THE END OF INJURY

Understanding and preventing the 10 most common injuries suffered by triathletes. **BY T.J. MURPHY**

Physical therapy for athletes has evolved in the past decade with a shift in understanding where the root causes lie and how to best deal with them. Gone are the days when everything could be cured by orthotics; now more attention is on hip strength, mobility and practicing good technique when you swim, bike or run.

We talked to four top sports physical therapists from around the country (read about them on page 80) and got their insight on which injuries might be lurking around the corner—and how you can prevent them in the first place.

Shoulder impingement

The deal: "Somewhat obviously, this is usually an overuse injury from swimming," says Nate Koch. "It's a result of improper biomechanics resulting in the stroke technique being off: The swimmer may not be using enough body roll and the reach isn't proper." Koch says that the internal rotation of the arm compresses tendons and bursa. A sign of shoulder impingement is that the morning after a hard swimming workout you wake up and your shoulder is sore.

First aid: "Lots of people don't want to miss workouts," Koch says. "The coach has it on the schedule and they can't bring themselves to take the break." But rest is exactly what you should do, Koch explains. Because an impingement comes from tightness and lack of "space" in the shoulder, work on mobility around both the shoulder blade and scapula.

Prevention: In addition to refining your stroke mechanics, consistent mobility and flexibility in the shoulder complex is the No. 1 prevention tool. Koch says to follow the example of most collegiate swimmers and spend time before and after each swim workout performing simple rotator cuff and mid-back mobility exercises to help counter all of the muscular imbalance created during a swim workout.

Lower-back pain

The deal: Sharp pain deep in the hip or in the lower back can be caused by any number of things, Koch says. "Diagnosing the specific problem is hard even for the trained eye," he says. "It could be 20 different things, but all that stuff is usually related to spine. Sometimes we feel like a sacroiliac joint clinic." Back pain usually originates from somewhere else—typically the hip, says Bryan Hill.

First aid: Figuring out the cause is important. A professional bike fit will ensure it's not your cycling mechanics. "Flexibility is key," Hill says. "If you work on hip mobility, the back pain will likely decrease. Alternate heat and ice, and warm up and stretch before and after workouts—especially rides."

Prevention: "Spinal mobility is important," Koch says. "This means improving your core strength and the mobility of the pelvis and spine." This is particularly important if you have an office job and are stuck in a

Shin splints

The deal: Shin splints are a member of the overuse injury family, caused by inflammation of the muscles, tendons and tissues around the tibia (shinbone), which results in a pain along the front or side of the lower leg. Contributing factors include overstriding, excessive pronation (flat foot) or rotation (high-arched foot). If not treated, shin splints could lead to a stress fracture.

First aid: Ice the area and work on calf mobility. Use specific trigger point massage to increase blood flow (try a tennis ball), foam roll or get ART (page 84).

Prevention: Follow the 10 percent rule, only increasing run volume by 10 percent per week. Find the right shoe and replace it often—rule of thumb is 300–500 miles, depending on your weight—and don't make any abrupt changes in terrain, such as running on trails for weeks and then switching to mile repeats on pavement. Having an expert check your running form also applies here. Hill also recommends working on flexibility of the big-toe extensors: Stand with your foot flat on the ground and lift only the big toe, or just use your hand to stretch your big toe in both directions.

chair all day. "When you're sitting, the pressure on the discs in your lower back is up 30 percent compared to when you're standing," he says. The solution? Get up from your chair on the hour, walk around and perform a few light stretches. A proper bike fit and a look at your swim and run mechanics by a professional are also great preventors.

Groin pain

The deal: Femoral acetabular impingement (FAI), or pain in the groin and front of the hip areas, are problems that can arise from being on the bike a lot. Groin sprains are more common than FAI, and usually a result of being hypomobile or inflexibile.

First aid: "Massage or ART (Active Release Technique) are great in the acute phase, as well as ice or modalities," Hill says. "Adjusting bike fit or seat height may be a factor that will help overall. Long-term, there is no substitute for consistent stretching and flexibility work through yoga, personal training, physical therapy, etc."

Prevention: Koch says that a less aggressive aero position on the bike is a smart way to ward off the potential for FAI. Similar to how you prevent shoulder impingement in your swim program, be sure to follow up your bike workouts with stretches to mobilize the joints and bring your muscle tissues back to center.

Iliotibial band syndrome

The deal: In addition to triathletes and runners, Jill Boorman works with professional baseball players in the off-season, when she sees a lot of ITBS problems. "They've just come off playing 162 games where they've always been moving forward," she says. The result is a pelvic instability—tight hips that are lacking lateral mobility, and the IT band pays the price. Runners and triathletes, Koch adds, who spend a lot of time running downhill can be especially vulnerable to developing IT band pain, which can show up on the outside of the knee or at the origin of the IT band in the hip. Also, Hill says, a foot dysfunction can be a sneaky reason for the knee and hip relationship to be off in running.

First aid: "I love ice for this," says Boorman. Icing can reduce the inflammation and the pain. She also encourages her clients to follow hard runs with swimming to "massage" the legs. Using a foam roller on the legs, massage and ART are also useful.

Prevention: To prevent ITBS problems, Koch teaches his clients exercises that improve lateral hip mobility, like monster walks and clam exercises. He also advises them to adopt a foot strike that is light and fast. "The more time your foot spends on the ground, the more forces the leg has to absorb," he says. "The less time you're on the pavement the better." Hip mobility is the key, but making sure that alignment while running is important, adds Hill. "Have a professional do a video run assessment, work on form and run with experienced runners to model their mechanics."

