What happens to runners when they strength train for life?

Toolkit for everything you need to know about run strength training

00:00.673 Daren DLake Runs: Stop, stop, stop. Yes. Stop going everywhere for all your information about strength training for running. This is all you need right here. Because strength training, like most things in life, is super confusing and nuanced. Information is everywhere with so many options and variations depending on each person. It's no wonder why all of us runners tend to get overwhelmed, myself included. In this episode, we, which is me and a medical sports professional, will create a robust toolkit so that you can learn almost everything about strength training, specifically for running, so that you can feel more empowered to make better decisions about your training habits, so you can Insert whatever you want to get from running. Run far, run long, run fast, run your best time, do X, Y, Z. In this episode, we'll touch on definitions of things you hear around strength training that might be confusing. You just don't know.

00:52.981 Sam - 10W2S: We then have the tendon, which attaches the muscle to the bone to help move a joint.

00:58.607 Daren DLake Runs: Tendinopathy versus tendinitis?

01:01.269 Sam - 10W2S: What happens in tendinopathy is they start to break down and they start not forming as well and neatly and as nicely as we'd like them to every time you're going through your running and training.

01:11.115 Daren DLake Runs: Why is strength training now the new bee's knees when 50 years ago not too many runners were doing this that we know of?

01:18.700 Sam - 10W2S: I think the research has changed and there's been more and more coming out on how it can benefit runners.

01:23.323 Daren DLake Runs: Why do you think some if not most runners tend to avoid strength training?

01:27.986 Sam - 10W2S: Time, I always find, is the biggest factor. That's what they struggle with. They want to get their K's in. They want to be, obviously, managing work, kids, life, and then strength training is just the, oh, I need to get that done too.

01:38.810 Daren DLake Runs: And a bunch more. Oh, why should you believe me and who am I? Well, I'm Darren D. Lake Runs. I've been running since 1994. I'm a three-hour marathon runner and a 10-hour Ironman triathlon finisher and still trying to get sub-60 minutes in the 5K. Still trying. TBD on that. And since 2012, I've been researching, experimenting, and talking to experts on how to get 1% better each day in my training, racing, and life, all to make it that much simpler and easier for you. I'll be joined by Sam Shearman, a Sydney-based physio slash physical therapist who specializes in running-related injuries. She holds first class honors degree in exercise and sports science and a master's of physiotherapy. Her experience spans various settings, including sports clubs and institutes. She also developed the 10W2S 10 Weeks to Strength for Runners app, which is so dope and simple and one of the best strength training apps for all types of runners that I think, and is passionate about helping runners manage their training and their injuries. Last, if you're listening via audio only, Please make sure to have a look at the links in the show notes specifically the episode Website because in our convo Sam goes into super detail about a lot of things like how to do strength training movements body position, etc And having a visual alongside of these concepts will help you understand it much better enough for me. Let's go in So before we ever jump into anything, I always like to define it, because I liken this to, think of, you're talking about the leaves on a tree or the fruit from a tree. And then the question is, what do the branches look like? What does the tree trunk look like? What do the roots look like? So before you can really talk, you need to like, what's happening there? Why is that? And yes, you can just talk about the fruit and the leaves on the trees, but I like to know, I'm a curious person, like, what the hell is actually going on here? Definition one. Tendons versus muscles versus bone strength in a simplified way for people that are not physiotherapists and scientists.

03:34.458 Sam - 10W2S: So we have the big bulky muscles. We then have the tendon, which attaches the muscle to the bone to help move a joint. A joint is when two or more bones meet again to create movement and stability.

03:49.619 Daren DLake Runs: Tendinopathy versus tendinitis. There's another one. Tendinosis. Yeah. So I see these terms pop up a lot. What's the difference?

03:58.585 Sam - 10W2S: Yeah. Tendinitis is a bit of an old school term because the iotis infers that the tendon is inflamed. What we know now, it is a non-inflammatory condition. It's rather, and I hate this word, a degenerative condition. Which is what I have. Yeah, it basically means the tendon isn't as strong as we'd like it to be. They're made up of tightly bound collagen fibers and what happens in tendinopathy is they start to break down and they start not forming as well and neatly and as nicely as we'd like them to every time you're going through your running and training. Yeah, so tendinosis is basically tendinopathy. It's just looking at it at a cellular level, but the pathology is, which is what the condition is, is tendinopathy. Makes sense.

04:39.321 Daren DLake Runs: Not really.

04:40.863 Sam - 10W2S: I would almost ignore tendinosis. It's just tendinopathy. You might read tendinosis on an imaging report. It just means that that area of the tendon is Again, showing that part of the condition where the cells and the collagen aren't lining up as nicely as we'd like them to, but let's put it all under the category of tendinopathy. Let's ignore tendinitis because it basically doesn't exist.

