

Emily: I'm Emily Kumler and this is Empowered Health. My guest this week on Empowered Health is Dr. Amy West. She is at the forefront of understanding how female bodies, specifically female athlete bodies are different than male bodies and also really she is an expert when it comes to the idea of sort of recovery and rehab from injuries, how to sort of regain both strength and mobility. So we're going to talk about a lot of stuff this week. I just saw Amy at the health [conference at CrossFit](#)¹, which is like right before the big [CrossFit games](#)². They have this super awesome health conference where they bring in experts on a variety of different topics from nutrition to exercise to cholesterol. And this year there was a wonderful person talking about cancer, [Dom D'agostino](#)³. And while we were there we started talking about how CrossFit's really changed the way we think about female bodies that it used to be the hot bodies were all like super duper skinny women and even female athletes would often be shown mostly for their faces, not for their bodies. And that that's totally changed. And when we look at the women's soccer team who just won, people who are really celebrating them for their athleticism them, that they were strong, powerful athletes more than just sort of like sexy women who happened to play sports. And so she and I are going to talk a little bit about CrossFit and what that has done in terms of, they're bringing a lot of doctors together and the medical side of all of that as well as really getting into some of the stuff that every woman should know about. Like when you're working out and you have your period, is that a good time to like really push it? Are those recovery days and you know just sort of unpacking some of the ideas around female athletes and female recovery and how our bodies are different.

Amy West: My name's [Amy West](#).⁴ I'm a physician, I am an MD [sports medicine physiatrist](#)⁵. Just completed my sports medicine fellowship. I'll be heading down to New York, where I'll be practicing. I'm also very active in the [CrossFit Health Movement](#).⁶ And [MD-L1, level one certification](#).⁷ and yeah, that's me in short.

Emily: Okay, so physiatrist means?

Amy West: So my primary medical specialty is called physical medicine and rehabilitation. It's a small field within the medical world and we have a few names. We're called PNMR for short. P. M. N. R. We're also called physiatry for short.

Emily: Sounds like [psychiatry](#).⁸

Amy West: Sounds like psychiatry and I often get mistaken for a psychiatrist. I've had people email me wanting to know about certain psychologic things. Common misconception, I'm not

¹ <https://www.crossfit.com/health/the-2019-crossfit-health-conference>

² <https://games.crossfit.com/open>

³ <https://www.ketonutrition.org/about>

⁴ <https://www.doximity.com/pub/amy-west-md/2>

⁵ <https://www.aapmr.org/about-physiatry/about-physical-medicine-rehabilitation/what-is-physiatry>

⁶ <https://www.crossfit.com/what-is-crossfit>

⁷ <https://www.crossfit.com/certifications>

⁸ <https://www.psychiatry.org/patients-families/what-is-psychiatry>

actually a psychiatrist, I'm a physiatrist. Happy to help, happy to help things. But I'm not actually a psychiatrist. But what we do, we are doctors of function, physical function. We specialize in treating the physical manifestations of disease processes on the body. So whether that be traumatic brain injury, spinal cord injury, sports injury, cerebral palsy, things like that. We also work with other specialties to treat how disease affects people's functions.

Emily: But is that like chronic disease, no, or like more?

Amy West: It could be anything really, but like say cancer for example, like we don't treat the cancer but we treat how it affects your day to day life. So are you getting to and from the bathroom, is your pain controlled, are you ambulatory? Things like that. That's what we focus on. Whereas like when it comes to like the chemo and that kind of stuff, that's where the [oncologist](#).⁹ they handle that. So things like that.

Emily: How did you get into that?

Amy West: It's sort of a very small field within the medical world and that many people even in medicine know what it is. So I got into it. I did my medical school training at [Harvard Medical School](#).¹⁰

Emily: Heard of it.

Amy West: Yeah, heard of it? Yeah. And they are affiliated with a large rehab center, [Spaulding Rehab](#).¹¹ And I found out about it when I was rotating there in medical school was right when all the victims from the [Boston Marathon Bombing](#)¹² were actually being admitted there. So they had kind of done their acute hospitalization, amputations. Some of them had traumatic brain injuries also. And then after they were discharged from [MGH](#)¹³ and all the big hospitals, they were sent to Spaulding to sort of get their lives back. I sort of had a front row seat to a lot of that and met a lot of those people and sort of saw how the field really affects people's day to day lives and how it can be useful and I thought that was great.

Emily: And so I feel like from the sort of lay person's perspective, you kind of think of like a [physical therapist](#)¹⁴ or somebody helping with some of that stuff. But what you're doing is much more involved than that.

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<https://www.healio.com/hematology-oncology/news/online/%7B87832370-175c-4edd-8b14-ae96f15632bc%7D/what-is-an-oncologist>

¹⁰ <https://hms.harvard.edu/>

¹¹ <https://spauldingrehab.org/>

¹² <https://www.history.com/topics/21st-century/boston-marathon-bombings>

¹³ <https://www.massgeneral.org/>

¹⁴ <https://www.medicalnewstoday.com/articles/160645.php>

Amy West: So we sort of work with the physical therapist, the [occupational therapist](#),¹⁵ the speech therapist, and then on the medical side of it as well. So we sort of help coordinate all of those things, prescribe those things in detail, but then also do medical interventions as well. So, and certainly in the sports medicine side of things, we do a lot of injections and stuff like that.

Emily: So to talk a little bit about, I mean obviously the podcast is mostly focused on women's health and I feel like there is some really interesting stuff about how women recover differently and I feel like if you can just sort of go into that in the areas that you feel like are most interesting and relevant to like sort of a wide audience.

Amy West: Well as far as like recovery is concerned, I think also part of it is our hormonal sort of milieu is different and it varies throughout the month. So that can affect how our ligaments and muscles and tendons recover from injury.

Emily: Or just recover from extreme exercise probably right?

Amy West: Yeah, the same things from extreme exercise. So our physical capabilities even vary throughout the month just because of our energy expenditure and our ability to recover within that sort of hormonal state. So it's something that can vary throughout the month whereas men don't, it doesn't really necessarily occur to them that this is something that happens. But for us, it's something that we can sort of, our recovery from injury as well as our recovery from exercise is variable based on where we are.

Emily: So does that mean that if somebody is sort of training for something that they should think about when they're ovulating or when they have their period so that they can be more efficient?

Amy West: There's been some interesting studies as far as injury rates and things like that. As far as something like [ACL injuries](#),¹⁶ which is something that women are more prone to in general than men, but there have been some [studies](#)¹⁷ that have shown that in the relatively high estrogen state, periovulatory state, there is a higher incidence of these injuries. Right now we're trying to figure out, well what exactly is the cause of that? And there's some thoughts that, and there's some studies that have shown that well ligaments are a little more lax during these times. So is that something that we can look at therapeutically and say, okay, well if you have someone who is an elite soccer player, should they be more careful at this time of the month? Should they only do certain exercises at that time or game participation, et Cetera, to see is that something that if we sort of take advantage of that information, can we prevent injuries down the line? It's kind of interesting idea. I think a lot of it's still in the kind of early.

¹⁵ <https://www.aota.org/About-Occupational-Therapy.aspx>

¹⁶ <https://www.mayoclinic.org/diseases-conditions/acl-injury/symptoms-causes/syc-20350738>

¹⁷ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5524267/>

Emily: We did this [episode on weed and women](#)¹⁸ and how if you smoke weed or use THC products when you're ovulating, you'll experience a heightened high. And the researcher basically was saying like, she started out looking at opioids and so she was like, this is probably true for everything. And she sort of made the leap that this is like evolutionary. You're more outgoing, you're more social, you're experiencing everything a little bit more.

Amy West: Yeah.

Emily: So it's interesting because you think about that in terms of ligaments, it really goes into like every system in the body in a way being more vulnerable.

Amy West: Yeah. And there's also estrogen also affects, there's a molecule called [lysyl oxidase](#),¹⁹ which kind of cross-links collagen in our tendons and estrogen inhibits that and it makes the tendons a little more loose. So in general, women in general tend to be more lax, but then also during that time of the month it's like even more so. It's interesting.

Emily: So be careful in your hot yoga classes.

Amy West: Exactly. The thing is too is that every person is different, obviously. And every person you can use that to their advantage even if they're aware of what's going on.

Emily: Well, yeah, and I would think if you were really training for something, you would want to be pretty meticulous about knowing when you're vulnerable and when you're not. I mean, and I wonder whether the inverse could be true too. Think about women going through menopause, and the lack of estrogen's effect on bone health and like how your bones become more brittle. I wonder if when you have your period are your bones more, like that's when your estrogen is the lowest, so does that have any impact?

Amy West: Yeah so, as far as like bone and mineral density, it's something that it's been very well studied in looking at young women who are, as they mature, because you achieve your peak bone mass by the time you're like 18 or 20 it's pretty much you've laid down what you're going to lay down. So what happens to you prior to that age is very important in sort of building that up. So we've looked at those. That's very well [studied](#)²⁰ as far as like how that goes. But a really interesting thing that's recently been starting to be looked at is this, in transgender athletes, you have people who are essentially going from one gender to the other by essentially inducing a menopause and then starting testosterone.

Emily: You mean if they're a woman transitioning to a man.