Patellar tendinitis or PF syndrome

The deal: According to Steve Berkey, "Patellar tendinosis is a pain that occurs under the kneecap from the knee not tracking correctly." Because there are so many causes, it's important to have a professional assess your lower body. Hill says the primary "big rocks" to assess are (1) foot position (flat or high arch) (2) knee strength on a single leg (using the simple single-leg squat test for range) and (3) hip mobility, primarily the hip flexor. "If any of the three or a combo are not biomechanically efficient, the risk for knee pain rises," Hill says.

First aid: Ice with a bag that conforms to the knee, Berkey says—like a bag of frozen peas. Do 15 to 20 minutes of icing per treatment. Stretching, massage and, in some cases, orthotics can solve the problem.

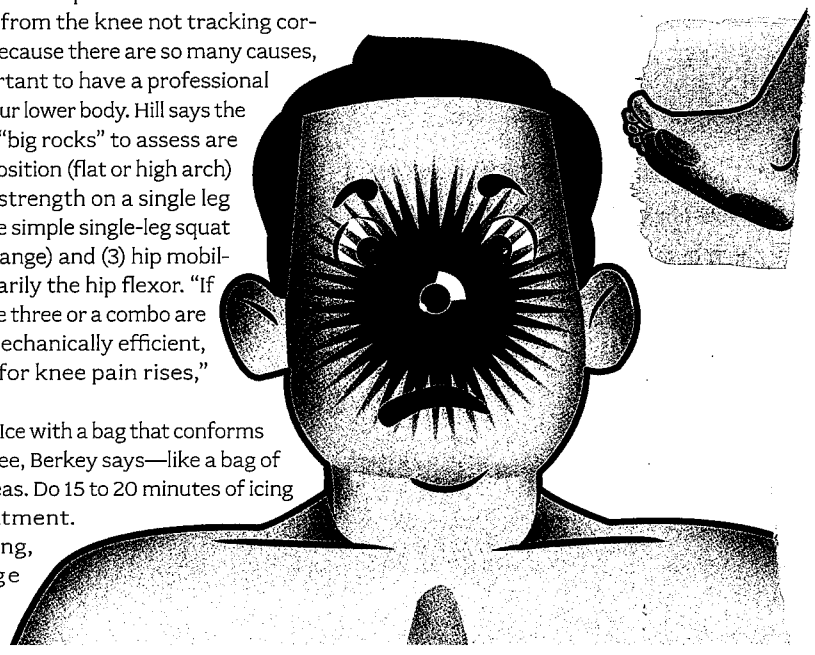
Prevention: Berkey says that patellar tendinitis is usually related to weak hip muscles and poor running technique. Exercises to strengthen and mobilize the hips should be paired with a focus on improving your running technique. "These are the things you can work on with a PT so you can steer clear of the surgical options that can come up with knee pain," Berkey says.

Achilles tendinosis

The deal: "Achilles tendinosis is composed of micro-tears along the tendon," Berkey says. Typically the pain is focused right on the attachment of the tendon to the heel, or up in the lower calf muscle where muscle attaches to the tendon.

First aid: "Ice is your safest remedy," Berkey says. "Ice two to three times per day for two or three days." Berkey also suggests that if the pain is in the fleshy part of the lower calf to use a bag of ice that conforms to the area, like a bag of frozen peas. But if the area is localized on the back of the heel, use ice to massage the area for a few minutes at a time, or until the area is numb.

Prevention: Achilles problems are typically the result of tight calves, says Berkey. In addition to stretching out the lower-leg muscles, choose your footwear well. "If you're walking around day after day in heels, you're going to pay a price in terms of a shortened tendon," Berkey says. Choose flatter-soled shoes or aim to stretch throughout the day. (For more on tendinosis and tendonitis, turn to page 24.)



