



(FIND) ± √ YOUR² LONG-COURSE (FORMULA)

BY KIM McDONALD (PHOTOGRAPHS BY JOHN SEGESTA)

= { Answer these (8) questions to dial in the training program that works for you.

(A)

After a decade as a professional triathlete and with ITU world championship wins at both the short- and long-course distances, Leanda Cave seemed to have her training dialed in. Then two years ago, she slipped and cracked her ribs while pulling a pool tarp during a spring training camp in Borrego Springs, Calif. So her coach, Siri Lindley, limited Cave's running to uphill treadmill intervals because running any other way proved too jarring and painful. The result?

A month later, Cave surprised herself by winning the Wildflower Long Course Triathlon, covering the half-marathon distance in 1:25, her fastest showing ever over the extremely hilly course. Realizing that uphill running could help with her long-course weakness, the marathon, she and Lindley soon made it a regular part of her program, which enabled Cave to run her way to a podium finish in Kona in 2011 and two world championship long-course wins in Vegas and Kona last year. "Uphill running helps every athlete," says Cave. "But until then I never really had the time to hone in on uphill running to see the effect that it had on me."

The point of Cave's story is not that uphill running should be a component of your Ironman training (although it does help those who, like Cave, lack natural leg strength).

It's that people respond differently to training. What works for one person doesn't necessarily work for someone else. And developing your own training recipe for long-course success, as Cave herself discovered, can take years of trial and error to figure out.

Over the past decade, I've talked to enough pro and age-group winners at Kona about their training to realize that Ironman athletes prepare themselves for the performances of their lives in vastly different and sometimes contradictory ways. Some find that high-volume, low-heart-rate training works best, while others have discovered that frequent doses of quality and speed are far more important for a solid performance on race day. So instead of presenting another cookie-cutter, long-course training program for the "average" athlete that may or may not work for

your next 70.3 or iron-distance race, here instead are some key questions to ask yourself before embarking on (and hopefully modifying) your training plan to achieve a peak performance in your next long-course triathlon.

DID YOU DO ENOUGH VOLUME LAST YEAR TO TRAIN FOR AN IRONMAN THIS YEAR?

That's the first question Jesse Kropelnicki, the founder and head coach of QT2 Systems in Boston, asks prospective clients who inquire about his Ironman training program. To him, the primary mistake of people who aspire to do an Ironman—even those willing to devote themselves to a full year of long-course training—is their lack of “sustainable volume” the year before. “What I call sustainable volume is the volume they were able to turn over year after year without getting injured or burned out,” he says. “At the end of the day, if you want to have a good experience in an Ironman, you need to get the volume into the 18- to 19-hour [a week] range. For someone who has a 12- to 13-hour training history the prior year, there's no way you can jump up to 18 or 19 hours the next year without getting injured or burned out.”

To prepare adequately for an Ironman, Kropelnicki recommends that triathletes spend at least a year doing 70.3 races while gradually building their total swim, bike and run training to at least 18 to 19 hours per week, with their peak training weeks reaching 22 hours. “That's the minimum we recommend in order to have a nice experience. I mean, sure, you may be able to finish with less, but the risk of injury goes up so much, so why not have some pa-

tience and wait? We try to instill patience in athletes because most of the time they're not patient. People decide to do an Ironman and it doesn't matter what they've done in the past; they want to do it next year. A lot of people rush it and in the end they don't get to start the race; or if they do start the race they get injured along the way. You need to take it in small chunks year after year so your body is prepared to complete the distance comfortably.”

ARE YOU TAILORING YOUR SEASON FOR PEAK PERFORMANCE?

Don't unwittingly set yourself up to be a victim of over-racing syndrome. Are you planning back-to-back Ironman “A” races in the spring and summer like many age groupers and pros who aspire to qualify for Kona? And then counting on a peak performance in Hawaii when October rolls around? After Cave broke her ribs two years ago and got injured again early last year, she realized that getting fit later in the year was in large part responsible for her 2011 Kona podium and last year's world championship wins. “That ultimately was a blessing in disguise,” she says of her two injuries. “My goal was Kona, and that comes in October, so there's no sense in trying to be 100 percent fit in January and February. So I think I've learned: Don't come into the year trying to be so focused and trying to win every race. Try to win the races that really count. And that for me is Kona.”

ARE YOU SWIMMING, CYCLING AND RUNNING EFFICIENTLY?

Most top coaches put economy and efficiency high on

± **UPPER BACK
FOAM ROLL**

Cave demonstrates some of the exercises she uses in her strength training program. On the opposite page is an outline of how to integrate them into your own routine.



± **TRX ONE-LEG
SQUAT**

RACE-SEASON BUILD

Build the necessary foundation for long-course training with these two four-week strength training programs from coach Tim Crowley.

