Running Form Fundamentals

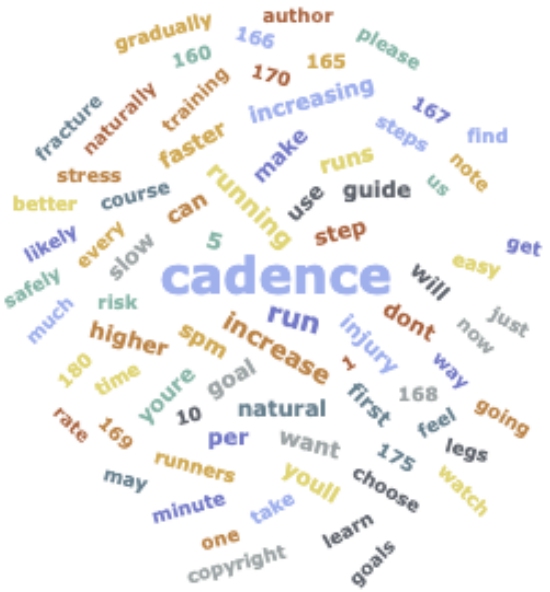
Instructional Series

from

TURNER FITNESS COACHING

Learn to Be a Stronger, Faster, and More Durable Athlete

Topic 1:
Increasing Cadence



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Introduction: A Guide to Increasing Your Cadence

All runners want to be faster, stronger, more durable. We want to run more miles, faster, and stay healthy doing it.

One of the most accessible and safest ways to do this is by increasing cadence.

Cadence is the number of steps you take in a 60-second period, and is measured by a number called “steps per minute,” abbreviated as SPM.

While most novice runners have a cadence between 155 and 170, elite runners routinely clock between 175 and 185 SPM!

So what do these trained elites know that most of us don’t?

A higher cadence has two advantages: better efficiency and reduction of injury.

First, taking more steps every minute leads to less vertical oscillation (or bouncing up and down). When runners increase their cadence, they contribute more energy to forward motion rather than vertical motion. For a visual demonstration, check out my Youtube video where I show what 150, 165 and 175 SPM looks like on a treadmill.

Second, a higher cadence **reduces the risk of injury** by better managing the forces acting on your legs.

The link between cadence and stress fractures has been studied: just this year, the British Journal of Sports medicine analyzed the cadence and injury rate of D1 cross country runners. They found that a higher cadence was associated with lower incidence of stress fracture.

In fact, **every 1 step-per-minute increase in cadence resulted in a 5% decrease in the risk of stress fracture!** View the full article from Running Magazine here.

To put that in perspective: if you increase your cadence by a mere 5%, from 160 to 168, you would **reduce your risk of stress fracture by 40%!!**

So how do you increase your cadence safely?

The best way is gradually. This is a step-by-step guide on how to do that safely, track your progress, and make cadence training a regular part of your running routine.

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Step 1: Find your baseline, or natural cadence.

You'll want to do this on a normal, easy run on a flat surface. Do your usual warm up, then run at least one mile at an easy pace. This will allow your body to settle into your natural rhythm. Run as you normally do, at a cadence that feels natural and easy.

Once you're comfortably running, look at your watch or smartphone, set a timer for 30 seconds, and start counting. Count each step (both left and right foot) for 30 seconds.

Then, to get your steps per minute, multiply your result by 2, and you have your natural cadence!

If you have an advanced running watch, it may calculate your cadence for you. Check in your watch's settings, and see if you can add "cadence" to your display screen while you run.

Note: you can record your natural cadence, along with your goals and gradual targets in the "Goal-Setting Worksheet" toward the end of this guide. Feel free to print that worksheet out, or convert to an editable format.

Step 2: Choose a conservative increase

It's tempting to want to blast your way to 180 SMP, but don't do it!

Changing too much too fast is a shortcut to injury-ville, and that's a town we're trying to avoid!

