

Train Smart 7 Principals of Movement

RAMON SODANO: Hi. So I want to be the first to welcome everyone to Global Connections Train Smart Seven Principles of Movement. Before I get into introductions of myself and my assistant here, I want to give a shout out to our program coordinator of Global Connections Kaitlin Hennessy. She is supposed to be doing the introduction. And I'm selfish with my microphone, so I was more important. So that's why I'm doing it.

But she's done a great job for us, and she's really helped out getting the stuff going. And we're really excited to start working with Global Connections more to do more of these webinars and other kind amazing stuff that I'd like to offer you with regard to increasing your well-being. So before we get into the meat, or into the meat of everything that we're going to go into today, first I'll tell you about myself.

My name is Ramon Sodano. I am the fitness coordinator here in Washington State University's University Recreation Center. That's just a fancy way of saying that I am the manager of the personal trainers in the weight room department here. A little bit about me, my background has been in fitness.

I've been a training conditioning coach and a personal trainer for the last 10 years. I received my bachelor's in kinesiology from Washington State University, and I also received my masters in sport management. I would say if we were going to talk about specialties, my specialty comes from movement and basic fundamental movement and primitive movement patterns of the human body and how to establish those so people move correctly when they get in the long term of what are sports specific or just typical kind of training.

I think of fundamental movement as the clay that molds exercises. It's not just the exercise. That's literally what molds them. So it's very important to me. So I'll let Natalie introduce herself.

NATALIE REETZ: Hi. I'm Natalie Reetz. I am a student personal trainer here at the rec center. I've been training for about two years. And I'm still in undergrad in kinesiology. I'm almost done though.

RAMON SODANO: What would you say your specialty is?

NATALIE REETZ: My specialty would probably be either strength and CrossFit.

RAMON SODANO: Natalie is one of our star personal trainers here. She actually gets requested quite a bit. And she's not taking clients any more right now, which makes things very difficult for me. But that's OK. She's been doing a great job.

So today we got this cool little area set up. We're going to go into what I call the seven principles of movement. Pretty much all of them are movements. One of them necessarily isn't. But it is very important and pertinent to everything else that you would do. So how we wanted to do this is we're going to talk about the seven fundamental movements that make up most exercises that you would see in a typical exercise routine.

So if you go to the gym, if you go to CrossFit, you go to your box, you do whatever, most exercises are made up of seven dominant fundamental patterns. And we really want to talk about the proper mechanics for those, and how to identify if you're deficient with the mechanics because a lot of bad things can happen if you are trying to do certain movements while in an improper fashion.

That leads me to a term that has been coined in the field called building strength on top of dysfunction. So if we are training ourselves consistently in an improper mechanical pattern, all we are doing is we are cementing that pattern in an improper way, which builds strength on a dysfunction. So you may be getting stronger, but the pattern that you are increasing is incorrect, and it most likely will lead to injury and or asymmetries in the long run, which is just not what we want to happen.

While talking about how establishing the basics of fundamental movement pattern, how to re-establish them is kind of beyond this scope. We're going to give you a quick check sheet, a quick list to look at when you're doing these basic movements that are involved in most exercises. And if for some reason you are unable to fix them at just noticing what's going on in the mirror, and trying to set the core, or stand straight up and down, or maintain the back, there may be something that's a little bit further down the rabbit hole that you need to figure out. And you would want to see a physical therapist, or a functional movement certified personal trainer who could help you with that.

But we don't want to get into all that today. We're not going to get into developing mobility and stability. We're just going to talk about the patterns, what they are, why it's important to build them into a program symmetrically, and then just the basic, basic form of what they look like, and the common faults that we see with them. So the basic patterns that we have is-- there's

going to be seven. You don't need to write them down right now.

We'll write them here when we go one at a time. That will be simpler so you don't have to rush and keep up with me as I go through this quickly. I talk really fast. I'm sorry. I'll try my best to slow it down.

So the seven movements that we're going to talk about, the first one I said, it's not really a movement. We call it core engagement and/or rotary stability. This is involved because in every single one of the movements that we're going to talk about, it is the foundation of that movement of all of them. We need to make sure that we're set from the core first off.

If you want to think about it, simply think of the core as the foundation of the house. So if you have a weak foundation, you start building real strong, real heavy duty framing around that house, all you're asking for is collapse. And we want to make sure that we have a strong foundation for that house. I'm a prime example of building a very weak foundation on top of a very strong house for a long time. And I'm dealing with injuries now into my 30s.

So that's awesome. But you know what? Don't do what I did. Listen to me now. So core engagement is number one. Number two is going to be vertical pressing. And most exercises, exercise routines, people are pushing stuff over their head for some reason. They're working their shoulders. They're working their Olympic lifts. They're doing some type of vertical pressing. The next movement would be vertical pulling, such as pull-ups, lat pull-downs, all kinds of different variations of where you're pulling yourself up, or you're pulling a bar to your head or to your chest.

So we have vertical pushing and vertical pulling, simple. Now we move on. We have horizontal pressing and horizontal pulling, or horizontal pressing and horizontal pulling. Horizontal pressing would be your dumbbell chest press, your bench presses, your push-ups, anything like that.

Your horizontal pulling is going to be your rows that are coming in, doing TRX rows, rows with the dumbbell when you're bent over, all kinds of things like that. The final two, we have knee-dominant exercises. When you think of knee-dominant, really think of your squats, single leg squats, lunges, anything where you're going to get a lot of knee flexion and extension. And the last one we have is hip-dominant exercises.

So we talk about the hip hinge, doing lots of things where the fulcrum point is in the hips, like

your dead lifts, good mornings, things of that nature. Kettle bell dead lifts, we'll go into those here in a little bit. So we have these six movements that are all encompassing with the core engagement.

It's really important that you build your exercise routine, or if you have a trainer who is training you, or you're training with a friend, but that you have a routine that is weakly symmetrical with these movements. And what I mean by that is you have as much vertical pushing as you do vertical pulling, that you have as much horizontal pushing as you do horizontal pulling, as much knee-dominant exercises as you do hip-dominant.

What's going to happen if you don't is you're going to develop asymmetries in the body. So I may be really, really strong in the front, and really, really weak in the posterior. That asymmetry can cause a lot of injuries. I could have a weak, rounded back where I'm hunching over. I'm in cifosis up at the thoracic spine. I'm started to get frozen shoulder syndrome coming up. And all of a sudden when I have to do something where I extend, I can tear a trap or a rhomboid, or some crazy back muscle.