¹⁸ <https://empoweredhealthshow.com/women-and-weed-estrogens-impact-on-our-experience/>

¹⁹ <https://www.ncbi.nlm.nih.gov/pubmed/9524359>

²⁰ <https://www.bones.nih.gov/health-info/bone/osteoporosis/bone-mass>

Amy West: You're inducing a menopause and then starting testosterone. So there's been some [studies](#)²¹ looking at, well what happens to bone mineral density in these states?

Emily: Oh that's fascinating, yeah.

Amy West: Which is kind of cool testosterone has some

Emily: Because like if you were under the age of 18 like before your bones are fully developed and somebody did that to you, you could be at risk for osteoporosis. I mean like pretty young.

Amy West: Yeah so what happens is if someone is transitioning prior to the age they hit puberty, they essentially are put on puberty blockers, which then sort of prolongs that window of when your bones are sort of supposed to be kind of fusing and your growth plates are supposed to be fusing.

Emily: And that's true for men and women, right?

Amy West: Right, yeah. So either way you delay that, you sort of delaying that puberty window if you will. Then they will start the hormone treatment and the desired gender, but while they're kind of on hold there for a little bit,

Emily: What is the reason for that?

Amy West: So you want to prevent any of the secondary sex characteristics that you would get?

Emily: You mean like breast development?

Amy West: Breast development, voice changes, height even, I mean it could affect, if you delay the puberty early enough, you can sort of max out someone's height and prevent like large hand and foot size, things like that, which

Emily: Become harder to alter later.

Amy West: Yeah I mean once those things happen, they're pretty much irreversible certain characteristics. So you delay that process until the person is of age and then they sort of start them down the road that they want to go down.

Emily: But nobody really has any idea about the long term impact on.

²¹ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6469959/>

Amy West: Yeah, that's really, it's an interesting question because there have been [studies](#)²² that have shown that bone mineral density during that time while they're on hold decreases quite a bit. But then what happens later, there aren't many studies at all about this. So people are looking into it now and saying, well what happens in the long term? Once you add back the estrogen or add back the testosterone, there is some bump in bone mineral density. But overall you can lose.

Emily: Because again, it would be awesome if you could figure out how to extend that period too, right? And we could like add more bone mass for longer.

Amy West: Right. Yeah.

Emily: We can induce menopause, but we can't seem to do the opposite.

Amy West: Yeah. So it's really interesting that people are looking at this stuff now and there's so much that we need to find out.

Emily: Yeah. Well, I mean, I feel like we're always struck by the fact that female bodies are just not studied as much as male bodies. And so I can imagine the transgender community is probably just guessing for answers because, and you just spoke at a big conference, right?

Amy West: I did.

Emily: And what was your talk on?

Amy West: I spoke at the [American College of Sports Medicine](#)²³ and I talked about transgender athletes and sort of the musculoskeletal health of that population because that's even less studied than. And there are all these ramifications of when you're changing hormones around, it has cardiovascular effects, it has musculoskeletal effects, it has all kinds of

Emily: Probably cognitive too. I mean I feel like estrogen and brain seems pretty connected.

Amy West: Yeah, I mean that's something that's still a big black box as far as like what we know. There's only actually been one [study](#)²⁴ that's ever been done with transgender athletes and it was actually performed by a trans runner. Her name is [Joanna Harper](#),²⁵ who she's a scientist and she has done a lot of studies on herself, but she's also studied long distance runners, who had transitioned from male to female. And sort of trace their times prior to

²² <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6469959/>

²³ <https://www.acsm.org/>

²⁴

<https://www.sciencemag.org/news/2018/07/scientist-racing-discover-how-gender-transitions-alter-athletic-performance-including>

²⁵ <https://www.huffpost.com/author/jmharps57-540>

transition and then after to see like where they sort of ranked in their age class and they placed almost identically before and after transition relative to their

Emily: That's so interesting too because I feel like there's all this talk about testosterone levels. You can probably speak to this a little bit. What is the cutoff kind of thing and that's so interesting because you sort of think, well sex is defined by chromosomes, right? But now we're looking at this as like an unfair advantage.

Amy West: Yeah, it gets really tricky because I think another thing to think about is also not just the level but also the sport that we're talking about. Because when we're talking about, so that study that I just talked about was talking about long distance running. So a win margin in that sport could be honestly 0.001 of a second, you know, it's much longer. So then whereas something like a sprint having a small quote unquote "advantage" in that could go a long way. So there's a lot of controversy as to what the cutoff should be. I think a lot of it can be sports specific. I think the goal in general is you know that everyone participates as they feel most comfortable. And then after that it gets a little tricky because especially when you're talking about local high schools versus the Olympics, you know there's a lot of, a lot of gray area in between those things. If you're looking at testosterone levels, for example, like someone who is a genetic XX female who has female phenotype, you're looking at a testosterone level that would be well below like 3 for example. You know, and if someone who has a level of 3 that's, that would be on the high end of normal. So someone with like [PCOS, polycystic ovarian syndrome](#),²⁶ or something like that. And then the cutoffs that have been made for testosterone levels in some competitions, it has been between 10 and 12.

Emily: How do they justify that though? I mean I do sort of feel like that doesn't seem fair.

Amy West: Now in certain sports, I think it's 5. Yeah, it's tricky.

Emily: I mean it's arbitrary, right?

Amy West: Yeah. I mean, you know, I think they try to gauge their best guess of when the effects of these hormones on muscle and whatnot. They try to gauge a time period and a level that they deemed sort of fair. So it's tricky. It's because it's really hard to gauge exactly what is the right answer for everyone. It's hard. And then also with like I said, level of competition or sport, it can vary. So yeah, it's just, it's an interesting kind of time. And that's the thing too is the rules are like a moving target. They're always constantly changing and when you get into certain, not just trans athletes, but then if you are talking about athletes with [DSD, or differences of sexual development](#),²⁷ so people who have genetic, it can be XY or you know, something in their body that prevents the testosterone from having a full effect or whatnot.

²⁶ <https://www.womenshealth.gov/a-z-topics/polycystic-ovary-syndrome>

²⁷

<https://childrensnational.org/visit/conditions-and-treatments/diabetes-hormonal-disorders/differences-in-sex-development>

Emily: What does that do?

Amy West: [Caster Semenya](#),²⁸ like the big one in the news right now, and she is a genetic XY but she, because of her genetic disorder that she has, so she has naturally higher testosterone levels than other females. And it's a natural, just what her body make, right? So then the big sort of scuttlebutt in the news now is the Olympic committees have basically said, well, you have to bring that level down with medication. Her argument is that this is what my body makes, like this is how I was born.

Emily: Right. She's not, it's not superficial.

Amy West: It's not superficial. And then also, you know, you have someone like [Michael Phelps](#)²⁹ who has a genetic advantage in his sport and that's because his body is naturally shaped the way it's shaped or it does what it does and

Emily: He's not disqualified for it.

Amy West: Right. Or basketball players who are seven feet tall and no one's tossing them out of competition because of their height.

Emily: Yeah, no, I feel like why isn't the chromosomal check the gold standard? I mean like, I feel like getting into the hormone levels is like

Amy West: She's XY. So she has essentially a male chromosome because of her hormonal kind of milieu, she has been raised a female, lives as a female, competes as a female. So it gets very tricky when you start talking about the sort of like very small subset of people who have in the past were called like intersex or whatever, you know who sort of have both who are not altering anything. That's just what their body does.

Emily: And when you get into the realm of, I would say especially female athletes, there must be a higher percentage of people who have these kinds of genetic makeup, right? Because it allows them to compete at a much higher level.

Amy West: Yeah and what's interesting too is that at the Olympic level there are also more women who, like if you took all of the pooled all of your testosterone levels within that, you'll have more women competing at the higher level who are on that upper end of what's considered normal. So that number 3 that I said before testosterone level, you'll have more women who are sort of near that number.

²⁸ <https://www.vox.com/identities/2019/5/3/18526723/caster-semenya-800-gender-race-intersex-athletes>

²⁹ <https://www.thoughtco.com/michael-phelps-body-proportions-and-swimming-1206744>

Emily: And that's because of the testosterone allows you to like what, put on more muscle and like

Amy West: So testosterone, if someone were just to take testosterone as like, it's technically an [anabolic steroid](#),³⁰ so it builds muscle mass and it actually affects your [Vo2 Max](#),³¹ so your ability to exercise.

Emily: Sounds great. I'd like to take some.

Amy West: It makes you stronger, makes you stronger, faster. Yeah. I mean, you might have some facial hair, but you know, you'll be stronger, faster.

Emily: Eh, whatever it's fine.

Amy West: You're cool with it. But yeah, so it has a lot of effects on the body. But so women who have PCOS for example, have higher levels of testosterone but

Emily: Why is that? Because their ovaries are suppressed? Is it a ratio or they actually have more testosterone?

Amy West: No they have more.

Emily: It's the primary hormone. I mean, I feel like a lot of women think estrogen is the primary hormone, but it's actually testosterone in women.

Amy West: I don't know the numbers exactly, but there is women with PCOS, it's just one of those things that they, you know, they've looked back at, you know, they look at all the women competing at the highest level and it just so happens that many of them happen to have that. You know, even been given that diagnosis or have levels that would suggest that they have that. And it's one of those like sort of, you know chicken and egg scenario of like what came first, you know, is it the ability that, you know, this high testosterone level that somehow lent themselves to lead to sport or was it just so happens this is what it is?

