

Fitness Myths

KAITLIN HENNESSY: Hello, everyone and welcome to Fitness Myths. My name is Kaitlin Hennessy. I'm the Program Coordinator here at Global Connections. And our goal at Global Connections is to provide engaging extracurricular programming for Global Campus students wherever they have an internet connection.

And tonight, presenting is Ramon Sodano. He is a master trainer as well as the coordinator for Wellbeing Online, and he's going to address some common fitness myths and questions at the beginning of the night. But feel free to bring your own questions and put them in the chat box at any point. And Ramon will address them.

And if you do have any technical difficulties throughout the evening, please do let me know in the chat. Or send you an email at global.connections@wsu.edu. And I'll do my best to help you. Thank you so much, and Ramon's going to get started.

RAMON SODANO: All right, hey, everyone. So again, my name is Ramon Sodano. I am the Coordinator for Fitness Services and Education at Washington State University. And I also oversee the Wellbeing Online program that we have here.

I have been a strength and conditioning coach and personal trainer since 2006. I got my undergrad in kinesiology with the folks on health, fitness, and education here at WSU. And I also got my masters in support management here.

I've done very in-depth research when it comes to functional movement and the ability to implement policies utilizing certain screens like that. So I have a lot of research and a lot of experience in the functional movement kind of movement. I would like to announce I have a phone a friend here with me because I'm kind of doing everything off the top of my head. I have my girlfriend, Dina Mijacevic, here. She's also a master trainer, and she's actually a professor of kinesiology here.

So if there is at some point at the end when we have a myth that comes up if I don't know the answer, I will ask her if she might know a little bit more about it than I do. And if we ever do come to something that I don't know off the top of my head, what I will do is we'll make sure that Kaitlin writes it down. And I'll go find a reliable resource that will have the answer to that question or that myth, and I'll make sure that we get the information out to the individual and to everybody who was watching the webinar as well.

So how are we going to do this is I have a series of questions that are kind of based off of myths that were given to me by the Global Campus student ambassadors. So I'll run through a lot of those and answer those questions. And a lot of them kind of pair off one another, so I'll combine those.

And then at the end, if you have any questions or myths that you want busted or talked about, feel free to enter those in the chat box to Kaitlin. And we'll kind of go over those as well. So really this is completely a free-for-all. We're completely to go over everything.

Beginning with some of the myths that we have right now, the first question is should you stretch before and after a workout? And we get asked about stretching and stuff all the time in the fitness room because a lot of people hear now that stretching is useless. So first and foremost, stretching is not useless, but sometimes it is misguided and used at times when it doesn't need to be done essentially.

So it is very important to warm-up before your workouts, right? And usually when you do a warm-up, you're not going to be doing some sort of static stretching. And static stretching is where you're stretching your hamstring for 30 to 60 seconds for a long period of time. Usually before your workout you're going to want to do some sort of dynamic mobility exercise, and that is really using the body through the range of motion at the joints that you're going to be using in that exercise.

So before the workout even though some of those mobility drills may look like stretching to you or static stretching, they're not actually what we consider static stretching in the exercise kinesiology realm. But do you do want to make sure to do some sort of dynamic mobility before exercising and some sort of warm-up. Typically, though, if you want to get the most bang for your buck for your workout and stretching, you will hold off that static stretching until after the workout.

There is some contraindications that come up with doing a lot of static stretching before an exercise routine begins because it can elongate the muscle and possibly get you stretched out to a point where you don't want your end range of motion there because your body isn't ready to utilize that. But for the most part, putting those static stretching at the end of your workout is completely fine. Or if have a day where one of your main focus really is to increase your flexibility, then you may have a day where you do lots of static stretching.

It's just important to remember that mobility has many components to it, and one of those components is flexibility. So your flexibility could be a drawback, or it could enhance your mobility as well. So again to put that simply, the most important thing to do is to have your static stretching be at the end of your workout if you are going to incorporate some sort of static stretching. And again, make sure to warm-up into a dynamic mobility exercise if you know what those are before you work out. And with that honestly, we should talk about that on-- is it April 26th?

KAITLIN HENNESSY: April 18th.

RAMON SODANO: April 18th-- we're hosting a webinar. And it's going to be a step by step process of how to properly warm-up. I have a four-part component warm-up series that I have

researched in depth. And it's a great way to do a proper warm-up. And we'll go over two ways to implement it in that webinar. So again, that's April 16th or 18th?

KAITLIN HENNESSY: 18th.

RAMON SODANO: April 18th. So make sure to come to that. So that was our first question. The second question is can you run/walk daily, or do you need rest days in between?

So with this and kind of with a lot of things that we're going to talk about, the answer to all of these questions is it depends, OK? And that's really with everything. There is no absolutes. There's no absolutes really in the world. There's no absolutes when it comes to like exercise, and fitness, and things like that.

So this will really depend on where your current fitness level is at the time. If you are somebody who does not run or does not walk at all and you're just getting into some sort of exercise routine and say that briskly walking is extremely hard for you and it really is wearing down your body, you're definitely going to need days where you rest, OK? the Same goes for running.

If that running is pretty strenuous on your body, or that exercise-- let's just put it this way. You should definitely rest when you have an exercise routine. The more and more you get adapted to running and those walkings, the less rest you will have to take. But it's still imperative for your body to regenerate, to recuperate, and to optimize itself the best as possible to take those rest days.

And once you get pretty high up in it, you can probably go six days a week. But it's still very, very important to have that one day of rest. Would you agree?

DINA MIJACEVIC: Yes, I would.

RAMON SODANO: Dina is an ex-track athlete, so she knows a little bit more about running and all that stuff than I do. But regardless, if you're in some sort of exercise routine, you should incorporate rest days. Your body needs time to regenerate, recover, and rebuild, OK? If you're leaving your body in a state of stress and not giving it time to adapt or rebuild for itself, you're only going to beat yourself down. And you're not going to optimize whatever you're trying to do.

OK, question number three is can you work out your abs daily, or do you need to rest in between? So I would not recommend you to do the same ab routine six or seven days a week. There's lots of things that are bad from that. But the deeper and deeper you get into the fitness realm or learning about exercise science, you understand that your abs are not exactly just the six pack you see on the surface level.

Your core and the musculature on your pelvic floor and round your spine and what we want to train our abs as is a way to support the lumbar spine. That's why those muscles are really, really

there is to make sure there's no shearing force that happen on a lumbar spine because that's where you're going to have a lot of degenerative disk issues, slipped disk, bulging disk-- all those kinds of things.

So with that, all of the multi-joint exercises or the compound lifts that you do like a back squat, a dead lift, even a bench press-- those things that take multiple joints in the use-- you're having to utilize your abs and the core musculature to stabilize the spine. So you're actually training your abs in those ways. That's why I do find it a bit ridiculous that when you see people always constantly train their abs with a bunch of v-ups, and Russian twists, and crunches, and all that-- those things will help that superficial level. But it's not going to really optimize what your core musculature is supposed to do.