05:01.352 Daren DLake Runs: Okay, so it's just an old school term, and for some reason, American physiotherapists, physical therapists, and general practitioners still use that term.

05:09.539 Sam - 10W2S: And I think it's really important to differentiate, too, because something that's degenerative versus something that's inflammatory needs to be managed differently. Inflammation requires rest, potentially medications. What we do know, you don't want to completely rest tendons. You want to get them stronger. So people might be apprehensive doing certain tasks on their tendinopathy, thinking that it's inflamed, where it's not the case.

05:32.507 Daren DLake Runs: That's crucial. So I hear these terms a lot in, uh, the, the physio physical therapy world, the strength training world, and it's eccentric. Concentric and isometric. And I kind of know what they mean. I hear a lot about eccentric. Everyone talks a lot about that, that being like the golden thing that more people should do. So tell me the definition, the definition between the three. Um, and then when you should do each, like, when's the optimal time to focus on each.

06:00.230 Sam - 10W2S: So an isosymmetric exercise is where you're holding a muscle contraction, but you're not moving the joint through range of motion.

06:06.356 Daren DLake Runs: Kind of like ice. Ice is how I like ice.

06:08.938 Sam - 10W2S: Oh yeah, like it's frozen. Yeah, that's how I remember it. So an example is a wall squat. You're just sitting there, nothing's moving, but your quads are contracting. Now concentric is the muscle shortening phase, and that's such as when you're standing up from a squat.

06:24.096 Daren DLake Runs: So you're pushing through.

06:24.996 Sam - 10W2S: Pushing through. Yeah, well, arguably, because I think eccentric control is harder. But eccentric is when the muscle is lengthening. So that's the difference. We have the static contraction isometric, the shortening contraction, which is the concentric, and the muscle lengthening phase, which is the eccentric.

06:41.984 Daren DLake Runs: And that would be the going down of the squat.

06:43.905 Sam - 10W2S: Yes.

06:44.225 Daren DLake Runs: Yeah. You know, when I started doing eccentrics, COVID, I didn't have any more resistance because I couldn't go to the gym and I had to do basically Goblet kettlebell. I was holding a kettlebell the heaviest kettle I have and a personal trainer was like do eccentrics, bro And I was like, all right He's like she's gonna get hard and he's like and then hold it at the bottom and I was like what and oh my god It's like it's his whole other world like holding it slow He's like do like three five seconds down and then he's like, you know, he said he told me I know it's different to explode up and then hold it three and then hold two seconds at the bottom and that really got me into the world of eccentrics and

07:19.581 Sam - 10W2S: Yeah, I think that phase is so important. It's arguably more important than the concentric phase. You want to have good control through that muscle unit. And as well, it can also help build a longer muscle too. So I think, you know, stretching, we need to do this to build a long muscle. If you're really strength training a joint through range, focusing on that eccentric phase, you can actually create a physically longer muscle, whereas static stretching, et cetera, is more how your brain perceives the stretch tolerance. You don't actually get a huge amount of change in the muscle itself. focusing on the eccentrics will help build a longer muscle.

07:51.033 Daren DLake Runs: I know that for tendons, eccentric is really good.

07:55.075 Sam - 10W2S: Yeah, so it used to be thought eccentric exercise is the B's and E's of tendon rehab. You know, just do eccentrics. Eccentrics? Yeah, eccentrics, 12 weeks, where more of the research is coming out around what we call heavy slow resistance training. So putting in the context of Achilles tendinopathy, if you manage it with an eccentric loading program, it is 3x12 single leg calf raises followed by 5 minutes rest and 3x12 bent knee calf raises. You do that twice a day and you do it for 12 weeks, you know, progressing the load and how much weight you're carrying throughout it. In a heavy slow resistance program, you're lifting heavier. You start, you can do three exercises per session and you only need to do it three days a week. So you're lifting heavy and hard and you get a few rest days. Now, the outcome you know, with one versus the other, they had the same, quite a sort of similar change in pain strength. However, the group that did the heavy slow resistance just were more happy about what they were doing. Like, you know, you're not stuck doing calf raises every second day for 12 weeks. So patient satisfaction is much better with the gym-based program. And that's my preference too.

09:03.288 Daren DLake Runs: Patient satisfaction. Yeah, you do more of what you like doing.

09:07.269 Sam - 10W2S: Yeah, I mean... I've seen that many patients. Oh, not the car phrases again. So, you know, you want to be, you want to be short, sharp, but effective. And you can do that with the heavier stuff.