Emily: Well it's also interesting is I feel like there's a connection between polycystic ovaries and like an intolerance to carbs and sugar. Like people often are told to like get off sugar and carbs as a treatment.

Amy West: Yeah. And also like [Metformin](#),³² which is used to treat type two diabetes is one of the mainstays of PCOS treatment. You know, not necessarily changing the PCOS itself, but the

³⁰ <https://medlineplus.gov/anabolicsteroids.html>

³¹ <https://www.verywellfit.com/what-is-vo2-max-3120097>

³² <https://www.mayoclinic.org/drugs-supplements/metformin-oral-route/description/drg-20067074>

Emily: [Glucose metabolism](#)³³

Amy West: Glucose metabolism and the insulin sensitivity issue.

Emily: Interesting.

Amy West: So yeah.

Emily: I feel like Metformin is like the dream drug for everybody.

Amy West: You know, just take it, everyone gets a little bit of it and then we're good. But yeah it's kind of weird.

Emily: So in terms of thinking about all of that in the context of like the average person, are there things that you have noticed in terms of the recovery? Whether it be from like sort of an acute injury, like the marathon bombing or that just in the rehabilitation that you supervised where you see that women do recover differently or that there are things that women could be mindful of in their, whether it's like exercising and the fact that you're just ripping your muscles and they're rebuilding and that that might be different for women in some way.

Amy West: As far as recovery, in general, I find that when you talk about like physical therapy for injury treatment for example, sometimes the efforts are focused on kind of very focusing on like muscle strengthening or like isolated exercises for recovery rather than looking at all those in sort of a functional perspective of like, okay, so how do I transfer these skills from the gym to everyday life such that I don't end up reinjuring myself?

Emily: You mean like when I'm in the gym, I'm super careful, but when I'm getting out of my car, I'm not.

Amy West: Right, or that getting in and out of your car is squatting but you don't realize it. So if someone's teaching you, they put you on one of those machines where you're like moving your legs in and out.

Emily: Oh yeah the abductors.

Amy West: Yeah. So if you do that and someone says, okay, you need to strengthen these muscles so that you move better. But if don't see how that movement translates to you getting in and out of the car every day, or you getting up and down off the toilet every day.

Emily: But do you need to see it? Because you're experiencing it.

³³ <http://www.caninsulin.com/glucose-metabolism.asp>

Amy West: I think that making that connection and also for providers to make that connection. Like someone says, well grandma doesn't need to know how to [deadlift](#).³⁴ It's like, well, grandma's going to have to pick something off the floor at some point. So yeah, she doesn't have to do like a 400 pound deadlift, but she needs to know the mechanics such that she can get to the floor safely.

Emily: Or she can get off the floor if she falls.

Amy West: Like a [burpee](#).³⁵ Like a burpee is a life saving maneuver in an elderly person that's getting up and down off the floor. If someone says, oh, I want grandma to do burpees, they're like, that's crazy. Well no it's not that crazy. Maybe her burpee doesn't look like my burpee, but you know.

Emily: At least do another.

Amy West: Yeah, exactly. But that's something that is, I think when we talk about sort of like rehabilitation efforts and like recovery, especially in women, I've found that sometimes that's not the focus. The focus is more on like very isolated movements or things that are not necessarily transferable to everyday life.

Emily: Or sort of the longevity game.

Amy West: Yeah. I've seen this now older women who I've been working with now and it's like they, their whole life they were told that they're not athletes, they've never seen themselves as athletes and now are older and having to recover from an injury or a surgery or whatever. And it's like they have to be athletic and it's like for the first time that someone's putting these kinds of demands on their body in a physical way and it's because the culture has changed so much.

Emily: Is that empowering for them or is it scary?

Amy West: I think it's both. I think it depends on who you're talking to. I think, you know, I think some people are very intimidated by the idea of being physically active and they don't see themselves in that way of being an athlete because they were told their whole life they weren't.

Emily: Or It's not ladylike.

Amy West: It's not lady like, it's not, you know, that's what boys do, I don't like sweat, that's, you know, I'll stay. Yeah. So yeah, I've seen a lot of that too, which is kind of interesting.

³⁴ <https://stronglifts.com/deadlift/#gref>

³⁵ <https://life.spartan.com/post/what-are-burpees>

Emily: Yeah. And I think in terms of women's long term health, the thing that always strikes me is that when a woman has a serious fall, [she's more likely to have another one within a year](#).³⁶ And that there is some crazy statistic that's like three falls within a year. Your likelihood of dying within five years goes way up. And so, I mean I think all of the stuff that you're talking about is sort of like the precursor to that. You fall one time, you better do everything in your power to get stronger and make sure.

Amy West: Oh yeah. I mean also hip fractures, I mean we're talking about bone density again, but if you have a hip fracture as an older person, your mortality likelihood skyrockets.

Emily: And that's men and women or that's just women?

Amy West: I mean both, but women are more likely to have the hip fracture, so. I believe the statistic applies to both, but it's mostly women who end up needing like hip replacements and what not.

Emily: So then talk to me a little bit about exercise for women. I mean I feel like one of the big things that often comes up is this idea of after you've had kids, how your abs are separated and people don't seem to understand that.

Amy West: [Diastasis](#).³⁷

Emily: Is that something that is actually dangerous? Like I mean I feel like there's this whole idea of like you can have a [hernia](#).³⁸ you can have back problems. Does it naturally mostly heal for people or is that the kind of thing that women need to be careful of exercises? I mean because there are different schools of thought about that.

Amy West: Yeah, no, I think it's something you need to be mindful of. Certainly. As far as like exercise during pregnancy, that's another sort of black box of the recommendations. It's one of those things that like the sports medicine side they sort of defer to the obstetric and gynecology societies and like no one wants to conduct studies on pregnant women. So it's sort of like a lot of

Emily: They're not even allowed to do clinical trials.

Amy West: Yeah, it's pretty difficult to get any of those things past an [IRB](#).³⁹ So a lot of the recommendations are a little bit vague. They recommend exercise, but exactly what and how much and it gets a little fuzzy.

³⁶ <https://www.cdc.gov/homeandrecreationalafety/falls/adultfalls.html>

³⁷ https://www.babycenter.com/0_diastasis-recti_10419293.bc

³⁸ <https://www.medicalnewstoday.com/articles/142334.php>

³⁹ <https://research.oregonstate.edu/irb/frequently-asked-questions/what-institutional-review-board-irb>

Emily: I feel like the big thing with me was the doctors all said, you can keep doing anything you've been doing.

Amy West: Right.

Emily: But don't do something new.

Amy West: Don't take up anything new. Don't take up any new hobbies.

Emily: No horseback riding.

Amy West: Yeah. So I mean I think it's with pretty much people have sort of, that's sort of the statement now. They're sort of like, okay, like do what you've been doing. Don't do anything crazy new or different. And like that's the best we have right now. Sort of going with that.

Emily: We interviewed [Emily Oster](#),⁴⁰ who's like an economist at Brown who has looked very carefully at like all of the pregnancy and then like early childhood recommendations. What garbage a lot of them are because they're not actually based on anything.

Amy West: Yeah.

Emily: She and I had a funny conversation about bed rest and I was like, is this because some dude thought that if you walked around like the baby would just come out of your vagina. Like there we go, that's it, don't walk, you have to stay horizontal. She was like pretty much.

Amy West: Yeah, pretty much. I mean it was like with one of my friends is really big into cycling. From [Dana Kotler](#),⁴¹ someone I used to work with. And she has looked into like the history of cycling and women and how it was, they basically thought that like bicycle seats were like orgasm machines. So like women weren't allowed to ride bikes for a really long time because it just, it was seemed, some guy thought that would be completely inappropriate.

Emily: That is really funny.

Amy West: So you know, there's like a lot of rules like that have sort of been passed down. And I think when you talk a subject like pregnancy where people are just, it's hard to study and people are afraid to kind of say the wrong thing. It's just, Oh people just err on the safe side of things.

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<https://empoweredhealthshow.com/ep-13-cribsheet-author-emily-oster-on-inaccurate-pregnancy-and-parenting-advice/>

⁴¹ <http://danakotler.com/>

Emily: But in terms of the healing after you've had a baby, the idea that things are kind of out of place and it takes a little while for them to get back into place. Like normally people are told not to exercise for like I think six weeks after if you've had a vaginal delivery. And I kind of wonder whether, again that's something that makes sense from the perspective of muscle recovery versus, I don't know, I mean I feel like there's a lot of stuff which we haven't done an episode on yet in continence, in older women being a really big deal. And my instinct is that's probably muscle.

Amy West: Yeah.

Emily: It's probably some tissue or whatever, but it's probably also mostly like a lack of proper exercise or something that has led to this deterioration.

Amy West: Yeah, I mean [pelvic floor](#)⁴² exercises and sort of pelvic floor, there's a whole pelvic floor rehab is sort of a subset of rehabilitation which can be super useful in things like this. It's hard to find therapists. There's not a ton of pelvic floor therapists around, but certain areas of being able to connect with someone like that. And for these kinds of issues I've seen be very effective.

Emily: But it's not like women have a harder time recovering than, say men, because of their ligaments and tissues and estrogen.