If you do have an ab routine to really train that surface level stuff, I would recommend just to do that once a week. There's no reason to do it six, seven days a week. If you want to reduce some sort of ab exercise each day or have it implemented into your program, it would be important to understand how to break down what those movements are.

And when we think about we're training our core, we can think of training in an anti-extension or an anti-rotation kind of way, OK? And then we can make this dynamic if we want. So you could implement anti-extension exercises as an active rest in your routine on day one and maybe do anti-extension or anti-rotation-- whatever you didn't do the day before-- and then you could flip-flop those so you're not necessarily always just taxiing the one movement or the one muscle group over, and over, and over again.

Another problem with doing an ab routine every single day is that you're going to create a very, very strong front side, and it's going to be overcompensated compared to the back side right? And what's going to happen is you're going to shorten your hip flexors-- especially if you're doing just general ab routine exercises like crunches, and v-ups, and things like that. You're going to shorten your hip flexors, and it's going to be real tight in front. It's going to put a lot of strain on your low back. It may look good, but it's not going to perform good.

So it's important to make sure you utilize these exercises in the most functional way possible that's going to make your body perform at its best. But if you do have an ab routine that you love and you have an ab day, just do it once a week. It's going to be good enough, especially if you have other exercises in your routine like squats, and dead lifts, and cleans, and all that stuff because that's going to engage the core musculature as well. Yeah, cool.

Next question is, is it more important to focus on diet or exercise in terms of weight management? Similarly put, diet is more important in terms of weight management. However, both these things-- they help one another, OK?

So the simplest way to think about weight management is your calories in versus your calories out. Everybody has a basal metabolic rate, and everybody have a total daily energy

expenditure. And what those two things mean is your basal metabolic rate is the amount of calories that your body burns throughout the day without any other activity put on top of it.

So I sat in this chair all day, and I didn't do anything. All the household keeping tasks that need to be done like my digestion, my posture, anything to fuel my muscles, do my blinking-- whatever is going on-- all of that needs energy, right? And that's my basal metabolic rate.

On top of that, when I do my activity, I go walk to class, I do my workout routine-- all those things add on top of it. And that becomes my total daily energy expenditure. There is ways to calculate what that is to give yourself a rough number. So if you get that number-- to be able to maintain at it, you're going to be able to maintain your weight. Below it-- you're going to be able to lose your weight. And if you go about it, you're going to gain weight.

And it's really easy to manipulate that with nutrition, right? So that's the easiest way for weight management. However, if your goal is to gain weight and you want to gain lean mass, just eating more is not do that. You're going to need to put some stress on the muscles to break them down, bring the food in to then build that muscle up more, and get that lean muscle mass on yourself.

Also if your goal is to lose weight, you can increase your basal metabolic rate by adding muscle mass on your body. Because the more muscle mass I have in my body, the more energy my body requires. And thus, that basal metabolic rate and then my total daily energy expenditure will be higher and I'm able to cut weight a little bit easier. Or I eat more and maintain weight, OK?

So the more muscle mass you have on your body, which will be achieved through weight training, is going to be able to increase that basal metabolic rate and in turn increase that total daily energy expenditure. Thus, helping you with the weight management-- whatever it is that you may do. So they very much compliment one another. But if you were going to ask which one is more important, monitoring your nutrition is more important. OK, is there any questions I need to answer so far?

KAITLIN HENNESSY: We can have a couple questions when you're ready.

RAMON SODANO: OK, we can do some of those before we get too far from these.

KAITLIN HENNESSY: OK. So one person asked can you give a few examples of what exactly is a static stretch? Like, toe touches? IT band stretches?

RAMON SODANO: So imagine I did a toe touch and I held it for 30 seconds. That's the-- I'm sorry, they hear you correct?

KAITLIN HENNESSY: Yeah.

RAMON SODANO: OK. So yeah, if I did a toe touch and I held it for 30 seconds, that would be an example of a static stretch. However, if I did something that involved a toe touch, but then I walked out to a push-up position, and then I did a deep lunge, and then I came back and I wasn't holding something for a long period of time, and I was really working my joints around their natural range of motion-- that can be considered more of a mobility exercise.

But if you're going to think about static stretching, think about it. You're stretching one muscle for a long period of time. So you're trying to isolate one muscle and stretch that for 30 to 60 seconds usually.

KAITLIN HENNESSY: And we did have another question. What is a good work-rest ratio? Is like 6 to 1? Or what would you recommend?

RAMON SODANO: So work to rest ratio-- is this with regards to weight training?

KAITLIN HENNESSY: I think this in regards in the frequency of exercise-- like, days off.

RAMON SODANO: Oh. Again, it depends on what your current training status is-- so how able you are to intake exercise without beating yourself down. What your goals are, right? Are you trying to be a marathon runner? Are you trying to be a power lifter? Are you trying to be an Olympic lifter? Your schedule honestly-- just who you are, what your day looks like-- all of that depends.

But I would say for most general population if you have a little bit of an exercise background-- honestly, if you're doing strength training routine, mix it in with some cardio. Four to five day a week is great, right? Honestly, I train four days a week. And I have a fifth day that's a recovery day. That's pretty good for me, and I've been my training maybe 16 now. Because I started doing weight training at age 14.

It just really depends on what your status is. And it's not one of those things where more is better. Being smarter is better. And the easiest way to do it-- listen to your body, OK? If you're really, really sore, maybe give yourself that other day of rest.

And again, if it's just your lower back's really sore and you've already rested two days, maybe do an upper body workout, right? But four to five days a week is pretty good for general population. But again, you might need to build up to that. You might be two days a week. You might be three days a week. But for the most part, if you can get that four to five, that's pretty good. Is that it?

KAITLIN HENNESSY: Mhm.

RAMON SODANO: Those are the questions for now, so we'll keep moving on. OK, number five. Is it better to workout every day-- OK, this kind of goes off of what we were just talking about.

This is good. So is it better to workout every day for shorter time spans or to do more challenging workouts with rest days in between?

Again, this is going to go on it depends. And there is multiple things that this depends on, right? If your schedule calls for you only being able to do some sort of short duration workout, then you probably want to focus on short workouts. If your goal is to be a power lifter or an Olympic lifter, you're workouts are going to have to be a little bit longer because the modalities that you're going to try to increase through the energy systems that are needed for those modalities-- they're going to take a longer period of time.

The one thing with this question that I want to address is it says is it better to do a workout every day for shorter time spans or to do more challenging workouts with rest days in between. If you are going to do a shorter duration workout, that workout should actually most likely have a higher intensity, OK? Usually when people are trained in a shorter duration period of time, it's going to be focused on much higher intensity to get the same bang for their buck that they could if they were doing a longer workout.