So you want to make sure that we're balancing everything out. That goes for your knee-dominant exercises since it's going to be quad-dominant work that's happening there, to your posterior dominant, which is going to your hip-dominant exercises, which will be your glutes, hamstrings, and things of that nature.

What happens a lot is that we see in the gym is individuals love to look in the mirror, and love to look at themselves, and just like to work what they see. And that really develops a lot of asymmetries and deficiencies in the body. And while it's cool to look great in the front, remember that there's a back side to you too. Remember that there's a left and right, and there's very seldom times that we're actually on two feet at one time.

We're linear animals. We're walking. We're always bipedal. You know we're going from left to right. Anything in sports, when you're cutting, changing direction, you're dominantly on one foot. So it's also very important to implement that unilateral work as well.

So that's a brief introduction of the movements. And what I want to do now is show you what each one of the movements looks like. I'm not going to. Natalie is. Like I said, I'm an old man, and I'm hurt now. So she's much stronger than I am.

And we're going to have her go through some of the movements, what it shouldn't look like,

and what it should look like, essentially, and then just maybe some things that you feel. if at any point you have any questions, feel free to bring them into us. I would love to answer them. I think you said we have about a 20-second delay. So feel free to still ask them.

And if it comes on, and it's still pertinent to talk about, then we'll hit it. And if not, we'll get them at the end. We have a spot for questions at the end, correct? And we do for that as well. So if you want to write your questions down or whatever, we can work through that.

So the first one I want to talk about is basic core engagement. And there's just going to be a real simple check that I'm going to have Natalie do right now to show what it looks like when the core is not engaged. And we'll get back to this section if you want to come over here when we're going to go to vertical pressing. Face them.

I'm going to have you show what extended, what extending or having the ribs come up in a fore engagement is with coming above the head with a PVC pipe. So she's going to bring this PVC pipe above her head. And she's going to show what improper core engagement looks like.

So she brings it up, and we see that her ribs are coming up. What we actually want to happen is have the ribs stay stacked down, and we want this lumbar spine to stay nice and straight. Turn to the side. So she's engaging her core by exhaling and bringing her belly button to her spine.

Bring the bar down real quick. So what she's doing-- face front-- is she's not just inhaling. So she's not coming in like this. She is literally contracting her abs and pulling her belly button to her spine to make a real nice neutral line. We're going to do more core engagement stuff here in a second. But it's very important to understand that the core's main function is to keep the lumbar spine.

She's going to get moved around a lot-- is to keep the lumbar spine nice and straight. A lot of people do a bunch of-- you're going to turn around again-- a bunch of rotation exercises, flexion exercise, an extension exercises to get their abs. What's happening is you're really working the superficial level of your ab musculature. It may look like you have a rocking six pack. But your core is actually not that strong.

So the lumbar spine, in total degrees of movement from lateral flexion, to flexion, to extension, to rotation only calls for a total degrees of 15 degrees of movement. What the core is there for

is to make sure that that spine stays straight in movement. So what it's really used for is anti extension, anti rotation. If I came up and I shoved Natalie, and she was ready, she would want to engage at the court to maintain the safety of the back.

Your core's reflexive in nature. Your body's reflexive in nature. And it wants to react to stimuli around it correctly. So if we're starting to train the abs in a bunch of ways where we're doing a bunch of flexion, rotation, extension, we could be developing some bad movements. So other things that we can look at with the core is I want you to turn to the side so the camera can see you. Put your arms up.

So I want you to see. Just watch her stomach as she engages her core. So go relaxed, and then engage the core. Now, are you breathing in or are you breathing out?

NATALIE REETZ: Exhaling.

RAMON SODANO: So it's really important to exhale as we're trying to do this core engagement. And we're just going to hammer this away for a second. Because if I'm just-- you're taller than me enough. You can put your hands down. It's OK. Don't make me look too short.

So we don't want you just to think of sucking air into bring that stomach in. That's not what we're doing at all. It is literally just a quick exhale, and then engages those abs. And it literally flattens this pelvic floor out. We want this pelvic not to scoop under, or get in any subjective position where it's going to make that back flex. Because if you think about it-- hold this for a second-- your spinal columns are stacked on top of each other like so.

In between each one of them is a disk. And if you want to think of the disk as some gelatinous structure that's held in by some membrane, and if we're put in the lumbar spine in the position that we're in now, we're getting some extension, and the vertebrae are separating, this disk is bulging out. And it's not really meant to do that at the lumbar spine. Now all of the sudden we put loaded weight on it, like in a back squat, and really extended. Now that disk just wants to bulge out even farther. And that's how we get herniated and slipped disc.

So it's really important. And pretty much every action that you do, that you have some sort of core engagement. There's multiple ways to do this. There's things like bracing the core, which is much like Olympic lifters and power lifters do. That's a little different. They're not going to be bringing their abs in so much as they are pushing them out. But it's a way to keep the back straight.

For our purposes though, we really want to think about exhaling and drawing that belly button into the spine. And we're a show one more exercise with it. I'm going to have you just do a plank to show what we want it to look like if you were to train a core exercise. So let's have you come down into your Plank position. Just do a prone plank.

So right now she's in good position. We got a nice, solid back. She's not having her butt super high. Show what butt high looks like. We don't want here. We don't want the butt sagging where her back goes into a lot of extension like this and we have to come up. And she is sturdy. She is literally exhaling while-- she's still breathing the whole time. Once you hold it, you can hold it.

It's like when you have to stop going to the bathroom abruptly. It's that same feeling as strange as that sounds. It is. And it's made sure that she is maintaining this neutral lumbar spine stand up. So I would highly advise to look into core engagement. There's tons of articles online about it. And they're going to be able to go into little more depth about how to do it.

We just wanted to hammer away because it is literally needed for every one of the exercises that we're about to do or that you were doing at some point in time. Do you have anything to add?

NATALIE REETZ: Nope.

RAMON SODANO: OK. Cool. Let's put this back over here. So what we're going to do now is we'll talk about vertical pressing. And what vertical pressing is going to look like, we'll start with the PVC pipe, and then we can go to maybe some actual exercises that you're going to see in the gym. So vertical pressing could be anything from your push press, your push jerks, your dumbbell shoulder press, your single arm shoulder press, your [INAUDIBLE] press.

Everything I'm going to talk about applies to all those exercises. We're going to start from a standing position. So let's do a strict press. And face the camera for right now. So do a correct strict press, where you're going to bring the bar above the head and bring it back down. Good. So a couple things no know. Keep going.