Amy West: Well as far as testosterone is also something that helps tend to recover faster. So men in general may have more brittle kind of tendons. They're not as lax and as stretchy. So something like an [Achilles rupture](#),⁴³ men are far more likely to suffer Achilles rupture because of the, one of the things anyways, that sort of brittleness of the tendon. But tendon also heals faster. And there have been some [studies](#)⁴⁴ where they've used sort of topical testosterone tissue and it's healed faster. So it's kind of cool. I mean, and I know someone who was actually doing that for awhile was using sort of via ultrasound, like almost like a patch, putting on some topical testosterone and seeing how that affects tissue healing. It gets a little tricky when you're dealing with athletes and stuff. Because you don't want to be inadvertently doping someone by doing this.

Emily: Yeah. But for somebody who's not an athlete who's recovering from a surgery or something, I wonder whether that would be a,

Amy West: I mean, that's why you have all these clinics that are like set up and you know, people essentially like dole out testosterone to men. And these guys all of a sudden feel great and healing faster, feeling better. And it's like, you know, yeah, if you take it, it'll make you feel good if you're a guy, yeah, for sure, but.

⁴² <https://www.continence.org.au/pages/pelvic-floor-women.html>

⁴³ <https://www.foothealthfacts.org/conditions/achilles-tendon-rupture>

⁴⁴ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5310744/>

Emily: What is the downfall?

Amy West: Testosterone also has cardiovascular effects and you know, yeah and stuff like that. So it could be, you know, with like any, anabolics you can end up with some other problems, you know, and then like acne and stuff like that. But and then for women, all the virilizing effects of taking it would have, but so it has its downsides. But in things like this, taking advantage of the healing properties of it, how could we maybe medically sort of make that work? Something like

Emily: Or [stem cells](#).⁴⁵ I feel like is another thing like that, that people put a lot of hope into. I don't know anything about the efficacy of it.

Amy West: Yeah. So that's another thing. So in my field it's something we do. It's kinda like, it's called stem cell treatment, but there's a lot of rules about how "stem cells" can be used therapeutically in this country. And there's certain amount of you can't process it and you can't do this and you can't do that. And so the actual stem cell treatments that are being done for musculoskeletal issues are not necessarily pure stem cells, but the hope is that they sort of induce a healing-like response.

Emily: I feel like people get facials that are like supposed to make you feel like.

Amy West: Yeah. You know, a lot of this stuff is still in its infancy. Yeah it's probably not. I can't say if I know those work or not. And I know there are certain like clinics and stuff that do a lot of stem cell stuff and where they harvest either from your bone marrow, from your [adipose tissue](#)⁴⁶ and they've had good results with it. I think in general the evidence is still kind of, we're still waiting for it.

Emily: Talk to me about the Gluteus, not maximus.

Amy West: Not maximus. The [gluteus medius](#)⁴⁷ which is

Emily: The other gluteus.

Amy West: Yeah, so this is like one of the things that I see in my clinic all the time is gluteus medius weakness. So in women especially, I see it more so in women. And the thing is, that the gluteus medius, it's muscle. If you do a lot of, I'm trying to think something that would fire it up. If you do a lot of single leg squats or like lunges, it's the muscle that's kind of on the side of your hip, kind of in your butt. It has three main actions.

⁴⁵ <https://medlineplus.gov/stemcells.html>

⁴⁶ https://www.sciencedaily.com/terms/adipose_tissue.htm

⁴⁷ https://www.physio-pedia.com/Gluteus_Medius

Emily: The outer side of your hip.

Amy West: The outer side, yeah. So it has three, it's like right next to your [gluteus maximus](#).⁴⁸ So sometimes they kind of get lumped together, but it has three main actions. It abducts the hips so it brings the leg away from the body, it extends the hip so it brings the leg back behind you. And it also internally rotates your femur. So if you do those three actions, so think about bringing your leg out to the side back and then turning your toes in so.

Emily: Guns of steel.

Amy West: Yeah, exactly. So in most people, even if they're super strong, that muscle tends to be relatively weak. And what it does is actually stabilizes your pelvis while you're moving. So think about when you're running, your pelvis kind of dips side to side a little bit. So if those muscles aren't strong, you end up with a lot more dipping side to side.

Emily: Which can cause back injury.

Amy West: Cause back pain, hip pain, leg pain, knee pain. I mean something like patellofemoral pain, you know like knee pain that a lot of female athletes get under the kneecap. The mainstay of treatment is strengthening that gluteus medius.

Emily: And why is that? Because when you're doing squats and stuff, it's not working that?

Amy West: It's not necessarily intuitive to activate it. Also you can cheat around it. So if you just bring your leg out to the side, you're actually activating a lot more muscles than if you bring your legs out to the side and then back a little bit. You could isolate that muscle. But you can cheat around it. So I think it's something that just gets missed in our training and in just sort of day to day life, people aren't thinking about it. So you can end up with a lot of problems sort of downstream from that.

Emily: So I feel like one of the things that's interesting to me is that you and I met at a Crossfit certification program for doctors that I crashed.

Amy West: Yup.

Emily: And I think one of the big takeaways for me with Crossfit is that it is this idea of like functional movement and not isolating individual parts of your body. But you're saying that there are instances where like you should be isolating parts of your body or like being aware.

Amy West: I think being aware. So I think isolation, and so what's great about something like Crossfit is that you're doing these movements, things like squats and lunges and like single leg

⁴⁸ https://www.physio-pedia.com/Gluteus_Maximus

squats for example, that are activating those muscles as you do in everyday life and working on strengthening them in context of an activity that you would be doing in everyday life. Whereas most people they aren't really thinking about it. And then also

Emily: So is that like a mind body connection that you think is like firing up the muscle?

Amy West: Yeah, I mean I think as far as like when you're training doing stuff like squats or like pistol squats or like single leg squats, things like that, it's much more involved than just a single isolated muscle movement. It involves that sort of neuromuscular control, that mind body activation of movement patterns that will help you in day to day life when you're, like I said, getting in and out of a chair or whatever. So you have to train that whole kind of mind body piece. Otherwise you won't be able to kind of pull those muscles in when you need them.

Emily: But that's, I feel like, go a little bit deeper on that. Because I think one of the things that's really interesting is when I have been in the best shape, the years where I'm really in good shape, I am very aware when I'm like bending down to get the groceries, or doing something of like, where are my knees, where are my toes? I feel like that form is sort of a second nature. Whereas when I'm out of shape I'm more sort of like, oh, whatever just get the groceries in the house.

Amy West: Yeah, and I think that's it. Like that's the key, right. Is not only being, if we're talking about this gluteus medius stuff, it's like, yeah, you can train that muscle in isolation in a gym, but if you don't ever use what you've been training in real life, what's the point? I've seen that a lot in just treatment of these things is that people say, you know this is the thing, like I go to physical therapy, I do my exercises every day and I'm still in pain. Like that's something I hear a lot. And it's like, well that's the problem, right, is that you do your exercises for 20 minutes a day and then the rest of the day you're moving like crap. Yeah, you're going to continue to have problems. Because making that connection from the gym to real life is like where the money's at and treating injuries long term anyway. So like when you're in the gym exercising a lot and you feel good, you're more likely to transfer those skills to everyday life. And I think that's like, that's the big part is like where we as rehab professionals can do a better job of sort of instilling those things in our patients such that they can use these things in everyday life and avoid bad movement.

Emily: And do you have any feelings on diet as far as sort of exercise and recovery and then throw in the women thing?

Amy West: Yeah.

Emily: And I feel like one of the things that's interesting that you and I have talked about before is like, this sort of like, [Let's Move Campaign](#)⁴⁹ and like these ideas of, Oh, you just need to exercise more. And it's less about what you eat and more about moving.

Amy West: Yeah, it's kind of an interesting sort of political background with sort of the medical societies and these exercise campaigns. It's like, yeah, we're, I think everyone's on the same page that we all want people to like move more and that exercise is good and we all support that idea. Exercise alone is like if you're only exercising, you know you're not pulling in that nutrition piece, you've really limited the benefits that you're going to have from the exercise part of it. So I think nutrition is huge and in all of this, and I think that more so than anything would be something to focus on as far as like exercise, performance, recovery, especially in women. I think it's especially important that we are aware of what we're putting in our bodies.

Emily: So what are some things like that that you think women could benefit from hearing?

Amy West: I think the first thing is just like the processed crap that everyone's eating. And what I've seen also is that people who think they're eating healthy and they're actually in a lot of crap, because the way the stuff is marketed or whatever, and it's getting off the processed crap is the first, I think, if people do that.

Emily: And so when you say processed, do you mean like the potato chips and the cereal and all that crap or you mean like canola oil and like, I mean, how deep are we going?

Amy West: I mean, I think meeting people where they're at is part of it. So you meet someone who's eating, having like two bottles of soda a day and it's like if, okay, the first step is we're just gonna cut that out and like, let's see how you do. So let's just start, we'll start there.

Emily: Probably drop 20 pounds in a month.

Amy West: Yeah, exactly. And there's a great movie I don't know if you've seen it called, [That Sugar Film](#).⁵⁰

Emily: No.

Amy West: It's great. This guy, I can't remember if he was in New Zealand or Australia, but he basically decides he's going to eat the amount of sugar that a typical Australian, you know, eats in a day and however many teaspoons that is. And he does it for, I think it's like a month or so. And he hits that number every day by eating, not by eating like sweets or candies or soda. He eats just like things you can find in the store that's just full of sugar that you don't even realize. And within a month like

⁴⁹ <https://letsmove.obamawhitehouse.archives.gov/>

⁵⁰ <https://www.imdb.com/title/tt3892434/>

Emily: Like honey ham, that one's crazy.