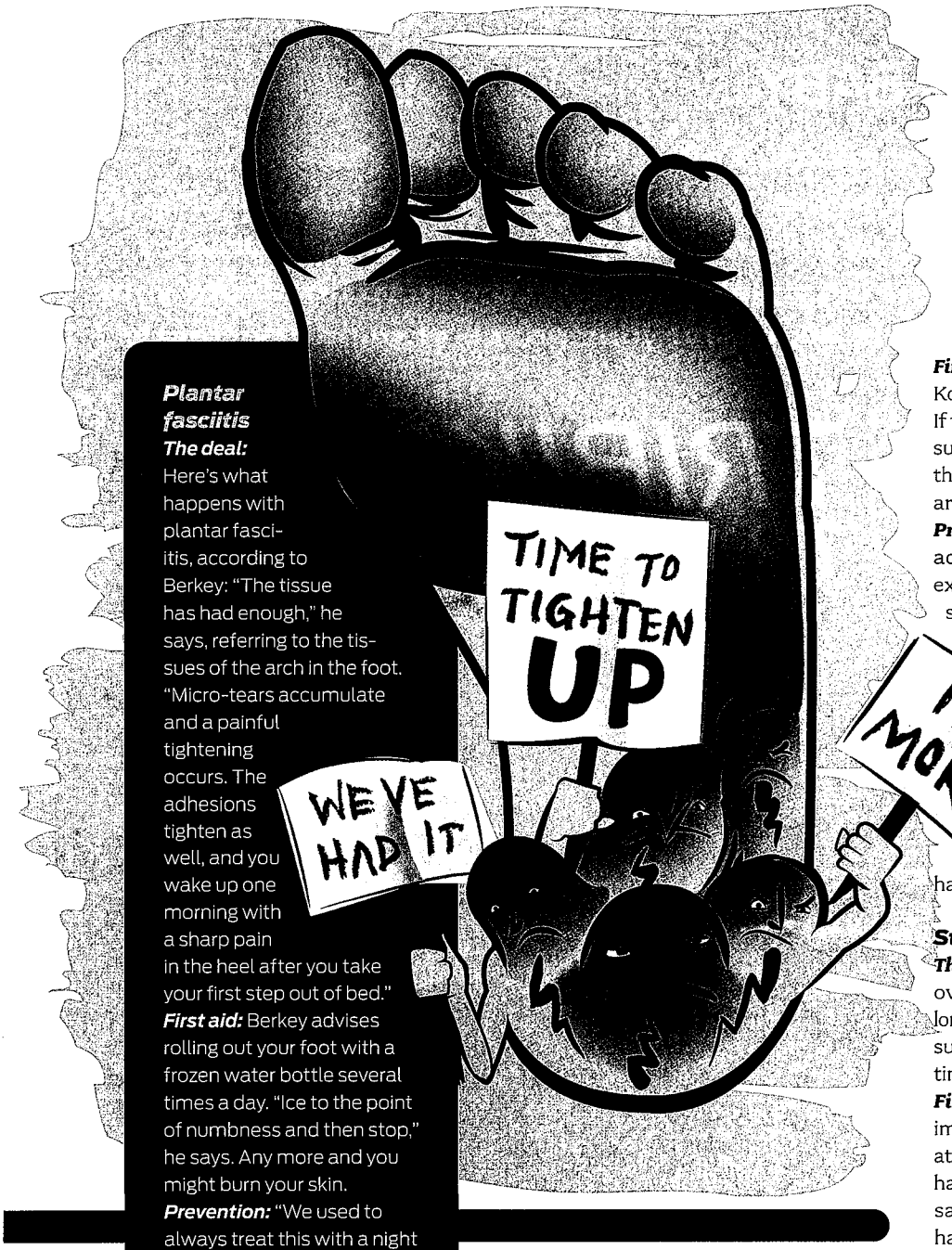
OUR EXPERTS

Steve Berkey is a doctor of physical therapy and the director of 90 Revolutions in Falls Church, Va., where 75 percent of his clients are triathletes.

Nate Koch is the director of rehabilitation at Endurance Rehab in Scottsdale, Ariz.

Bryan Hill is a physical therapist and co-owner of Rehab United in San Diego.

Jill Boorman has been practicing physical therapy since 1994 and is currently the clinical manager at Premiere Physical Therapy in Charleston, S.C.



Plantar fasciitis

The deal: Here's what happens with plantar fasciitis, according to Berkey: "The tissue has had enough," he says, referring to the tissues of the arch in the foot. "Micro-tears accumulate and a painful tightening occurs. The adhesions tighten as well, and you wake up one morning with a sharp pain in the heel after you take your first step out of bed."

First aid: Berkey advises rolling out your foot with a frozen water bottle several times a day. "Ice to the point of numbness and then stop," he says. Any more and you might burn your skin.

Prevention: "We used to always treat this with a night splint," Boorman says. "But the issue is you're pushing off over and over again with your foot." Boorman recommends "plantar flexion" stretches to open up the talus joint, like sitting back on your heels. Berkey has patients focus on the flexibility of the big toe and believes that massaging the arch and foot—self-massage works here as well—will really help prevent arch pain issues if you're regular about it.

Hamstring muscle tear

The deal: Koch says that the hamstring tears suffered by triathletes are different in nature than the image that a sprinter tearing a hamstring might impart. "It's an easy diagnosis with a sprinter," he says. "They tore it in a dramatic way and there's bruising in the area. But with triathletes we're talking about small tears, micro-tears, so it's more like a tendinosis than a tear." A common cause of chronic hamstring tears, Koch says, is when a newer triathlete adds track workouts to the program. "They're suckered into going too hard by the glory days," he says.

First aid: Rest and ice as soon as possible, Koch says. "Gentle massage will help, too." If the problem doesn't go away, Koch might suggest noninvasive ASTYM treatments that aim to rid scar tissue from the problem area.

Prevention: "Shorten the stride," Koch advises. By shortening the stride you expose the hamstring to less overall tension and lessen the risk of tearing things. Preventing hamstring problems is also an area where you need to take measures throughout the workday to get up, move around and introduce spells of light mobility work to your day. "If you sit all day and then go run intervals on the track at night," Koch says, "you're going to have trouble getting full hip extension."

Stress fracture

The deal: Stress fractures are a common overuse injury when the tissues can no longer absorb the punishment and the bone subsequently breaks. The result can be a tiny crack that usually takes weeks to heal.

First aid: It's time to take a break from impact exercise, like running. "Endurance athletes hate taking any time off, but they have to with a stress fracture," Boorman says. She offers her clients a solution: "I have them do their running in a pool and I work them hard. I've had clients use pool running while the stress fractures healed and then still be in good racing shape after their rehabilitation is complete."

Prevention: "The thing I've seen over the years is that the athletes who get stress fractures always have terrible nutrition habits," Boorman says. "They just aren't eating well. So I'll first talk to them about their diet and advise them to get enough protein and vitamins. Their bones just can't handle the stress without them." Boorman tells endurance athletes to pay special attention to recovery meals following long or difficult workouts. "Chocolate milk and a turkey sandwich will do the trick," she offers as an example.

