



Winter Training

For High School Athletes

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While most high school athletes identify summer training as the best time of year to make a jump in volume, general strength and overall fitness, the training that takes place between the end of the cross country season and the beginning of official practice for outdoor track is just as important. There is no reason that the summer should be the only time to make a significant jump in volume, strength and fitness. So, what should a serious high school athlete who wants to run at a higher level in outdoor track than they did in cross country do during the winter? I suggest the following list of Must-Do items, mantras that should be repeated weekly (if not daily) and a handful of tips to remember:

Must Dos

1. Easy Days Easy, Hard Days Hard
2. Challenging Aerobic Running
3. Running by Feel
4. LMLS and SAM Every Day You Run
5. Strides the First Week of Training
6. Weekly Long Run
7. Intelligent Increase in Volume (if necessary)
8. Sleep Enough to Support Your Training
9. Rope Stretching
10. Nutrition and Hydration
11. Have Fun

Mantras

When In Doubt, Do Less #WIDDL

Simple Ain't Easy #simpleainteasy

Easy Days Easy, Hard Days Hard #EDEHDH

Sleep to Race Fast #sleeptoracefast

Run for Fun and Personal Bests

Injury Free Leads to Consistency

Patience Is a Necessity

SAM Is My Friend.

Stress + Rest = Growth

Remember

You can't control the weather, but you can control becoming a better runner each day.

April and May are several months away.

Value the non-running work as much as you value the running work.

You can't gain fitness if you don't rest and recover properly. Remember the equation.

Growth Mindset and Grit – you need both.

You're trying to transcend a former self.

Introduction

Before we begin, please make sure you've taken the proper recovery at the end of your cross country season. Failing to be fully recovered from a long season – one that started in June – is key to running well in outdoor track. What should you do? Simple: take two weeks of downtime – one week of very little activity and no running, then one week of no running, but add in some non-running activities.

The first week, you should only do rope stretching and some hip mobility, which I'll explain below, but only do that 2-3 times that first week. If you want to get into the pool and do some pool walking 1-2 times that first week, that's fine, as just 10-20 minutes of pool walking is a great way to get your legs back to normal (the hydrostatic pressure of the water flushes the legs). That's it. This is a week to not only rest the body, but to rest your mind.

The second week, you should be active for at least five days. Play sports you don't get to play during serious training; join a parent for a yoga class or two; go for a hike or on some bike rides with your family. Be active, but do not run.

The goal at the end of these two weeks is to be a bit bored and to be excited to get back to training. If you're not excited to get back to training, then you need to do a third week of non-running activity. Remember, you want to be racing fast in April and May and you have months between now and then.

Once you've completed these two weeks, you're ready to train.

What follows are guidelines that will ensure that you show up to the first official day of outdoor track practice fit and ready to handle both the volume of training and the intensity of training necessary to run PRs.

One last thing: Don't say, "I'm building a base this winter." Instead, say, "I'm doing foundational training this winter." Most runners think that all you do in the winter is "build a good base," which means lots of running, most of it at an easy to moderate pace. Sure, you need to get in plenty of minutes/miles to run well in outdoor track, but if you ignore strength and mobility work, fail to do strides, and refuse to do any rope stretching, you will not realize your potential come April and May. Foundational training encompasses more than just running, as you're building the foundation upon which you can add more miles and more intensity. We both agree that if you run more and run at higher intensities, you'll race faster, but you have to lay the foundation in the winter to be able to do those two things and stay injury free. Lay a foundation of training this winter, a foundation that you can build upon as winter ends and outdoor track begins.

Easy Days Easy, Hard Days Hard

This one is simple, and is the core of the training for the winter. Your easy days need to be easy so that you can gain fitness on the harder days. If you try to pack too much into a week or a month of training, e.g. two workouts, a medium run, a long run and a speed development day within one week, then you're on your way to a state of fatigue that could lead to overtraining.

Is it going to be a easy to go easy on the easy days? No. You want to become the best runner you can, so you want to run and you want to challenge yourself. You'll get to run harder runs and you'll get to do a weekly long run; you'll get to do a ton of general strength and mobility training; if you choose to, you'll do daily rope stretching. You'll have ample opportunity in the winter to gain fitness, so long as you keep your easy days easy.

In their fantastic book *Peak Performance*, Brad Stulberg and Coach Steve Magness use the following equation as the foundation of their thesis:

$$\text{Stress} + \text{Rest} = \text{Growth}$$

For the serious high school runner, this equation uses “stress” to mean training stress, i.e., the hard days. Rest means sleep, easy days and other recovery activities, such as pool walking/pool running and rope stretching. So what’s growth? It’s your fitness. Completing cycles where you stress the body and recover from the stress will lead to new levels of fitness. This phenomenon, also known as the General Adaptation Syndrome, first proposed by Dr. Hans Selye, is something I cover during the Boulder Running Camps, as it’s the process underlying all sound running training. The General Adaptation Syndrome also explains the negatives of too many hard days within a given training cycle, which can lead to overtraining. The serious high school athlete is trying to get things just right - hard days followed by easy days - which allows them to absorb the training. Do that over the course of weeks and months and you’ll gain a great deal of fitness.