So I would suggest if you were going to do short intense workouts that you would still also involve rest days. I would never say not to have a rest day whether you're doing short duration or long duration workouts, OK? And again, if your goal is to lose weight and you only had 15 to 20 minutes each day and you couldn't go on the Stairmaster for an hour or something like that, which is another story, you would want to make that workout like an interval-style of training, right? Make it high intensity, get the heart rate real high, really train that blood lactate threshold, and push the boundaries, OK?

You want to get the most bang from your workout in that short amount of time. So you're most likely going to increase the intensity. And honestly, those longer workouts will probably be a much lower intensity because you're able to increase more volume and get that same benefit but in a long period of time without having to do super, super hard. Again, each one of those modalities is going to have a different end goal from it, and that's fine. But the simplest way to put it is you should have rest days I guess is the easiest way to say it.

OK, number six is what are the best foods to eat before and after the workout? So this is a huge question. And there are lots of things that can go into it, and we're not can get into lots of the nitty-gritty because there are certain calculations that you should eat this many grams of this one to two hours before and this many grams of this three hours before.

For the most part, if you were going to eat something before a workout, you should try to eat it one and two hours before and kind of focus on a rich carbohydrate and a rich protein meal-- a little more carbohydrates honestly than you would have protein. And another thing is it kind of depends. Does eating before the workout make you nausea? Does it make you bloated? Does it may you not actually workout as well? If you don't like eating before your workout, you shouldn't do it if it affects your workout.

Regardless, you need to have adequate nutrition throughout the day to make sure that your workout has the most optimization that it possibly can. But if you were going to eat before a workout-- one to two hours before with a good protein source and a good carbohydrate source would be really good. You want to make sure that you are eating 15 to 45 minutes before eating or drinking before a workout. You want to avoid those things that are very, very sugary-- a very high glycemic index carbohydrate.

And I learned this today due to Dina sending me actually some power-- she teaches sports nutrition and stuff like that. What happens is due to the fact that you're intaking a very simple sugar, it goes in the bloodstream right way. And then what happens when you ingest sugar-- it turns glucose in the body, and insulin is released. And insulin is kind of carrier of glucose to take it where it needs to go.

So if you do this 15 to 45 minutes right before a workout, all that insulin's going to be dumped out. And it's going to uptake all that sugar. So you actually might have a hypoglycemic-- so like a low blood sugar going into the workout, which you do not want. Because the main source of energy during your exercise is glucose.

So usually when you are eating before, you want to make sure it's an hour or two before and it's rich in carbs and protein. Honestly, a lower glycemic index and more of a complex carbohydrate is a little bit better. And if you do want to know kind of the ratios of gram per kilogram of body weight that's recommended by certain organizations, I have that stuff written down that Dina sent me or we can go over.

But it is important not to be malnourished when you go into workout. Make sure that you have some sort of energy inside of you, OK? And then it also talks about after a workout. After your workout, you want to continue with whatever you figured out your total caloric intake is. Continue to ingest for how many calories you need afterwards, and spread it out a little bit if you can.

And honestly right after the workout, to be able to replenish yourself you can definitely take in a high glycemic index or a simple carbohydrate right afterwards. Because you're usually pretty depleted, and you can just ramp up those carbohydrates and glucose in your body. And it's good, again, to eat a little bit of protein afterwards. There's only so much protein that can be processed when you do eat it. So continue throughout the night after the workout to help rebuild those muscles.

Is there anything else I should add to that? Just eat and make sure you're not malnourished. Don't go into a workout starving. If you notice yourself getting really hungry during your workout, or getting the shakes during your workout, or feeling really lightheaded-- that may be a sign of you having a hypoglycemic reaction. And that might be a sign that, OK, I need to increase my food intake before my workout. And just listen to your body on that.

With regard to hydration and stuff like that before a workout, the simplest way-- and this is what I tell everybody-- is you can monitor your hydration level by just monitoring your urine, to be blunt about it. As long as you have a flow that is clear or semi-yellowish, you're pretty good. I'm sorry, we're getting a little raunchy here. But if it's clear or looking a little yellowish, you're good. You're hydrated. Once it starts getting to that really dark tint of yellow, it's showing that you're dehydrated and you need to start taking that in.

After your workout, you need to replenish. So if I was 150 pounds before my workout and I lost two pounds to sweat, I need to replenish that by 120 to 150% of water intake afterwards. And I learned that one pound is equivalent to 0.5 liters. So whatever 120% to 150% is of that 2 pounds in liters is what you would intake afterwards.

DINA MIJACEVIC: Or one pint.

RAMON SODANO: Or one pint. Thank you. And beforehand, there's tips and tricks you can do for hydration, but I would just suggest to monitor your urine level. What was it? What did you tell me for throughout the day for under 30 over 30?

DINA MIJACEVIC: Up to at least 3 liters. So 1.9 to 3 liters under 30 and then close to 4 liters, which is about a gallon over 30.

RAMON SODANO: OK, so if you're ages 30 and below, 1.9 to 3 liters daily is a good source of water intake. And then above 30 years old?

DINA MIJACEVIC: About 3.7 liters, which is about a gallon.

RAMON SODANO: About 3.7 liters daily, which is about a gallon.

DINA MIJACEVIC: Any fluids-- not just water.

RAMON SODANO: Any fluids. And again, this is all getting real nitty-gritty about it. Just drink water. Just drink water throughout the day and you'll be hydrated, and you'll be OK.

KAITLIN HENNESSY: We have a couple of questions very related to this right now. So these two you can probably pair together-- but Emily asks, what are your thoughts on pre-workout drinks? And then also Heather asked I have heard that caffeine can help increase the effectiveness of a workout, but doesn't that also contribute to dehydration?

RAMON SODANO: So the main reason most people take pre-workout drinks is due to the caffeine in it because it gets you hyped up for the workout. And it makes you want to be able to go real hard. But if you look at certain labs that make pre-workout drinks, there's much more that goes into creating a pre-workout than just putting the caffeine in there.

What it does is it preps the muscles and preps the energy systems that are going to be able to be optimized to the best ability that they can throughout the workout. But I would suggest that when it comes to pre-workout drinks if you don't need it now, don't take it, right? There's really no need for it.

I say that, but I love pre-workout. But it's because I'm addicted to caffeine, and I'll admit that. And then the thing with caffeine possibly dehydrating you is because caffeine can act as a diuretic and increase your urine output. It actually takes an extreme amount of it to be able to cause that dehydration to kick into play. You should add on with that more. You know more about that.

DINA MIJACEVIC: Most healthy adults can tolerate about 400 milligrams of caffeine a day. General, one scoop of pre-workout just depending on the brands. But most of them have about 300 milligrams, so that could be OK for most healthy individuals.