WORK IT OUT

Most triathletes know that regular soft-tissue work is key to any recovery program, but with so many different kinds, how do you keep your MAT straight from your ART?

BY KELLY DUNLEAVY O'MARA

When it comes to soft-tissue work, the most important thing is to find what works for you, so don't get caught up in hot trends. "Whatever you're doing should make you feel better, not worse," says Bryan Hill, owner of Rehab United, a full-service rehab and training facility in San Diego. "Everybody's different."

Secondly, you need a good practitioner who understands your sport and has access to as many different tools as necessary, according to Chappy Wood, a chiropractor in the San Francisco area who also uses ART, massage, Graston and lasers on his athletes. So ask around for recommendations. A growing number of full-service facilities are also offering a comprehensive look at an athlete before providing a variety of these soft-tissue techniques in one place.

ART

Active Release Technique is growing in popularity as an alternative form of soft-tissue work. The technique uses very localized (and intense) pressure and movement to work through targeted scar tissue and adhesions that create tightness and injury. ***When should I use it?*** Treatment (performed by a chiropractor) is often intense and can leave bruising, so most athletes use it to treat a specific injury, such as IT band syndrome, or to nip recurring tightness and aches in the bud. However, Hill says more athletes are starting to work it into a regular recovery/prevention program.

Graston Technique

As opposed to hands-on techniques, Graston uses a series of small (and scary-looking) tools to break up scar tissue and loosen muscles. Though many practitioners will use the tools to dig into tight muscles, the technique is actually very specific, says Hill. A quick, repetitive motion brushes over the muscle/tendon junction to create heat and elasticity, encouraging healing and stretching tissues and fibers. ***When should I use it?*** Ideally Graston causes less soreness than deep-tissue work but can still create bruising. Many people also find the sensation of metal rubbing over their skin unnerving, so don't try it right before a race.

MAT

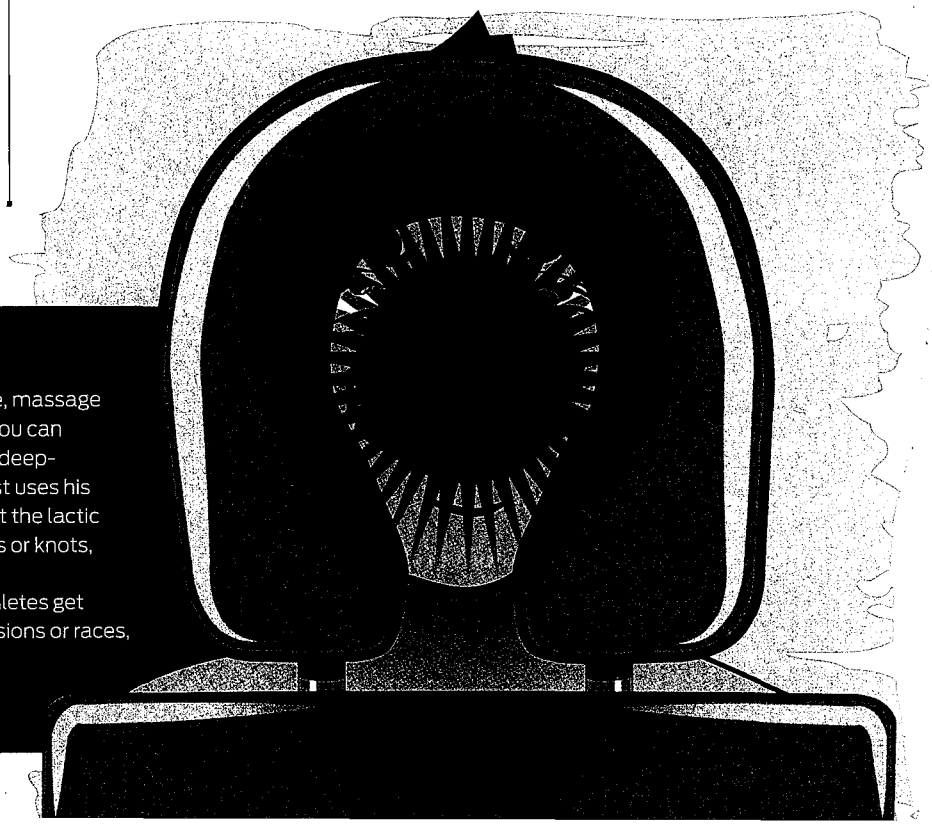
"Weakness causes tightness," says Megan Leyba, education director for the Muscle Activation Technique main clinic in Colorado, and tightness leads to injury. MAT attempts to address muscular weakness by starting with a range-of-motion test and then applying pressure at the muscle attachment points to get those weak muscles firing. A follow-up test checks to see if the muscles work better after treatment. ***When should I use it?*** Most athletes come to MAT after an injury. But it can be used on an ongoing basis as a check-and-balance on weak muscles or for any kind of muscular issue, according to Leyba.

Rolfing

Perhaps the most obscure of the soft-tissue techniques, Rolfing Structural Integration focuses on the sheathes and connective tissue surrounding muscles, called fascia. Rolfers use hand manipulation and patient breathing to lengthen the fascia. Elasticity then creates better posture and alignment. ***When should I use it?*** Rolfing is typically done in a 10-session series, moving from superficial layers to core tissue to total body integration. It is most often done holistically to resolve overall aches and pains.