Amy West: Yeah, or like you know, all these low fat, you know, healthy, whole grain, whatever crackers or whatever, you know, and they're just like tons of sugar like pumped into that. But within a month, like his whole body just like goes to shit. I mean his liver enzymes go through the roof, like he's puts on a lot of weight, like his moods all messed up. So it's a really interesting thing. And that's what, you know, I think he was in Australia. So it's like, what the average Australian eats. So in America it's probably like double that. You know, he goes to like [Jamba Juice](#)⁵¹ and

Emily: The juicing thing is crazy.

Amy West: Yeah. And eats like, he has like one gigantic smoothie that has like 10 times the amount of sugar that any person should have in a day. But people think that's healthy, right? They go and they say, this is a healthy, I'm not going to McDonald's, I'm going to this juicing place.

Emily: I feel like I had that a lot more when I was like, my kids were really little and we'd go to the playground. And you'd see these moms who like their whole life was their child. They were trying to do the right thing and they were giving them like fruit roll ups, right?

Amy West: Yeah, well it's fruit.

Emily: Organic fruit roll ups and like juice boxes and like all this stuff. And you know you're supposed to have like 23, the [American Academy of Pediatrics](#)⁵² suggests like 23 grams⁵³ of sugar, for kids for a whole day. And it's like you just blew your wad with that one fruit roll up, like maybe even half of it. And people just don't know. And I always remember being like, they're so conscientious, right? Like I am sure their everything in their houses, grass fed, and yet they're missing the mark.

Amy West: Yup. And I think that's the more interesting. I think it's easy to spot the person who's eating McDonald's all day, but then people who they grow frustrated because they think they're eating healthy. They think they're doing what they need to do and it's like they're actually doing things that are very unhealthy and sort of reframing that whole rewiring the brain a little bit when it comes to that. It's challenging.

Emily: Bob and I actually worked on a documentary like now 20 years ago that we never did anything with. We have all the footage and we keep talking about like ripping the audio or doing

⁵¹ <https://www.jamba.com/>

⁵² <https://www.aap.org/en-us/Pages/Default.aspx>

⁵³ <https://www.aappublications.org/news/2016/08/23/Sugar082316> 25 grams, to be exact.

something because [Mark Hegsted](#)⁵⁴ who was the dietary guidelines architect, I was the last person to interview him alive. And in that interview he basically acknowledges that there were a lot of like sugar they should've been more mindful of. But the counter to the sort of like journalism that I was doing with the interviews, Bob, who's super into self-experimentation was super pissed off when [Super Size Me](#)⁵⁵ came out because he was like, this is not about the fat and the meat. This is about the bun and the coke and the fries. So he did the same [Morgan Spurlock](#)⁵⁶ diet.

Amy West: Okay.

Emily: For, I can't remember, it was like four months. All he ate, I had to go after I worked at the newspaper in Las Vegas and I would go to like the Wendy's drive through. I'd be like, may I have 30 cheeseburgers and he would take the patties and just eat them. And so he ate fast food only, but he didn't have any of the sugar or any of the bread. And his cholesterol went down like all his biomarkers improved. His physician, who we have on camera when we started was like, I cannot recommend this. This is a terrible idea. Like why would you do this? And sure enough we'd completely won him over in the sense that he was like, I can't believe that all of this is getting better. But it was such a message of like you watch a movie like Super Size Me and you think like, oh, it's the shitty McDonald's meat and like all this crap, which is probably not great quality meat.

Amy West: Not great, yeah.

Emily: Right? But it turns out that wasn't the problem. Like he was so loaded up on the carbs and the sugar, I mean sugar in particular, that was potentially what was causing him to have such deterioration in his health.

Amy West: Yeah, that's crazy.

Emily: Yeah, I should pull up that footage.

Amy West: And that's what's so crazy is that even when I was younger, you know, I was a kid when that whole like low fat mentality sort of was drilled into us by everything. That we had to have these like low fat cookies and low fat whatever it is. And it was all just replaced with like chemical crap.

Emily: Right.

Amy West: Sugar.

⁵⁴ <http://www.epi.umn.edu/cvdepi/bio-sketch/hegsted-d-mark/>

⁵⁵ <https://www.imdb.com/title/tt0390521/>

⁵⁶ <http://morganspurlock.com/work/super-size-me/>

Emily: Sugar. Yeah I can remember everybody eating tons of Peeps, you know those Easter Bunny candy and being like, well they're fat free. It's like Good Lord.

Amy West: Right? Exactly. And I think that's crazy that I still come up against that quite a bit in clinic and people saying, well I can't eat that, that's fattening. Whereas this is a low calorie, fat free, whatever. And it's like, but yeah, that's crap though. And that's not going to do the trick so. Kids foods, like you were saying, and the way we feed our kids so much of that crap, you get sensitized to it. So when stuff doesn't taste like that, it's like they don't want it. But it's because it's, and it's all kind of intentional, you know, on the big foods part, you know, that's what they're hoping to do, right? Is conditioned people so that they want to eat their stuff.

Emily: Sort of amazing, right? Because they basically have created all these products that are incredibly delicious to eat. They're really cheap and they have zero nutritional value. It's like that's what everybody wants.

Amy West: Yeah, it's crazy.

Emily: Do you have any feeling about the sort of [vegan](#).⁵⁷ vegetarian stuff as far as women go?

Amy West: When I first started med school, this was like, I mean this was a long time ago, but I started reading a lot about sort of veganism, vegetarianism, and the [China study](#).⁵⁸ And I'm familiar with that and I kinda got super into into that and I experimented with myself about it. So I was vegan, sort of loosely, but vegan for the most part for a while. And I found Crossfit like sort of maybe a year into this and then I noticed that for me like I wasn't able to perform the same way.

Emily: Meaning what? You were more tired, you couldn't lift as much?

Amy West: Yeah I couldn't lift as much. My muscle mass in general was not as much. And I found, you know, I started eating some more chicken again and then like things became easier for me. I can only speak on my personal experience and I've read a lot of the literature as far as how it pertains to vegan diets and I think there's some positives in it. I think it's better than if you're going to eat nothing but crap then yeah, great. Be a vegan and eat vegetables. That sounds good to me. But as far as like.

Emily: Except well I always see that a lot of the crap food is vegan.

Amy West: Exactly and that's the, if you're going to eat like these fake meat things instead of real meat, then I think that sort of defeated the purpose of at least health wise. I mean people

⁵⁷ <https://www.vegan.com/>

⁵⁸ <https://nutritionstudies.org/the-china-study/>

have other reasons for it, but like if you're doing it for health reasons, it can be very difficult to stick to. There's a very small amount of leeway that you have before you end up just eating all bread all day. Well then that's not really, or like vegan pastries, that's not really like

Emily: Yeah or even like we have an [episode](#)⁵⁹ coming out on endometriosis and one of the, it was actually a surgeon who's becoming sort of world renowned because he's so good at the surgery that there's very few people who have to come back and have follow up surgeries with him. He's in Georgia. And he said to us that one of the things that women can do like pre-surgery or whatever, if they want to try is to cut out or reduce soy because soy has so much estrogen in it that actually that can trigger endometriosis in a way. And I thought that's really interesting because women who are vegan and are trying to be conscientious about getting protein have to basically rely on some soy.

Amy West: Right. Yeah. And that's in soy. Yeah. Because of the, it has some implications for possibly like breast cancer and things like that. This idea is soy. And I've seen [studies](#)⁶⁰ that have said both things that it's good for breast cancer, it's bad for breast cancer. And that's logically, it makes sense that if you know these sort of estrogen like compounds that are in it can sort of promote estrogen liking tumors. You know, that makes a lot of sense to me. So same thing with endometriosis as far as

Emily: Just stimulating the estrogen you already have in your body a little bit more too and adding to it.

Amy West: Or stimulating the same kind of receptors.

Emily: So what foods have testosterone in them, right? Like that's what we want.

Amy West: I don't know if we have any of those, but yeah.

Emily: And so I feel like the last thing I want to make sure we talk a little bit is like the Crossfit health doctor movement. And we will probably talk to [Greg](#)⁶¹ at some point, but we haven't yet. So can you just tell us a little bit about, like how did you find out about that? What is going on?

Amy West: Yeah. Well, I mean, how I found out about it, so I was, I was in residency or medical school at the time and I was, I found Crossfit. I thought it was great. And then I saw sort of the parallels that it had with the field that I'm in with Rehab Medicine and psychiatry and I thought, oh, these two things have a lot in common. And then I was like, well, how do I have, I find out about the other. So I was sort of like, so I gave some talks at smaller and made my grand rounds about Crossfit and what it is. And people were like super interested in it.

⁵⁹ <https://empoweredhealthshow.com/ep-19-opening-up-about-endometriosis/>

⁶⁰ <https://www.cancer.org/latest-news/soy-and-cancer-risk-our-experts-advice.html>

⁶¹ <https://www.theboxmag.com/crossfit-training/origins-of-crossfit-9629>

Emily: Just on your own.

Amy West: Yeah. Yeah. So we had to do [grand rounds](#)⁶² about something. So I said I'll do it about Crossfit.