Her ribs are staying nice and flat. When she comes up she's not extending. Show ribs up. Ribs up. So she's not coming out here. And notice again, what happens when she's coming to this extension is we're putting her lower back in a bad position. The weight is above her head. So the force of that weight is coming straight down through her body. And now her back's not in a

safe position to protect that disk.

If she lowers the ribs-- I made her do a little more than you have to-- she's now stacked. Some things that may happen with somebody not being able to get to this position and keep the ribs out, they may have some shoulder mobility issues, they may have some lat mobility issues, they could have a whole bunch of stuff going on in the thoracic spine that they don't know what's going on. So if you cannot achieve a position that looks like this with a nice flat back, ribs down, and biceps up by the ears without having to extend at the back, you may need to see a physical therapist, or you need to find the functioning movement certified trainer. Because they're going to be able to help you re-establish-- well, first find out what the motor problem is, and then reestablish that proper position.

So again, show some good presses. Keep going. Good. Now let's have her turn around. So now with regard, we have good position, we have all that. Now we need good stability. We want to make sure that when she gets to the end range of her position, or even throughout the motion that she's doing that she is stable the entire time through. A good thing to remember when you're exercising is not the weight you lift. It's how you lift it.

If you're lifting a super heavy amount of weight, but you're getting from point A to point B terribly, that's not impressive to me. Sorry. That's not impressing me at all. And I don't think it's going to benefit you in the long run. It's going to have you get hurt. You want to make sure that you lift the weight correctly. And if it's hard with a light weight that's awesome because you're being kind to your joints while being strenuous on your muscles.

And the joints are what usually wears out first. If we can protect those for the longer run, that's going to save you a lot of money and a lot of headache that comes with those injuries. So again, when she's pressing above the head she's also coming into where-- so press up. She is engaged at the lats. She is stiff in the shoulders. These things are not going anywhere. She is strong and she is sturdy. She's not standing up they're real elastic like. OK. Put the bar down.

Good. So some exercises, so the main fault that you're going to see from that is people having to come out here cause they don't have the proper mobility to get above their head. They're going to come here when they want to get to that proper mobility. And yeah. That's about it. Can you think of any other faults with the overhead pressing from a standing position? OK.

The big one to watch for, and only one I'm really, really worried about is, again, that extension. So when you start in the strict press, engage those abs right away. My bad. Engage the core.

It's not just the abs. So when you press up, you're not going to extension.

So some other exercises you can do with this-- we'll have Natalie sit down at the bench. You want to grab those 40s? Here's our basic body building work out that you can do with it. She's just going to-- I'd say sit your butt at the butt end and then have your feet off at the end. There you go. She's going to be doing a no back supported overhead press because this is a great way to show-- because actually, doing 40 pounds with no back support to actually do proper engagement, it's pretty heavy weight honestly.

So she's going to bring the weights up. And we're going to see if she can actually do it properly. OK. Press up. Good. And see she's maintaining that nice straight back. Give me a couple reps. Again, she's engaged, she's sticking, her shoulders are tight. I know, it's heavy.

And now we can see she's actually starting to extend because she's getting tired. And that's because 40 pounds, even though people are-- you can set them down-- people are throwing up the 85s and 90s above their head. And what's typically happening is they have this all the way up. They're pushing their head against that. And they're rocking their back.

You're no longer-- if you're trying to isolate your shoulders, you're not isolating your shoulders anymore when you arch your back. Now you're recruiting your anterior, your delts, and your pecs, and you're starting to use more muscles to be able to do that action. If your goal is to train a single muscle group, which I know not all of ours are, you might as well find the way to put that muscle group in the most strenuous position with the lightest weight.

Why try to go into bicep curls where I'm swinging a bunch of weight when my biceps are doing the work anymore and that's what I'm trying to train. It's counterintuitive. If you're doing a light weight and it's making you work hard, that's completely fine. Sorry. That's me on my soapbox. We are good.

So that is vertical pressing. For vertical pulling, this is going to be difficult to show in here. We have tried to set up a gym atmosphere, but we don't have pull-up bars or anything. So we're going to just go over one of the main concepts with vertical pulling, which is packing the shoulders. It's not really packing the shoulders. It's more lat engagement.

And we want to make sure that we get to that position before we ever pull a bar to our face or pool ourselves to a bar doing pull-ups or a lat pull. So Natalie's going to turn around. And we're going to imagine that she has this PVC pipe. Let's say it's a lat pull. Now, she's going to

get to a position that's counterintuitive for her shoulders. So I want you to really get some slack.

See how her shoulders come up like this. A lot of people hang on the bar and start swinging to their chest where they're doing their lap pulls. What we want to see happen-- exactly, like that. What we want to happen is she's literally going to engage at her lats. And it makes her scapula turn downward. So she's engaging at the lats, and now she's in a safe position. Her shoulders are safe now.

They're not just opened up where all the ligaments and all the tendons are going to get aggravated in there from being in a bad position. She's now engaged her lats, and she's taking some of the force from the bar into her lats. When she pulls the bar down her face-- let's say you're doing a lat pull so you can lean back a little bit. She can pull it down above her head.

She keeps that position the whole time and isolates her lats. She's also making sure not to extend at the back when she's doing this, which is actually hard to do in these movements. So vertical pulling, the main thing I want you to see is that lat engagement to make sure that our shoulder is in a safe position and that we're not going to just-- really as the bar comes up we slink our shoulders out and really shoot the ligaments up there and just tear them up real bad. We don't want to do that. Good.

So since it's difficult to show vertical pulling, I think we're going to stick with that. A way I like to do my pull-ups is I make sure we do what's called hollow position. So I will be doing pull-ups. But I put my feet in front of me. So I get a little bit of core engagement right there. And it keeps my back straight. And I pull myself up like so.

So we call it hollow because you're almost out this way. OK. Good?

NATALIE REETZ: Yep.

All right. So next we're going to talk about-- let's do horizontal pressing first. So one of the reasons we talked about the vertical pulling first is because that little lat engagement that I was just talking about with the lats, we're going to also utilize in our horizontal pulling and our horizontal pushing as well.

So we're going to have Natalie just show a basic bench press. Right. Actually, let's have you

come down and do a push-up. So do a couple of just good push-ups real quick. So we're also going to watch. OK. We're seeing that there's no back extension happening. Show them what happens, what it looks like when your back extends as you come up. Good. That's some bad reflexive core right there. So we're making sure that we're stout the whole time.

