



Steph: Hello, Katie, and welcome back to the show.

Katie: Hello, Steph. Excited to be here.

Steph: Yes, a very important topic today. One more specifically for the athletes, but I think something that there will be takeaways from for everyone. Definitely a big topic in the training world. I thought we would dive in to just talk about, I guess the other side of the actual training, whether it be the running, or the swim-bike running, or whatever that looks like. We need to consider what are the restorative or regenerative practices. We might start with just a bit of an outline as to how you would define that first.

Katie: Yeah, certainly, I think there's a lot of comparison-itis around training load or exercise load, or even game load in a team environment. Almost like bragging. Think about something like say a Strava is all about putting points on the board for how hard you worked, but there is less consideration and chatter about restorative practices to actually recover from that activity, and like we've discussed many times on the show, particularly our last episode together, whereby those restorative practices helped prevent injury, inflammation, particularly overuse. But also just result in happier humans that are less stressed and can achieve their goals more effortlessly because, as I know you've spoken about many times on the show, and so have I in all my content that stress hormone, cortisol, is so detrimental to achieving body compositional results, detrimental to stress and brain function, as well as recovering from exercise.

If we don't utilize regenerative (how funny) restorative practices, then we're not gonna get adaptation. Adaptation is whereby our body actually absorbs the training load, and we get the results. Let's say someone didn't implement some restorative practices into their daily or weekly routine, their training could become null and void, because they're not actually recovering, therefore they're not adapting, therefore they're not getting stronger, fitter, powerful.

That's at the core of why this topic is so important, and I feel like in modern daily stressful life, if our listeners are not athletes, these will still be super-relevant just to give respect to the amount that we all have on our plates. A stressful week from work needs just as much restorative practice as does a big training week, for example.

What do I mean by restorative practice? Anything that enables recovery. That might be physical recovery, but it could also be mental recovery and just refreshing the mind. As a coach, I do this naturally, this has always been part of my coaching principles and I wouldn't do it any other way. However, I have found that that's not the norm, not every coach, and not commonly with athletes, are they putting the importance on restorative practice or recovery.

I feel like team sports probably do it better. If you've got a team of footballers, netballers, etc, to go do ice baths or soak their legs in the ocean in five degrees, they're going to be more inclined if there's 30 or 50 of them doing it together in a team environment. In these singular sports that endurance attracts, I think it's probably harder. It's not the norm as part of the routine, I guess.

Steph: Yeah, it's an interesting point because you're right, we see that in a lot of the team sports. I often go for a walk down the beach, and I see the brave, usually boys, but that might be where the footballers hang out, waist deep on a Sunday morning or whatever it might be, but they are generally in numbers.

I think though, you're right, there is that real lack of it being built into a training plan. There may or may not be a discussion. But the onus is often left with the athlete, and we all know what falls off the list first when we get busy, right?

Katie: Yeah, absolutely. I would love to see a world where training recovery or restoration is measured and marked and compared much like training is. We talk a lot about how many hours did you rack up, how hard was your session, what was the intensity, how many calories did you burn? It's all about effort, effort, effort, effort. I would find it hard to believe if someone in a social setting around a training environment got kudos for saying, "I went to five yoga classes this week." It's just not what we brag about. It's just an interesting part of the culture, I think.

Steph: Yeah, absolutely. I wonder if it's a lot to do with the current software and technology. There's a lot of different ways to measure fitness, as you mentioned. There's obviously Strava, or people do it on TrainingPeaks. I'm sure there's more options in 2018. But what about measuring the other side, from a recovery, or a fatigue point of view? Can we measure that equally?

Katie: I have no doubt that that will be part of our future with actual real data and science behind it, much like training metrics have science behind it. In the meantime, we can come up with our own framework in terms of putting runs on the board for putting recovery practices into place.

I have worked on a little bit of a rejuvenation protocol, in terms of giving the certain action steps points, and giving athletes a goal for how many points to rack up per day or per week, or say on a weekend when their training is heavier, to put some incentives in place for those recovery protocols. Let's say an athlete did legs up the wall, post-training for ten minutes, with belly breathing, that might give them 20 points. A Yin yoga class might be 30 points, a massage might be 40. We start to put these metrics in place.