WEEKS 1-4

Start with mobility. Foam roll for 30 seconds each: upper back (elbows to side then elbows together), IT band, glutes (ideally using a tennis ball), hamstrings and calves. Do a wall press (extend shoulders and arms overhead while the back is pressed against a wall 10 times or for 30 seconds), ankle mobility stretch, ankle band walks (1x30 feet forward/back, 1x30 feet lateral)

EXERCISES	WEEKS 1-2	WEEKS 3-4
Kettlebell goblet squats	2x8	3x8
Kettlebell swings	2x8	3x8
Kettlebell standing overhead press	2x8	3x8
Pull-up	3x6	4x6
Front squat	3x8	4x8
Hip flexor stretch	20 seconds	20 seconds
Dumbbell chest press	3x8	3x6
2 Dumbbell stiff-legged deadlift	3x8	3x6
Pectoral stretch	20 seconds	20 seconds
Reverse curl-up on bench	2x10	2x12
Kneeling cable lift	2x8	2x10
Suitcase carry with one dumbbell	2x60 feet	2x60 feet

Six-Week Ironman Taper

WEEKS 1-4

Start six weeks from race. Foam roll for 30 seconds each: upper back (elbows to side then elbows together), IT band, glutes (ideally using a tennis ball), hamstrings and calves. Wall press 1x10, hip flexor stretch 3x5 seconds, one-leg hip lift 1x10, lateral squat 1x10

EXERCISES	WEEKS 1-2	WEEKS 3-4
Kettlebell goblet squat	3x8	2x10
TRX inverted row	3x8	2x10
TRX one-leg squat	3x8	2x10
TRX knees to chest	3x8	2x10
Half-kneel cable lifts	2x8	2x10
Bench reverse curl-ups	2x10	2x12
Cable palloff press	2x8	2x12

To see video demonstrations of these exercises, visit Insidetriathlon.com/strengthexercis.es.

their list when it comes to training their athletes for long-course triathlon—and for good reason. The more efficiently you swim, bike and run at a given effort level, the farther and faster you'll go. Better economy also reduces the impact and strain on your muscles and joints. That means less risk of being sidelined by injuries while training for your big race. That's important because being consistent in your training is essential if you want to build the necessary training volume to handle the physical demands of a long race.

In the Ironman, Kropelnicki says the primary limiter on race day for most people, especially those new to long-course racing, is their durability. "It's not your aerobic engine or how fast you can run a 5K," he says. "If you talk to anyone who's had trouble in an Ironman, it's usually because they've had to walk part of the marathon. It's not because their heart rate is 170 and they can't maintain it anymore. It's because their legs are so shot that they're walking and their heart rate is 60."

ARE YOU AN AEROBIC OR ANAEROBIC ATHLETE?

Do you out-sprint your training partners in 200-meter and 400-meter track intervals, but get left in the dust when it comes to mile repeats and longer races? Or are you a more aerobic athlete who tends to do better at the long distances, but could benefit from more strength and power training? Although it may be counterintuitive, long-course racing places a premium on power. Just look at the differences between the slender body

type of last year's Olympic triathlon gold medalist Alistair Brownlee and the more muscular physiques of 2012 Ironman 70.3 world champion Sebastian Kienle and Kona champion Pete Jacobs. Cave is something of an anomaly for a long-course world champion—a naturally thin athlete who lacks the leg and upper-body musculature of her main competitors. But she's worked hard to overcome that deficiency. In her transition from ITU to Ironman racing, she's put a lot of effort on building her leg strength and power. Besides hill running, she does lots of big-gear intervals and hill repeats on the bike, one-legged squats and core and strength training in the gym. "I'm not as strong of an athlete, so for me developing that strength has been very important," she says. "I have a lot of endurance, but being able to combine the strength-endurance components has really helped me this year."

If you're a muscular, primarily anaerobic athlete, consider a different approach to your long-course training—placing more emphasis on developing your aerobic system with more long rides and maybe reducing some of the excess muscle you'll have to carry for 140.6 miles. Don't eliminate strength training entirely; just go easy on the heavy stuff. Kropelnicki likes his more naturally muscular athletes to focus their gym work on functional strength, such as exercises using a TRX, to maintain their resilience to injury. "Regardless of the athlete, we're doing some sort of strength training," he says. "The magnitude of that strength training really depends on the athlete's muscle content."

± **TRX BODY SAW**
WITH CRUNCH



± **KETTLEBELL**
OVERHEAD SWING



WEIGHT ROOM RULES

How to build and maintain strength during the race season

You've heard this advice before: Devote the off-season to strength training, then back off the heavy lifting and transition to core and stability exercises during the race season. Sounds reasonable, right? Except that Tim Crowley, a strength and conditioning and triathlon coach in Clermont, Fla., who's worked with 2008 Olympian Jarrod Shoemaker and Ironman pro Heather Gollnick, says it's wrong.