Emily: But that's kind of bold, right? Because I mean, not everybody's super on board with that plan.

Amy West: Yeah. And especially then, I mean it's kind of strange how that tide is turned a little bit. But back then even, I would say Crossfit and it was like people had a lot of things to say, about a lot of [negative things to say](#)⁶³ about it. And we're kind of super, kind of get on me about it, and that's part of the reason I did the talk, right?

Emily: Which was what? Mostly that the idea that people get hurt?

Amy West: Oh it's dangerous, yeah. Oh it's dangerous. People would say this to me a lot they'd say, oh well you do sports medicine and stuff and those Crossfitters will keep you in business because they're always getting injured. And I'd say we know what actually keeps me in business, obese people. That actually is what keeps me in business. All the aches and pains that overweight people have. I spend a lot of my time treating that. People had things like that to say like, Oh, you know, and mostly people who didn't know what they were talking about, who didn't realize that actually physiatry and Crossfit share a lot of commonalities as far as like promoting function. And there's a lot of science, the principles behind Crossfit, so constantly varied functional movement from a high intensity, those things are all kind of in the literature, separately, as things that are good for you. So combine all of these things.

Emily: Hard to argue it.

Amy West: Hard to argue it. So that's part of the reason why I did it. So I did this grand rounds and it was actually very well received and I was able to actually get some people to start crossfitting who never and actually

Emily: Doctors?

Amy West: Doctors to start crossfitting, someone who, and actually one of those people ended up doing the MD-L1 and got her mom into it. And her mom by the way, is like kicking a lot of butt. And her mom's like in her, I think in her seventies and crossfitting for the first time and is like kicking ass. But also, and then I got a lot of people that I worked with who were sort of like very anti to be and we're telling people not to Crossfit and they became, they sort of moved into that neutral to positive. That was pretty cool. So I was doing this and at the time I sort of felt like

⁶² <https://www.medicinenet.com/script/main/art.asp?articlekey=40370>

⁶³ <https://www.inc.com/magazine/201307/burt-helm/crossfit-empire.html>

I was a little bit in isolation of like I'm a crossfitting doctor and like who else gets it? And I actually got some emails from people like who worked within that hospital system being like, oh hey I heard you do this thing like I Crossfit too. But like it was like a secret club a little bit.

Emily: Which is funny because I feel like the public perception is that it's like this loud cult.

Amy West: Well yeah, in the medical world they can. I mean in the sports medicine world especially, there's a lot of politics, sort of the backs kind of behind the scenes of people who were pretty anti-Crossfit who are sort of leading those organizations. So you get a lot of mixed messages as to like how people feel about it. But I thought it was kind of living the breeze, kind of doing this thing by myself. I actually ended up doing an L-1 prior to the one that we did because I thought, oh, it'd be cool to, like I was talking about Crossfit from what I knew about it and how I felt about it and the things that I had read about it, but I hadn't sort of gotten the official word on like what they say about it. So I went to the L-1 and one of the people who led the L-1, [James Hobart](https://games.crossfit.com/athlete/4945).⁶⁴ He was at Reebok, he's now [One Nation](https://www.crossfitonenation.com/)⁶⁵ and he's sort of like a well known guy in the community. He just said, I had said to him, I was like, hey, like I'm a doctor, like, I'm doing Crossfit stuff. And he's like, oh, you know, so, and he just kind of, we exchanged information and that was sort of it. And then like months later is when I maybe kind of been about a year later, but that's when I got an email from my name had been passed along to

⁶⁴ <https://games.crossfit.com/athlete/4945>

⁶⁵ <https://www.crossfitonenation.com/>

⁶⁶ and then they sort of were like starting this Crossfit health thing and then that's how I got it. And it's crazy because you know we were at that first, the first MD-L1 and it was like, I don't know how many people were there, 50 people. And it was like, Oh wow, we're like, the first people here. No one was really sure what was going to happen with these L-1s.

Emily: No one knew what was going to happen that weekend.

Amy West: Yeah, it was like every day was a new, was a new adventure. We didn't know if this was going to be a one time thing and that's it or maybe they do one a year or whatever and now they're doing them like every couple months and there's a wait list of a year long to get into it. I've had people contact me since, like friends of mine said, Oh you know I want to do it. And it's like, okay well maybe in a year and a half you'll get in. And where it's so weird because when we did it it was like this kind of novel like let's see what this is.

Emily: Jeff and I were like, we are not doctors.

Amy West: Jeff is an honorary doctor.

Emily: It was like the three of us we're like, we're not doctors.

Amy West: Jeff is an honorary doctor.

Emily: We'll wear our shirt proudly. Well one of the things that I was really struck by that weekend, as sort of like a conscientious observer of all the doctors, was the idea of how isolated people felt. Like that you guys were all doing this all over the country basically and like using Crossfit as a prescription essentially for treatment of all kinds and it wasn't like everybody was in sports medicine. It was like people were interns or an ob gynecologist, but recommending Crossfit as a treatment for all kinds of things. Nobody was like sort of connected in their medical realm, which I mean I think to Greg's credit is a pretty phenomenal idea of linking you guys up and sort of building that army per se of medical professionals who are on board.

Amy West: When I started talking about it in my, where I was working, it was sort of like you almost have to watch who you talk to people about. Especially in my field, there are some pretty anti Crossfit people who have power.

Emily: Why are they anti? Like is it, can you get into this or is this?

Amy West: I talked about this in this grand rounds? And these are things that I've read and I can just report what I've read. But it's a little complicated because part of it has to do with the certification process. Like so Crossfit trainers don't pay any other group to be there. Yeah, but

⁶⁶ <https://crossfitce.com/coaches/neil-curran/>

like the, you know, like the [NSCA, the National Strength and Conditioning Association](#),⁶⁷ and they all pay this US Reps, which is sort of like this overseeing body of trainers and Crossfit doesn't pay anything to them. So part of it is that there had been some legislation to sort of essentially outlaw Crossfit as a bunch of like unregulated people who are out there training people recklessly because they're not certified through this one body. So there's like some money things that are sort of playing in the background.

Emily: Which I think is sort of ironic because I think what a lot of people don't realize is they're two other sort of trainer certification things that are pretty common and both of those are like a scantron test. So like you're not actually working out or like doing any of the movement. Whereas Crossfit you have to actually show that, as I was training you.

Amy West: Right, exactly. Learn from the best.

Emily: That like you have to know how to do the movements and you have to correct people and like that's sort of interesting that like hands on takes it up much farther than sitting at a desk and filling out a piece of paper about like how to do a [plank](#).⁶⁸

Amy West: Right. There's also like if you wanted to own any kind of global gym, like if you want to just set one up, you can just pay somebody to set it up. You don't even need to be licensed in anything to own and operate one of those places. So that's one aspect of it is like the training piece and what's.

Emily: But so like when you're talking about people that are at a medical facility, is it because they're on the board? Like are they benefitting from those?

Amy West: No, no so like, you know, and then there's big sort of sports medicine groups. Part of it is like there's been some [false data](#)⁶⁹ that's been put out there in the public about Crossfit injury rates and what not and Crossfit's been pretty vocal about that. They've kind of come after, Greg has sued quite a few people who have published false data. And part of the reason that data exists is, so for example, our biggest sports medicine society, they sponsor this [Exercise Is Medicine campaign](#),⁷⁰ which is funded primarily by Coca-Cola. So Crossfit's been pretty vocal about calling attention to that connection of like, why is one of the biggest sports medicine societies in the world taking money from Coca-Cola? Like that's an odd thing,

Emily: But it's actually, I mean like I feel like we should explain that because I think that that actually is fascinating. It makes a lot of sense because like if I'm drinking a two liter every hour

⁶⁷ <https://www.nasca.com/>

⁶⁸ <https://greatist.com/fitness/perfect-plank#plank-variations>

⁶⁹

<https://www.clubindustry.com/commercial-clubs/nsca-article-included-false-injury-data-about-crossfit-judge-rules>

⁷⁰ <https://www.exerciseismedicine.org/>

and I'm becoming metabolically damaged, but you tell me that it's because I'm just not moving my fat ass enough, then now it's not Coke's fault, right? It's my fault because I'm not moving enough. And so the idea of sponsoring an exercise organization fits with their business model really well, right? Blame it on the sloth nature of the individual, who's getting really fat and tired on my product.

Amy West: And like that's what's so, that connection in the mixed sort of strange bedfellows the two like Gatorade, which is a Pepsi Company. There's this whole [Gatorade Sports Science Institute](#)⁷¹ that is one of the primary sponsors of this sports medicine organization, which I personally don't feel comfortable giving recommendations that are partially at least influenced by Pepsi and Coca-Cola. Like to me that feels weird. But I do think that there are a lot of people even within the organization that either don't know that the connection exists.

Emily: I was going to say like how consciously is that a part of it?

Amy West: Yeah. I think it's not very conscious at all. And I think that's sort of part of the problem. I think you have a bunch of very well-meaning physicians in other sports health professionals who are very well intentioned, who all really think they want to promote exercise, which I'm all for. But there are these influences that underlie it that make me sort of look sideways. Yeah. So that's part of it. But you know, so there's this whole kind of backstory that Crossfit and ACM have kind of gone head to head with it because Crossfit's been very vocal about calling out that relationship. And you know Greg and his tactics. Sometimes he kind of you know, he doesn't sugar coat things. So no pun intended, but he doesn't sugar coat things since, you know, so he's got something to say, he'll say it and he'll say it loudly. So

Emily: He's not a diplomat.

