

Rock Solid—The Injury-Free Triathlete

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Have you ever had a season cut short by an injury? Do you have a nagging problem that just won't go away? Conversely, do you have a training buddy that never gets injured and works out with incredible consistency? What are the "secrets" of these triathletes who always stay healthy? The truth is there are no secrets or gimmicks—just tried-and-true training approaches that respect your body's nature, keep you healthy, and allow you to become a better triathlete. To make yourself rock solid and stay injury-free, follow our four-step plan: 1) maximize your health foundation, 2) ensure optimal biomechanical alignment, and 3) train smart, and 4) employ recovery techniques.

Health Foundation

Having a high level of overall health is the fundamental key to injury prevention. Being very healthy gives your body the best opportunity to withstand the stress of your workouts. To make yourself as healthy as you can be: sleep well, rest well, eat well, minimize your work-related stress, and maximize your relationship-related enjoyment.

Sleep

When you are sleeping, your body is in its most restorative state. Sleeping well allows your body to perform the daily repair of every one of your cells. Nothing else, not good nutrition, not massage, not soaking in a hot tub, will do the job that sleep does for you in terms of cellular repair. To maximize the benefits of sleep, arrange your schedule to allow for as much sleep as possible. In this day and age, sleep is one area of health where more is always better. Aim for a minimum of seven hours a night, getting more if you can. To establish consistent high-quality sleep: set a regular bedtime, wind down in the hours before going to bed, and create a bedroom environment that is dark, quiet, and at a comfortable temperature. If you have trouble sleeping well, consult with a doctor to identify possible causes of and solutions to your poor sleep.

Rest

You need time in your days and weeks when you are not sleeping, but are not putting out energy. This is called rest, a foreign concept to some triathletes. You are not working, doing chores, or working out. You are putting your feet up and reading a good book for fun, watching a movie, playing a board game, or doing a similar low-key activity. *Rest is vital.* It allows every cell in your body a break from the "go...go...go" demands of everyday life and training. Although not as restorative as sleep, rest is critical to your health foundation and establishing

injury resistance. Try to carve out some time each day for at least a bit of rest and carve out more when you can (like on weekends). If you have trouble “doing nothing”, learn to! And try not to think of rest as “doing nothing”. Instead, think of it as the conscious choice to allow yourself some downtime each day. Learn to rest well and think of it as storing up energy for your next big workout.

Nutrition

You are what you eat. *Literally*. Your cells are continually remade from the food that you eat. What do you want your cells to be made of? Broccoli and salmon or soda and cake? Your best bet is to revolve your diet around natural, whole, unprocessed foods: vegetables, fruit, lean meat/eggs, and nuts/seeds. Eat the most naturally grown plant foods and the most naturally raised animal foods that you can find and afford. These foods contain all the nutrients that are health-enhancing and they do not contain any health-harming substances. There could not be a more straightforward way to select your foods than to focus on these whole, natural, unprocessed options. Eat to your levels of hunger each day. Eat until you feel satiated—not more, not less. This ensures that you are adequately nourished, but not over-fed. Spread your food intake out over the course of the day. *Always eat a good breakfast*. Lastly, start your day with a glass of water and drink water all day long in between meals. Drinking enough that you keep your urine in a clear-to-pale-yellow shade ensures that you are well-hydrated.

Work Life

Work, chores, and finances represent a big challenge and a lot of stress for most people these days. For most people, there is no way to eliminate all of this completely. But it can be minimized. And doing so greatly enhances your health. Your body responds to all stress with one blanket stress response. This fight-or-flight response mobilizes your body’s resources to be able to escape a dangerous encounter. In today’s world, this rarely means fleeing from a predator. Instead, it’s wondering whether your company may have layoffs, dealing with an overbearing boss, struggling to meet deadlines, hoping your mutual funds are performing well, or making sure you can pay the mortgage. Regardless of the stressor, your body releases a cascade of stress hormones. These hormones do a great job of getting you ready to meet a challenge head on. However, if your work life is very stressful, you are calling on this system all the time, draining your body of vital resources and suppressing your body’s healing capacity—making you more susceptible to injury. Be aware of the impact of stress. If you know that you experience too much work-related stress, consider your options for reducing it and make a plan to work at it.

Relationships

For good health, you need companionship with others as much as you need sleep, rest, and good food and water. Fulfilling relationships, often thought of as emotional and thus “only in your head”, have a direct physical impact on your body. Strong fulfilling partnerships, family relationships, and friendships are an

important consideration in maximizing your health and preventing injuries. Work on creating and maintaining fulfilling relationships.