09:15.912 Daren DLake Runs: All right. And the last definition, it's a messy one and feel free to correct me on this. So, I hear the term hypotrophy or hypertrophy as it's spelled, H-Y-P-E-R, trophy. And then there's muscle endurance. So these are different types of strength training. Hypotrophy, muscle endurance, general strength training, and then power. Feel free to sum that all up. Maybe give me an example of each one and when it's necessary, because it seems like All of them are good, especially for runners. You want to have a comprehensive training routine. You don't want to just do all hypotrophy. You're not power lifters. We're not, you know, lifting for the highest weight. But you also don't want to be doing 30 reps, you know, body weight stuff. So maybe just go through each one. So hypotrophy first, what's an example set?

10:07.939 Sam - 10W2S: Oh, so hypertrophy is when you're getting an increase in the muscle size, but also strength as well. Typical set and rep range is three to four sets of 12. And an example when you do it is, I mean, I usually start most training programs in that rep range, whether it be, you know, tendon rehab or getting someone onto a running program, because if we're going too heavy, too early, that's going to put a person in risk of injury. You need to build into, you know, going into the lower rep ranges.

10:37.862 Daren DLake Runs: So hypotrophy is basically getting jacked.

10:41.045 Sam - 10W2S: Well, no, I mean, not for runners because runners do worry about putting on too much muscle mass, but runners run a lot and that's, um, catabolic to muscle size. So if you're lifting in that, you know, three to 12 rep range and you're running lots, you're not going to see a huge. Change in muscle size. So that's important to consider because you still are going to get good benefits and strength.

10:59.833 Daren DLake Runs: While we're here, catabolic. So running is catabolic, which breaks down the muscle. And then strength training is an anabolic activity, which is particularly hypertrophy. Yeah. And you want to, uh, I mean, look, there's argument. Do you really need to run? Uh, I like running, but walking briskly uphill can probably do the same thing and be less detrimental on your body. I like running. So you need to counter that with. and anabolic type workouts. Um, and obviously eating your protein and eating the right, the right types of foods. So next we got muscle endurance. Um, what is that compared to hypotrophy and an example set?

11:37.355 Sam - 10W2S: I hate the term muscle endurance and I basically never prescribe it. It's when you're doing, you know, less sets, maybe two sets and you're doing higher rep range. So anything above 12 starts to creep into that muscle endurance. Muscle endurance

isn't effective for endurance performance because it's not, well, it's basically doing something almost similar than what we do do. And we don't want that. We actually want to provide a heavier stimulus to get better aptation in the muscles, a capacity to produce strength. So I actually can't find one reason where I've included muscle endurance sets and reps with any of my exercise prescription. Okay. Good to know. Very good. All right. Yeah. Tendons like the slower, heavier stuff. So, and that's important for runners.

12:17.568 Daren DLake Runs: General strength. Is there a difference in general strength and hypotrophy?

12:21.609 Sam - 10W2S: No, I don't even think there's something called general strength. We more just have strength or maximal strength and that's really in the lower rep ranges. It's like looking at like a 5x5 or a 4x5. So you're lifting very heavy but you're doing very little reps and perhaps some higher sets. So again, maybe five sets, five repetitions and greater than 85% of your rep max. Also not great, I mean like 85% of your rep max, I should say.

12:47.678 Daren DLake Runs: Which we might get into the one rep max, O-R-M, is the one rep max. We'll talk about that maybe in a bit. So the last thing is power. lifting heavy is what a lot of people, a lot of runners say.

13:03.576 Sam - 10W2S: Yeah, power is that ballistic force in your body to produce that ballistic force. I think it is important with runners too, particularly if you have been strengthening for a while and we want to get more explosive capacity, it facilitates that rapid elastic recoil of the tendons. You can do it a couple of ways. You can do the power training in the gym. Set and ref range looks something like perhaps four sets of six. Exercises look like, again, a bit more advanced exercises, but power cleans. But you can also get power development through your plyometric training too. And that's all your jumping based activities. Again, it's all about that rapid, you know, we call it the stretch shortening cycle of the tendon and its ability for it to act like a spring.

13:45.477 Daren DLake Runs: Is that the whole recruitment of all the muscles?

13:49.100 Sam - 10W2S: Well, you don't want to absorb... Recruiting muscles? Yeah. When you are running, you actually want less almost recruitment of the muscles. You just want that snappy recall effect. So if you're spending too much time absorbing all the load through your muscles, it's actually going to slow you down and you're going to be absorbing more oxygen. Whereas if your muscle and tendon unit can act like a spring, you're using less energy and it improves running economy.