Those points that we attribute to them are obviously just my opinion of how I've seen certain activities impact athletes over the years, and in terms of what's most valuable, and how many we need per day. I would love to absolutely see research insights around how do we measure this in the future. I don't think that that's far away. There's a software called RestWise, that's rest, R-E-S-T, and that does help us formulate recovery, which is pretty amazing. The key technology that helps us utilize the metrics in RestWise is heart rate variability, and that requires a Bluetooth heart rate strap, or some applications on devices just utilize your finger over the camera lens, which is super-interesting. Heart rate variability can give us a recovery score, so that's how we can start to measure was something effective in helping us restore from a certain session.

Let's say I came back from a super-hard speed-based interval run, and my heart rate variability was sitting higher than my baseline, indicating acute stress, and then I went and did 10 minutes of legs up the wall and belly breathing, and that heart rate variability score came down, and it can happen that quickly, then we know that that practice was effective. If it stays the same I'd be, Right, you need a magnesium bath tonight as well to enhance that recovery.

That's obviously the data nerd's way of doing thing and quite specific. You can be more intuitive with it, and just taking note of, Okay, how sore am I today? How fatigued am I today? How well have I recovered from yesterday's session? What does my urine look like, ie., how hydrated am I and how has that played into my recovery? So there's a spectrum of ways to look at this, and I would start with tracking your recovery-based exercises the same way you track training.

Everyone's very digital, everyone's always on their phones. It's just building it into a habit that's already there really, even if you do a handwritten diary, just start to track that you did 10 minutes of foam rolling, or when you have massages, or that you did a magnesium bath, and start to look at the patterns while also tracking muscle soreness, general recovery, and fatigue, and willingness to train and motivation, and all those things that play into effective recovery.

Steph: I love that. Go on, sorry. I was just gonna say I love that. It's not dissimilar to how we give our clients other things to track, like energy and sleep, and digestion, not just that main goal which might be body comp in one example.

Katie: Yeah, absolutely. I think it's important to track the things that have meaning to you, as an individual. Don't try and track things just for the sake of it, track things you're actually gonna pay attention to. We've got enough data in this world coming at us that divides our attention, so pick three metrics that are important to you, and relevant to you, and start tracking them in software either like TrainingPeaks or in your handwritten training diary, and then start to track, "Well how often am I actually putting recovery in place?"

For those that say, "Doing nothing." So they just train hard, get on with their day, go to work, rush around and literally do nothing in terms of recovery, maybe get a massage once a year. If you're starting from that point of view, I'd be giving an athlete like that points for simply doing a proper cooldown before they rush off to their day. I'd be giving that athlete points for two minutes worth of mobility work, whereas an athlete who's

already doing mobility, regular massage, magnesium baths, the points are going to look quite different. That's where I would definitely individualize things, and for the coaches listening, make sure you do the same for your athletes on that different spectrum so that the athletes that are quite diligent with recovery exercises, are still gonna be motivated by you putting a challenge in place that is beyond what they're already doing. And those that aren't doing a lot recovery protocols in place don't get disheartened by the enormous task, we've got to scale that.

Steph: Yeah, absolutely. Just gotta start. I think you've given us some really good places to start, like definitely track it like whatever it might be, your gym session, your run, your soccer games, your training and definitely yeah, look at what you're covering off in a week and where you can start, I guess continue to improve things as well. Because when you're starting to pay more attention, and maybe obviously noticing some of the really positive flow on effects of that increased commitment, there's the buy in as well, because you're not gonna regret legs up the wall, or actually breathing properly to bring that heart rate down before you jump into the kitchen and try to digest your recovery meal.

Katie: I know, and the thing is, I think it gets overlooked because of the simplicity sometimes-

Steph: The whole breathing conversation. People look at you like you're a bit cray-cray.