Amy West: Yeah. And I think there's

Emily: He's an activist.

Amy West: Yeah. And I think there are some people in the, probably in the sports medicine world, who are not fans of that. So it creates this kind of weird situation because I, like I said, I was just speaking at this conference not that long ago. So, and want to be involved in that academic realm of things. You know, I have to be a little conscious about what I say and to whom. Because you don't want to piss off the wrong person for what. You know, I've had people tell me that people that I respect greatly who said like, oh, people at Crossfit are nuts, Greg's nuts blah blah. You know? And it's like, well I know both sides of it so.

Emily: Yeah, yeah. What's so interesting that it's so politicized too when it's like, really the name of the game is helping people.

⁷¹ <https://www.gssiweb.org/en>

Amy West: Yeah. And then even the research journals, right. To get research published, I mean that's like a whole other, you know, I've written about, sometimes you can, they don't want you to use the word Crossfit because they say it's a brand name. You can talk about high intensity function movement from, you could constantly vary high intensity, you know, function movements. And that's okay. You talk about that, but you said the word Crossfit immediately people don't want to hear you talk about it. They don't want to engage in the conversation because you're promoting a brand and it's like, well

Emily: It's so interesting because you're like, well, you're promoting Coke's agenda.

Amy West: Yeah. The thing is that people don't even realize that they're doing it right, but that's part of it. And it's like, I've said this on another podcast. I said this like, you know, I'm like, Greg is very like revolutionary. He's all about tear it down, burn it, start your own thing and do it better. And it's like for us in the medical field, we have to be a little bit more evolutionary. We have to kind of, okay see, look at both sides, try to educate, try to help other people understand the other side and it, you know, so we have tactics that's a little bit different as far as like creating change or creating like a new way of thinking. Because medicine is like always, especially if it's like fitness stuff, even nutrition, like things are happening in the media, in the mainstream culture like well before like medicine gets on board with it. So there's a lot of educating and talking things through.

Emily: Well, and also even in terms of research, I mean it's like all the research gets garbled up and then people get more confused and then probably opinions get based very staunchly on false information.

Amy West: Yeah and I mean that even happened with Crossfit itself. Like all these anti Crossfit studies were being kind of churned out and there's questions as to the funding for those studies and the motivation behind the people who are funding them and whatever. But, and then that's the message that gets out there is that well Crossfit is dangerous because of this [study](#).⁷² which has a lot of flaws and is funded and even the results are kind of very, you know, not kosher. And that's the message that gets out. That's as much as it gets into the media. And then that's sort of like, so if that's sort of already existing in the media and also in the medical literature then to be a physician who's like, actually let me point out that actually all of these things are wrong.

Emily: Well yeah but I think there is also something important to sort of distill down, which is that Crossfit, because it is this sort of like open source model, you can have a [box](#)⁷³ that's like a bunch of meatheads who are not paying attention to form. They may have done the certification program, but there's 60 people in a class and like little old me is trying to lift too much and

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https://journals.lww.com/nsca-jscr/Fulltext/2013/11000/Crossfit_Based_High_Intensity_Power_Training.30.aspx

⁷³ <https://greatist.com/fitness/ultimate-guide-crossfit-lingo#1>

getting hurt. And so I think that when people ask me about Crossfit, my big thing is always like it can be life changing if you find the right box.

Amy West: Absolutely.

Emily: You have to find a place where they're going to coach you individually. Like have an onboarding program, have a way of really getting you to figure out where you are in terms of your athleticism and like one of the things that I always say to women, I own these three wellness centers for middle aged women. We do a lot of the sort of like same like functional movement kind of patterns and definitely high intensity stuff for half of the time that they're in and they come in three times a week, usually. But my big thing is always when your body is changing, whether it's you've had a baby or you went on a super anorexic diet before your wedding or like whatever, you need to kind of be mindful of where you are in your game because like I was an athlete in high school and then in college that sort of faded away. But I still am super competitive, so like I am more likely to go in and kill myself because I remember when I used to be able to do it and I want to do it again and I am excited to be there and I want to participate. That's not good. What I need is a coach who says, slow your roll.

Amy West: People say that to me. Like, oh well you know I went to this gym and I didn't like it. And first of all, it's not for everybody. If you don't like it, you don't like it. But also there are bad coaches, there are bad physicians, there are bad and you name it. There are people who are better than others. And just if you had a bad experience with one person, I wouldn't say like write off the whole thing or you know, and I think the way that I've seen a change sort of like there was sort of like a boom in like a lot of boxes popping up and over time the ones that weren't as good have sort of fallen by the wayside anyways so.

Emily: So do you have advice for anybody in terms of like starting, if somebody is thinking about getting into a sort of functional movement space, do you think like whether it is joining a Crossfit box or trying to do stuff on their own, like do you have any resources that you think are important for people to sort of, questions to ask themselves, or things to think about?

Amy West: Like you were saying, it's kind of know what drives you a little bit. So if you're someone who like feeds off the competition or someone who doesn't, someone who doesn't like that at all. Sort of finding the right sort of social kind of state of wherever it is that you're going. I think that's really important. I think it's also super important to, and as far as like making like true change and like lifestyle change, we as physicians can recommend stuff, but unless those things become habit, they don't really happen. And finding people that can help you make things habit. So whether that's a group of people that hold you accountable and make sure you come every day, whether that's a group of people who you share recipes with, whether that's just a group people you like seeing every day, so you're more likely to be around them. Finding coaches who sort of serve a similar, you know, who kind of are able to say things in a way that makes sense to you. I think those are huge in sort of going down the health and wellness journey. I think it's really hard to do it in isolation and some people will do it. But like I think you

having a group of supportive people and an environment where healthy behaviors are encouraged are all super important in actually making those changes permanent. So that'd be my advice is try to find a group of people that you like being around. You know, that's the first step, you know.

Emily: Because then it really becomes like a lifestyle change rather than just like a fad kind of.

Amy West: Right and I think that's why. Gym memberships skyrocket in January and then by you know, March or whatever, they're all, people aren't going anymore. And it's because I think it's really hard to keep yourself motivated in isolation. And if you can do it, great. But I think it's really hard.

Emily: Yeah. No, that's interesting. Is there anything else that you thought I was going to ask you that I didn't? [RED-S](#)⁷⁴?

Amy West: RED-S. Yeah.

Emily: Will you explain that?

Amy West: Yeah. So RED-S are Relative Energy Deficiency Syndrome, but the new name for what was formally called the Female Athlete Triad, which I think is an antiquated way of putting it. But what that is is sort of, it's a combination of three things. So low energy intake, you know, nutrient intake. Hormonal problems, so whether that's menstrual, amenorrhea, or losing your periods essentially. And then the third thing is bone mineral density. And these three things are all related. So like we were saying before, you lay down a majority of your bone mineral density as much by the age of 20 it's pretty much all there. And for something that was most often seen in female athletes, and specifically female athletes who had to lose weight for competition, or be smaller like gymnasts and dancers and things like that. They would reduce their caloric intake. So, and that would set up this triad of problems where you don't have enough calories in your body to support your hormone levels and then you end up losing your periods, essentially. And then that also leads to decreased bone mineral density. So it's this triad of things that,

Emily: But it's all triggered by the calorie restriction?

Amy West: Pretty much so and that's why it's super important that, especially young female athletes, are eating enough, are having regular periods. And if you're not having a period regularly, you know why that's happening. You can't really make up that bone mineral density once that time period has passed. How we end up seeing in the clinic is people coming in with recurrent stress injuries, bony stress injuries, and those are things that take forever to heal. And if you're not fixing the underlying problem, which is caloric deficit, it's going to be very hard to treat. You'll be someone who's constantly injured and then later in life will have problems with

⁷⁴ <https://www.uwhealth.org/health-wellness/red-s-syndrome-what-athletes-need-to-know/51699>

like [osteoporosis](#)⁷⁵ and what not because you just, you never reach maximum bone mineral density and then you have these recurrent injuries that are nagging. But to treat that is really hard because a lot of times with restrictive eating and what not is there are many layers to that and it's a matter of drilling down someone's nutrition and.

Emily: Well and so is that also true for girls or young women who are, have eating disorders that aren't athletes?

Amy West: Yeah, so this will happen if you're not getting enough calories, you will in most cases lose your period. And then that's a whole other series of problems. With how we see it, you know, as far as athletic women are concerned, a lot of times they don't seek care for it until they start getting injured and they can't participate in sport. And then that's when it's like, well, oh the issue. So where someone who's not athletic might not have these injuries. So they don't really even realize until later in life when they fall and break a hip or something.

Emily: So if somebody actually at that MD-L1, and I can't remember, it was one of our coaches who I remember being curious though, she basically was saying like, there's this fallacy that women who lift and have very low body fat are guaranteed to stop getting their periods. Then she was like, that's not true at all. And like I still got my period and I have like 2% body fat. That's interesting. So it's not about fat on the body per se. It's about the calories that you're taking in or the food you're eating.

Amy West: Yeah, so you're not taking in enough food to support your metabolism and your hormone production, et Cetera. So if you're someone who's super active but you're eating enough to support that lifestyle.

