physically active. The American Heart Association actually has some established kind of guidelines on, you know, what level of physical activity is adequate. So according to the American Heart Association guidelines, they do their recommendations rather suggest that patients should be getting a minimum of 150 minutes a week of moderate intensity exercise.

And when they say moderate intensity exercise, what they mean is something that gets your target heart rate up to anywhere from about 50 to 75% of your target heart rate, which is based on your age, if you can. And the formula for that is to 220 minus your age is how we get to that target heart. So, if you can get a 50 to 75% of that target heart rate to 20 minutes your age, you know, and you get getting your heart rate up for 150 minutes a week, that should be, you know, what we all strive for.

The more you know, the more physical activity in general. The better. They also do say that if you exercise for at least 75 minutes vigorously, for an activity that gets your heart rate up from above 75%, closer to 75 to 85% of your target heart rate, that 75 minutes of vigorous physical activity is what you know. So, it's either striving for 150 minutes of moderate intensity activity or 75 minutes of more vigorous activity.

So, you know, when you break that down in terms of counseling patients, you know, what I like to say is at least 30 minutes, five days a week gets you 150 minutes. So, really heart rate does matter. So, it's okay. Taking a walk is excellent. You know, you want to be physically active. So, I wouldn't frown upon that by any means.

But I think we need to work with patients to find ways to, you know, be physically active and, you know, get their heart rates up.

MCGUIRE: And what is the normal weight for the average woman, depending on height, of course, but BMI, even Where should we be?

WEINSTOCK: Yeah. So, it's tough to say what the, quote, normal weight is. And you know what? But I think when we talk about BMI or body mass index, what we're really looking at is their patient's body mass index to their height. So, when we calculate a BMI, what we're really looking at is a patient's body weight in kilograms divided by their height in meter square and you can kind of put patients in certain buckets as being, you know, underweight, being normal weight, being at being overweight or being obese at the other end of the spectrum, what's considered normal is anywhere having a BMI between 18 and a half.

So, 18.5 up to the cut off is really like 24.9. Up to 25 is where we really draw the line. So, 18 and a half up to about 25 is considered a normal BMI. When you get up to 25 to 30, you're in that kind of overweight category and then above 30 obese and anything under 18.5, you're considered to be underweight.

But the BMI as we know it, is an imperfect tool. It doesn't take into account how the weight is distributed. It doesn't take into account muscle mass. It's just, you know, a body mass index. So, it's good to look at BMIs. You know, we use it in health care and it's good at a population level when you're looking at, you know, large numbers and population level.

But for an individual, it's probably not the best indicator of health is what we're coming to realize. But it's still an important thing and it's still routine practice that we, you know, follow a patient's body mass index.

MCGUIRE: When you said how the weight is distributed, is that relevant? Because we've often heard that if a woman is carrying it high throughout her torso, she's more at risk than if it's more hips. Is that true?

WEINSTOCK: Yeah. So, we do know that for men and women who tend to have more weight distributed adipose in their belly and there that tends to be worse, you know, so there is some degree of truth to that. But, you know, another thing that also plays a big role is muscle mass. So, like a bodybuilder, for example, you know, it may be, you know, maybe massive and may have a lot of weight, but in fact, it's very cardiovascular, really fit.

And so, again, it's tough to then the numbers are sometimes tough when you look at just a BMI in the absence of the patient, it's tough to draw a lot of conclusions there. You really need to look at the patient and then use that as a starting point.

MCGUIRE: Yeah, great. In reference to diet. And I think everyone has a pretty good idea of what they should eat or what they shouldn't in most cases. But when it comes to teaching patients, do you have like a top three to stay away from and a top three to add? Not, you know, that you have to stick to three.

It's just I'm just throwing it out there. But what are your big ones?

WEINSTOCK: So, I think the big ones and for me I try to make it like as easy as possible for patients to understand my big one, I think, is the things that are worse for patients. You know, we know that fried and fatty foods are not good for coronary disease, but things like, you know, in general staying away from animal products.

So, things like, you know, meats and high fat dairy cheeses, those kinds of things are ways that, you know, those are the kind of foods that we would want to stay away from. I think, unfortunately, in the American diet, you

know, we kind of have, you know, a steak and consider that the main meal I actually in college studied nutrition, and one of my favorite professors in college was a had a doctorate in nutrition and taught course.