Katie: Yeah, but when people understand there's a huge amount of science behind that breathing, and the effectiveness of that breathing can change everything. Then that's a game changer once that buy-in occurs. I think, for those that do use a lot of data in their training, I think it's really valuable to start to look at a points system. Let's use training stress scores 'cause a lot of endurance athletes are familiar with it. It's a term that mostly TrainingPeaks uses. So if you go for an hour run and it's aerobic, it might be 60 points worth of training stress.

To make sure you back up from that, let's aim for replacing 60 points worth of restoration. And, as an example, I give legs up the wall 15 points, making sure you get your post-training meal in that's suitable to your workout, 30 points. A gratitude practice because of the positive vibes and impact that has on general mental state, and therefore recovery, is five points. You could go for an easy 15 minute walk and you've got 25 points and boom, like that 60 minute run, you're already black. You're mutual, your bank balance is back in the black.

It doesn't have to be overly complicated and it doesn't have to be overly expensive, 'cause wouldn't it be nice to have a massage every day, but I don't think athletes have time, nor the money, unless they are professionals.

Steph: Yeah, definitely. There's no expectation that it needs to be even costly from a time point of view. I think there's some of the myths that people, the stories they tell themselves, like I've heard you say before. If you're short time and your temptation is to cut out the cooldown, you've got to actually cut out one of the intervals, or one of the actual

components from the training program, 'cause that's nowhere near as important as how you wrap things up.

Katie: Yup, absolutely, yup. That's a really important point to make. Short on time, reduce the main set, not cut off the cooldown, or just stop fluffing about and get to training on time.

Steph: Get off Instagram.

Katie: Correct.

Steph: No, I'm glad you mentioned the training for TSS, because I think that is something that is quite measurable. What's your experience in terms of it being utilized properly from a coach and an athlete's point of view?

Katie: Particularly within the software?

Steph: Yeah, or using that TSS to actually maybe make modification to the program, or to add in more restorative practice if the score's looking a little bit high?

Katie: Oh goodness, this would be ideal amazing world. God the world would be a better place if all coaches did this.

Steph: Yeah.

Katie: Just for some context. So training sessions create training stress, and training stress accumulates. And, as the training stress accumulates, what happens is what's called your training stress balance starts to decrease. If we just kept training without recovering or adapting, the training stress keeps accumulating, accumulating, accumulating, and then the training stress balance keeps going down, and down, and down, and down which indicates a large amount of fatigue. Eventually that athlete is gonna fall into a fatigue hole, get injured, burnt out and be very, very unhappy. So we don't design training in that way, it does need to come in ebbs and flows.

The idea behind a restorative practice is we could essentially enable an athlete to do more training, or bump up the intensity if they were doing more restorative practices.

Steph: Yeah.

Katie: That's the goal. It does enable your coach or yourself, or whoever is managing your training, to actually load you up more if you're recovering better and putting more in place. If, in an ideal world, a coach would be looking out for is that training stress balance number decreasing significantly into the negative, and going, "Okay, I need to put a rest day in. I need to make sure the athlete is getting a massage, or doing a magnesium bath, or maybe jumping in an infrared sauna," and encouraging them and making the athlete accountable I think is key. That's normally why athletes get a coach.

It's someone to be accountable to their training for, and I think the same has to be for recovery.

Yeah, it would be fantastic if red flags went off if the coach is seeing high amounts of fatigue and they say, "Right, we need to up the ante." Let's say they normally would rack up 100 points of recovery or rejuvenation in a week, I'm just using numbers out of the sky, then if that fatigue is much higher and the training stress balance is at the negative, then that might need to be 200 on the bigger training weeks or the bigger fatigue weeks. It should ebb and flow based on where an athlete is at, or they got a higher emotional stress, for example, which is obviously very hard to measure with data, but it absolutely has a physical impact.

Steph: Yes, so true. I guess it's quite relative and perceptive. I wonder, I don't know that this exists, but does TrainingPeaks connect with an HRV to factor in some of the more emotional stress or what the body's telling us from that elevated heart rate?