A venti cup of coffee from Starbucks just of drip coffee has about 480 milligrams of caffeine anyways. So that would be if we were to consume about nine cups of coffee. Because 400 milligrams is about four cups of coffee per day. If we were about to consume about nine, that would be a potentially detrimental thing about dehydration and possibly death too.

RAMON SODANO: Yeah, well, you're getting really up there.

DINA MIJACEVIC: But anything lower than that 400 milligrams, which is most healthy, active individuals-- it's not going to cause any major issues with dehydration.

RAMON SODANO: And these are really getting into those high numbers too. But if you don't get your pre-workout and you don't feel like you need it for optimizing yourself, I just wouldn't take it. I like my pre-workout kick in the morning.

And again, it's risk versus reward. For the most part, you're going to be all right. Honestly, if you drink that coffee and you continue drinking water throughout the day, you're most likely going to be OK. You just got to monitor it.

DINA MIJACEVIC: It's except that a lot of pre-workouts is not caffeine that's our concern. So other thermogenics that are placed inside that a lot of people have different reaction in terms of diarrhea, or upset stomach, or even vomiting. It's not due to high concentrations of caffeine. It's just a whole bunch of different ingredients mixed together.

RAMON SODANO: That's actually a really important point, and we should make a plug on certain things. So a lot of time when you're getting certain supplements there's two things that can happen. Well, there's multiple things. Let's say there's three things that can happen.

What's on the label is actually in there, right? And the amounts that they said that is supposed to be in there-- those things are actually in there. Another thing that could happen is what's on

the label is not in there. You're actually just getting something that like straight sugar or nothing of what is actually in there. Because they don't have to regulate their supplements.

And number three, there could be things in there that you don't know because they don't want to tell you because they're illegal. And they're going to actually make the supplement look better. So a lot of people who are like NCAA athletes, pro fighters, things like that-- they get tested positive for some sort of a performance enhancement drug because they're taking a supplement that's tainted. And they don't know that it's actually in there, and that's the actual thing that's making this supplement work.

So there are certain labs out there that you can purchase supplements from that will help you identify what is in there is actually in there. And the best way to go through is get NSF certified supplements. Those are the ones that are regulated by the International Olympic Committee and NCAA and stuff to where they're going to have no banned substances in there. And what is in there is actually in there.

Now, there's going to be certain things that you can't get through NSF because there are certain things are banned in NCAA or the Olympics that are cool for us to use and it's not going to be super detrimental. But you still want to know that what's on the label is going to be in the supplement-- there's other labs out there. And the one I know off the top of my head is called the GMB.

And if your supplement has a GMB stamp on it, what is on the label is most likely going to be in there. Again, they don't test every single batch, right? They're going to come in and surprise the vendor, take what they have right there, test it, and make sure that it's adequate to what they say. So a lot of things with supplements, right? A lot of things can come up with supplements.

KAITLIN HENNESSY: And on that supplement note, Chloe asked what are your thoughts on protein powder?

RAMON SODANO: So when it comes to protein I say you should just get it from your food sources unless you're a vegetarian and it's very difficult to come by. But the best way to get protein is through animal flesh honestly. It has a complete amino acid profile, and it's what the body needs. If any of you are coming to Rendezvous and you want to come to my workshop-- it's called "How to shop for real food." I'm all about JERF. And that stands for Just Eat Real Food.

So I'm not big into supplements. The only supplement that I actually do take is a pre-workout and it's honestly just for the caffeine. It's not for all the other things-- I hate to admit it. But all nutrients-- you should try to get them from a well balanced diet. And I think that you should try to get your protein from some sort of nutritional source.

With that, there's a couple wait times that I do say that it's OK to get protein powder or something like that. That's if you're an athlete, and it's really difficult to get the amounts of

protein that you need to eat. Because sometimes I've had athletes that need to take in 350 to 400 grams of protein, and that's very hard to do just from eating food.

Then, again, if you're a vegetarian and it's hard for you to get a whole protein sources or that have complete amino acid complex-- taking a protein supplement at that time is nice. Or it's a quick way and you want to get it in quickly after running to work and maybe after your workout you have a protein powder with some simple carbohydrate mix it with ground up greens, and some fruit, and some ice, or something for your post shake. That's all right.

But again, I would still recommend trying to get it from food. I think the best way to be able to obtain any nutrient for the body is to get that nutrient in the way that the body intended, and that's not through a synthetic form. That's through what we have grown and come to eat by becoming humans that we are now. Is that all of them so far?

KAITLIN HENNESSY: That's all of them right now.

RAMON SODANO: OK. Supplements are a fun one. And if you guys aren't coming to Rendezvous-- Dina's coming with me too. She actually does research on supplements. That's like her area of study. So she has a lot of information on that, and she'll be there with me too. So make sure to come talk to us.

The next question is are there different ways to train for different outcomes when it comes to weightlifting? More specifically, is there a way to lift weights to improve strength versus a way to lift weights to add bulk. The answer is yes, and the answer is go watch my building your own program webinar. But no, we'll tell you.

So there is definitely a different protocol that you can do to increase endurance for your muscle, to increase hypertrophy-- which is the bulk of your muscle-- and to increase strength for your muscle. And typically, the least volume that you have-- so if I was doing one to three reps, I'm training for strength and power, OK? And those usually come with more sets. So it would be like five sets of one to three reps with long periods with a rest period.

Because what I'm doing is I'm taxing my central nervous system, and I'm utilizing all my strength, and power, and velocity, and everything to complete this. And for those systems-- that energy system that's being utilized at that standpoint, which is your phosphocreatine system. It takes about-- is it two to five minutes to replenish?

DINA MIJACEVIC: Creatine phosphates?

RAMON SODANO: Yes, three to five?

DINA MIJACEVIC: No, that's ATP. It's takes about three to five minutes to replenish your ATP. And it takes about eight minutes to completely replenish creatine phosphate.

RAMON SODANO: OK, so it's going to be a low rep ratio with a large amount of sets with a long rest period. That's for strength and power. When we go up to the hypertrophy, now we're looking at anywhere from honestly 8 to 12 rest. Because we're doing six reps, you're still kind of in strength. You're definitely still in strength.

So I would honestly say 8 to 15 rep is a good range for hypertrophy. The books are going to tell you 8 to 12. But 15 depending on what your training need is and stuff that's going to get you there. And typically, you're going to be doing anywhere from two to four sets with that, and then you have a moderate rest break, right? You're going to have a 60 second to 2 minute rest break, and we're being real general right now.

And if you watch the "How to build your own program beginners edition," we really break this down with literally visuals of everything and stuff in there too. It's a really good webinar honestly. So again, that 8 to 12 to 15 rep ratio with moderate sets and moderate rest period-- that's good for hypertrophy. And then when you want to train for endurance, you're going to go 15 reps and above. And your rest periods are going to be 30 to 60 seconds. OK?