Emily: So how do you know what is enough?

Amy West: If you are losing your period at any point, like that is a big red flag that that's not enough. But there are recommendations, I can't remember the numbers off the top of my head now, but as far as like how many kilocalories per lean body mass you should be taking in per day.

Emily: But some of that, I mean I feel like going to the [Gary Taubes](#),⁷⁶ like a calorie is not a calorie is not a calorie becomes confusing, right?

Amy West: Yeah. Super confusing.

Emily: You're like, wait, am I not eating enough fat or is it actually calories?

⁷⁵ <https://www.iofbonehealth.org/what-is-osteoporosis>

⁷⁶ <https://empoweredhealthshow.com/ep-17-gary-taubes-pt-ii-challenging-dogmatic-nutrition-wisdom/>

Amy West: Right. Yeah. So the recommendations officially are in kilocalories per like lean body mass. But as far as like, and I think that's when it becomes important to like in certainly in the high level performing people to work with like a nutritionist or work with someone who's knowledgeable as far as how to break down your calorie intake and your macronutrient intake such that you can maintain your bone mineral density and maintain your hormone state and what not. So it gets a little tricky like I said, and even as like as medical professionals when we were talking about nutrition guidelines and things like that, it gets waffly because all those new guidelines are sort of, as you were talking about before, are influenced, have a lot of influences.

Emily: Bullshit.

Amy West: Yeah. I mean, you know, are influenced by different people by the time it gets to us as physicians and like what should we be recommending, it's really confusing. And unless you're someone who takes like a vested interest in like trying to figure it out, it can be really, really hard to make recommendations to people who are technically the standard of care is X and even though it doesn't make a whole lot of sense, that's

Emily: What everything is based on.

Amy West: Yeah that's what everything is based on. So we kind of, our hands are tied a bit. So that's also like getting people connected with boxes, with Crossfit boxes or whatever where the people are talking about nutrition on a regular basis where

Emily: There's so much self experimentation that goes on.

Amy West: Yeah. People are like talking about it, they're helping each other figure it out. That can be more effective than anything that we can do in a clinic.

Emily: Okay, that's helpful. Are there blood tests that you recommend for women to sort of judge their overall health? Like whether it be, I mean like obviously a [DEXA Scan](#)⁷⁷ is something.

Amy West: Yeah. So you want to, you know, bone mineral density, DEXA Scans, et cetera.

Emily: What age do you think people should start doing them?

Amy West: It depends because you know, I think most women aren't getting those done until you're approaching menopause. And so if you're someone who's ever had a stress injury, a [stress fracture](#)⁷⁸ that should be

⁷⁷ <https://www.verywellhealth.com/what-is-a-dexa-scan-190167>

⁷⁸ <https://orthoinfo.aaos.org/en/diseases--conditions/stress-fractures-of-the-foot-and-ankle/>

Emily: And what is a stress fracture? Like what's the definition of a stress fracture?

Amy West: So basically like you can have like bony stress changes so they can have happen from like overtraining, like your bone basically, you get like swelling in your bone, essentially. Right before it actually fractures, it's like injured. The bone itself is injured. So you could either just have the sort of the stress reaction within the bone or you can actually have an actual fracture in the bone.

Emily: But it would be like inflammation essentially in the bone?

Amy West: Yeah so you get an injury from like overuse, it's not, you know, it's not a traumatic injury where you like fell and broke. So and there are certain places in the body where they're more likely to happen. But especially like in runners, like women who are long distance runners, a stress fracture in a long distance runner and a female is like you have to explore the bone mineral density piece of that unless you know that like I stepped on this thing and my foot broke. So things like that where if you're someone who's had a history of stress fractures or have had them in unusual places, like you need to go down that road of looking into your bone mineral density and your hormones and what not because,

Emily: But is there any reason why like somebody who's 18 shouldn't get a baseline to see where you are?

Amy West: It's usually the radiation piece of it. And so I haven't seen that happen too much as far as like people getting them who are just like totally healthy.

Emily: Just curious!

Amy West: But I mean maybe someone does that. I haven't seen much of that happen but.

Emily: So as far as bone density goes, I feel like people talk a lot about weight bearing exercise being really important for women. Can you talk about that? Like why? Because it's like you're building like you're pounding on the bones?

Amy West: Yeah. So you are, so your bone is like constantly breaking itself down and remodeling.

Emily: That's like a muscle. I didn't know that. That's interesting.

Amy West: Yeah so there's like osteoblasts and osteoclasts are these cells in your body that break down bone and rebuild them. And so that's happening on a constant basis. So weight bearing exercises sort of increase the bony turnover essentially because you're putting more stress through the bone itself.

Emily: And it allows it to build up more.

Amy West: Yeah.

Emily: But it doesn't build after a certain age I thought? Or it just prevents you from losing it? Well, I mean this is where I get confused. This is why I'm deferring to you. So I mean I feel like there is this idea that like you build up a certain amount of bone til like 18-19, say right? And so then that's sort of like your bone mass, like you're at your heightened. And then you start to lose it slowly over time as you age, and as you get closer to menopause it becomes more extreme. But there's this idea that if you do regular weight bearing exercise, you can preserve your bone?

Amy West: Right.

Emily: What you're describing of like you're breaking the bones down and rebuilding them, you can't add bone mass or you can through exercise?

Amy West: No, I mean you preserve it. It's mostly about preservation. You can maybe increase it slightly, but you're not like jacking up your bones necessarily. But no, you're preventing the loss.

Emily: Because it's interesting. I mean I feel like bone loss is such a big deal for aging women.

Amy West: Oh yeah, and after menopause certainly, it happens kind of rapidly. So you know, it's the things like doing weight bearing exercises, weight lifting, that kind of thing. Super important in getting women active in preventing bone loss, and then fractures, and then disability. And you know, it's sort of a chain that kind of, like I was saying with older women now who are sort of finding themselves as athletes for the first time. That's a reason why it's super important that that happens because to prevent fragility later in life, you have to be active.

Emily: Oh my god I have to go work out right now.

Amy West: You have to go work out right now. Yeah, it's for sure.

Emily: It's always good to see you.

Amy West: Yeah. I mean you have the equipment, so.

Emily: I have the outfits, I have the equipment.

Amy West: That's all you need, right?

Emily: I just need the motivation.

Amy West: Looking good is half the battle. You have the right outfit, you're good so.

Emily: It's so nice to have you here. Thank you so much.

Amy West: Oh, I have another point to make.

Emily: Yes ma'am.

Amy West: For women especially who are seeking medical attention, and I've found this in the past where someone comes in with a stress injury, some male providers may be uncomfortable talking about like their periods with the female athletes. So like that kind of conversation gets skipped. Are you having your periods regularly? Are you eating enough? Like what does that look like? It's something that can happen if the level of comfort around that subject is not high. So I've seen like someone who's had recurrent bone stress injuries and like the thought is like well, we'll leave the period talk to her primary care doctor. And it's like no, that's something that as a sports medicine person you need to be talking about or whatever, you know? So the point is just that for female athletes, like finding a provider, for whatever it is that you're seeking attention for, but like a provider that's comfortable talking about your periods, comfortable talking about your eating habits, things like that is important. And if someone's not asking you about that, you maybe should

Emily: Find somebody else.

Amy West: Yeah.

Emily: Or be the one to be very proactive about it. If you like everything else about the provider, maybe you just go in and you say, and I'm not having my period.

Amy West: Yeah.

Emily: So like I need to tell you this, it's important medical information. If you're scared to ask me, I'm going to tell you.

Amy West: Right. And I'm not saying it's like the majority of people, but I've just, I've seen it in encounters.

Emily: But it's a question you think is important to ask?

Amy West: Oh for sure. If someone's having a lot of musculoskeletal problems, because everything's related, so if you're having a lot of musculoskeletal issues, whatever they are, or pain even, you're having a lot of pain and you want. It does factor in there. So someone at least should be talking to you about it and even if they can say, talk to you enough about it so that they rule it out as a problem. But just so that everyone's kind of talking about it.

Emily: Yeah but I feel like that's another one of these sort of like litmus tests of like, is this a doctor I want to go to or not?

Amy West: It's hard sometimes for people to know that that's something that should be asked. If you don't see the relationship between like, oh, I had this bone fracture and like my period, how are those things related? It's like, oh wait, they're actually super related. But you might not even know that they are, but just, you know, you can get a sense of, if someone's not used to dealing with female stuff, you know, they can kind of defer it to someone else.

Emily: If that's how they're going to refer to it, I would suggest you get a new doctor.

Amy West: Lady things.

Emily: Right. Totally. All right. Well thank you so much. I feel like this was a lot of fun.

Amy West: Yeah. It was a lot of fun.

Emily: One quick end note to add, which is really exciting and we'll link to it in our show notes, is that we recently learned that the US women's soccer team was [using a period tracker](#) for their training and they used it as a part of a study. So there's some really interesting data there that literally just came out. We'll probably follow up on that because I think this is, again, one of these things that it doesn't matter if you're a professional athlete or you're just a woman who works out. It's interesting to know how your menstrual cycle both impacts your ability to push yourself and also like times where you maybe need to be careful of injury. And I just love that these amazing female athletes, we're already ahead of this, so I hope you enjoyed this week. Don't forget to sign up on empoweredhealthshow.com and also follow us on social and please, please tell all your friends.