Your initial increase should be small: I recommend 2-3 steps per minute higher than your normal, baseline cadence, depending on your history of injury, and how healthy you are feeling right now.

This first increase should be a learning experience; it doesn't have to get you all the way to your eventual goal.

Once you've chosen your initial increase, you can move to step 3.

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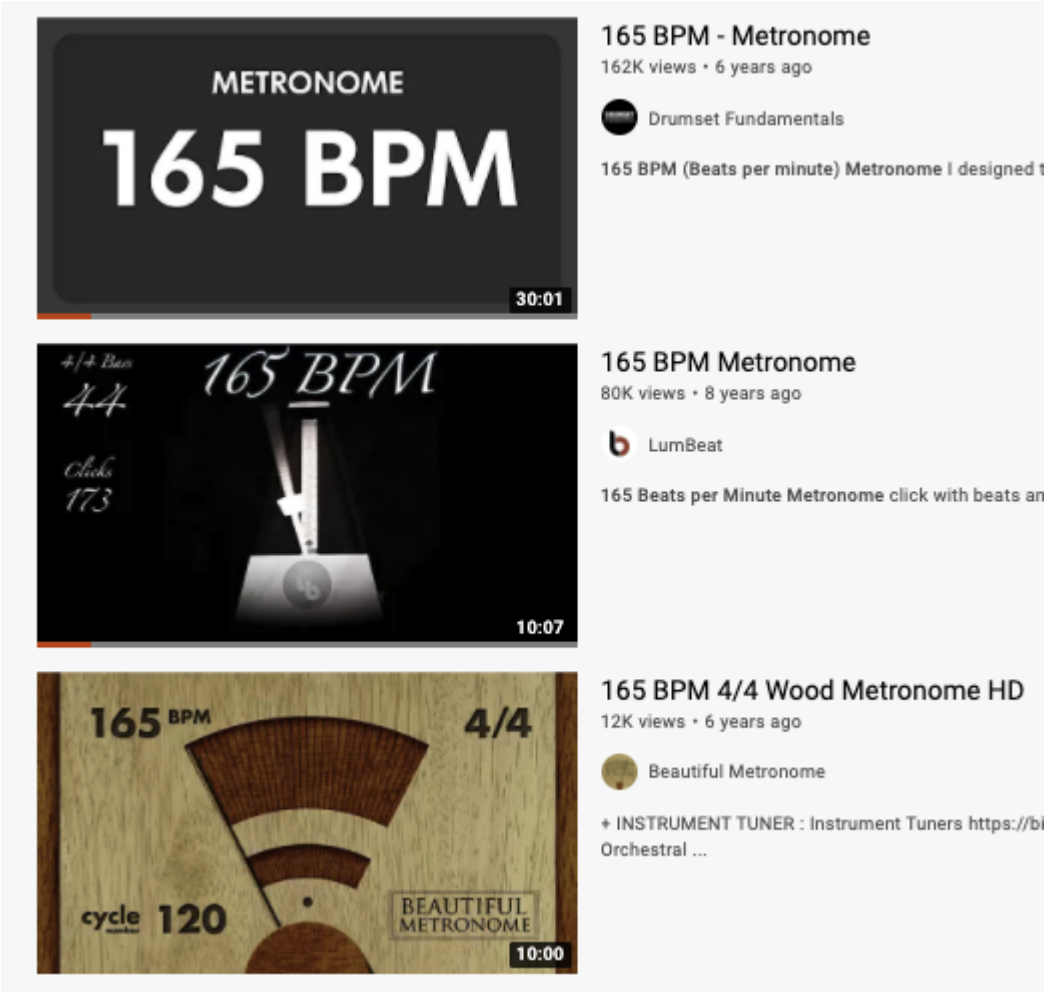
Step 3: Choose your auditory cue

In research on improving cadence, the consensus is that audio cues are the most effective way to do it. In this step, you'll choose what type of sound you prefer.