Again, "Build your own workout beginners edition" is honestly one of the better webinars that I have put on. It teaches you how to build your own program, specifically for what those goals may be. I completely go through these rep protocols and things like that. And at the end, I teach you how to utilize a four-day split template that I have created for you that I teach you how to use it in webinar. And then in the video vault is literally the attachment to the four-day split where you can build your own program program.

And you don't need to know exercises or anything. In the four-day split there's drop-down lists in each one of the sections. It has tons of exercises that fit in a certain area and has videos to all those things. So it can help you build your own program. So I definitely recommend checking that out.

I literally give it to my personal trainers here. My new personal trainers who have never trained before-- they have to use that four-day split when they train with people. Because I know it was put together in a good way. So look into those. Was there a question with that?

KAITLIN HENNESSY: There is a question going back slightly to protein. Carly asks, what are your thoughts about taking branched chain amino acids?

RAMON SODANO: I think taking branch amino acids is a very good thing to do. Honestly, I would take an EAA complex, which is Essential Amino Acids. But take your BCAAs, take your EAAs. Dina would agree. I know she would agree.

And that's the thing. So another thing with my pre-workout-- I get my BCAAs from my pre-workout. So a lot of pre-workouts have BCAAs and stuff in there. But if I was going to say take BCAAs or EAAs, I would take an EAA complex because they have all the BCAAs in it. That's a lot of "A's" right now.

So EAA is Essential Amino Acids. And then BCAA is Branch Chain Amino Acids. And your essential amino acid supplements out there are going to have the branch chain amino acids in them as well. What it means by essential amino acid is those that are just ones that are not produced by your body naturally. So you get all of them in there.

DINA MIJACEVIC: What are branch chain amino acids?

RAMON SODANO: Well, it's leucine-- oh, what are they? It's leucine-- uh.

DINA MIJACEVIC: Leucine, isoleucine, and valine. And the reason they're called "branch chain amino acids" is because if we have to tap into protein metabolism for energy, those are the amino acids that are getting metabolized. That's in extreme cases for starvation or over exercising and a higher intensity 90 minutes in duration or longer.

RAMON SODANO: But BCAAs will still help out in the rebuild phase. Correct?

DINA MIJACEVIC: They help, especially the leucine content.

RAMON SODANO: Yeah. So what she's saying right now is if there is a situation that comes up to where you don't have sugar or fat in your body to be utilized as energy and say you're working out, your body will start breaking down. And this is not good. You don't want this to happen. Your body will start breaking down your muscle and utilizing that as an energy source. And if you have branch chain amino acids in there, it helps facilitate that without as much destruction I'm assuming?

DINA MIJACEVIC: Yeah, there is a minimal amount of percentage of protein that is actually metabolized for energy.

RAMON SODANO: Yes, so everything works at once.

DINA MIJACEVIC: But if we're sipping through branch chain amino acids let's say from a supplement brand-- we have a mixture in water-- that should kind help out with metabolism of protein and especially those three branch chain amino acids. So that could also help out. And also the research showed that branch chain amino acids, especially the leucine content, helps more with the MPS, which is Muscle Protein Synthesis, right after the workout, than actually consuming whey protein or casein. It's about the leucine content honestly than--

RAMON SODANO: There you go. So if your goal is to have that protein synthesis, which just means the building of the muscle after there has been damage to it, the leucine from the branch chain amino acid is to be more beneficial than an actual protein supplement. That's really cool.

DINA MIJACEVIC: According to most research on muscle protein synthesis anyways.

RAMON SODANO: Nice. I did not know that actually. That's really cool. So yeah, I'm a big proponent of BCAAs. Again, you can get them in all kinds of different ways though. Is there any other questions?

KAITLIN HENNESSY: No.

RAMON SODANO: OK. These are really good questions, y'all, so keep them coming. I'm very glad I have her here. She knows way-- because I'm just not big into supplements. So I never did a lot of research into them. And having her as research hub for it has helped me out so much when I do what it take something.

OK, next question-- is running always bad for your knees? Or is there a way to prevent knee injury and still run? So the answer is if you have good form when you run, you're probably not going to damage your knees.

The thing is most of us don't have good form when we run. And a lot of us have bodies that are structured in a way that don't elicit the proper form to be put into play right away without some sort of coaching. So the one thing with long distance running-- it is one of those exercises that has the most wear and tear on your body.

A lot of long distance runners have nagging injuries all the time because it's just so excessive and all the time. And it's just constant pounding, constant pounding. And I think it's when you run and hit the ground, it's like eight times your body weight hitting down each time that you-- I forget. My orthopedic surgeon was telling me about that.

But if you have good running form and you have the body for it, it's not going to hurt you. But it's developing properly running form and then also building up. If I haven't ran five miles, I'm not going to go out and run five miles tomorrow. It is building up my body to have that musculature that is important for that for the shock absorption and teach my body how to do that.

So you'd also not need to have that good running form, but you would need to build yourself correctly without just jumping in the line and doing something that's going to hurt yourself. So a slow periodized program where you add on a little bit more and on a little bit more would be good. Dina actually taught a webinar that was how to train for a 5k, 10k, and beyond last summer. And it's on our video vault too where she talks about a lot of the ways that you can train for a long distance event. And she goes over and exercises that will help with that too because there's certain strength training routines that will help put you in a better proper position to where you're not going to cause so much damage to your knees and stuff.

For the most part when it comes to doing cardiovascular activities or trying to get my cardio with my clients or something, I don't do long distance stuff just because it is so much wear and tear on the body. I don't have people go out and run. What I try to do is, again, I try to get the most bang for my buck for anything I do for myself or for my clients. So I like to do that interval

training where I get my heart rate up real high, and then I bring it down real low, and then I get it up real high. And I'm only maybe doing a total of 10 minutes of work, if that, because you can even do a total of five to six minutes of working if you were going at 100% capacity and then resting and then 100% capacity.

You actually get the same caloric output as you would if you did something for steady state for a long period of time and you get less wear and tear on your body. Also with that, the cool thing about training in those interval fashions in that high, high anaerobic way is you're actually able to increase your VO₂ max, which is your body's ability to utilize oxygen at the cellular level while not working necessarily in an oxidative system, which is what you do when you do more steady state long distance cardio kind of stuff. And that's for the fact that you're actually training at your blood lactate threshold.

So your blood lactic threshold-- the simplest way if you're doing a bunch of curls and all of a sudden you can't do any more, that's because your blood lactate is completely taking over the muscle. And you can't do any more. But if you rest for a little bit, it settles away. And then you can do some more.