Massage

The most classic soft-tissue technique, massage is a go-to for any athlete "as much as you can within your budget," says Wood. Basic deep-tissue massage works when a therapist uses his or her hands to systematically flush out the lactic buildup in muscles, break up adhesions or knots, and stimulate blood flow. ***When should I use it?*** Professional athletes get massages regularly and after hard sessions or races, but never deep-tissue before a race because it typically creates soreness.



TOP MYTHS ABOUT RECOVERY

Rest and recovery might be the most important training you're not doing. And there's an explosion of products that want to help you do it better. Here's how to navigate the hype and get the most out of your body's natural rebuilding efforts. ***BY MARTY MUNSON***

Can you shop your way to faster recovery and pack in a few more quality workouts this week? With the proliferation of recovery beverages, bars, clothes and devices on the market, it seems like it: Just do this/wear that and you'll spring out of bed in the morning, ready for your next interval session.

Of course if it were that easy, we'd all be winning medals. So what *does* work to help you recover from a long or hard workout and get you ready to nail the next one?

"The world of recovery is a mixture of folklore and some science," says William Sands, Ph.D., former director of the Recovery Center at the Olympic Training Center in Colorado Springs, Colo. And, he says, a lot of "I saw an athlete do X so it must work" reasoning. "It's not always wrong, but much of the time it is. And unfortunately, a lot of the science that should be straightening out all of these recovery questions is still in the beginning stages," says Sands, who's currently the director of education at the National Strength and Conditioning Association. That means there's a big gray area for myths to grow in. Here's the truth about some of the more popular ones:

Myth: I don't really need all the recovery days my coach gives me. ***Truth:*** Sure, tough workouts that leave you fatigued are essential to hitting your goals. But so are days and weeks when you're not doing that. "You dig the hole, and that's OK," says Sands. "But you have to fill the hole and then make a hill to improve your performance. The worst thing you can do is dig a hole and keep on digging. If you don't rest properly, you can sabotage your training."

"It's easy for athletes to think that if they're going hard, they're getting fitter. That's not true," says Matthew Weatherley-White, co-founder of a popular-among-pros online tool called Restwise that helps athletes know how recovered they are. "Hard work creates the conditions for physiological adaptations. And adaptation happens during recovery. If you don't hit the best stress-to-recovery balance, you're not optimizing your training."

Myth: Ibuprofen helps you recover better. ***Truth:*** Over-the-counter doses of ibuprofen and acetaminophen may actually work *against* recovery. Current thinking is that they interfere with the ability of your muscles to repair themselves and get stronger after hard workouts, says Todd Trappe, Ph.D., professor at the Human Performance Lab at Ball State University who has researched the compounds' effects on muscle.

Normally, "your body's rate of protein synthesis goes up 50 to 100 percent after exercise," he says. But in one of his studies, "when people took the maximum over-the-counter doses, the drugs eliminated the ability of the muscle to turn on the protein synthesis response. If you kept taking these analgesics day after day, there's no way you'd get muscle to grow or adapt." Plus, other research suggests that these drugs may mess with healthy muscle adaptation by affecting the production of compounds like collagen that help give tissues strength.

Too addicted to the relieving effects to give them up? Think again. In Trappe's study and others, there was no difference in soreness between people who took the drugs than in people who took a placebo—although it's possible that the achiness was too great for the drugs. The caveat: In a small study that shocked even the authors, Trappe and his team found that OTC analgesics in people over age 64 didn't turn down muscle building after exercise—they raised it. Stay tuned for more if you're in the masters group.

Golden Rules of Recovery (As We Know Them Now)

Right now, there's no (legal) magic formula that helps you recover at a superhuman rate. And to say that research is contradictory on the up-and-coming drinks, products, clothes and more is like saying that Craig Alexander is a "pretty good" athlete. "There are no recovery modalities or supplements that can overcome stupid coaching, bad planning, and no talent," says Sands.

Yet there are a few essentials for recovery that science, coaches and athletes can agree on. Have you heard them before? Yes. But do you actually *do* them?

Rule #1: Sleep

That hour you spend comparing the exact amount of amino acids in different recovery drinks or the Excel spreadsheet of the mmHg rating in every pair of compression socks on the market? It's not that it's a bad thing. But devoting at least part of that time to sleep is likely to get you to the finish line faster.

Numerous studies on sleep and athletes have found that it's the best natural performance booster around. In fact, when a group of college swimmers increased their sleep to 10 hours a day, their performance in sprints, reaction time off the block and flip-turn times all improved.

There's no set number of hours you should get—it's possible the optimal amount of sleep is an individual thing. But you almost certainly need more of it. Fifty to 70 million Americans do not get enough sleep. You can't train yourself to need less sleep. And you don't function better; you just get used to feeling worse, says Weatherley-White.

Rule #2: Eat right

Eating right for recovery not only means replenishing your glycogen stores after a long or hard workout. It also means eating right during the rest of your day. If you go into a workout inappropriately fueled or hydrated, you're not going to get the most out of it even if you refuel well afterward.

And in the rest of your meals, if you neglect the nutrients your body needs to stay healthy and manufacture energy—well, it's no surprise that junk in equals junk out. (Yes, there are pros who eat terribly. But coaches say that there are certain people who perform well *in spite* of what they eat, not because of what they eat.) You don't need a whole nutrition dissertation here because you already know that a healthy diet comprises produce, lean protein, the right kind of fat and smart grain choices. Figure out what you're not getting now and take a minute to figure out a few easy, healthy meals you can rely on. (See sample recovery foods on page 90.)