For us running nerds with fancy running watches like Garmin, Suunto, or Polar, it will likely have a cadence feature that will beep -- or vibrate -- at your desired SPM.

If you don't have such a watch, don't worry. There are two tools you can use on your smartphone:

1. Search Youtube for "____ BPM metronome" and insert your desired cadence. You can find videos for any cadence, even a beautiful wooden one in HD!



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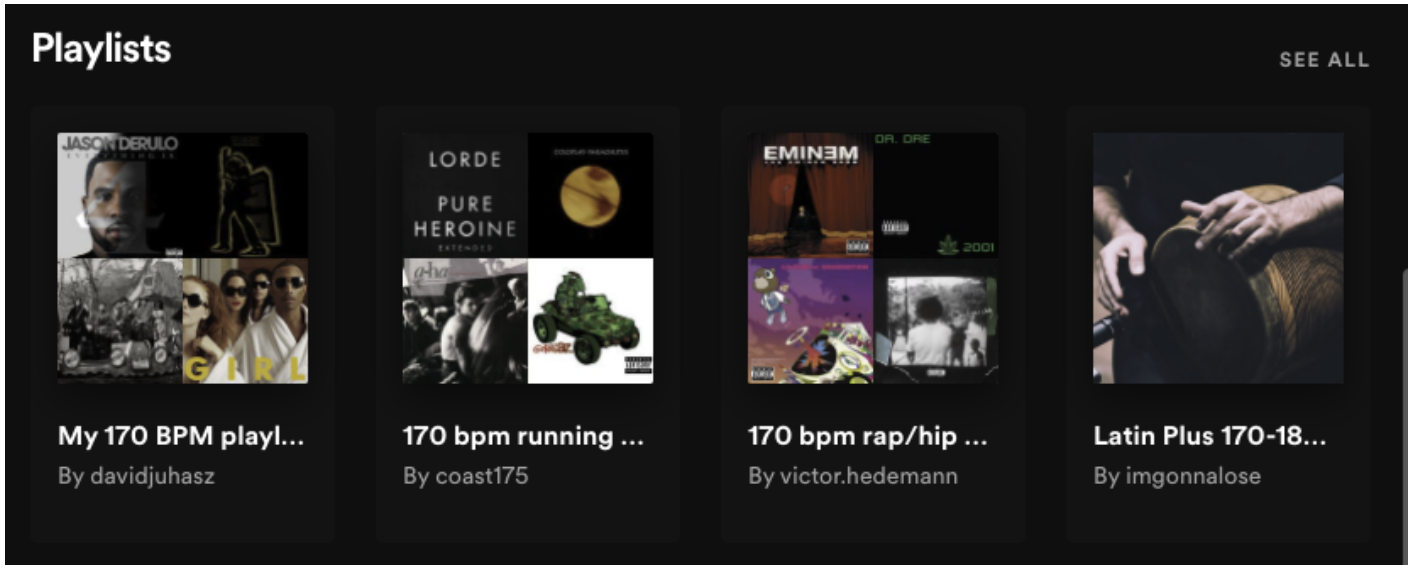
2. If you prefer a more musical option, search your favorite music service (Spotify, Youtube, Amazon, etc.) for "____ BPM playlist" (BPM is beats per minute). There are playlists for just about any cadence in pop, rap/hip hop, and even Latin genres!



Step 4: Test it out!

Now you're ready to go for your first cadence training run! Here are a few tips for making your first run as successful as possible, while reducing your risk for injury.

- Change as few other factors as you can. Run in your most familiar shoes, socks and gear, on a familiar route.

- Take it easy. When increasing cadence, you will naturally want to go faster. Fast steps tell your brain you're trying to speed up, so you'll need to consciously stay slow. Be at a comfortable pace where you can talk easily.
    - Running on a treadmill will solve this problem! Consider doing at least one of your cadence runs per week on a treadmill to train higher cadence at a fixed pace.