All triathletes, particularly those doing long-course races, need to continue to build their muscular strength throughout the race season, says Crowley. "In an Ironman, it's the last 10 miles for most people that are going to make or break their day. At that point, it's not about leg speed; it's not about cardiovascular fitness. It's about sheer strength, the ability to hold it all together at the end. Whether it's running or cycling or even to a large degree swimming, everything is a function of your maximal power output. And that basic piece of power is strength."

By eliminating all heavy lifting during the race season, Crowley contends an athlete will lose the maximal strength gained over the winter "because once you stop, three or four weeks later, those strength gains are gone. If you did a maximal effort on the bike for one minute at the highest power you could sustain at 50 RPMs, which takes a tremendous amount of strength, that's still 50 reps. It's in the strength continuum, but it's not developing maximal strength. The sheer athletic strength that you develop in the weight room needs to be converted into swimming, biking and running movements. They all blend together into a continuum to create a better athlete."

While it's true "a squat or deadlift is not the same as a pedal stroke, you're still using the same muscles," he continues. "So now we take that basic strength, put it on the bike and now we're doing it within the circular pattern and transferring it over. The higher your deadlift or squat strength, the

higher wattages or bigger gears you can push. Then that on-bike strength will be converted into a higher sustainable power over an Ironman or half-Ironman distance."

Quality strength training during the race season is particularly important for long-course athletes because it helps prevent injuries and improves your "ability to do sustained training loads over time to put out a good performance on an Ironman course," Crowley says. "The point that people often miss is that high loading builds tendon strength, and most athletes are going to suffer from 'itises,' tendonitis or something similar."

And it's particularly beneficial, he adds, for female and male athletes over age 35, where strength is often a limiter. "For masters athletes, it's a game changer," he notes.

But don't overdo it in the weight room, either. Don't do the same volume of maximal lifting you did during the off-season, Crowley advises. And make sure your strength program isn't having a detrimental effect on your swim, bike or running workouts. Crowley says all you need during the race season is 30–35 minutes in the gym twice a week to complete your dynamic warm-up, mobility work, core stabilization and main strength work. Eliminate travel time by putting together a low-cost gym in your home office or garage with a weight bench, kettlebell, a pair of dumbbells, TRX, ankle bands and foam roll. On page 49 are strength-training workouts using most of those simple fitness tools that Crowley gives to his athletes preparing and then tapering for a long-course race. "Two weeks or 10 days out from a race, we're not going to see a decrease in their strength," he says. "So when we get down to the last month or six weeks before an Ironman, the strength training is very, very minimal. We're doing more warm-up, mobility and flexibility, and the strength work may be only three exercises—a deadlift, a pull and a press, but we're keeping the quality high!"

DOES YOUR TRAINING FIT THE DEMANDS OF THE RACE?

Many triathlon coaches who have either won or coached winners of the Hawaii Ironman—Dave Scott, Siri Lindley and Brett Sutton, to name a few—believe it's essential to inject periodic doses of speed into their long-course athletes' training programs. "You never want to lose that top end," says Scott. "A lot of people [who eliminate intensity] say, 'Well I'm going from Olympic-distance training to Ironman training,' and, especially with the amateurs, every time I hear that I cringe because they think it's a license to go slow. They just think, 'I've got to put in more miles and I'm going to be a better athlete.' And on the contrary, they end up going slower because they don't innervate those fast-twitch muscle fibers and they lose their top end."

Keeping those fast-twitch fibers working is important because it helps to delay the fatigue that sets into your slow-twitch fibers during the later stages of a long-course race. But you can't just do speed work and expect to have a great Ironman. The bulk of your training needs to fit the demands of a long-course race. And the best way to get in that aerobic training without risking injury is with long hours in the saddle and moderately paced runs. Kropelnicki's athletes, even his fastest Ironman pros, do no running speed work and keep *all* of their runs in the aerobic range. "Any intensity is applied on the bike or in the water," he says. "It's pretty much zero intensity on the run." Athletes often believe frequent fast running sessions will set them up for a fast run off the bike in an Ironman, contends Kropelnicki, but more often than not that leads to injury. "They're not patient enough to develop a robust aerobic system, which at the end of the day is the energy system they're going to use on race day. So they try to rush

it with intensity sessions that put them on the couch."

ARE YOUR LONG RUNS TOO LONG?