And he I still remember this years later, said that we should use meat as a condiment as opposed to the main, you know, meal. And so, his point was that it's okay to eat meat in moderation, try to pick leaner cuts, things like chicken or fish as opposed to steak and try not to make it the main part of the dish.

You know, you can eat meat but use it kind of as a condiment as opposed. So that kind of stuck with me, you know, eating meat here and there, like I said, is okay, but try to pick leaner cuts. So, things like, you know, chicken fish as opposed to the heavier things. The other thing I usually counsel my patients on is it's always better, I think, to eat at home with a meal that you've cooked because you know what's in there.

Going out and eating out is fun, but you don't know really what's in the food that you're eating because you're not the one preparing it. And a lot of times, unfortunately, when you go to a restaurant, you know the meal and you're not in control of what you're eating because somebody else is preparing it. And so, you know, eating at home, I think, tends to be healthier.

I try to encourage my patients to cook for themselves, you know. And then, you know, the other big thing is, you know, try to minimize things like salt, trying to minimize things like saturated fats, you know, and so those are the kind of the big things I talk about with my patients.

MCGUIRE: Okay, Excellent. Excellent. Thank you. Now, we're all living in a high paced society and, you know, very results oriented. So, we sometimes feel like we're on a hamster wheel just running at the top speed. What are some your favorite strategies for reducing stress for women or for anyone?

WEINSTOCK: But sure, yeah. So, stress is interesting because from an evolutionary standpoint, some degree of stress is actually protective and is good. And so, stress can propel us to, you know, make a deadline or, you know, encourage us to study for a test. And when stress becomes disordered is when, you know, it's chronic stress. So, it's, you know, stress that hangs around for long periods of time.

And it's with this chronic stress that we do worry about the cardiovascular system; chronic stress, we know it can cause deleterious effects on multiple organs in the body. It can weaken the immune system. It can cause physical stress to multiple organs. And so, you know, when patients are under chronic stress, those are the ones that we need to work with in finding tactics to help them with, you know, with their stress levels and ways to cope in healthy ways.

So, things are very much in vogue now. And things that work for patients are things like mindfulness, yoga, meditation, things like, you know, which can other things that can improve lifestyle, like getting exercise, you know, those are things counseling, therapy, you know, whatever ways that patients can work to lower their levels of stress over the, you know, long periods of time will be important and beneficial to the cardiovascular system.

MCGUIRE: Excellent. Excellent. Yeah. So, you wouldn't recommend alcohol as one of those stress reducers. I know that's a risk factor as well but how much is too much.

WEINSTOCK: Yeah. So, alcohol is an interesting topic because you know, I'm sure we've all seen stories where they say, you know, a glass of red wine is good for you. And, you know, that's actually been shown that moderate alcohol consumption can have some benefits. And when we refer to moderate alcohol consumption, what they define as moderate is it's unfortunately, it's different for men and women, but they label moderate alcohol consumption as 1 to 2 drinks for men and one drink for a woman.

But moderate alcohol consumption is in general, you know, considered to be okay and may offer some benefit. But in cardiology and cardiovascular disease, we also do know that alcohol can be extremely bad for the heart, especially for people who, you know, abuse alcohol. We see alcohol-related cardiomyopathies, unfortunately. And so, it's a double-edged sword. And it's something where, you know, again, it's tough to say whether it's you know, whether it's truly benefits because we know that it can cause harm.

And it can affect others, or it can for alcoholics can raise cancer rates and be toxic to other parts of the body, but in general, in moderation, you know, a glass of wine a day I think is okay. And some would say maybe offer some potential benefit.

MCGUIRE: Okay. Good to know. All right. Just don't have that second one. All right. Do you have any examples of a patients like a female patient that's coming to you with chest pain or something that relates to what we've talked to today that puts in a real-life scenario?

WEINSTOCK: Sure. So, I do have one of my favorite patients from clinic who came to me. She was having some symptoms which had kind of been dismissed by some other providers that she had seen. They were a little bit, you know, somewhat atypical in nature. But she was most alarmed by the family history. I believe her father had coronary artery disease and it had a bypass surgery.