Katie: Yeah, so the TrainingPeaks does think with multiple heart rate variability technologies, they're getting much better. The best one out there would be heart rate variability for training, HRV4Training, and there's a coach's version as well. The coach's version helps sync to create alerts for when a coach needs to be paying a little bit more attention to a certain athlete based on what their metrics are saying.

Steph: Cool, I love that.

Katie: And that syncs with TrainingPeaks which is cool, and so that rest wise technology. I mean, in terms of measuring emotional, that would really be up to the athlete to ensure that they're actually putting that information readily available for their coach. So whether it's in TrainingPeaks, or on the heart rate variability technology, noting that their emotional stress is high, and therefore the coach being able to reflect and say ... You know, we all have stress for days, but if someone's having a string of four to five emotionally stressful days, that is absolutely going to impact training, and there needs to be an adjustment, in my opinion. That's where I feel the world of individualized coaching needs to be. If a coach isn't doing that, I don't feel they're doing their job.

Steph: Most definitely. Yeah, but it will be interesting to see where the technology does go as well, because I feel like, in general, athletes are definitely becoming more open to these sorts of elements of training. Not even a few years ago it was all just harder, faster, more training, more training, whereas there's a lot more conversation about that whole balanced approach, holistic approach, which you're obviously big on. It's gonna be fascinating to see where that evolves.

You've mentioned the logging side of it, whether it's more manual or in the TrainingPeaks, it's definitely some amazing technology in terms of HRV tracking, or the apps that you can check out on your smartphone. I just wanted to run through of some other examples of what activities we should be doing. I think legs up the wall and yoga have been mentioned, but let's talk about what else might be considered restorative, and really important for us to plan into our busy weeks.

Katie: This is definitely my opinion and I'm sure it will be a shared opinion, and I think it's important for people to interpret, well what makes them feel provides a stress relief? And what fills their emotional tank? For some people it's going to be a dinner with friends, and a glass of red, and a nice meal and a social outing. But other people it's gonna be time on their own, reading a book, candles lit, and off to bed at an early hour. Yeah, I think you can choose and identify those things that work for you. Some people love the ocean, some people love rainforests and nature and the beach, and some people just love their own home and don't want to go outside. Consider all those things when you make up your own rejuvenation plan, but some of my ideas would definitely include ice baths or cold water immersion, there's a secondary benefit to both of those that it can help encourage working on breathing techniques which helps performance and recovery as well. Then what I think most athletes would already be doing but maybe not recognizing, is they're probably already doing recovery sessions, if we're talking about endurance athletes, that involves walking, swimming, spinning on the bike, or a super-easy run. That's still recovery through movement and exercise, and the key there is that the intensity is low, and they might go in feeling heavy and fatigued, but come out refreshed. That's how you know it was a successful recovery session.

Others would be the yin yoga, or recovery yoga, and intertwined into that would definitely be meditation and mindfulness, or a stand-alone meditation mindfulness session. You can do your own TLC sessions, so tender loving care, and that might be sitting at home on a mat or your carpet watching your favorite TV show, or music in your ears, and doing a bunch of stretching or watching a YouTube, like yoga video. Do what works for you in terms of time and accessibility, and the financial side as well.

Then there's the nutrition and hydration elements that are just as important, and making sure that your hydration includes some form electrolyte and that's what I like to recommend, say lemon and a salt as a natural one, that is included as a recovery protocol. Then, on the nutrition side, I mentioned earlier is making sure you get that nutrient timing right post-meal, Steph we can dive more into that if you want, or we can wait until another episode.

Other ideas on my list are magnesium baths, which people are familiar with Epsom salts, similar thing. Infrared saunas are fantastic and then there's the massage, myotherapy chiropractic, and physio treatments as well. There are just some ideas that people would start with, or the compression boots have become very popular of late.

Steph: So many amazing options, I love that. I'm a big fan of yoga, obviously, but I love an infrared sauna. One day I'll have one in my spare room at home, that's on my wish list.