So she goes down, and up. And she maintains that straight back. Also notice that she's actually tracking her arms very close to her body. Go down. You see how her elbows aren't flaring out? Show them, flared out elbows. A lot of people used to think this is the way to work the pecs right here because we're getting a larger range of motion. It's not too good, honestly, on the pec, on your tendon, which I've torn before. So trust me. You don't want to bench and push up that way.

But as we all are turning those arms in and keeping the arms close to the body, we're, again, protecting the shoulder, and we're protecting the chest. So she is literally doing this lat engagement right now. She's almost turning her hands into the floor as she's doing a push up. It's like she's opening a door knob. It's literally turning the floor.

And you can see-- if I had her wearing a tank top, you can see her scapula move. So it's important to keep those arm's pretty close to the body.

SPEAKER: A question is if you can't do push-ups, you're not strong enough to do push-ups, what is a good way to work up to that?

RAMON SODANO: So the best way to work up to push-ups-- because most people would tell you to drop on the knees, right? That's what we do. But we've been talking so much about core engagement, that all the sudden when you drop to the knees, the core is kicked off. So we're not going to be able to build the motor pattern from the brain, to the abs, to the small musculature of the floor, to reflectively kick on if we actually drop to our knees.

So the next best thing is we're going to start going inverted. So we'll start on an inverted [INAUDIBLE] or an inverted bench, and we make that range of motion a little bit less. Like for instance, when I tore my pec when I came back from surgery, I started doing push-ups on the sink, on my bathroom sink. And I slowly lowered myself until I got to horizontal. The main reason why we want to do that is we're not disengaging the core.

Once you drop to the knees, the core disengages. So it's always my recommendation to do it on an inverted or at an inclined position-- not inverted. My bad. The thing too though is if for

some reason you could not even do a push-up on a plyometric box that's really high off the ground, the next best way to start building is strength. To be able to do something is build the eccentric strength first.

So eccentric strength is the lengthening of the muscle or the stretching the muscle. So if I couldn't do a full push-up, what I would do is I'd maintain good pack position, and I'd come down for one, two, three, four. Then I'd drop my knees, and I'd stand back up, and I'd do it again. So that's a good way to start building strength because that's the loading phase.

And then all of a sudden when you start pushing up and maintaining that good back position, then we're building the concentric phase. But usually it's a little bit more strenuous on the muscles to do that eccentric loading. And it will transfer over to that concentric, the next pattern, the pushing up, and will help individuals be able to do a push-up or a pull-up.

If you can't do pull-ups, another great way is to jump yourself above the bar, and then lower yourself nice and slow. So doing eccentric training or-- what do they call it? What's the other word for eccentric training? Negative training is a great way to build strength if you can't do it initially.

But yes. To be simple, bring yourself up on the incline and then slowly lower yourself to the ground. Good question though. Thank you. A lot of people just think to drop to the ground. So I'm glad you asked that.

So with her push-ups, she's tracking the arms close the body. She's keeping the lats engaged the whole time. She's keeping a nice straight back. And yeah. So that's one vertical press, or horizontal press. Now I want to talk about a horizontal press on the bench press because it's important that-- there's these things we got called the five points of contact when it comes to bench pressing. She's going to pick this heavy weight up.

OK. So you can lay back. So when we are bench pressing, it is-- oh, the dumbbells. I'm sorry. It is essential to maintain the five points of contact. That's going to be your head, your shoulders, your low back, your butt, and your feet. So let's start pressing away.

She is going to make sure-- see, her arms are still tracking pretty close to her body. She's not flaring out. you don't want them flaring out. Say that's going to be real hard on the pec tendon right there. She's keeping herself-- and just that little turn engages these lats.

It literally makes her stiff so she's not going to get put in a bad position. Now keep going. She's

also making sure that she is not arching at the back. It may look like she has a little bit of space. But it's because her butt is tight right now. If she came down, and then arched on the way up, this is not what we're looking for. That shows that the reflexive nature of the core is not kicking in during the external stimulus that's coming from the bench press.

So she wants to make sure to keep those ribs down by having lats tight, butt tight, and feet on the ground. You'll see people all the time sometimes when they first bench, they go down and they lift their feet up off the ground and start wiggling all over the place. Don't do that. For basic bench press press, keep the feet flat on the ground. She looks good.

All right. Now what I want to show is a typical exercise you will see with a horizontal pressing the gym. Show them a dumbbell press. So Natalie and I do dumbbell presses a little differently than most people. A lot of people will be what we have called a prone grip. That's palm side down.

And it gets real wide. And it has a lot of stress on that pec, that pec tendon. What we slowly do is we just externally rotate, which, again, engages that lat. Notice just how my shoulder comes down. I'm in a stiff position now. And we go from here. Natalie even goes in more, which is just fine. We are being nice to the scapula and we are working in the position that the scapula actually wants to work.

We're turning on the way down. The scapula, it works here, but it puts a lot of things in subjective positions that we don't want to do. So show them a couple dumbbell presses. Good. And this is what we call a neutral grip with palms facing each other. It's fine. It's beautiful. How are you feeling?

NATALIE REETZ: Good.

RAMON SODANO: Good. All right. Hop up. So those are some horizontal pressing actions. Again, main things to focus on is do not let the back go into extension. That's going to be with I'm going to say with every movement that we get into. We're going to make sure that the lats are packed, that they're engaged.

When we're actually doing a bench press where we're utilizing a bench, we want to make sure that the butt's tight, and that the lats are tight, and that we're maintaining our head, the back of our head, our shoulder blades, our low back, our butt, and our feet all in contact with either the bench or the floor.

I'm so used to asking them, does that make sense, or is there any questions? But there's nobody here. So--

NATALIE REETZ: I have one thing to add though. When you're tucking your back in, you want to think about tucking your scapulas into your back pocket. So you're bringing them back and down instead of trying to arch your back. Think about that. It's just tucking the shoulders back and putting them on the bench.

RAMON SODANO: That makes perfect sense. Thank you, Natalie. That's why I hired her. So that is horizontal pressing. We'll talk about horizontal pulling now. So we can just do a dumbbell row, honestly.

So main things, and how I actually want you to do a dumbbell row is come back, hand here, do your lumbar row. So get your feet a little wider, step back, give a good hip hinge, soft bend in the knees. So we want to make sure if she's-- actually, hop up real quick. Set that down. I don't think I've had you do these before.