Rule #3: Train smart

Smart training programs factor in "rest" or recovery periods. That's when your body makes sense of the stresses that have been put on it and prepares itself for more. If you don't take these periods because you can't stand the thought of "rest," then rename them "power building" or "regeneration" periods. Just don't think that you don't need them. "No one 'wins' training. You only win (or lose) the competition. You should be willing to back off on one or two battles in order to gather your resources to win the war," says Sands.

Myth: Carbs are overrated as recovery fuel.

Truth: "There's no question that having enough carbohydrate in your diet after you work out to be sure muscle glycogen is restored is still the best science out there," says Trappe.

A long or hard workout depletes your glycogen (stored sugar in your muscles that they use for fuel), and you need to replenish those stores if you want to be able to have a great workout again within the next 24 hours.

"The sooner you're going to work out again, the more attention you need to pay to refueling efficiently and quickly," says Monique Ryan, author of *Sports Nutrition for Endurance Athletes*. "We know you can make back your fuel stores in 24 hours, but triathletes are often in a position of having less than 24 hours to recover between workouts."

Conveniently, your body wants to help you out. For the first 30 to 60 minutes after exercise, the "refueling window" is open and your body is primed to restock glycogen stores efficiently. When you get home from a really long workout, you should refuel with 0.5 grams of carbs for every pound of body weight (for example: A 150-pound athlete should eat 75g), says Nancy Clark, a sports nutritionist in the Boston area and author of *Nancy Clark's Sports Nutrition Guidebook*. About two hours after that, when you've showered

and have made lunch or dinner, you should get that amount of carbs again.

Use common sense—if you did a workout that burned 600 calories, then you don't need to refuel with 800 calories. But if you burn thousands, then you will want that refueling snack or light meal, then you will have lunch/dinner, and then a few hours later you will probably be hungry again and get a bowl of cereal and so on. "Your body talks to you if you listen to it," Clark says. "I encourage people to be responsible, but not obsessed with the numbers." How many carbs you should get "is a concept, not an exact ratio. If you get more carbs than you need, you'll have them around. If you get less, you'll be hungry."

So there are guidelines but they are just that—guidelines, not rules. Apply them with common sense.

Myth: More recovery means less training.

Truth: More recovery could mean more *efficient* training. It means recovering when you need to recover and training hard when you need to train hard, not just slogging through endless hours of mediocre workouts just to log them in. "Beware of defining yourself by training volume rather than the results of your training," says Weatherley-White. Instead, be aware of when you're too fatigued from work, travel and everything else going on to hit your splits, and be aware of when your body can absorb and be productive with that training volume. That's what performance gains are made of, he says.

Myth: I need extra protein after a hard workout.

Truth: "Most workouts for triathletes are about spending glycogen. A really long bike ride might dip into muscle protein for a little bit of fuel," says Ryan. Eating a normal amount of protein takes care of it. And that's not a couple of steaks—0.5 to 0.8 grams per pound of your body weight should do it. For a 150-pound athlete, that's about 75g protein a day. One 3-ounce chicken breast gets you a third of the way there.

Myth: The older you are, the longer it takes to recover.

Truth: Maybe not. "I devoted four-plus years of my life to this question and didn't really come up with an answer," says James Fell, Ph.D., senior lecturer and exercise science program coordinator at the University of Tasmania. "Anecdotally, the common thought is that more recovery or a reduced training load is needed. However, my research has not confirmed this." He did find that older people said they felt more soreness and fatigue than younger ones felt. But their performance wasn't affected by it—in one study, older cyclists rode just as hard whether they felt that fatigue and soreness or not. It's possible that performance drops with age in part because people think they shouldn't train as hard. His recommendation: If you do find that your body's not ready for the next hard session, take more recovery time between sessions, but don't reduce the intensity of those sessions.

HOW THE RECOVERY "CLASSICS" STACK UP:

» Turkey sandwich (2 oz turkey) *286 calories, 42g carbs, 22g protein*

» Low-fat chocolate milk (1 cup) *157 calories, 26g carbs, 8g protein*

» Banana (large) and peanut butter (2 T) *309 calories, 38g carbs, 9g protein*

RECOVERY FOODS YOU MIGHT NOT HAVE THOUGHT OF:

» Onigiri (Japanese rice ball in seaweed) *190 calories, 43g carbs, 3g protein*

» Strawberries and maple syrup over low-fat yogurt (1 cup) *307 calories, 55g carbs, 14g protein*

» Low-fat cottage cheese (1 cup) with 1 serving of Triscuits *283 calories, 27g carbs, 31g protein*

» Applesauce (1 cup) with walnuts (1 oz) and cinnamon *285 calories, 31g carbs, 4g protein*

» Shrimp (2 oz) in small tortilla with cilantro and yogurt (1 oz) *219 calories, 26g carbs, 17g protein*

» Quinoa (1 cup) with raisins (1 oz) and almonds (1 oz) *413 calories, 66g carbs, 15g protein*

Recovery Products: What Works?