14:13.207 Daren DLake Runs: Right now is the part where I go, Hey, if you're not feeling this, make sure you subscribe, rate, share it out with your friends about how amazing this is. Rah, rah, rah, rah, rah. All right. While you should go out and do that anyway, how about I actually give you something that will help you? Is the running, health and fitness and endurance sport internet too much sometimes? Is it too much conflicting content on how to train right? Or you just don't have time to read and watch the latest trends on how to, I

don't know, carb cycle for your next marathon. Don't worry. I'll take care of that for you by showing you how to train, race, and live 1% better consistently. To do this, just sign up for my free newsletter, OPB. I figure out this whole 1% better thing so you don't have to by scouring the endurance sports deepest and darkest corners of the internet. Go to DLakeCreates.com forward slash news, all spelled the normal way, to be inspired and motivated on the regular. Let's get back into it. So why do runners need strength training? This is, I'd say, the thesis of all the stuff we've done over the last few days of recording. I mean, look, 50 years ago, runners didn't do this, quote unquote. That's actually a lie. But a lot of people like to say that anecdotally, that I didn't hear about runners doing plyometrics and lifting weights, and they were fine.

15:29.737 Sam - 10W2S: So what do you think has changed? I think the research is changing, there's been more and more coming out on how it can benefit runners. I was actually having a look at when it first started appearing in the literature and I really couldn't find too much beyond the 2000s, so really I think beyond 2010. There's been so much more coming out and showing how beneficial it is to the sport. So I think it's still, I wouldn't say it's in its infancy, but it hasn't, there's not a huge amount of research from the 1990s and later, earlier I should say.

16:02.898 Daren DLake Runs: Always the research, always the data. Why do you think some, if not most runners avoid strength training, not strength training, or I guess avoid strength training? What do you think it is and how can they combat that? Like what's a good tool that they can use, like behavioral?

16:16.240 Sam - 10W2S: Yeah, time I always find is the biggest factor. It's what they struggle with. They want to get their K's in, they want to be obviously, you know, managing work, kids, life, and then strength training is just the, oh, I need to get that done too. Some people are not as confident in a gym-based setting. So that may be a, limiting factor. That's the two things I think about is not feeling confident, not knowing what to do, and not having the time being the biggest factor. How they can combat that, well, I mean, that's what I made an app for. Nice little segue, but yeah, with making the app was I just wanted to make something accessible to everyone. I wanted to make it quick and easy to do, like not easy as in effortless for the exercise, but something that doesn't take up too much time. I've got two facets with the app. One, that's home exercises, four exercises to do no longer than 20 minutes out of your day. Or for those runners who do want to step in the gym, I've got some gym-based programs too.

17:10.031 Daren DLake Runs: Awesome. I will be promoting this and plugging this. Go check out the app 10W2S. You literally just type it in. Most countries, it's available in the app store.

17:19.857 Sam - 10W2S: Yeah, worldwide.

17:20.217 Daren DLake Runs: Yep. Whatever app store, Google Play and Android and Apple. All right. So would you agree that Everyone has imbalances, especially runners.

17:30.581 Sam - 10W2S: Yeah. I mean that's just part of life. We're not we're not symmetric.

17:33.283 Daren DLake Runs: No one's perfectly symmetrical So how does strength training help the imbalances that everyone because I have a my left leg is bigger than my right leg and my right arm arm upper body is bigger than my left. And I've got a scoliosis, so I've got a curved spine. It all makes sense with that. So how do people counter that?

17:55.819 Sam - 10W2S: Yeah. So first of all, with a strength trainer, you can work some of the smaller muscle groups that you perhaps are not strengthening elsewhere. And you can also strengthen your left side to your right side. So I often find with runners and injuries, I tend to find it's usually the weaker side that develops an injury first, because it's simply due to a load versus capacity issue. So the load is all the running that you're doing, and the capacity is the strength of the tissue, so that's the muscles, tendons, bone. So I tend to find the weaker side is more likely to reach that failure point too, but there is also some evidence to suggest that people may prioritize their stronger leg and therefore load it up more. So it may be different, but from what I see in the physio clinic, it tends to be the weaker side that reaches failure first.

18:39.510 Daren DLake Runs: Speaking of failure, should in a strength training, should you go to failure or almost failure?

18:45.432 Sam - 10W2S: I would say almost failure. So you're around that 85% repetition max. So you have one or two left in you? Yeah, exactly.

18:52.535 Daren DLake Runs: All right, squats. The question of all questions. Ass to grass, squat. So all the way down, half squat, quarter squats. Half squats for sure. Half squats for sure, okay. Is there a time to do all three?

