



runSTRONG

Resource guide

Injury prevention and performance enhancement recommendations for *runners*.

- - - - X



RUN STRONG

- - - - X

A comprehensive and sensible approach to training accomplishes injury prevention and performance enhancement at the same time. Learn how to keep yourself in the game and off the sidelines with our runSTRONG resource.

GET FITTT

- - - - X



The quote above, from former U.S. President Dwight D. Eisenhower, is applicable to runners. Unfortunately, a lot of runners experience injuries. The incidence of running-related injury in long distance runners is estimated to be as high as 80%.¹ This means that 80% of long distance runners may be sidelined each year due to injury at some point during their training. Following a training plan with appropriate progressions can help reduce your risk of injury. The “FITT Principle” is a helpful framework for establishing an exercise program. The acronym typically stands for Frequency, Intensity, Time, and Type. These are important training variables to consider when designing a plan. Additionally, we add a twist to this principle by adding a “T” for Tribe.

FREQUENCY • INTENSITY • TIME • TYPE • TRIBE



¹<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2465455/>

FREQUENCY - HOW OFTEN

Generally, we recommend novice and recreational runners to run on non-consecutive days. In other words, do something different for exercise after a day of running. This allows your bones, muscles, and tendons to recover fully from the running stimulus. Generally, this recovery period takes at least 24 hours, which is why we encourage running on non-consecutive days.

INTENSITY - HOW HARD

Intensity is a measure of how hard you are working in an exercise session. It can be measured objectively with heart rate data. It can also be measured subjectively by using Rate of Perceived Exertion (RPE) on a 0-10 scale. Generally, most of your training days should be relatively easy compared to a few sessions of very hard effort. Many recreational runners spend too much time “in the middle” working out at a moderate effort. Pro-tip: Keep the easy days easy, so that you can go hard when it’s time to. It will not only help your performance, but also protect you from injury.

TIME- HOW LONG

Training for endurance events can be a significant time commitment. Planning out our week in advance can help you strategically fit in your training session with the time you have available. Be realistic in your planning so that you can be as consistent as possible with your training. If you happen to miss a training session, we generally advise skipping that day and getting back to the routine as planned. Think of it like medicine...you wouldn’t want to double up on a missed dose.

TYPE - THE STIMULI

The key variable in this category is variety. While running may be your primary activity, there is a lot of benefit to incorporating other forms of exercise. Strength

training in particular has been shown to be protective against injury.² It also may improve your running performance.³

TRIBE - CONNECT

Although not traditionally included in the “FITT” acronym, we believe it is important to include this vital ELEMENT of CONNECT. Humans are pack creatures and despite our uniqueness we are all similar in that we desire acceptance and belonging. Finding a group of like-minded people will likely improve your motivation and enjoyment with training. This will likely improve your consistency and overall performance. I’m reminded of the famous African proverb, **“If you want to go fast, go alone. If you want to go far, go together.”**



Our TRIBE: Members of Basecamp Athletic Club (BCAC) CONNECTING outside “Basecamp 31”, home of Pro-Activity.

² <https://www.ncbi.nlm.nih.gov/pubmed/24100287>

³ <https://www.ncbi.nlm.nih.gov/pubmed/23914932>

RUN WELL

- - - - X

Running is a skill that requires practice to master the movement fundamentals. Due to the sport's low barriers to entry...just grab a pair of shoes and find an open road...the skill involved with running can easily be overlooked. It's reasonable to assume your body will naturally find an efficient running form as you practice and find your rhythm. Nonetheless, consulting an expert for a running treadmill analysis can be beneficial to highlight potential areas for improvement. This may be particularly useful if you've experienced a running-related injury as small changes to running form help offload sensitive areas allowing you to stay in the game and off the sidelines. Below is a brief overview of some variables we analyze during a running gait analysis.

STRIKE & SOUND

Strike pattern refers to the way your foot hits the ground when running. There are 3 primary categories: rearfoot, midfoot, and forefoot. The majority of runners, especially recreational distance runners are rearfoot strikers⁴. Importantly, there is no "best" way to strike the ground when running, and so doing what comes naturally to your body is likely the most efficient for you. Foot placement and foot inclination are more important to consider and more easily modifiable. Landing with your foot far away from your pelvis and your toes pointed excessively upward are signs of overstriding. Overstriding is a concern as this increases the breaking force that occurs each time your foot hits the ground. Therefore, your bones have to absorb higher loads and your muscles have to work harder to maintain your speed or accelerate. Often times the most obvious indication of overstriding is a "loud" runner. This is where sound becomes an important component of the treadmill analysis. Generally, good distance running form should look smooth and sound soft.

⁴ <https://www.ncbi.nlm.nih.gov/pubmed/24894762>

SPEED & STEP RATE

Speed is straight-forward, how fast you are running. Step rate, also referred to as cadence, is a measure of how many steps you take per minute. This is an important variable to consider as it is easily modifiable with cadence training and impacts several other variables such as strike pattern, sound, and vertical oscillation (how “bouncy” your running is). Cadence is directly correlated to speed because as we run faster we will generally increase our stride length and then our step rate. Therefore, we’d expect a higher cadence at higher speeds. Run cadence generally ranges between 140 and 190 steps per minute. When appropriate, cadence training can be a helpful strategy to reduce forces associated with running particularly at the knee. For example, one study shows an increase in cadence of 5% can decrease peak knee loads by 20%.⁵ Increasing cadence beyond 10% generally comes at the expense of reduced running efficiency. It’s best to perform cadence training using a metronome and on a treadmill so the speed can be held constant.

SHOES

The shoes you wear while running has an impact on your running form. The advice around shoe selection for runners can appear confusing and complicated, however, we can boil it down to two practical pieces of advice.

x Comfort is key. When choosing running shoes, try on multiple pairs and find one that is most comfortable for you. Don’t hesitate to return a pair if it doesn’t feel quite right as you try to break them in.

x Variability is good. It is generally recommended to rotate between a couple pairs of different shoes while training to vary the forces experienced during running in an effort to prevent overuse injuries.

⁵ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3022995/>

RUN STRONG

- - - - X

As the title of this running resource suggests, strength training is an essential tool for the endurance athlete. It may be particularly important for runners, as the loads that the body experiences during running are significant. Strength training enhances the body's resilience to withstand these loads. Further, there is no evidence that strength training impairs endurance performance. Rather, it is well established that strength training actually improves endurance performance in various ways.⁶ Below are some foundational strength exercises to consider for an endurance athlete.

X **Squat**

X **Hip Hinge / Deadlift**

X **Step ups**

X **Band resisted lateral toe taps**

X **Calf Raises**

X **Farmer Carries**

SUMMARY

- - - - X

Running is a popular sport that offers an array of health benefits. It unfortunately has a high rate of injury, however, the risk of injury can be well managed with a few key strategies. First, follow a sensible plan that gradually increases your running exposure and includes strength training. Remember, it takes time and effort to become a skilled runner. Fall in love with the process and don't rush progress. Also, finding a tribe of like-minded running enthusiasts can help you achieve beyond your dreams. Lastly, don't hesitate to consult a professional experienced in working with runners to help you when you feel you need it. Good luck and have fun!

⁶ <https://www.ncbi.nlm.nih.gov/pubmed/23914932>