And when she came to me as a patient, you know, she already had some risk factors for coronary disease. I think she was in her early sixties and had uncontrolled hypertension, uncontrolled hyperlipidemia we came to discover. And really hadn't seen a whole lot of doctors throughout her life but wasn't feeling right.

Her main complaint actually was dyspnea, not chest pain. She was short of breath, and it had somewhat of a limited workup. And basically, it was told that based on the work-up that had been done, that, you know, no clear explanation was given. So, she got referred to cardiology and she was somewhat scared to you know, I remember early on talking with her because of her father's history of bypass surgery.

She was, you know, very anxious about what the workup would involve. And we ended up doing a stress test as part of the workup, and it came back positive. And I remember she was, you know, somebody who that also made her even more uneasy about things. And we had to have a frank discussion about the indication, you know, for cardiac catheterization.

And she was very worried. I don't think she knew a ton about cardiac cath at the time and, you know, had seen what her father had went through with bypass surgery and was worried that that might ultimately, you know, be the path that she was headed down. There is unfortunately, you know, she did end up she did get a cardiac cath.

She actually did very well with the cardiac cath. She was very nervous about it. I was there when she had it done. She came with her husband. We did find that she had a pretty severe lesion in mid-LED. So, she did get a stent. It she got a stent to her heart. And that was actually around Christmas time a couple of years ago.

And she was scared. But after going through the cardiac catheterization, she actually realized that, you know, she had built up this fear and anxiety in her mind. After seeing the demise of her father to coronary disease. She went through the cath. We optimized her medically. And now, you know, we I've seen her many times in follow up now and she's had like this new outlook on her life where, you know, unfortunately we did find that she had the disease like her father.

Fortunately, she didn't need bypass surgery. And, you know, one stent was the fix. But now she was somebody who we had a tough time working together with because she didn't want to take, she was reluctant to take medications and other things. And once we found the disease and she realized that, you know, we could work

through this and that this wouldn't necessarily be the end, we've worked very well in optimizing her hypertension, her hyperlipidemia, and her husband.

The interesting thing was that he actually now he hadn't seen doctors in years and saw what she went through. And now he's a patient of mine that that I follow. And so that's one of the outcomes that kind of comes to mind, because there's a lot of apprehension that goes into the work-up and diagnosis and treatment of this disease.

But, you know, we have good treatment nowadays and so it's not always a bad story. We can, you know, take a bad story and work to minimize and work to improve outcomes.

MCGUIRE: Ultimately, What a great story. It's perfect, actually. Yeah, Knowledge is power. I think sometimes when people know what they're dealing with. But that's an excellent example and it speaks to as clinicians that we really need to be aware of that anxiety that people have in these situations because they don't understand a lot of the times and what's going on.

And it sounds really scary the minute you mention the heart. So that was a perfect scenario. Thank you. Any final thoughts that you'd like to share with us regarding heart disease in women before we close?

WEINSTOCK: Sure. So, first of all, you know, February is Heart Health Month. And so, it's awesome that we're dedicating time to this very important session. I would say, as providers, you know, part of the health care profession in general, we should all take this very seriously. As I mentioned it, heart disease is the number one killer of both women and men in this country and not, you know, as I said earlier, not everybody knows that.

And so, saying that out loud and acknowledging that is important. So, I think the take home points are, you know, to acknowledge that and to work on some of these strategies that we talked about throughout the podcast to lower that. And I think that as providers, you know, all of us can hopefully work to educate our patients, but also, we'll go back to our families and friends and community at large to educate people on this disease process.

MCGUIRE: Excellent. Fantastic. Well, I got my red on for Heart Month, so we're ready to go. I've certainly learned a lot. There was a lot I knew, but a lot I didn't know right. But there are always some things we can improve on. That's an important piece for all of us as women, for women who are listening to this, too, you know, think about yourselves as well as your patients.

Thank you so much for sharing your expertise with us. Dr. Weinstock. This information has been incredibly helpful. Like I said, for all of us. So, thank you for joining us. We really do appreciate it.

WEINSTOCK: Thank you so much for the opportunity to be here.

MCGUIRE: And thank you for listening. Be sure to check out the many courses and podcasts available at Elite Learning.com as you develop in your career. Like I said, knowledge is power. This is Leana McGuire for Elite Learning by Colibri Healthcare.