19:09.540 Sam - 10W2S: Oh, absolutely. I mean, a variety is good, but in, I guess, reference to, in context of running, half squats more seemingly replicate the running stride in itself. And that's also where the research sits. There was one study that looked at maximal strength training in runners and how it improves running economy and performance. And they were doing five by five, so five sets, five reps. And they were only doing half squats and they did it for eight weeks and they saw, you know, big gains in their performance. Yeah, it's basically performance what they were looking at. So time trial performance.

19:43.318 Daren DLake Runs: Yeah, you told me about that when we first met and I started implementing them in heavy half squats. And I really liked it. I like lifting heavy. I have the power, fast twitch muscles. then I hurt my back, but that was because I was deadlifting right after that.

19:58.246 Sam - 10W2S: Well, that's the mistake. While we're talking about that, I think with deadlifting, and it is one of my favorite exercises, but always do it first in your program, just because you are loading up those structures of your back. And there's something

called spinal creep. So if you're doing other exercises first, the mechanoreceptors, so the receptors that respond to movement, they're less able to, I guess, give the information to have your body provide stability around the joints. So as an example is if you're maybe doing some back squats first and then you go to pick up something heavy afterwards, your back is less able to stabilize. So deadlifts I always think deserve to be first in the session and I query whether doing deadlifts and back squats back-to-back is a good idea.

20:44.572 Daren DLake Runs: It is not for me. I did it probably the last four or five years of me properly lifting and every single time I start getting into the heavy sets. pull a little muscle in my lower back. And it's been extremely bad and just mild. And it's always when I do heavy squats followed by heavy deadlifts.

21:04.419 Sam - 10W2S: So my recommendation here is I don't think I ever program or very rarely program deadlifts and back squats on the same day. They're both heavy compound exercises. They are absolutely excellent exercises. One of the best exercises to strengthen your core. But they'll always be at the start of the session as a first exercise. And they'll likely be on different days.

21:23.010 Daren DLake Runs: Here's a fun one. When's the best time to do strength training for running? Very contentious topic. Before or after the run. And then timing. Should it be four hours if you do it after, four hours after, immediately after, 12 hours? So which one is it? Because there's studies that contradict each other.

21:40.382 Sam - 10W2S: Yeah. Yeah. I think the best strength is the one that gets done. Don't get me wrong. You want to do the one that is your priority first. So if you're thinking like you've got a tendon injury and we really want to start lifting heavy here, I'd go strength first and then do your run afterwards. If the run's the priority, run first and then strength afterwards. In terms of timing, obviously opposite ends of the day is better, but once again, no issue doing them at the same time, you just want to get it in.

22:08.531 Daren DLake Runs: Yeah, to add on to that, I found in the preseason, and I call it the build, VO2 max build, and I actually prioritize strength. So I'll make sure that I get the strength done. First, depending on my schedule for life. Luckily, I have a gym right next to me. I also have a whole bunch of kettlebells and I got the Bulgarian bag. Is it the one of the bags? I got random little bits and bobs in my house to where I can do a lot of single leg movements, functional type stuff. So I can move it around my schedule. But then as I get into my race build, which is about anywhere from six to 10 weeks out from my main race, I focus on running and then I lift after and actually drop the strength training down to two times a week.

22:54.473 Sam - 10W2S: That's perfect.

22:55.414 Daren DLake Runs: But yeah, but most of the year I'm actually like three times a week strength training, sometimes four if you add in the plyometrics strength training. I just like doing it and I always make sure that it gets done because I can pretty much run. I run

commute everywhere, so I can actually get in these incidental easy runs much easier than maybe other people. But yeah, I don't have I have a lot of time. I have the same amount of 24 hours that everyone else has. So I just, I've made sure that I have the kettlebells at home. I can do the home workouts. So I'm like, oh, I can't do the calf raises at the gym. I'll just do them at home. And I just move certain exercises to home.

23:28.408 Sam - 10W2S: Another thing to consider too is I often read that you shouldn't heavy strength train when you've got a high-intensity running session, where I think it actually might be the contrary. You want to have your heavier days where your day off is where your body has that chance to recover and adapt. So if you're going heavy run day A, then heavy strength day B, you're providing a lot of training stimulus on each of those days. Rather, if you do the strength and the harder sessions on the same day, perhaps it gives a bit more recovery in the next following day. You don't have to do that and don't take it with a grain of salt, but that's something to consider too.

24:09.381 Daren DLake Runs: Here's a kind of theoretical hypothetical as we wrap this up. Is doing something with average form and not the optimal reps better than nothing?