- Make it a relatively short run, whatever that means for you. Don't make this your long run; don't even make it a medium run!

- Use your arms. Rather than trying to focus on your legs and what they're doing, move your arms in time with the beat. Your legs will naturally follow, and it will feel less awkward.

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Step 5: Plan ahead and increase gradually.

Now that you've done your first cadence run, it's time to plan: how many days should you train cadence? What's your ultimate goal?

Experts recommend somewhere between a 5% and 10% increase for most people. Anything more than that, and you're pushing too far from your natural cadence, and likely to change your running form significantly, which can lead to injury.

Use the chart below to find your 5% and 10% goals, and write them in the "Goal-Setting Worksheet" at the end of this guide.

Cadence in SPM

Natural Cadence	5% higher	10% higher
150	158	165
151	159	166
152	160	167
153	161	168
154	162	169
155	163	171
156	164	172
157	165	173
158	166	174
159	167	175
160	168	176
161	169	177
162	170	178
163	171	179
164	172	180
165	173	182
166	174	183
167	175	184
168	176	185
169	177	186
170	179	187

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*If your natural cadence is over 170, that's great! You're already well on your way to a healthy and efficient stride! Use your best judgement for how much to increase. I would recommend somewhere between 175 and 180. You don't want to push much past that, unless you're going out for the olympic trials in the 200m (in which case, call me and let's be friends).

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Step 6: Make it a routine.

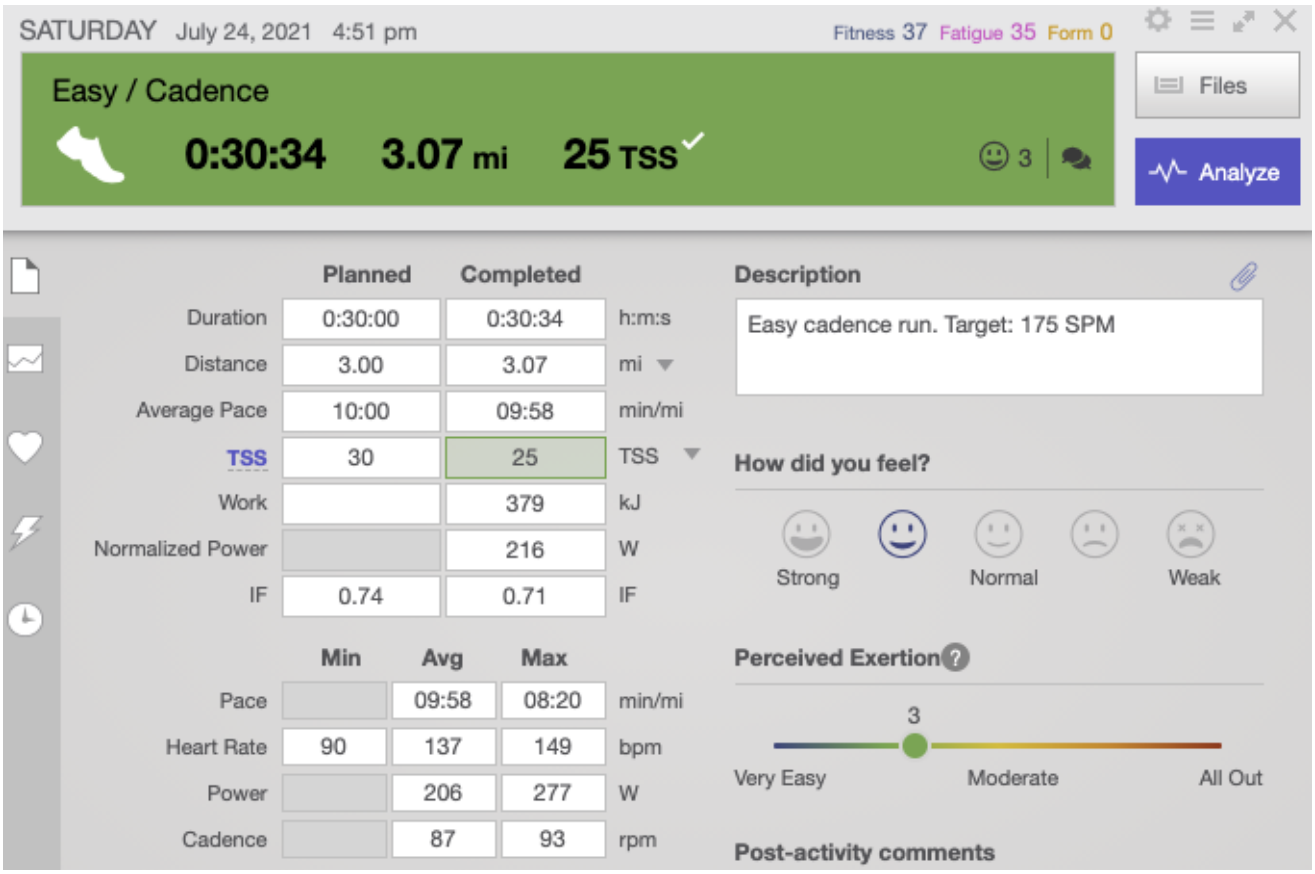
So you have your natural cadence, your first cadence training run, and an eventual goal. Now how do you make this a continual part of your training plan safely and effectively?