Katie: Me too, it's on mine as well. I feel like I need to rally with my local friends and say, "Right, let's just get one and come over and chill out." What I didn't mention actually was sleep, because sleep is king for recovery and rejuvenation. If we're not setting ourselves up with that positive sleep environment by getting off blue lights or screens before bed, that's absolutely gonna inhibit recovery, so getting nine hours sleep or time in bed would get massive bonus points, and if you're not a great sleeper and you don't get anywhere near nine hours, when the goal would be, "Well how do I enhance the

quality of the hours I am getting?" And that's what you would track. So the quality of sleep over the quantity.

Steph: Yup, amazing. An absolute 101. I would love to hear any successful transformations that you've been a part of. I'm thinking that you've definitely had some resistant athletes along the way, who've rolled their eyes at the "M" word, the meditation word, or maybe has been that, absolutely ticking all the boxes from a training point of view, but not looking at anything to balance out the equation. What have you got to share in terms of a transformational story?

Katie: I've worked with athletes on both ends of the scale, in terms of, heavily invested in doing whatever I tell them to do, if I tell them to get a massage and infrared sauna every week, they will do it. Then I've got the other end of the scale, that are quite resistant to it, like the idea of it, in a practicality sense, it never happens. There's success stories on both sides, so if I look at case 1, an athlete that's super diligent with recovery, to give a picture of that athlete that I've got in mind, they book a massage irrespective of time of the year, once a month. In the build up to an iron man they will increase that, and they're pre-booked, for taper week, etc, all planned and organized, of course. Infrared sauna once a week, magnesium bath on a weekend after long runs, legs up the wall and belly breathing after every session. Yin yoga class once a week, obviously, we track this in their program, it's all part of it. Athletes love to see ticks and highlights and green boxes in Training Peaks. So, a coach, here's a hint, if you want your athletes to do their recovery, put a ten minute legs up the wall thing as a training item and it'll happen because they'll want to see it green. What else do they do? They'll often ... this is key, actually. This athlete will always text me if they have pulled up unusually sore, or they'll raise it as a metric on Training Peaks, and I'll get a notification. So, calves are super sore after, xyz, should I change training? Should I adjust anything? That's where that collaboration with your coach is king. Then, my job is to go in, look at training stress, and where they're at, and that soreness rating and see if I need to adjust any of their training. That doesn't mean I'm completely wiping off their sessions, it might just be changing some hill repeats from a 10 degree incline to a 3 degree incline, if they've got calf soreness. It's not like you completely miss out on your training, which I think is a fear with athletes, it's often why they don't admit that they're tired, fatigued, sore. They worry their coach is gonna tell them not to train for a whole week, which in some cases is needed, that's usually more on the mental side, but more often than not it's just an adjustment that's required. Your whole training plan isn't gonna ripped from under you if you admit that you're struggling a little bit, so don't be afraid to be honest. This athlete also is very good with their nutrient timing, post workout and will plan their meals and prep their meals, etc. basically, the ideal athlete. Their experience going into iron man was one of, a little bit of shock, this was a ... the person I'm thinking of, it was their fifth iron man, so fairly experienced, I would say. But, this time around, doing it holistic endurance approach, and a little bit differently, they were like, "I just feel a little bit too good, am I meant to feel this good?" They weren't destroyed, I think I spoke about this on our previous episode.

Steph: Yeah, I know who you're talking about now.

Katie: Yeah, you just don't have to feel that shit, training for an iron man, I think it's really important for people to recognize, yes there's some soreness because you're developing muscle, strength and power, there's a little bit of fatigue, but it should ebb and flow, you shouldn't always feel exhausted. I think there's a difference between being fatigued and exhausted, and that's important to identify. That's definitely one of the side effects of investing in recovery, that particular example. The other I can name and shame, because they are my husband, and-

Steph: Micheal.

Katie: This was someone who started at the other end of the spectrum, so not heavily invested in recovery, very invested in pushing themselves, being very consistent at training and doing everything right in regards to training, but not much else. So, the refueling involved, I can't even ... it was so bad. The nutrition was terrible, poor guy.