Excellent habits in these five aspects of health together will make every cell in your body strong and resilient. Conversely, habitually poor health habits will lead to weakened, injury-susceptible and injury-prone cells. Taking good care of your foundational health is *the fundamental key to injury prevention*.

Biomechanical Alignment

After establishing and maintaining a deep health foundation, being optimally biomechanically aligned is the next key factor in preventing injuries. Ensuring your optimal biomechanical alignment is the smartest step you can take to minimize injury-inducing stress on your joints, bones, muscles, tendons, and fascia.

Is one of your legs shorter than the other? Do your hips rotate more to one side than the other? Do you have excessive tightness in any part of your body? Have you had a string of repeated injuries despite seemingly good treatment for each of them? A “yes” answer to any of these is a sign that you may have some issues with your biomechanical alignment. Think of your body as a system of levers (bones) and pulleys (muscles). In optimal biomechanical alignment, your lever-pulley system is ideally stacked and tensioned (like a true wheel) from head to toe to maintain an upright position with your center of mass a few inches below your belly button, just in front of your sacrum. But this natural order to the way your body’s tissues are arranged can be altered by both acute stressors (e.g., a fall, a surgery) and/or chronic stressors (e.g., excessive sitting, poor bike fit, poor running shoes) taking your body “out of true”. To do so, your body makes soft-tissue compensations, altering the pull of your muscles on your bones, changing how your body is arranged (like how a spoke that is too tight affects the tension of the other spokes and if not corrected will eventually pull the whole wheel out of true). These compensations play a significant role in the development of injuries down the road by placing excessive, uneven stress on structures throughout your body, especially structures most exposed to the demands of your workouts. It is important to note that these compensations are rarely “just the way you are” but rather are a form of adaptation which decreases your optimal performance and, if not treated, often lead to frustrating, lingering injuries.

If you currently have an injury, have been injured frequently in the past, or simply want to make sure your alignment is optimal, you should consider seeing a medical practitioner—consider a physical therapist, chiropractor, or osteopathic doctor—who takes a *whole-body* approach to restoring optimal biomechanical alignment *within your body* and has a proven hands-on therapeutic approach at releasing soft-tissue restrictions. These approaches get at the *root causes* of most injuries and with successful treatment make you *much more injury-resistant*.

Smart Training

With high levels of health and optimal biomechanical alignment, you are well on your way to keeping injuries away. You can add a layer of injury-prevention security with each of these smart approaches to training.

Strength-Power

Developing high-levels of athletic strength-power makes you injury-resistant. Incorporate strength-power workouts into your training plan. Use free-standing, total-body, integrated exercises that train *movements* not muscles. Exercises like all forms of squats, lunges, step-ups, push-ups, pull-ups, standing pushing exercises, standing pulling exercises, Olympic lifts, medicine-ball throws, plyometrics, and similar exercises are ideal for developing athletic strength-power and will enhance your injury resistance. Keep workouts focused on strength-power, not endurance. To do so, do three or four good exercises, do 10 reps per set or less, and take rest intervals of 2-3 minutes between sets.

Technique

Incorporating drills to improve your technique in swimming, cycling, and running also helps keep you out of the physical therapist's office. In swimming, work on establishing a balanced, streamlined position and a strong high-elbow pull. In cycling, work on your bike-handling skills as well as pedaling skills. In running, work on establishing an efficient mid-foot landing under your center of mass, on establishing a quick, rapid turnover where you are light on your feet, and keeping your stride compact in both the front and back. A coach can help identify the best drills for you to be doing and can help you via video analysis of your technique and group or individual coaching on your technique.

Appropriate Workout Load, Ideal Weekly Workout Patterns, and Rest Weeks

Workout stress, *in the presence of the opportunity to recover from, adapt to, and grow stronger from that stress*, is what training is all about. For many driven athletes, the middle part of this statement (the part in italics) is omitted from their thinking. To them: Workout stress is what training is all about. This leads to the mistaken belief that taking on as high of a workout load as they possibly can is what will bring them their best results. This is only true to the degree that they can *recover from, adapt to, and grow stronger from that stress*. Instead of trying to do as much as you possibly can, create an appropriate workout load for yourself. This is one that challenges you, but allows you to *thrive*, not merely survive in your workouts, weeks, and training phases. Your workout load is appropriate if you are seeing steady, modest, yet continual improvements (or at least maintaining your ability for already-very-fast athletes or older athletes). If you are digressing, despite your hard work, your workout load is too high for you. Pay attention to signs of chronic fatigue. These include, among other factors, higher resting heart rates, poor sleep (especially waking up in the middle of the night), frequent illness, and the most obvious sign: feeling tired.