Here are some tips:

1. Increase cadence at a slow rate; somewhere around 1-2 SPM per week, or no more than 5 SPM in a month. This may seem slow to you, but better to take it slow and let the feel of the new cadence sink in.

2. Make about 1 in 3 of your runs “cadence runs.” Why not every run, you ask (and I asked)? The idea is to gradually implement this new step rate into your mechanics, not force it in. On your other runs during the week just run naturally, no beeps, no music. Over time, you’ll notice your cadence naturally increasing on your other runs, which is the goal.

3. Your cadence runs should be easy runs. Nice and slow pace, and low distance, especially at first. After a few weeks of cadence runs around twice/week, you can start going farther, or trying some slightly faster runs at your goal pace.



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Above is a screenshot from one of my cadence training runs from the summer. During this run, I had my watch beeping at 175 SPM. Notice that it's 3 miles, which for me is a short run (as I'm preparing for a marathon in October). My pace was around 10 minutes per mile, which is slower than my usual pace. I really focused on being relaxed, natural and smooth at 175 SPM. I even took walk breaks around once per mile to stay relaxed, keep my heart rate down, and not get tight.

4. Carefully monitor your body during this training period. You're changing a major factor in your running mechanics, so you will be more susceptible to injury. If you feel a slight twinge in your hamstring or a little ache growing in your hip, take it seriously and back off. Reducing mileage and/or intensity for the next few weeks is a good idea, if you can.

*<u>*A note on maintenance</u>: once you are reliably running at your goal cadence, you should still do periodic "cadence check-ins" to make sure you're not unconsciously decreasing your SPM. Once or twice per month, schedule a cadence run, turn on your metronome or favorite BPM mix, and reinforce the hard work you've done to increase your cadence.*

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For further reading, check out this article on Active.com about why cadence is important:

Home > Running > Articles > Running Technique: The Importance Of Cadence And Stride

Running Technique: The Importance of Cadence and Stride

By Mackenzie Lobby
For Active.com

Rookies in almost any sport spend the bulk of their time—at least in the beginning—learning proper technique. Whether it's honing that penalty shot on the soccer field, executing the perfect tackle in football or achieving an efficient swim stroke, athletes and coaches spend a lot of time and effort on the mechanics of the sport.

Running isn't exempt. In fact, proper running technique is paramount.