24:18.794 Sam - 10W2S: Yeah, sometimes I think form doesn't need to be as precise as we think it should be. To get the benefits. Yeah, to get the benefits. Any injury is when your body is not used to that stimulus. So if you have poor form when you pick up something and it was relatively heavy and, ah, that's an injury, I have my back sore, then clearly your body's unprepared for it. But if you're in a starting place, yes, form is important, but it is, you know, if it's not, To a degree, I don't think it's a huge thing to worry about unless you're, again, lifting very heavy and you're not prepared for that lift.

24:57.511 Daren DLake Runs: So something I hear, I coach a few runners and one of the runners that I coach, he was like, dude, I feel really sore after I run or after I lift and it feels like it's hurting my running. And I've actually heard this from other people. They're like, running makes me, sorry, strength training, lifting makes me slow. How do you, how do runners manage that? Is there like, I feel like there's like a few week period of adaptation. Correct. Yeah. That they need to just get through it. Absolutely. Do they regress it? Like, tell me, tell me, like, give me a quick.

25:27.606 Sam - 10W2S: So DOMS, which is the delayed onset of muscle soreness, it is much more likely to occur when you're first starting a new program. So an example for me is when I've neglected gym for a little bit, then I go in, you know, get some heavy leg work in and I go for a run the next day, my legs feel like bricks. It's just uncomfortable. It sucks. You feel slow as ever. So there's going to be a few, if you haven't previously done that kind of strength, there's going to be a few week period adaptation period that you're going to feel a little bit slow and heavy during some of your training runs. I think it's appreciating that that is occurring and then the more your body adapts. I mean, for example, in my own example, once I'm training regularly, it probably takes me two weeks to start feeling a bit better again. And if I have that in the back of my mind, it makes it easier getting through those first two weeks where your runs just feel terrible.

26:16.773 Daren DLake Runs: I guess that the two weeks, you know, I would regress maybe. And I guess if you're starting out, there is no regression, but maybe you three months before that, you were lifting heavy and you probably need to go in and regress the workout. Yes. Why should people regress workouts more? And like how, how little should they go down to? Is this running or the strength? Strength.

26:36.164 Sam - 10W2S: Sorry. Yeah. Well, you want to regress because if you haven't been doing it for a while and then you hit your body with this huge stimulus and again, injuries happen for the movements were unprepared for, then that's, that's your risk there. But it's just about, again, you still want to lift a load that's, again, you feel like you've only got a few reps left, but because you've detrained, that load isn't going to be as heavy as like, let's think maybe 60 kilogram back squats. It won't be that because you've simply not had that time doing the lift.

27:02.160 Daren DLake Runs: Yeah. And you can regress it by less reps, less sets.

27:07.064 Sam - 10W2S: I would actually other way around. So, because, you know, with heavy strength training, you're in that lower rep range, so you can go, you know, all the way down to, you know, five reps and you're generally lifting heavier. So you might start a bit higher again in that sort of 12 rep range, which will be a little bit lighter, but it still needs to be a heavy enough stimulus that when you hit, hit rep 12, you feel like you've only got a few reps left in you.

27:29.621 Daren DLake Runs: But, um, a random. theory that I heard from a physio and he said that there's some new studies and it's really hard because it's based on how a person feels and those are like really tough studies but basically the correlation between how bad a tendon feels, the pain of a tendon, and actually what's happening in the tendon are like total opposites, meaning that if a tendon feels a 9 out of 10, the actual damage to it or the, I wouldn't even say inflammation, but like what's actually happening is actually way less. and possibly vice versa, I think it's more happening where it's like, oh my God, it burns, it burns, it feels really bad, but there's actually nothing wrong. It's not as bad as it feels. How do you feel about that? Are they, they seem like early day studies, are they theories?

28:17.831 Sam - 10W2S: Nine out of 10 is painful. I wouldn't want anyone doing any exercise through a nine out of 10 pain. That's the top and that's where, yes, And I wouldn't say you're damaging at the time. I could say you're doing some calf raises and, oh, it's nine out of 10. It's just the tendon is in such a bad place. It is so sensitive. You don't want to be pushing it with any, even at that stage, like I'd be slaying off your feet for a few days. You know what I mean? Maybe not nine out of 10.

28:38.849 Daren DLake Runs: Yeah, yeah. Let's say six out of 10.