Most triathletes in most situations should take at least one rest day per week. This is a day where you do *no workouts* (including swimming, strength-power workouts, or any other workouts). Also, use swimming workouts to your advantage. Because of its non-impact nature and reduced involvement of your legs, swimming is a great way to get a great endurance workout, while giving your body a break from the high-impact nature of running and the high amounts of stress placed on your legs from both cycling and running. Consider workout patterns that alternate days of cycling and running with rest days and days with swimming workouts. The following tables give you an example for a triathlete who has the ability to workout twice per day or once per day on weekdays.

Sample Week of Workouts for an Athlete Who Can Workout Twice Per Day

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Swim	Bike Run	Swim	Bike Run	Swim	Brick	Rest Day

Sample Week of Workouts for an Athlete Who Can Workout Once Per Day

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Bike	Swim	Bike	Run	Swim	Brick	Rest Day

In addition to rest days, you need rest weeks. Take a rest week every 3-5 weeks based on how frequently you need one in order to keep improving. Younger, fitter, and/or less-stressed athletes tend to be able to go 4-5 weeks. Older, less fit, and/or highly stressed athletes tend to need a rest week every 3-4 weeks. In a rest week, cut your workout load in about half and don't do any long workouts or anaerobic-intensity workouts. Don't think you can avoid taking rest weeks. There is a common expression in triathlon: "Either you rest now (when you choose to) or you rest later (when your body makes you because you are injured)." This could not be more true!

Bike Fit

Being well-fit on your bike means a lot more than being as aerodynamic as possible. It means being on a bike that is right for your body and it means being positioned to most comfortably and most powerfully ride. Being well-fit to your bike assures that you are utilizing your muscles well, while placing the least stress on your tendons, joints, and other injury-sensitive parts of your body. You should make sure you are well-fit to your current bike by working with a bike fitter experienced in fitting triathletes. Also, if you are considering a new bike, your absolute first step should be working with a bike fitter *before you buy anything* who can help you select an appropriate frame and components for you that can be used to build a bike that is well-fit for you. The time and money invested will go a long way in keeping you injury-free on your new bike. This allows you to have a bike that is fit to your body, instead of trying to make your body fit a given bike. Buying a bike first, then going to a bike fitter, can be a frustrating exercise

because you may find that some of your components cannot be adjusted in a way that is optimal for your body, or worse, that even with a lot of component-swapping, the frame will never really work well for you.

Running Surface

Although they are most convenient for most triathletes, running on roads can contribute to the development of injuries. Part of the problem is the unforgiving nature of road surfaces, especially cement. Another issue is the camber (sloping for drainage) of many roads. The unforgiving surfaces increase the stress on each footstrike. The camber places uneven stresses on your body. While running on cambered roads is unavoidable for many, try to do some of your running on roads that are flat (not cambered), on trails of different kinds, and/or on a treadmill.

Running Shoes

Your body is made to run and you want to wear running shoes that allow your body to function as it is made. As a general rule, run in the simplest running shoes you feel comfortable in. Choose shoes that are light in weight, flexible, and have thin soles with minimal height to the heel. Heavy, inflexible shoes with thick soles, high heels, and/or excessive motion-control structures are unnatural. These types of shoes frequently cause more problems than they purportedly solve particularly when the support of the shoes masks misalignment in your body. When you are optimally biomechanically aligned and running with good technique, your body is perfectly designed to run without any outside shock-absorption or motion-control mechanisms. Because they alter your normal movement patterns, over time these types of shoes tend to cause more injuries than they solve. Stick with simple shoes that allow your feet and body to move as naturally as possible. Good options to consider are running shoes sold as racing flats or cross-country running shoes. Consult with a coach, physical therapist, or a running-shoe expert if you need help in choosing the right running shoes for you.

Recovery Techniques

The use of specific recovery techniques can also assist in injury prevention. Consider these “icing on the cake”. Massage, hydrotherapy, and napping are your best bets. Professional massage, self-massage (using any one of the several self-massage tools available), or a simple massage from a family member or friend are all useful. For hydrotherapy, a hot bath, an Epsom-salt soak, or a hot-tub soak while you are resting or a cold bath right after a workout can be very effective in enhancing recovery. Naps of 20-45 minutes after a workout (and after you’ve eaten) or while you are resting are simple and effective.

There are no quick-fixes or magic bullets when it comes to injury prevention. Take a comprehensive look at everything you do to stay healthy and see where

you can do things a little better. Start with your *health foundation* and *biomechanical alignment* to ensure depth to your injury-prevention approach. Employ *smart-training* approaches to add an important layer of injury resistance. Use recovery techniques as icing on the cake. The reward is years of injury-free training and racing!

To learn more about Jason, Will, and Tri-Hard Endurance Sports Coaching:
www.Tri-Hard.com.