Arm carriage and correct foot fall are important for developing a precise running gait, but the easiest way to improve your form is to focus on running cadence. The correct cadence can vary by individual. Optimal cadence is generally considered to be somewhere around 180 strides per minute.

https://www.active.com/running/articles/running-technique-the-importance-of-cadence-and-stride

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Goal-Setting Worksheet:

Instructions: Research shows that when we engage and interact with material we retain more information, and implement what we learn more easily.

Use this worksheet alongside this guide as an enhancement to your learning and goal-setting. Print it out, or convert to an editable format and use it electronically.

What is your natural (baseline) cadence?	_____ SPM
What would be a 5% increase?	_____ SPM
What would be a 10% increase?	_____ SPM
What is your 2-week cadence goal?	_____ SPM
What is your 6-week cadence goal?	_____ SPM
What is your ultimate cadence goal, and when will you hit it?	_____ SPM and I will hit it by _____
What is the difference in how you **feel** running a slow cadence vs. fast?	_____ _____ _____ _____ _____

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Interested in More Running Instruction and Coaching?

Check out the “Running Re-BootCamp,” a comprehensive training program to become a faster, stronger, more durable runner, for life.

It is 12 weeks long, and new cohorts launch on the first Monday of every month. You complete the course with a group of like-minded runners and athletes who will become an invaluable resource for your learning and training.

Can you imagine what running goal you could accomplish if you improved your running form, were more resistant to injury, could safely add training volume and intensity, and could confidently pace your races?

I promise you will get ALL of that in this program!

To learn more, Schedule time to talk with me 1-on-1!

What topics are covered in the course?

This course will include everything that runners struggle with and need to know to be durable and successful in the sport long-term. Here are a few sample topics we will cover in the 12 weeks of the course:

- The #1 thing all runners can do immediately to improve their form and reduce injuries.
- How to identify and correct chronic muscle imbalances that plague runners
    - (IT band issues, hip flexor pain, calf strains and plantar fasciitis, to name a few!)
- Strategies for pacing the perfect race, anywhere from 1-mile up to the marathon.
- How to safely use plyometric training and drills to improve your speed and agility.
- Incorporating effective strength training, no matter your level of experience.
- The three steps to becoming a more durable athlete, and “injury-proof”!
- How to use technology to enhance your performance, learn about yourself, and pace your races.

For more information, visit: https://turnerfitnesscoaching.com/running-re-bootcamp/

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About the Author

Colin Turner is a lifelong athlete with 20 years of competitive running experience, including State championships and regional competitions. After struggling with injury, pain and frustration for years in his 30's, unable to run more than a few miles at a time, Colin re-invented himself as a runner and athlete and is now training to qualify for the Boston Marathon.

During his re-boot and re-invention, Colin researched running biomechanics, physiology and anatomy, strength and mobility, nutrition science, and studied to receive his NASM Certification as a Personal Trainer. He also piloted cutting-edge technology to analyze his performance metrics and more closely understand endurance and strength training.

Over the course if this research and study, Colin discovered that most conventional wisdom about running is WRONG! For example, people believe that knee pain is a life sentence of "no running," when it can be corrected and healed with adjustments to running form and strength work. Also, running is a skill that can be practiced and learned, not a "natural ability" that some people have, and some don't.

Colin is also a certified teacher, with a Masters in Education in Curriculum and Teaching from Boston University, and 10 years of experience in the classroom. With this expertise, he decided to create an educational course called the "Running Re-BootCamp" to help anyone who wants to run, but finds themselves struggling with pain, repeated overuse injury, or wants to run their first big race, like a marathon.

Fundamentally, he believes that anyone can re-invent themselves, re-boot their fitness and running, and transform their lives through learning new skills, habits and mindsets.

Colin loves to travel, explore nature, cultivate tiny trees in tiny pots, makes things out of yarn, and learn new things. He lives in Boston with his wife and two children, and teaches part-time in the Boston Public Schools.

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