28:41.031 Sam - 10W2S: Six out of 10. Yeah. So that's, again, you're not going to hurt it doing any kind of the strength stuff, but if you're pushing through with runs, that's going to continue to develop the tendon pathology. So for most people, I put everything on a scale

of 10. I say between one to two is safe. Three to four is acceptable and really like keep it under five, anything higher than that. And that's both during the run and in the 24 hours afterwards. If you go for a run, a little bit, you know, a bit sensitive, but the next day, Oh, you're like hobbling around so much pain. It was clearly too much. So that's the best way I try and manage tendon injuries and making sure runners can. you know, maintain their training load as you keep it on that scale. And it's very subjective, but you don't want to be in a position where you feel like you're changing the way you run. That's certainly too much. But in terms of pain sensitivity, when runners are coming through and we do want to work on tendon strength, and perhaps first session we're doing our calf raises for an Achilles tendinopathy, I almost want them to feel a bit of sensitivity through the tendon. It's clearly sore. And if you're doing your calf raises and you're not feeling anything, then you may not be providing a sufficient stimulus for it. Maybe pick up a weight in your hand, try again, and perhaps you feel a one or two out of ten pain, it's a pretty good load.

29:57.168 Daren DLake Runs: Last question to kind of wrap this all up. How do you feel about runners staying with the same strength training program and then not Loading properly and then like I guess a better a better way to frame that a phrase that is how heavy should they go? especially getting into the run season should they plateau and maintain or should it be like a Keep going through example you prescribed to me 3 by 12 at 70 kilos, right? Whatever exercise it is, you know, 70 kilos. I'm doing that, and then you go, okay, now 4 by 10, right? And then it might be 5 by 5. And it's like, you know, 90 kilos, right? It's just random numbers. Exercise doesn't matter. When should I then back that down or should I stay at that 90 kilos as I go? Cause this is for runners. This isn't for bodybuilders and you know, uh, power lifters. Should I then like stay at the five by five during the race season? Like how should the overload be managed?

30:57.586 Sam - 10W2S: You'd want to, um, taper as coming into your races. So I wouldn't be doing any kind of strength work in the 72 hours or 48 hours before a race. I probably would go a little bit lighter in that week, um, into, into the race.

31:11.288 Daren DLake Runs: So some people think you shouldn't lift four to six weeks out.

31:14.290 Sam - 10W2S: They're like, no strength training four to six weeks out.

31:16.072 Daren DLake Runs: That's crazy, right? Atrophy will happen, right?

31:18.794 Sam - 10W2S: Yeah, yeah. I'm not sure the data on with runners, but for most sports, 72 hours is a pretty safe space. You want to be continuing to provide that training stimulus and I think the fact that you have perhaps conditioned yourself to be able to lift, you know, five by fives and you're not pulling up sore afterwards, I mean, that's what your body's used to. So you don't need to, again, change the load too much. It's just the timing and making sure that you do have that time to taper before the event.

31:44.913 Daren DLake Runs: Alright, would you say one week out, like, instead of strength training on your days, you do, like, maybe plyometrics or some, like, squat jumps?

31:52.977 Sam - 10W2S: Yeah, that could be a good idea. I do think a week out is a safe space to come into an event. You could just do some lighter TheraBand work in those few days before the race, but still stop all kind of strength in the 48 hours beforehand.

32:07.740 Daren DLake Runs: Okay. That was a lot. We went through, let me see my notes here. We went through, uh, how strength training is super confusing. We defined a whole bunch to get rid of the confusion from tendons to muscles and bones and strength, tendinopathy, tendinitis, tendinosis, hypotrophy, power, general strength, eccentrics, isometrics, et cetera. I asked a bunch of questions like, Oh, 50 years ago, why didn't runners. to strength training, and you answered that. How do runners, you know, why do runners have imbalances, go into failure, half squats was the best time to strength train for runners, which the answer was whatever works for you to get it done. And, you know, what's the right amount, one rep max. form, pain, DOMS, tendons, tendon pain versus actually what's happening, regressing workouts, and training load. I said overload, sorry. I meant to say training load, managing that. So is there anything that you want to tell the audience, this captivated audience of thousands, yes, thousands, whether they're on the social media, listening to podcasts, watching the video on whatever, YouTube, et cetera, This is a core takeaway of it all.

33:17.310 Sam - 10W2S: So strength training, if you are a distance runner, is one of the most important things you can do for your training to minimize injury risk. It builds the capacity of your muscles, your tendons and your bones to tolerate all the weekly kilometers, miles you're putting through it. And it can also improve performance. So make sure you fit it in.