When it comes to the many recovery products on the market, there's a lot of hope and either not a lot of published evidence or a rat's nest of contradictory findings. Of course, many athletes won't wait years for conclusive evidence before trying them. And some swear by the results. Here's what's going on with some of the most popular products:

Proponents say: When you exercise, excess fluid leaks from capillaries. Dynamic compression helps keep cellular debris from accumulating and keeps swelling down. ***Opponents say:*** It's expensive and there's not enough objective scientific evidence yet that it works. ***Used by:*** Garmin-Barracuda pro cycling team, Kelly Williamson

Proponents say: Compression helps promote the return of blood to the heart, relaxes the muscles in artery walls so more blood flows through them, and may promote lactate removal. ***Opponents say:*** Compression socks were designed to prevent blood pooling in the legs due to gravity. But once you lie down, gravitational pull isn't an issue. So sleeping in them doesn't do anything for you that nature's not already doing. ***Used by:*** Matty Reed, Dave Scott

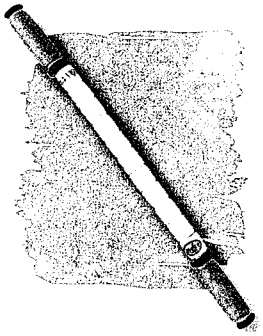
Proponents say: An icy soak decreases muscle soreness and may reduce inflammation. ***Opponents say:*** Markers of muscle damage still show up whether you ice or not, and there's a debate about how damaging the inflammatory process is to athletic recovery or adaptation. Other opponents say that anything that takes blood flow away from the muscles doesn't help recovery. ***Used by:*** Bree Wee, Julie Dibens, Mirinda Carfrae

THE TOOLS OF RECOVERY

Recover faster after a workout or rehab yourself back to health with these tools.

BY AARON HERSH AND ADAM ELDER

Because all injuries take time to heal, no product is going to get you over an injury on its own. But since inflammation is the underlying physiology behind injury, you can get it under control faster—and perhaps prevent it in the first place—with the help of these high- and low-tech devices. *Triathlete* medical advisory boardmembers **Dr. Jordan Metzl** and **Dr. Jeffrey Sankoff** weigh in on each product.



The Marathon Stick $32, Thestick.com

Use for: Self-massage

Dr. Sankoff says: Increases blood supply. For muscle fatigue, The Stick is great. Just like massage feels great on a fatigued muscle, The Stick is going to do wonders for that kind of thing. If you have a sprain or a torn muscle, The Stick should not be used.

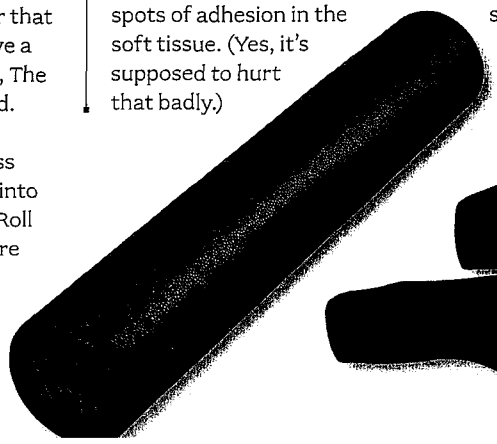
Fix yourself: Grab both handles and firmly press the center of The Stick into a major muscle group. Roll it up and down the entire muscle body.

OPTP Axis Black Roller $20, Optp.com

Use for: Self-myofascial release, stretching

Dr. Sankoff says: In terms of preventing injury, the foam roller can be quite effective. It is particularly useful for stretching things that are hard to stretch otherwise, such as the IT band.

Fix yourself: Place the roller on the ground and lay the side of your thigh against the foam. Roll back and forth, allowing it to massage into your leg. Stop and hold for a moment in the most tender places, as those are likely spots of adhesion in the soft tissue. (Yes, it's supposed to hurt that badly.)

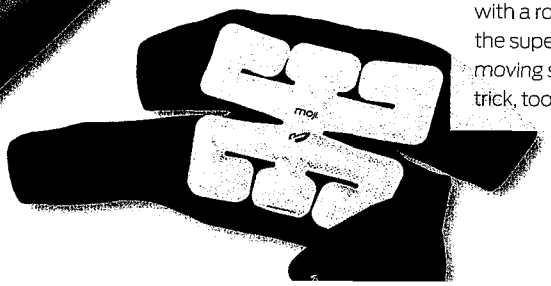


Moji One $80, Gomoji.com

Use for: Applying ice to many different body parts

Dr. Sankoff says: When you apply ice to something, you minimize the amount of swelling. By decreasing the amount of swelling in the area, you can decrease the amount of time it takes to recover from your workouts or an injury. Ice is effective for all kinds of injury, but in overuse injuries, you have to address whatever the issue is that caused the injury in the first place.

Fix yourself: Drop the pack in the freezer for four hours or more. Attach it to the fabric strap and wrap it around any sore body part. Remove after 20 minutes and drop it back in the freezer.



Trigger Point Starter Set $70, Tptherapy.com

Use for: Post-workout muscle massage

Dr. Metzl says: Scientific data have shown that massage quickens muscle recovery. And if you can do your own massage at home, that's great. The Trigger Point tools are essentially similar to a foam roller but can get in deeper.

Fix yourself: Use the ball or roller to get into small or hard-to-reach muscle groups such as the calf or hip abductors.

HOME REMEDY

Moji is able to conform to the body better than ice cubes from the freezer, but so do frozen peas. The home solution won't last nearly as long, but wrapping a bag of frozen veggies against an ailing body part with a roll of plastic wrap from the supermarket—or better, a moving supply store—does the trick, too.