We're going to get a position that I don't think I showed Natalie before. So when we're doing a horizontal row with a dumbbell from the floor and want to make sure that we keep everything engaged, we're going to get ourselves in a very strange position. We're going to have our legs nice and wide. We're going to have a good, solid base. And we're going to really push our butts back.

And my hamstrings are nice and tight. I have a little bit of weight on the bench. And I'm keeping a nice, straight back. I'm not extending. I'm engaged right here, and I'm maintaining this position the whole time. I grab that dumbbell. And the only thing I have to do is just put it right up to my chest and back down.

Make sure to keep these heels on the ground. You can even scoot them back a little bit farther, make some room. Bring it up, squeeze. OK. So main things-- Natalie, now you got it. The main things to look for here is that we're keeping that arm close to the body, and we're tracking it, again, making sure that we're using the scapula for how it's meant to use. So go for it.

She's coming right up. She doesn't need to twist all the way over. Show them how a bodybuilder comes up and really-- it's not needed. It's extra movement that's not really working the rhomboids or the low traps or anything like that. We're getting the most bang for

our buck right here.

She has to have good, sturdy, core engagement right here. That's why we actually have the bench right here because that's acting as an external core because we're putting her back in a subjective position right now. But by having the platform in front of us, we're able to get some extra action from that.

So pulling is more about what-- you actually want to grab that PVC pipe? Sit your butt here and back facing that way. And imagine that you're doing a cable row. OK. There you go.

So when she pulls back, note how her arms are staying as close to her body as possible. Give a supine grip. Good. So those elbows are staying nice and close. We're not flaring them out super wide. Honestly, there are certain rows that you can do.

It's not as bad to row with a really wide grip as it is to press with a really wide grip. But if you want to be the most particular about your safety, it's best to keep those arms in as close as possible. So she is imagining that our her are just hooks and that all the pulling is coming from pretty much her lower traps and her rhomboids.

She pulls back, retracts the scapula, and she imagines that she's smashing an apple between her shoulder blades, or a walnut, or whatever you want. So she's getting a good pinch here. And she's still engaged with the lower lats, right? So go all the way out. Now show her what it looks like when you disengage your lats, as in from being out here.

So disengaged and now show engaged. Good. So she sets her position. Disengage. Engage. This is literally-- she's not arching at the lower back. She is literally just engaging. I can feel them firing right now. Again, that's going to help keep that back nice and straight as we're rowing through.

There's multiple types of rowing you can do. Again, just make sure the back's in a good position. And I really do like to keep the arms close to the body. Good. Stand up. So now we'll get into the more-- what you really see the base of most exercises. And that's you're squatting and your hinging. So our squatting is going to be our knee-dominant stuff, and our hinging is going to be our hip-dominant stuff.

So let's start with a basic squat. And we don't even have-- are you feeling good to do no weight squats right now? OK. Cool. Come right here. So first thing is to note with a squat-- let's show them from the front face forward. When you're squatting-- so just start doing some good

squats-- you want to make sure that on the way down you are driving your knees out, and on the way up you're driving your knees out.

You are essentially sitting. You want to think that you're sitting your torso in between your legs. You'll feel a good stretch in your abductors when you're doing it correctly. So she is driving her knees out on the way down and out on the way up. This is for the fact that if she squats, and then she has a valgus collapse happen, so her knees come in, and then it extends up, what's happening is we have tendons on the inside or ligaments on the inside of this knee. And we could be putting our MCL or our immediately collateral ligament in a subjective position by having the force come down that way.

So we always want to make sure that the knees are staying out, even on the way down and on the way up. Those are two big keys to always keep into consideration when we're doing knee-dominant exercises or doing any kind of squatting. OK. The next thing is-- face that way. And start doing some good squats. So we know her back is staying nice and straight. She's not completely doing a ballet squat where she's straight up and down.

She's a little bit of a hinge. But the back, the lower back is not kicking underneath or anything. Show them what it would look like if you had a bar on your back and then you went, fell forward. So what we don't want to happen is this.

And then they start standing up. And then they extend at the back. That's now not working their lower body. We're now working our lumbar spine when we don't want to do that. This is meant to hit our leg.

So show them again. Squats down, falls forward, and then extends up. We don't want that to happen at all with our squats. I know you were practicing. So there's a thing called the butt wink that we don't want to happen.

She doesn't have a butt wink because she has good mobility. But she's going to try to fake what a butt wink is. And the reason we don't want-- what's going to happen is she's going to squat down. And once people maybe lose their hip flexor mobility or their hamstring, or they're not mobile in a certain region, all of a sudden now the pelvis in the lower back have to kick in to take over, to keep the range of motion going.

So what happens is that pelvis will curl under. It should then, again, flexes that spine and puts those disks in a subjective position. So show them what a butt wink looks like. Notice how her

hips are just scooping underneath. Stand up. Do it again. It's right there. Her butt is winking underneath, and now we're in a flexed position at the spine.

We do not want that. If you are having that happen in your squats, there's most likely a mobility issue somewhere. It could be in your ankles, it could be in your hips, it could be in your hamstrings, it could be a number of places. But it's something that you want to get looked at.

A good way to start training squats-- actually before we get to that, another thing we need to focus on with our squats is we don't want our knees diving over our toes. So when she squats down, the weight of-- this is incorrect. So when she squats down correctly, the weight of her body is in the heels of her feet. So she could wiggle her toes right now if she wanted to. What we don't want to haen-- stand up-- is squat down and have the knees fall over the toes.

She has great ankle mobility. So her ankles are still maintaining contact with the ground. But for someone like me, if that was happening, you'll see this all the time. Say if you are squatting, and for some reason do a good squat, and your heels come up off the ground, if you're having that issue is a good thing to start doing at that point, maybe start putting five pound plates under your heels, and do squats with that, and then slowly remove them.

If that doesn't fix it, there's a bigger issue. But that's usually a quick fix that can happen. So we talked about making sure that the knees stay back, that the weights in the heels, that we do not valgus collapse at the knees, and that we drive our knees out on the way up and on the way down. Natalie, face forward. Can you show them what the worst squat in the world looks like?

She was practicing this earlier. So we don't want this at all. We want to be strong, and we also want to be mobile and stable. If for some reason that-- hold this-- your squat, you can only maintain good form to here. Practice that from now on. And then get lower, lower, and lower, and find out where your restrictions are at.