33:37.125 Daren DLake Runs: Yes. And I'll add to that strength training helps you as you get older. keep muscle mass, having a good strength training routine will just help you in daily life. And it's kind of like a, you kill or you feed two or three birds with one scone and we're not killing birds here with the stone. And it's just, it's going to help you through like a lot of people that strength train As they get older, they're the ones that, you know, they don't break hips, they don't slip as easy. So we're all getting older. Even if you're 20 years old, you're getting older. And this is one of the things, perform better as you age. And I just find strength training is, it's just, it's fun once you really find the workouts that you like and you find the time. So definitely do that.

34:21.673 Sam - 10W2S: And also strength loss is primarily due to disuse, not aging. So you have to keep it up. It's often I find actually with the older runners or older people, I should say, they often stop strength training because they get one niggle in their knee and they think, okay, it's not safe for me to be doing this stuff. I'm going to stop because my knee hurts. And that's where things deteriorate. So it is so important as a lifelong activity to continue your strength training as we get older.

35:14.267 Daren DLake Runs: What is one thing you would tell the 19 year old version of yourself?

35:17.370 Sam - 10W2S: I would say you don't need to do anything differently and it's all going to be fine.

35:21.092 Daren DLake Runs: In one sentence, why is running not bad for your knees?

35:24.775 Sam - 10W2S: Because joint loading improves cartilage health.

35:28.659 Daren DLake Runs: Why did you choose to focus on runners and not rowers or cyclists with your app?

35:34.064 Sam - 10W2S: Because I think running is something that's accessible to everyone. I enjoy doing it, but runners, as a physio, I just, I already know they neglect their strength or something. I think it's something that's so important and this will help facilitate that component of their training. With, for say, rowing, most rowers are rowing, you know, in a club, they've got the gym there, they've got programs written for them. So they don't actually require that, I guess, external app to help facilitate their training because they already have, like at the rowing sheds, there's a gym, there's a training program, there's a coach. it's less of an individual sport.

36:06.051 Daren DLake Runs: What is your favorite run and why?

36:09.252 Sam - 10W2S: My favorite run, in Sydney anyway, I really like running from my place in Paddington, heading up towards the city, around the Opera House, through the Botanical Gardens, then heading up towards Forkloughs, Bondi, beautiful, beautiful water views, and then, you know, back up to Paddington. It's a beautiful run. That's why I love running in Sydney. It's nothing like it.

36:30.016 Daren DLake Runs: What races do you have coming up that you're excited about?

36:32.964 Sam - 10W2S: Unfortunately, I haven't got anything on the cards at the moment purely because I have just started this master's program. I am very busy at the moment, so I'm trying to manage the master's, the full-time work and everything in between. The thought of adding a race in at the moment to train towards, it just feels like it's going to be one extra stressor or something else I have to adhere to. At the moment, I'm just running for enjoyment. I would love to find a race and start getting some structured training in, but at this point in time, I feel like it might be an extra stressor on an already busy schedule.

37:02.431 Daren DLake Runs: What do you have in store for 10w2s? Let's say 12 to 24 months.

37:08.343 Sam - 10W2S: I would start to love to look at building in some rehab programs into the app. Currently, the app is more prehab, so it's, you know, strength programs a runner can follow to help improve their running performance and reduce the risk of injuries. I'd love to build the app so we can, you know, have a look at different body areas. Here's a,

you know, a program from Achilles tendinopathy, or here's a program for, you know, your runner's knee, patella femoral pain syndrome. That's where I'd like to take it.

37:33.472 Daren DLake Runs: You've made it to the end. Thank you so much for listening to all this stuff on how we try to make running and training and life and all that stuff work, because time is a resource that no one can make more of. Not yet, at least. So we appreciate you taking the time out of your day to listen, watch and generally consume all this stuff. Accessibility is pretty cool nowadays, so we have a transcript for all the episodes. Make sure you go to the show notes section of this episode on whatever podcast player you're listening to, or you can go to the description of the YouTube video, or just go to podcast.delaycreates.com to find the episode and the transcript. All of this was produced in Sydney, Australia, so I acknowledge the Gadigal of the Eora Nation, who are the traditional custodians of the land. I pay my respects to elders, past, present, and emerging. A lot of people ask how they can support us, and I think the easiest way is to just share this out to people you know that would like this. So whether it's a podcast link from Apple Podcasts, Spotify, Google Podcasts, whatever you're listening to, or watching on YouTube, send them a link, just flick it to them. Email it, text it, you know, Instagram, whatever. Send them a link of this episode, or my newsletter, or whatever you can, the YouTube link, whatever you can. The second easiest way is to rate, like, or subscribe to this podcast and or video on YouTube, or even subscribe to my newsletter. If you have any feedback, feel free to hit me up. Talk at DLakeCreates.com. That's T-A-L-K at DLakeCreates.com. Spelled the normal way, train smart, race, and live easy. Peace.