So that blood lactate threshold is correlated with these ventilatory thresholds, called VT1 and VT2, which correlates to the ability to utilize oxygen at the cellular level. So you're able to do this anaerobic interval training without going in your oxidative system. So you actually save your muscle mass, and you're able to increase your VO₂ max or your aerobic system without it having to go into your aerobic capacity, which is really cool, and it saves wear and tear on the body.

So when you do those interval trainings, you're able to-- so to back up a little bit. A lot of things you hear is when people do a lot of cardio or a lot of long distance cardio is they sacrifice of muscle mass from it, which is true to an extent. But don't think that if you do a steady state that you're going to lose all your muscle. But it is true to an extent.

But in a way to avoid that say if you are a strength and power athlete or you are a body builder and you want to maintain as much lean muscle mass as possible-- you're able to train in this really high anaerobic fashion to increase not only your anaerobic threshold by aerobic threshold, which is that oxidative system, while not sacrificing the lean muscle mass that you're trying to hold onto. Does that make sense, or did I go off too deep?

DINA MIJACEVIC: You did go off too deep.

RAMON SODANO: OK. Is there questions? I see you writing.

KAITLIN HENNESSY: One question to follow up on that is so is HIIT training better than weightlifting?

RAMON SODANO: Well, no. But yes and no. They're different things, right? HIIT training is exactly what I'm talking about right now is that interval training, right? And you can do it with some types of weight training. You could. I would rather do maybe [INAUDIBLE] VersaClimber, or Assault Bike-- those kinds of things.

So it's going to increase your blood lactate threshold, right? It's going to increase that ventilatory threshold. It's going to be able to let you push farther. But it's not going to get you what a well-rounded weight training routine would get you as well. A combination of all these things is the best. You shouldn't just do one thing. So the way that I implement my interval training or my HIIT training in my programs is I do at the very end. And if you go to the build your own program webinar, we kind of go through this entire process.

But instead of having to do 30 minutes of stair stepper on a different day, I'll go through my entire weight training routine. And at the very end, I have just some high intense-- and what I usually do is I hop on the VersaClimber or Assault Bike. And I'll do like a 30 second on, 30 second off for 10 minutes. And then that's my interval. So I mix my interval training in with my weight training. Because one doesn't trump the other. They're doing different things.

KAITLIN HENNESSY: And to go back to the running, how do I figure out if I have proper running form.

RAMON SODANO: OK, Dina just taught me about proper running form. So I was a sprinter, so I have really good sprint form. But one of the questions coming on here is what is proper running form, so I asked her. And she's going to chime in when I mess up. So most importantly, you want to not like land flat footed or just completely heel strike. You don't want to run just on your toes.

What she explained to me is that you want to do is you want your foot to fall under your center of mass, and you're going to initially strike with the edge of your heel. But you're going to roll through, right? You're going to make sure to get that shock absorption just like if you do Jiu-jitsu in here. If you break fall, you disperse the weight, right?

So you want to make sure to roll through. But you're not hitting directly on the heel, correct? You're hitting kind of on the front edge of the heel, and then you're rolling through. And you're trying to minimize your ground contact, correct?

DINA MIJACEVIC: Mhm.

RAMON SODANO: And she was kind of explaining to me of when you watch a horse run. If you see them, they constantly-- how'd you explain that?

DINA MIJACEVIC: When they push the dirt. You see them-- like, the dirt.

RAMON SODANO: And they're just on the ground real quickly, and it's just rolling through. And it's real pretty honestly.

DINA MIJACEVIC: That's the best running form if we're going to actually be real.

RAMON SODANO: As a horse?

DINA MIJACEVIC: Yeah.

RAMON SODANO: That's awesome. Sprinters like me, when I sprint, I'm really trucking my arms, right? So when you're doing your run, you want relaxed arms. But you still want them going right arm with left leg, left arm with right leg. But it's much more relaxing, and you don't want them crossing the body. With that, you're going to waste energy like that.

So you're trying to be relaxed, having a run length of your foot underneath your center mass, which is probably easier said than done. And then make sure you get that roll through. And again, there's a lot that's going to go into a proper running form.

There are places that can give you a gait analysis. And I'm sure there's people around your areas that if you want to do some sort of like training, they can help you out there. That's where my expertise falls off is long distance running. I was a sprinter, not a long distance runner. Is there any other key points?

DINA MIJACEVIC: I would also suggest for people if they're really interested in pursuing running more seriously to really invest their time and maybe some money into getting fitted for the proper running shoes.

RAMON SODANO: That's one, yeah.

DINA MIJACEVIC: Because oftentimes we do pronate when actually go in. All right? We walk in. Or we actually-- yeah, well, they can't see us. So a lot of us actually pronate, so you can see it from somebody who has wear and tear on the shoes when the inside of the shoes are kind of wearing off. It means that's it's probably over-pronation.

That could caused a lot of the shin splints, a lot of the Achilles tendons, and a lot of different runners to. So it's important to get fitted for the shoes that are good for somebody who over-pronates. I'm not too worried about supination, although it can--

RAMON SODANO: So here's your pronation. Here's your supination. So if this is my feet, this is pronating my feet. This is supinating my feet.

DINA MIJACEVIC: For the supination, I'm not to worried about it as much as I'm worried about pronation. But supination can cause a lot of the IT band issues.

RAMON SODANO: Lateral issues, right?

DINA MIJACEVIC: Yeah, a lot of lateral issues too. So when you get from iliac crest all the way down to the side of your knee, that it's kind of tight so you have to roll it out. You have to stretch it. So that's something that could be also a huge component to somebody's running form too.

RAMON SODANO: And with that, I'd like to say too it's cool that you can get shoes that are going to act as a crutch to your over-pronation or your over-supination. But there's something going on in your body that's causing you to pronate excessively or supinate excessively, OK? And that's when you want to find somebody like me, or a physical therapist, or a functional movement specialist who's going to be able to do a joint by joint approach for you.

Because maybe something's happening at you're ankle to where you're supinating a lot, but it's not your ankle's fault. It's something going on at your hip, right? And we need to fix that up and then all of a sudden that gets fixed up. So get the shoes while you're doing it, but then figure out why that issue is part of you and attack it.

Because doing something like that is like you're just getting the pill. You're getting the pill for the symptom, right? You're not actually fixing the root cause.

But sometimes bodies are just a certain way no matter what. Sometimes you're just going to be like super supinated or pronated. And everyone is going to need to a certain degree. But if it's excessive-- like I was so bad with external rotation and all kinds of things. And it was due to tight hip flexors, and my back would always lock up.

Once I did just a couple of corrective strategies and some soft tissue work, all of a sudden my toes are going forward. My back wasn't locking up. So make sure you also address those issues as well. Get to the root cause.

DINA MIJACEVIC: Because running-- I think it's the only activity that goes through open and closed kinetic chain. So one joint is always up in the air. One is always free to move, one is on the ground. So that's alternating between open and closed kinetic chain.