A great way to initially start learning squats-- grab a dumbbell-- is what we call a goblet squat. A goblet squat helps because the weight's in front of the body and acts as a counter weight so that when she wants to fall backwards to put more weight in her heels the weight holds her up. And it's a good way to just train that motor pattern.

A big thing about training nowadays is really developing the proper motor pattern that makes

the sequence of the movement happen. So you want to make sure that you do things correctly so that the brain tells the body to do things right. So when she does a goblet squat, the main concern here is that she maintains two points of contact, top of the dumbbell, bottom of the dumbbell, maintain contact the whole time.

Squats down touch the elbows on the inside of the legs, and then stands back up. Back down and up. So another thing that we want to look at, when we're trying to get the proper depth of the squat, it does not need to be-- we don't talk about 90 degrees at the knees. We talk about femurs parallel to the ground.

So you want to make sure that you watch where your femurs are at in relation to the ground. So squat down to where your femurs are parallel. Boom. She's there. So it's different for everybody. 90 degrees might get some people above this. And 90 degrees might get some people below this.

So it's a good use to use the femurs. Cool. Anything with squats?

NATALIE REETZ: No. You've got it all.

RAMON SODANO: OK. Distance. Yes?

SPEAKER: Question. How big of a difference is foot position while squatting, toes forward versus toes out?

RAMON SODANO: I am glad you asked. So this is a person-specific thing. And it all comes down to how the structure of your hip is, and more essentially how the structure of the ball of your hip goes into the socket, into the what?

NATALIE REETZ: In the acetabulum.

RAMON SODANO: She corrected me earlier because I called it the lesser trochanter. Yes. Yeah. It's the acetabulum. So and honestly, it's very genetic too. It's very interesting to watch. Dr. Stu McGill has a bunch of stuff on the ball and socket joint and how people from Ireland are different people from New Zealand and things like that.

But you want to do with what makes you comfortable. A lot of times when you're super duck-footed it's because you have really, really tight hip flexors. And you need to roll those out and stretch them. And it will turn the toes inward. And not everyone's going to be straight forward.

So I was actually going to talk about this. This is a way to find your deadlift position. And this is a way to find your squatting position. And it's a thing that I call the grip and rip. I didn't invent it. A guy named Brett Jones figured it out.

But if you want to find your squatting position with regard to where your mobility is at currently and what is proper for your body what you would want to do is you're going to stand straight up and down. You're going to lift your toes up off the ground. And while your toes are off the ground, you squeeze your butt cheeks. And your toes will go out to where you're squat or deadlift position should be.

And that's my body. OK. I'm tight in this position. It's pulling to me to where my hip flexor-- not my hip flexors-- my hip socket actually is. However, some people are just here because they are really, really immobile in the hips. Now, I shouldn't just say the hip flexors. It's a number of reasons.

And you used to be terrible. I used to be terrible. And we're both getting better at it because we do a lot of soft tissue work or manual manipulation on our hip flexors. But there's no way that I'm ever going to be a toe straight forward kind of person. So do what feels comfortable for you and that allows-- the simplest way to put it is do it where it allows your femurs to go parallel to the ground without your heels, coming off the ground and without your knees diving inward.

Challenge yourself to get a little bit more forward. Start [INAUDIBLE] in your hip flexors, and stretching out certain areas to see if that happens, because sometimes that duck walk is a mobility issue. But you can still train while having it. But again, you don't really want to re-- you don't want to cement an improper pattern. You don't want to cement that improper positioning.

But the thing is, if you are training with proper knees, driving out, getting the femurs to parallel, sitting the hips back in it, when the mobility starts to develop, as you start developing the mobility, the toes will just start turning in naturally to where they are now after those muscles loosen up a bit. And then you've already cemented a good pattern from a to b.

So it's OK that way. But again, a good way to start it, especially if you're going to go up to a deadlift or squat, lift the toes off the ground, squeeze your butt. Where your toes fall, that's your squat position. I would not suggest-- so for a long time, people are like, OK. I have to have my toes forward. And I need to get into my deep squat. And they're forcing themselves into this position.

And you'll see that their toes turn out at the bottom. If they turn out, that's you. And just be happy with where you're at. You're unique, you're beautiful, you're an awesome person. Do what you do. But again, it's very person-specific. There's certain tests that you can do to find out how your hip socket is engaged with regard to the ball and socket joint.

If you remember this individual's name and if you want to post a question afterwards, I can send you literally the link to Dr. Stu McGill's two tests that he utilizes to be able to find the shape of your own hip. And then you can have one of your friends do it to you or watch where you're at because it's going to tell you how wide your leg should be in your squat. Because some people should actually be wider than this hip width apart.

So it's not a universal thing. It's very individualistic. But I can post that link. Can I post that link on something for them? And it will be able to have you and a friend go over it where it's pretty cool and you can figure out what your actual squatting position is. Because this is only going to do so much for you. But those will be-- and it's easy to learn. He explains it really well. And you'll be able to figure it out. Any other questions?

I love that question though. Foot placement's huge. As you actually, if you may have saw, Natalie was squatting a couple times. And her toes turned out. And it's just because she wants to be cool and wants to have her toes straight. But it's not how all of us are. We're unhinging.

OK. I was going to have you do PVC pipe hinging, but we're not going to. So hinging is essentially the deadlift. It is you picking things up in the world. It is where I think weightlifting started. I think one caveman was like, hey, caveman two. I bet you I can pick up that boulder and you can't.

And then that's where weightlifting was born. That's science. That's proven. But you have to think. And every day-- well, actually, in everyday life you're doing all these things. You're doing vertical pressing, you're doing vertical pulling, you're doing vertical pressing, and you're doing everything. But the one thing that you probably do more than anything is you bend and you squat.

So now we're going to talk about bending. So we're going to start with-- have you ever done PVC pipe hip hinging with-- OK. Come here. So we have points of contact again. Weird, right? You want your set your low back. No, no, no, no. Slide down, hand at lower back. Turn your hand the other way. Excellent.

So a great way to teach somebody at hinging to find out if they should properly be hinging is to have them put at PVC pipe and do a hip hinge while they maintain contact of the head, contact at the shoulders, contact at the low back, contact at the butt. Now, a hip hinge is literally-- so you're bending over, but you're not squatting. You're hinting at the hips and you're pushing backwards.

You're going to have a soft bed bend in your knee. You're going to keep the back straight. You don't want to arch too much. Keep that down. And there's going to be a lot of tension in the hamstrings and in the glutes. So you're literally pushing your butt backwards. OK It's like you're on the dance floor and you're chasing someone. That's what kids do.