Key point: you are always better off training at 90-95% of your capacity, ready to race when the gun goes off. When In Doubt Do Less - #WIDDL. If you’re tired in the middle of a training cycle, talk to your coach and consider taking a couple of easy days or a day off. As a young athlete, you’ll respond very well to a single day of rest and often that’s all you need to be ready to jump back into serious training. When In Doubt Do Less needs to be one of your winter training mantras.

Every serious runner is motivated to put in the hard work – the stress part of the equation. The question for the serious runner is “Am I willing to rest/recover properly to “absorb” the training?” The most serious collegiate and professional runners I’ve worked with have no problem grinding out long runs, pushing their limits in workouts and crushing their general strength following these long runs and workouts. The best ones took their easy days easy, ensuring that they’d be ready for the next hard day on the schedule. They valued the second word in the equation as much as they valued the first.

Stress + Rest = Growth

Challenging Aerobic Running

This one is pretty simple, but one that many serious high school athletes don’t focus on. In the summer, most high school athletes know that they shouldn’t be doing a workout like 10 x 400m with 60 seconds of recovery in July. They’ve done those workouts during the track season to get ready to run the 1,600m or the 3,200m, but when the race

distance is 5,000m, they correctly identify that particular workout as inappropriate at that time of year.

But when cross country ends, many athletes think they need to get back to “speed work” during their winter training to be properly prepared to run well at 800m and 1,600m distances, and possibly to run a leg on the 4x400m relay. While you absolutely need to do race pace work – e.g., if you’re going to run 4:40 for the 1,600m, then you have to do some work at a 35 second 200m pace, or a 70 second 400m pace; if you’re going to run 5:20 for the 1,600m, then you have to do some work at a 40 second 200m pace or an 80 second 400m pace – you don’t need to do a 10 x 400m with 60 seconds recovery in December and January. Rather, you need a steady diet of challenging aerobic workouts. Why?

Look at this chart:

Distance	Aerobic %	Anaerobic %	Phosphagen %
800m	60%	35%	5%
1,600m	84%	15%	0-2%
3,200m	90%	10%	0-2%
5,000m	95%	5%	0-2%

As you can see in this table, the aerobic metabolism contributes the majority of your energy when running 800m, 1,600m and 3,200m. It makes sense that you would do workouts that develop this metabolism, right? Plus, the aerobic metabolism can be developed year after year, which is why the best endurance runners in the world are typically older than the best sprinters. I go into detail about the importance of the aerobic metabolism at the Boulder Running Camps, but the bottom line is if you want to run better in track than you did in cross country, you need to develop the aerobic metabolism.

The obvious question is then, “What workouts should I be doing to build my aerobic system?”

Fartlek workouts, aerobic repeats, progression runs, progression fartleks and a weekly long run are the keys to improving your aerobic system in the winter. I cover each of these workouts in detail on my blog. Go to CoachJayJohnson.com.

CoachJayJohnson.com/aerobic-workouts-fartlek

CoachJayJohnson.com/aerobic-workouts-aerobic-repeats

CoachJayJohnson.com/aerobic-workouts-progression-runs

CoachJayJohnson.com/aerobic-workouts-progression-fartleks

The key with all of these is to make sure at the end of each workout you can say, “I could have run 5-10 more minutes at the final pace” or “I could have sped up a bit for 5 minutes if I had to.” While being able to make either of those statements will likely mean it would have been a race effort, that’s fine, so long as you can make one of those statements. Said another way, you are not running “all out.” Rather, you are running challenging workouts that are controlled; you’re running at less than a 100% effort, with a 100% effort being a race effort.

Running by Feel

Running by feel is important all year long, but especially in the winter. Winter weather for most high school athletes will be a mix of extremely cold and icy days, some great weather days, and a lot of days in between. Paces that you might have been able to run in the summer might not be reasonable in the winter, even though you’re fitter than you were a few months ago. Don’t rely on a GPS but rather go by feel, running very easy on your easy days, then running a bit harder on your challenging aerobic running days. Running by feel is a skill. It’s not foreign to you, as you had to learn to race by feel in cross country where you don’t get splits. Tap in to how your heart and lungs feel when you’re running easy, running a bit faster, and running a hard, but not too hard, pace.

LMLS and SAM Every Day You Run

This one is binary; you will either do LMLS before each run and SAM after each run, or you won’t. If you do them, you’ll decrease the chance of injury. An injury free runner is a consistent runner, a runner who can string together week after week of uninterrupted workouts. Show me a runner who has done several months of injury free running and I’ll

show you a runner who is ready to race well, and likely PR. Distance running is a game of incremental steps forward; consistency is our goal, even though it's not a glamorous goal. Consistency in training is the key to running PRs each season.

LM stands for [Lunge Matrix](#) and LS stands for [Leg Swings](#). You simply need to go to YouTube and type in "LMLS and SAM" and you will be taken to a playlist that shows all of the videos you'll need to properly perform these routines. Rather than go into the rationale here, simply watch the videos.