RECOVER RIGHT

Triathlon generally attracts highly motivated people, most of whom embrace hard work. But that ethic can often present a double-edged sword when an athlete struggles to balance heavy training with easy days and adequate recovery. Coach Matt Dixon of Purplepatch Fitness is known for taking injured, over-trained athletes (Linsey Corbin and Rasmus Henning are two cases) and radically changing the way they approach training by making recovery a foundational priority. Dixon explains how you can hurdle some of the biggest challenges to proper recovery—and in turn reap some serious performance benefits. ***BY MATT DIXON***

Among the Purplepatch squad of professionals, we have several mantras that we use in the training process. "It takes confidence to recover" is one that we hold dear to our hearts. Confidence in yourself, in the training plan, in the coach and in the journey of progression you are on. Our hard training will only yield positive results if we are healthy and our bodies are responding positively to the training load. You understand the need for hard work; you should also understand the need for balanced recovery in support of that hard work.

The trend of recovery modalities, including ice baths, compression, stretching and massage, is hugely popular in endurance sports nowadays. While some have their time and place in an athlete's plan, their importance pales in comparison to other areas such as lighter training sessions or blocks of training, sleep and rest, as well as fueling and nutrition.

The trigger for adaptation (improvements) is stress, and in the case of endurance sports the stress is training stress—the root of why hard training is necessary in the first place. This adaptation can occur in a positive or negative sense, but to improve performance the athlete has to respond positively to the training stress. If you respond positively (what is called functional adaptation), you will get fitter, stronger and faster. If your response to the stress is negative (nonfunctional adaptation), you are on a path to major fatigue, injury and performance decline. Every great coach understands he or she needs to keep the athlete in a positive state of adaptation. This doesn't mean athletes shouldn't get tired, or train tired—pushing limits is necessary. The key is ensuring that the hard training is offset with lighter training, allowing adaptations to occur, as well as emotional, structural and metabolic rejuvenation. Carefully planned recovery helps you train harder.

Psychological barriers of recovery

A lot of athletes have a really hard time striking the recovery-training balance. Some reasons why:

- ***The competition is working hard.*** Any competitive athlete has one eye on his or her competition, and this can wreak havoc on the emotional makeup of the training approach. Recovery provides no validation of improvement, as compared to a hard session with a performance breakthrough. When you are going light or easy, it is sometimes tough to not think about your competition out there on an epic training session.
- ***The culture of the sport makes you feel weak.*** Hard training is great to talk about, and dramatic sessions are what dominate the stories of the most successful athletes. We are told so often that performance arrives to the last man hanging on the rope. The truth is that performance arrives on race day, to the man who has trained himself to hang on to the rope longest on that day. This is a big difference.
- ***Coaches lack self-confidence.*** It is often not just the athlete who struggles with recovery. I see coaches layering in too much intensity, perhaps as a way to be seen to provide value or hard work. A great coach knows when to push, but the courageously great coach knows when to hold the athlete back. Confidence, wisdom and experience facilitate this trait so often missing.

All of these barriers lead athletes and coaches to make poor decisions when structuring training, like overloading multiple days in a row with really hard work, and never providing the opportunity to recuperate and balance the training load. Hard sessions become mediocre; recovery sessions remain mediocre. Training becomes ho-hum and a flattening of the intensity spread occurs. Repeat this pattern and athletes begin to lose the ability to raise the intensity of pace or power. They become fit—but slow.

Making recovery positive

How can you avoid some of these fears and reactions, and view recovery as a positive part of the journey to perfor-

mance? It's actually pretty simple:

- ***Reset your lens.*** View lighter sessions and days as a part of the training plan. By framing it as an essential part of the plan, it becomes easier to accept and embrace. Many of my athletes have a "pit bull" mentality when it comes to training hard, so the recovery becomes the essential tool that enables them to train as hard as they love, and thrive from it.
- ***Get in front of the fatigue.*** Each athlete is different when it comes to resilience, but the goal is to schedule in a lighter day or block of training before you are in desperate need for it. It doesn't mean pulling back at the first sign of fatigue, but resting before it becomes a bigger issue. Getting a day, or session, in front of the fatigue allows quicker recuperation, and the chance to more consistently apply the hard work.
- ***Monitor fatigue.*** There is major emphasis on monitoring training performance, but less on how the athlete recovers from that performance. This is a backward way of looking at things. The optimal tactic is daily self-evaluation, as simple as a five-minute check-in, or using a monitoring tool such as Restwise. Information creates awareness, and awareness allows the athlete and coach to make smart decisions.
- ***Be realistic about your resilience.*** Remembering that recovery is a tool to facilitate work, your goal should be to get back to effective training as quickly as possible. This is always individual and needs ongoing evaluation. I have some athletes who can absorb high workloads and only need a day or two of recovery to bounce back from fatigue. Others are less resilient, requiring longer recovery blocks. Both sets are highly successful in racing (where it really counts), but only because we have worked hard to find the right recipe for them.
- ***Learn your response to workload.*** This final component is critical for coaches. Some athletes respond quickly to an injection of higher intensity training, but break down or become flat if it is always present in the plan. Others require higher intensity in every week of training and become fatigued and regress with a higher-volume approach. Learning this response leads to a clearer plan and understanding the type of training—and recovery from that training—that are needed.

I talk a lot about the value of the recovery process (it is a major focus of setting up the training plan), but I am seldom thought of as an "easy" coach. I cannot think of anyone on my professional squad who begs for more work. But we don't simply aim to accumulate as much training as possible, nor do we base success on how much we get done. I frankly don't care how much training any athlete does each week. I don't spend too much time counting hours or miles, and certainly don't judge success in terms of volume achieved.

I base success on being able to maximize the specific and effective training we can consistently apply. If we find that individual recipe, we have a good chance for success. By making recovery as a part of that goal, it places a premium on it from the start, and inspires confidence in the plan, the coach and, most importantly, in the athletes themselves. And this is how top performances are born.