So in a close kinetic chain, one or more joints are actually not being able to move. So when our foot is planted on the ground with breaking and ground contact time and breaking capacity still, so that means that if one joint is not working properly, we're having issues with ankles which could cause shin splints or anterior tibialis issues, or Achilles tendon issues. That could also lead to misalignment in the knees and the hips. So once we have that contribution to multiple different joints involved in one activity like running, that could cause a lot of the improper forms due to just misalignment in joints in general.

RAMON SODANO: Can we just bring Dina over here? Is that cool?

KAITLIN HENNESSY: Oh, yeah.

RAMON SODANO: Dina, get this chair and come over here. Dina's going to join us because I feel like it would be weird if you can hear her talk and not see her. Is there any questions again while we're on these topics? I don't mind answering any questions. I kind of like it like this.

KAITLIN HENNESSY: There is a question that is related back to the weight lifting--

RAMON SODANO: This is Dina.

DINA MIJACEVIC: Hello.

KAITLIN HENNESSY: This is Dina. --that goes what are your thoughts on doing weights continuously such as no breaks, constant load until muscle exhaustion? Like what Doug McGuff describes and practices?

RAMON SODANO: So when you're doing your sets to failure-- is Doug McGuff who wrote Body by Science? I think he might have been the one who wrote that. He does one set to failure for like each muscle group and things like that. Those, again-- is it Body by Science? Yeah, a lot of people do programs from Body by Science in one of your classes actually.

I like it. It works. It really does work. And they have tons of research by it too that says it works.

It's not my favorite modality. But if you're an individual who has limited time, that's a great way to go, OK? And especially for hypertrophy and you will get a lot of structural integrity from it too, which is kind of cool.

I say don't just focus on one style of training. Do McGuff stuff. And then maybe do some Mike Boyle stuff. And then go and focus on maybe some Lee Taft stuff and some-- well, I'll leave Taft as more speed and stuff like that. But incorporate Gray Cook's functional fitness thing.

Go through different and maybe do some Louie Simmons 5, 3, 1 stuff. Do different programs if you have time. But when you do have limited time and you really want to probably get the most bang for your buck, doing stuff like those to failure is one of the best ways to go about it.

OK. We were on the running question. We already talked about re-hydrating before, during, and after a workout. Are sports drinks necessary for the average home exerciser, or is water sufficient? No, they're not necessary. They're essentially just Coca-Cola. I would stay away from them.

OK. Now, we are on to the new student ambassador's question-- do you really need to cool down after your workout? If so, why? And for how long? OK, yes you do need to cool down after your workout. And one of the main reasons for this is when you put yourself in a workout, you are changing your nervous system, OK?

When we're at rest and we're just hanging out, we're kind of like in this household just keeping. It's your parasympathetic nervous system. Once you go into an exercise, you're switching into your sympathetic nervous system, which is kind of a fight or flight-- the lion's chasing you for lack of a better term-- nervous system. And that's what you're in.

And when you are in that nervous system, you're on alert. And you're not going to be able to rest and recover because everything is going elsewhere, OK? So it's important to put yourself back in that parasympathetic nervous system. And that can be done I some light foam rolling, and stretching, and honestly just laying down and doing some breathing techniques after a workout. So it is essential to your workout to do a cool down if you want to optimize your performance to that highest capacity that you want from your workout.

So yes, cool down. For how long? Again, that's just person specific. 5 to 10 minutes is pretty good. If you want to go through some other stuff and really do it maybe 15 minutes-- I wouldn't go any longer, you could if you wanted to-- but maybe some breathing techniques, some static stretching, just watching the clouds, just really bringing yourself back, not letting yourself stay in that high awareness state.

Was there a question with that one? OK. Doo, doo, do, doo. Is swimming really one of the best exercises for you? While I hate swimming, it is great for you. And swimming can actually be or being in the water can actually be used as a cool down. There's something with putting the body in water that brings it back to that parasympathetic nervous system. But if you're swimming laps and stuff, you're not going to be there because you're exercising.

But the reason why it's really good for the body, especially if you're like me and you have lots of joint issues and stuff, is you're buoyant in the water, right? It's less impact on your body. When you're running, you're constantly putting stuff on your feet and stuff. When you're swimming, you're really gliding through, and you're not putting a lot stress on your joints, OK? And you're still able to really build that oxidative capacity.

And honestly if you're doing breaststroke, oh man, like your triceps will be screaming. And your lats are screaming. You're getting a good workout in there too, and you're putting a lot of stress on the joints. That would be the main reason why swimming's really good.

And that's why a lot of times when you come out of physical therapy and you're trying to recover, go swim first, right? If you're going to get the blood moving and it's going to get the nutrients to go where they need to go, and get the blood flowing where it's needs to go to help repair, but it's not going to put a lot of stress on injured area or areas if you're me. Anything else for swimming? You're more of a swimmer than me.

DINA MIJACEVIC: One of the concerns with swimming for some people-- not everyone-- is the bone--

RAMON SODANO: Is drowning.

DINA MIJACEVIC: Yeah, that too. It's the bone mineral density.

RAMON SODANO: Oh, yeah.

DINA MIJACEVIC: Because it's not an impact type of activity that a lot of individuals who excessively use swimming as the primary mode of exercise maybe putting themselves at a risk of osteopenia or asperosis later on. But that's only in few cases, especially if there's any other concerns in terms of dietary intake, genetics, any other injuries. So swimming is one of the activities that's not going to provide the stress needed to build strong bones.

RAMON SODANO: And that's a really important thing, especially for all the ladies out there. You want to incorporate some sort of strength training or some sort of impact because Wolff's law states that-- it's just like muscle. Once you put that stress on it, it breaks down the bone a little bit. And then you build it back up stronger. And if all you were doing is swimming, you don't get that benefit because you're really losing that impact.

So again, doing one thing is not necessarily the best. Doing lots of things and lots of variety just like with your diet and things like that-- eating lots of different colorful things, eating lots of different meats and things like that. Having a big variety is very good. OK. Is there a question? OK.

So this question is when running, should you take walk or jog breaks? If so, how long before you start running again? Again, that just depends on training age, who you are, what your goals are. If I was doing interval training and I was doing intense sprints, then I'm usually going to do a 1 to 3 ratio. If I sprinted for 20 seconds, then I'd rest for 60 seconds.

And when you first start out if you were doing interval training, you'd probably do one to five, especially with sprinting because it's so tiring. And then you slowly bring it back down. But if we're just talking about long distance running, what you're going to do is-- especially if you're just starting out-- yeah, jog to where you know you're starting to get uncomfortable. Go a little bit further and then maybe give yourself a break.