So what she's going to do is she's going to hip hinge. And as a coach, I would watch if she loses any points of contact. Keep hinging, keep hinging, keep hinging, keep hinging. She is absolutely beautiful. She is ready to hinge. She is ready to deadlift.

She's losing a little bit. So come down again. Now we're losing a little bit of contact on the butt. I'm not trying to poke her butt. Honestly, it's very minimal. And I think that she's pretty good for hinging. She is able to maintain all this contact. When I used to do this, the first thing that would happen-- yeah, so let me see this-- is I thought I was the best deadlifter in the world.

And the first thing I did as a deadlifter was engage my back. And then I would go down. And I could lift all the weight in the world. But you want to keep everything nice and flat, hinge-- oh, mine's terrible.

So now that she has surpassed that test, we will talk about-- I think it's a great thing to start teaching people how to hip hinge with a kettlebell deadlift, or a kettlebell RTL. This is for the fact that they're able to put the weight behind themselves and in between their legs, and maintain good proper back positioning. And if somebody can't do this properly, and they're all a sudden giving up their back, which we'll talk about what giving up your back looks like here in a second, if they all of a sudden just can't do it, and all of a sudden they just couldn't do it in the first place, the easiest fix in the world is just to bring the weight up to them.

So if they can't hinge properly down to the proper depth of the weight, you would just put a step, or a weight plate, or something underneath it to where it decreases the range of motion of the fulcrum at the hips to grab that weight. So what I'm going to have you do is I want you to do a kettlebell deadlift. I want that kettlebell to be about the middle part of your feet.

So there's a couple things that she's going to do when she's hinging. She's going to make sure. I always tell people I want you to imagine that you're being tickled. And so you're going to keep your arms real tight to your sides and nobody can tickle you. So she's got credit cards in between her arms. And they got minimum money on them and she doesn't want to lose them.

So no credit cards going anywhere with-- I have all kinds of crazy queues. I'm sorry. She's going to maintain contact in the lat engagement the entire time as she goes to reach that kettlebell. I really want you to overemphasize this hinge. So step even farther forward.

So we're really going to get a good hinge. You're going to get a good stretch. So what she's going to do is I always call it. She's going to go get that kettlebell. She's going to push her hips back as far as she can while maintaining her arms against her body. Once she starts to feel her arm slip away, that's when she's going to start bending at the knees.

So a hip hinge does not mean that you just have straight legs. You will have a slight bend in your knees. And the slight bend can increase as you need it to when the hinge stops. Does that make sense? So she's going to go get the kettlebell. She's going to start pushing her butt back.

And now she's going to start bending her knees because the mobility-- yep. Good. She grabs that kettlebell, bring it straight up, back down. Do a couple reps. So is there any way you can keep your legs a little more straight or do we need to bring that kettlebell up to you? Good. So she is a little taller than me, so it makes it a little harder for her.

But she's having a good hinge here, except we're at the very bottom. We're seeing this happen, her back starting to flatten out. So if I wanted to-- hold on real quick. I'm going to come behind you. What do we have? What do we have that I can use? I don't know if we're going to be able to do this.

Well, we can do it simply like this. Let's make it super easy. Now get the kettlebell. So this isn't ridiculous. Usually you just put a weight or we could use a 45-pound plate. But notice how it's not happening anymore. She's not having that flexion at the spine happen anymore.

So then we would go down to something smaller, and something smaller, and something smaller. Or, she's actually pretty strong, and I could use a bigger kettlebell that's easier to get. This is a pretty light kettlebell for credible RDLs. But we want to make sure that back stays flat

the while time, and we don't start having our arms shift out in front of us.

So when I talked about giving up the back earlier, if I'm hip hinging backwards, and all of a sudden my arms are shifting out, now this weight is forcing me down here, and I have too much pressure on my low back, and I'm not protecting it by keeping the weight back here.

So I'm being very nit picky right now. Her hinge was fine, honestly. So that's a great way to start teaching yourself how to do a hip hinge or a dead lift. So again, it's nice, soft bend in the knees, pushing the butt back, keeping the knees somewhat straight, nice, tight back, not arching but keep this position throughout the entire motion.

So now we start getting better at it, we can start doing things like deadlifts. So now you can come over here. And what makes this a little bit harder than the kettlebell is she's no longer allowed to have her hands come in between her legs to where she's able to maintain that back position. So when she goes and gets the bar-- so let's just an RDL from the ground.

So just hold it right there and get into position. So get stacked. Yeah. So you're about to pull the bar off the ground. Notice we're in a good hip hinge. And what's happening is she is now externally rotated her arms to engage her lats the whole time. Pick that bar up. She keeps the bar close to her, back down. Good. So typically in an RDL, you actually don't go all the way to the ground. But we're going to show RDLs going into the ground.

Do you want to show? Do you just want to RDL this? Yeah. It's fine. Do an RDL. So RDL is you're not going all the way to the ground, and you're really just working the hinge phase. Boom. Don't let it fall off of the body. Keep it close. [INAUDIBLE]. What are you doing? Come on.

So she is really practicing her hinge phase because it's hard to have the mobility. Because now when she goes all the way down it's going to turn into a deadlift where she gets a little bit more bend in the knees. But if you want to focus on that hinge, RDL is really good for it. She's loading her hamstrings. As she's sitting back and sticking her back behind her, She is loading her heels too. You should feel a lot, lot, lot, of weight in the heels, which will load the hamstrings. And you'll feel a lot of tension back there.

She's a deadlift queen. You'll have a state record?

NATALIE REETZ: Yes.

RAMON SODANO: What was it?

NATALIE REETZ: 420.

RAMON SODANO: So she deadlifted 420 pounds. What are your tips with deadlifting?

NATALIE REETZ: Keeping a nice, tight back, and training your back muscles. Because a lot of people have weak backs, and they start to cave in. And I think it's-- oh, it's because I'm not keeping-- or I'm not arching my back enough. So then they hyperextend their lower back. So getting that really strong back helps a lot.

RAMON SODANO: That makes me remember that we forgot. So the most common fault with a deadlift-- so let's have you actually roll that way so you can be in the middle here, so you're a profile to the camera. No one tell anybody that we're using plates on the ground. So the most common thing that you're going to see with a deadlift that's gone wrong is not back extension. But it is back flexion.

So if she goes and gets that weight, all of a sudden when she picks the bar up off the ground, she cannot maintain the hip hinge position. So hinge down, grab that weight. Good. She is in a good position.