Most of us who have done stand-alone marathons know how important those 20-mile training runs can be to marathon performance. But resist the temptation to do them when training for an Ironman. It's a physiologically different event. "The big mistake I see people make is in their long runs," says Kropelnicki. "They think they need a three-hour run to run well at Ironman." Caitlin Snow, who consistently runs her Ironman marathons in the 2:50 range and has been the fastest American female runner in Kona for the past two years, never runs continuously for more than two hours at a time and keeps all of her training runs completely aerobic. So does Jessie Donovan, a long-course pro with three children who, in her first year as a professional, won Ironman Lake Placid and Ironman Mont-Tremblant and placed second at Ironman St. George last year. "At the end of the day, all that matters is your weekly total mileage of running," says Kropelnicki, who coaches Snow and Donovan. He points out that with runs longer than 2.5 hours "the athlete's mechanics fall apart and the injury rate goes up tremendously, so it doesn't add much to the athlete's ability to run off the bike." Like many top Ironman coaches, Kropelnicki prefers instead to break up his athletes' long runs into two separate sessions: a 90-minute run in the morning, and then another 90-minute run in the afternoon following a bike session to simulate race demands.

ARE YOU PRACTICING YOUR RACE NUTRITION PLAN?

It's often said that the fourth discipline in a long-course race is nutrition, and it's true. Those of us who have suf-

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CAVE'S SAMPLE STRENGTH PROGRAM

In her transition from short-course superstar to Ironman and 70.3 world champion, Leanda Cave has learned the importance strength can play in long-course races. Here's a sampling of what she does:

Treadmill hill repeats:

90 min runs with a consistently repeating sequence of 5 min at 3 percent incline; 6 min at 6 percent; 5 min at 3 percent; 3 min at 8 percent; 5 min at 3 percent; 1 min at 10 percent.

Low-weight, high-rep strength training:

Three times a week in the gym, Cave focuses on leg strength to develop her bike power and to build fatigue resistance for the latter stages of the marathon. She'll also do a mix of different kinds of one-legged squats and lunges.

Big-gear, low-cadence cycling to develop bike strength:

These include a mix of hill repeats and 10-minute intervals on her long rides in which she focuses on turning over a big gear while in the aerobars, maintaining a specific high wattage.

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TRAIN SMARTER | RACE FASTER

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FIND YOUR PERFECT RUNNING SHOE

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NEW RULES OF STRENGTH TRAINING

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THE TRIATHLETE'S GUIDE TO PEAK PERFORMANCE



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ferred in an Ironman have learned this lesson the hard way. "You look at age groupers who have had difficulty in long-course racing and at least 60 percent of the time it's related to fueling and stomach issues," says Kropelnicki. "So all of that training volume that you've put in, all of that time you've spent away from the family, is useless. It doesn't matter if you're a 15-minute 5K runner if you're walking on the Queen K [Highway] and throwing up." Once you've developed your fueling plan, Kropelnicki believes it's critical to practice it in training. His long-course athletes do it daily, no matter how long or short their workout. "Really practice fueling on a daily basis," he advises. "It doesn't matter if you have an amazing fueling plan. If you don't practice it, your body is not going to be able to handle it [on race day]. It needs to be practiced every day, day in and day out, without exception."

ARE YOU MENTALLY PREPARED FOR A LONG RACE?

Are you doing all of your long training rides with friends or in groups? If so, make sure to do some of your long rides solo. Pushing yourself at Ironman pace for five to six hours requires a lot more mental focus on race day than any group ride. Do you know how you'll handle the possibility of a flat, leg cramp, dehydration or GI issues? A long-course race can be a miserable experience if you're not prepared for the physical, mental and mechanical problems that seem to always crop up along the way to the finish line. To mentally prepare his athletes, Kropelnicki and his coaches have them develop "race-day scripts" to practice solving whatever problem comes up. "Our thought is to make sure the athletes have every single tool in their suitcase that they need," he says. "They just hope a situation doesn't happen and, inevitably when it does happen, they're screwed. So instead of just hoping it doesn't happen, let's assume it's going to happen and let's have a tool to pull out to deal with the situation. I think from a mental aspect on race day, that's the biggest thing because it can bring a tremendous amount of confidence."

Last but not least, don't forget that an Ironman or even a 70.3 is a long event. So don't start your day like you would in a sprint- or Olympic-distance race and expect to have something at the end. As a short-course pro, Cave said she was conditioned mentally to approach all of her races like they were hard training efforts. But her biggest breakthroughs in long-course events came when she finally realized that she had to consciously slow herself down during the race. "My big mental shift in the last couple of years has been to slow down, and I think that's really worked," said Cave. "For anyone racing an Ironman, don't expect to go as hard in the race as you do in training. It's a process. Get from one point to the next without exhausting yourself. That's the lesson that I've learned. Be more conservative in the race than you think you need to be."