And then just walk. I wouldn't say stay still. I would say walk until you feel like you can go again and then go again. And then maybe time those rest periods that you took and shorten them down and shorten them down. And then, OK, now I'm running a mile nonstop. Cool, OK.

Now I'm doing my mile and do I want to increase my intensity first or do I want to increase my duration first? Usually [INAUDIBLE] just for general population. You increase your duration first. But if you want to focus on getting a faster mile time, then focus on that intensity and going faster. It's whatever your goals really are.

But the most important thing is your body is the best feedback that you have. Just listen to it. And if it's screaming and dying and your knees are hurting and your ankles are dying, maybe take a break, especially if you're just starting out. If you've been doing it for a long period of

time and you are that ultra marathon runner or something like that, you need to push through those things. But that's because that's your sport. For gen pop, really listen to your body.

Again, you're the runner. What else are you going to say here? For this? Is that good enough?

DINA MIJACEVIC: Yeah, that's pretty good.

RAMON SODANO: Yeah, once you get to whatever it is-- if you're goal is to run a really fast three miles, I'm not going to tell you to run a mile and then stop and then run a mile. But get to where you can run it comfortably and then get better at it. And I don't want to take away from not suffering, right? Suffering through certain things is good, right? It builds character and helps you out.

But I'm not training for anything any more. I'm not an athlete anymore. So I'm training for life now, so I want my body to recover and be better. And if that's what you're going for, then listen to it. But still challenge yourself. I don't want anyone to be wusses, you know?

Next question is so for beginners, what is the difference between hand-weights-- and I think this individual meant dumbbells by that-- free weights, and machines? Do they provide different results? So let's think about this very simply. And just so we know, dumbbells and free weights are essentially the same thing. They're just a more unstable fashion of a barbell.

So when we think about exercise equipment-- if we're going to go from easiest to hardest, it would be your machines is the easiest. It has the most stability. It controls the pattern of what you're doing. If I'm on a chest press machine, it literally gives me starting point, end point, right? There's not all kinds of difference in it.

Then may come some of those machines that do have a little bit of that stability-- those hoist machines and stuff like that. Then you're going to come to your cable machines. Those are a little bit more or less stable. Then you'll come to your free weights stuff, especially barbells. There's a lot more stability where your body has stabilize it. And then you're dumbbells, kettle bells, and things like that-- it's much less stable.

So the way of working through those things is honestly just the amount of control that you have to put into it to stabilize it, right? So you will know from holding a barbell compared to a bench machine-- there's a huge difference. Because usually when I'm doing a pressing machine, I'm only using the prime moving muscle-- just my chest to my arms to move it.

But when I'm holding a barbell, I have to engage all the natural stabilizers of my shoulder, and of my lats, and of my body to maintain that, right? So if you're just starting out, it's always good to start with machines and then move on to free weights and things like that. Just because you're 85 years old doesn't mean that you can't touch free weights. So you can get to those as well as long as you're a good trainer or that you know what you're doing. Don't think that you can't do it.

KAITLIN HENNESSY: We do have a question from Emily.

RAMON SODANO: Hi, Emily.

KAITLIN HENNESSY: And Emily asks, what are your thoughts about CrossFit?

RAMON SODANO: OK, I love my thoughts about CrossFit because I'm a functional movement guru kind of person and everyone thinks I'm going to hate CrossFit. And I don't hate CrossFit at all. So a lot of you may know and may have heard that CrossFit reports lots of injuries, OK? And again, this really gets honed in on because there a certain population.

So when it comes to the injury rate in CrossFit, I do not think it's a CrossFit issue-- well, it kind of is-- but I think it's a coaches issue. Because what happens when people are getting hurt a lot of time in CrossFit is they are doing certain exercises that are contraindicated for the given movement that they have in their body at that certain time. What that means is if somebody has a shoulder mobility issue, they shouldn't be pressing overhead until they fix that shoulder mobility issue.

If they have a hip hinging issue, they should not be doing dead lifting until they fixed that hip hinging issue, OK? And there's ways to identify if someone is deficient in a certain movement pattern, and there are certain steps that you can take to re-establish that movement pattern and then get them back into the exercise that you want them to do.

So I don't think it's a CrossFit issue. I think there are certain coaches in CrossFit who just want to get people in and out. And it's like, OK, her's grandma Betty and she's doing 45 snatches today. And she should not doing that. She should first be assessed for her quality of movement and see what movements are contraindicated for her. And then she should be allowed to have exercises within the given WOD, where the contraindicated movement pattern is put and have those corrective strategies put there instead.

So she doesn't have to get removed from the WOD necessarily. She can still do the entire work and get the metabolic output that is so desired through CrossFit. But during exercises that are contraindicated for her, they are swapped out for a corrective strategy that either elicits the same metabolic response that does not put her in that contraindicated position or is an exercise that allows her to utilize a corrective strategy to re-establish that position.

And then in the warm-ups and cool downs of those boxes and things like that-- they implement certain warm-ups that apply to all those movement patterns and then give certain individuals the corrective strategies that are inherently bad in that individual person. Our CrossFit program here-- I developed a functional kind of CrossFit program that I gave to the person who oversees our CrossFit. And we have very minimal injuries that actually happen.

I think CrossFit is very cool for the community that it has. When you look at professional CrossFit athletes, there's no lie in that they don't look great. They do crazy things. It is the

ultimate exercise out there. It is gymnastics, Olympic lifting, crazy kinds of stuff. What people can do is absolutely amazing.

But people should work up to those things. They should not be thrown in the lions den right way. They should be properly taught how to do these movements, and they should properly established the correct movement patterns before they do 100 reps of them or something like that.

People always think I'm going to have a beef with CrossFit, but I don't. I love watching it. I think it's really cool to watch and stuff, but there can be dangers in any type of strength training routine that you do.

KAITLIN HENNESSY: Thank you, Ramon. And we are about out of time. Thank you so much for coming tonight, and thank you Dina for adding in some really great information on the scientific aspects and the supplemental aspects on running. Is there any closing thoughts that you would like to add Ramon?

RAMON SODANO: My closing thoughts would be with anything that you do, whether it be nutrition or strength training, you should utilize variety, OK? Experience new things. Don't get comfortable on one routine. Because once you get comfortable, that's when you're just optimizing to be able to better yourself. So do use variety. Try things that you're not cool with like a picture. We got a new piece of equipment at the gym, and she was not trying to use it. But now she's all about it.

And same thing with diet and stuff. And we're going to talk about that. So if you're coming to rendezvous, come to my "How to shop for real food." And we're going to talk about how to make tips and tricks for being able to create variety, and eat healthy, and make it cheap, and all that stuff. But yeah, thank you for your time, and I hope to see you all this weekend. We hope to see you all this weekend.

DINA MIJACEVIC: Correct.

KAITLIN HENNESSY: Thanks, everyone. Good night.