Steph: This is, what would we call it? BK, before Katie?

Katie: Yes. So, there was a lot of processed sugars, definitely not complete meals, lots of eating on the go, rushing, no massages whatsoever, definitely no baths, or anything like that. It was just work, train, sleep, and sleep hours were pretty minimal too, because they were ... he was working his butt off.

Katie: Then I came into the picture, but really what happened was Mick was training for his first half iron man and had nailed everything and was doing very well and improved out of sight, was on track for his first half iron man to be at least 4 hours, 45 ... so, sub 5, quite a talented athlete, but he got sick two weeks out from that and that was the pivot point because he just never wanted to experience that again because he didn't get to express his potential on the day for something that he'd been working his ass off for eight months, and putting a lot on hold to achieve that goal.

Yeah, so getting sick didn't help and he couldn't get a proper taper, and he didn't feel great on the day, ended up doing about 5 hours, 20. Since then, has obviously risen from that, but it took a long time. It was probably a year after that first half iron man, he spent having to rebuild. He never quite came back from that fatigue and illness 100%, it took a long time and he had to change the food he was putting in his body, he had to get massages regularly, does magnesium baths, and Mick is a very different athlete now to who he was eight years ago. He's someone who now books in massages every fortnight - month, he is more diligent with his mobility than I am and I am more than willing to shame myself for that.

He will get in the garage every day before every session to complete his mobility, because he understands and unfortunately has lived through the implications of not putting restorative practices in place, whether it be getting injured, or getting sick, or getting burnt out. I would love athletes to not have to go through that before they're motivated to go and do these rejuvenation protocols. He's by far, the best success story, it helps when you've got me in the house whipping you over the ass to run a magnesium

bath, or whatever, but those habits are now all on him, I don't have to say anything, he does it off his own bat and he's very good with it.

One of our old coaches had a really big impact on him as well, Craig Percival, he would just ... Mick would get to the point of super fatigued, because he was one of those athletes that didn't want to quite mention that he was struggling, so it would almost happen too late. So Craig would be like, "Two days off until you feel human again". So, that was the rule, and those two days had to be full of mobility, walking, chilling out, having fun, and just having no pressure to train. Every coach is gonna tackle this differently, but the key is definitely preventing it and seeing the orange flags before there's red flags.

Steph: Yeah, so cool. An absolutely 180, he's even posting on Instagram about his foam rolling, his leg soaks, and it's so good to see. And, you know, the proof is in the pudding, because he's really just come such a long way. I hope it inspires others that are a little bit resistant, who haven't yet found that nice balance between the training and the recovery, to have a good look at what areas you can start to address next.

Katie: Yes, that's it ... to bring his story full circle, he's now 4/30 half iron man, and he's on his way to doing his first ultraman, there will be no way ultraman is in the picture unless he was good at these rejuvenation protocols, just automatically, without me, as his coach, having to say, "or if ... do this", he just does it automatically and I think that's important. You have to take it off your own bat, you can't wait for someone to tell you, "Hey, put food in your mouth, hey, jump in a bath", you've gotta take ownership.

Steph: 100%, so awesome to hear. This has been such a fascinating topic, one I hope has inspired our listeners to take a look at things from a different angle. Is there anything else that you wanted to share, or if not, could you direct us to where we can find out more about you online?

Katie: Yeah, if you want to follow up for the data, really interested in the numbers and the nitty gritty of this, I'm presenting this concept of rejuvenation protocol at a conference in September. After that, I'm happy to provide the information publicly. So, get in touch, Instagram is @holisticendurance one word, or you can email performance@holisticendurance.com.au if you're curious, or you can book in, have a chat, do a wellness consult, or even read *Healing The Grumpy Athlete*, if you're a female athlete, that will be very relevant.

Steph: Awesome, so all the links will be in the show notes, as always. Katie, you're a wealth of knowledge, thank you so much for coming back on the show today.

Katie: Thank you Steph, thanks for having me again.