Now when she lifts, her butt all of a sudden comes first, and she lifts with her back. That is a big no no. That shows me that-- because the core is not just in front. It's all the way in back too. It shows me that her posterior side is not able to engage to be able to maintain that position throughout the entire movement. And it's exactly the same thing as that weight coming out in front of me. We're given up the low back because we're coming here with a deadlift.

We shoot up. OK. It's nothing but my low back now. OK. We want to make sure that when we're using the deadlift, that we're using the muscles that are right and correct for the exercise which is her glutes, and her hamstrings, and a little bit of her back, but more for support. Anything else? All right. Roll that back.

So to reiterate a little bit, it is very important within your programs to make sure that you have as much vertical pushing as you do vertical pulling, as much horizontal pushing as you do horizontal pulling, and as much hip-dominant as you do knee-dominant exercises. I would even get to the point where you have as much single leg hip-dominant, like a single-leg RDL,

to as much single-leg knee-dominant like a pistol squat or something like that.

So make sure it's equivalent across the board. Do the exercises correctly. Use what we talked about today just as a quick check. If you're doing a vertical press and for some reason the ribs just keep coming up no matter how hard you're trying to be able to hold them down, it's not an easy fix. It's confusing to figure out what it is. But if you find someone that knows how to work around it, or how to re-establish your mobility, and then re-establish the stability, and then re-pattern the improper pattern, it's a minimal process. It only takes two to three weeks. You've got to find the right people to do it.

And I would suggest to probably see a physical therapist for that. They're going to be able to-- OK. You're fixed. Well, they're not like that. But they do magic, honestly. So it's beneficial to exercise. We all know that. It's beneficial to weight train. Everyone hears it.

But more specifically, it's more beneficial to weight train correctly. So with that, that wraps up what we're talking about in the seven principles of movement in the Train Smart webinar that we have here. I want to tell you guys about some opportunities that we have going on.

Right now Global Connections is working with us here at Washington State University and the rest the Pack 12 schools. And a competition that we have amongst ourselves called the Pack 12 Fitness Challenge, it runs from October 24th to the 28. And what it is, is we are able to log minutes of our exercise time that we do. And we go against other universities.

And the website was pack12.org for logging your minutes. So essentially, you go on there. And if you want to the gym for 45 minutes, you log your minutes in there, and then it goes to our entire Washington State University total. Help us out with this. We lose to Stanford every year. I have been doing stuff at WSU since 2009.

And I have come in-- I. I take this very personally, apparently. We've come in second and third every single time. And Stanford always beats us. And I would like us-- if we start getting global campus students to help out, online students, it's sneaky and cheaty. But everyone else is doing it. So it's whatever.

We will also be doing a thing called the weight-- here at the rec center we have a weight room challenge that we do where each day is a different three-minute challenge. I'm going to be working with Global Connections to post the challenges either on the Facebook or are we doing it on the Well Being online page?

We'll probably be doing them on both. So make sure to check those out. You'll be able to submit your scores. I bought prizes for everyone. We got some foam rollers and some bands. You guys got some yoga kits or something. Or, what are you guys doing?

SPEAKER: Lots of prizes.

RAMON SODANO: Lots of prizes. So hop on and do it. It'll be a good time. Our next webinar is going to be Shopping For Real Food. It's going to be on November 1 from 6:30 to 7:30 PM. I will go over what I call JERF, which means just eat real food, and how to do so, and this typical consumer world that we live in now, and how to utilize the store for yourself, and how to not get caught into what I call the cardboard carbohydrates, and the secret additives in foods, and all the terrible stuff that our body just is not really primed to deal with at this point.

Also checked out Well Being online. I post content every single week. I'll post a workout of the week. I post an article review every other week about topics that deal with your well-being. And then I'll post a nutritional tip every single week. Is there anything I'm missing?

SPEAKER: We just have a question.

RAMON SODANO: OK. We do have a question.

SPEAKER: When pulling and lifting, I notice a popping in my shoulders. Is that normal, or am I performing the exercises wrong.

RAMON SODANO: That is usually not normal. But what I would say in there is one, not knowing who you are, and not going through your workouts with you, not seeing how you move, not seeing your mobility, your stability, anything like that, I can't really answer that question. And even as a strength conditioning coach and as a trainer, I can't really diagnose that as well either.

I would suggest that you see a physical therapist about it. See them first. If it's not causing you a whole bunch of discomfort. I have popping and cracking everywhere. We age. Things happen. But no. It's not normal. But it may not be something that you have to deal with or have to really go out of your way to try to fix.

However, if it is causing some sort of pain, or if it's feeling like it's starting to cause some sort of pain, it would be definitely going to get looked at. Regardless, since the body isn't really meant to do that, there may be something going on. So it wouldn't hurt to see a physical therapist about it to see maybe if you can work around it.

SPEAKER: And then how often can one do resistance training?

RAMON SODANO: That depends on what your goals are. The question was, how often should one do resistance training? So it really depends on what your goals are.

If you're an Olympic lifter, and you're trying to compete, you're lifting six days a week in a very, very strategic programming. If you're just trying to do general fitness, and you're just starting out, honestly, just starting out, two to three days a week is just fine. I would suggest if you've been going to the gym for a while, three to four days is good.

Make sure to do some sort of like cardiovascular activity too, whether-- it can be, honestly, steady state stuff where you're doing longer distances, or if you like to get really amped up and do the interval training, that anaerobic threshold training can correlate to aerobic threshold training as well.

But if you are general fitness, and you are trying to stay somewhat healthy, a minimum of three days a week of resistance training is pretty good. If you can get four it makes your programming a whole lot easier. But again, it's really dependent on your goals, who you are, what your schedule is. The main thing is, do not make weight training a chore.

Don't make it something-- oh, I got to do this. Make it something that-- it's inbuilt into your life. And you understand it for the preventative medicine that it is. I'm a true believer in doing proper nutrition, and proper exercise, and fitness will keep you out of the hospital. It is the true form of preventive medicine that's out there.

Granted, it's not going to solve everything. But it's going to help a lot of things. I think it was Hippocrates said, let food be the medicine. And it really is what you put into the body. What you do to the body is really going to affect how it is used and how it works. Cool! So all the questions we've got for now.

I will post that link for you, or I'll send it to Caitlin to post for you of Dr. Stu doing the individual squat stance test. And that's all we have for you guys today. Thanks for coming.