LMLS is the proper way to get ready for a run, and runners at all levels report that they feel much, much better when they take their first step running after having done LMLS before the run. You do LMLS before you take your first step of running.

[SAM](#) stands for Strength and Mobility, specifically core strength, hip strength and mobility. You no doubt know you need more core strength; what you may not know is some exercises - such as the bicycle crunch - can hurt you (a bicycle crunch damages your spine - no more of those). You may not know how important hip strength and hip mobility are; they are vitally important if you want to train injury free. So many injuries "down the kinetic chain" – knee injuries, shin injuries, plantar fascia injuries – are related to dysfunction at the hips. You need to do SAM after every run to ensure you have the strength and mobility to stay injury free.

Dr. Richard Hansen and I have organized SAM into 5 phases. Each phase has a Hard day and an Easy day. After your workouts and long runs, you do SAM Hard; after your easy days, you do SAM Easy. You do SAM immediately after your run so that you get a longer aerobic stimulus (i.e., your heart rate stays elevated, which is great as you've ceased the pounding on your legs, but you're getting a significant aerobic stimulus). If you've been doing core strength work in cross country, you may want to skip to Phase 2. If that is too easy, skip to Phase 3. Don't go past Phase 3 at the beginning of your winter training, as it lays good foundational strength and mobility work. You can always go to Phase 4 and Phase 5 later in the winter. SAM takes between 10 and 25 minutes. Every high school student-athlete has 25 minutes in their day to become a better runner.

The bottom line is you have to value SAM as much as you value running. SAM following each run is a modern way to approach running training. The best runners in the world are doing non-running work so they can handle more volume and more intensity. It should be obvious that if, over the course of months, you can handle more volume and more intensity, you'll PR.

If you truly want to PR this spring, then every day after your run, you need to ask yourself this question: “Did I do LMLS before my run and did I do SAM after my run?” When you answer yes, you set yourself up to handle more volume and more intensity when official practice starts.

Three more thoughts on SAM:

First, high school coaches, athletes and parents need to understand the progression of strength training:

Body Weight → Light External Load → Heavy External Load

With this in mind, it’s important that high school athletes have a good foundation in body weight exercises. Once an athlete can do all of the body weight work in SAM, then they are ready to move to light external loads. Most high school athletes are muscularly weak and SAM helps them gain the muscular strength they need to not only handle more running and more intense running, but SAM also lays the foundation of muscular strength needed to progress to light external loads and then heavy external loads.

Second, the body weight work in SAM will naturally stimulate testosterone and human growth hormone (HGH). These hormones help both males and females handle greater training stresses. Again, if we assume most high school athletes are muscularly weak, the general strength work in SAM will be enough of a stimulus to increase the levels of these two hormones. Once athletes master SAM, then they are ready to move to light external loads.

Finally, while SAM is important for both genders, this work will dramatically improve training for female athletes. When testosterone and HGH levels are high in female athletes, the chance of injury greatly decreases, while the ability to train at higher levels increases. It’s so important that if a girl only has an hour to train, she must make sure she has enough time to get in all of SAM, even if that means cutting the run short.

Strides in the First Week of Training

Failing to do strides at the beginning of summer training or winter training is the most common mistake I see school runners (and coaches) make. If you want to run a solid leg on the 4x800m relay, and if you'll be asked to run a leg on the 4x400m relay, you need your legs to be moving at that of those paces in the winter. Waiting until the beginning of official outdoor track practice to do 400m or 800m pace work is a mistake, but a common one.

First, I need to acknowledge that for some athletes, the footing outside – on a track, on a bike path or even on a turf field – will not be safe for running faster than an easy pace due to ice and slippery snow. Creative coaches find a way to get in the work, sometimes having athletes run in parking garages, in hallways at school, or even do activities like hammering on a stationary bicycle for the same duration as a 100m stride. That said, most athletes in most parts of the country will be able to do strides in the winter a couple of times each week.

So what should you do for your strides? Simply start with 80m-100m strides at a 3,200m pace for the first week or two, then move to a 1,600m pace for a couple of weeks. If you can do 4-8 of these, that's a good start. Ending winter training being able to do 10 x 100m strides, with the first 4-5 at a 1,600m pace, then 4-5 at a 800m pace, with an easy jog as recovery, is very realistic. Ideally, you are able to do some work at a 400m pace. You can do a 100m run where you accelerate for 30m, run a 400m pace for 40m, then "run out" for 30m. Building up to doing 4-6 of these before the beginning of official practice is realistic.

Keep this quote from John O'Malley, one of the best distance coaches in the country, in mind: "Our feet are moving fast every day." John's 4x800m relays have run under 7:46 for the past six seasons, which is roughly 1:56 per runner. Wow! In his interview with HighSchoolRunningCoach.com, he talks about the importance of doing fast running the very first day of practice.

So, you need to be doing some sort of stride work during your easy days. And you need to end your workout days in the winter with some strides as well.

Finally, if you're pressed for time, do your strides as part of your easy run. So if you are to run 50 minutes, you can do 5 x 20-30 seconds at 3,200m pace with 90 seconds of recovery at the 35-minute mark of the run. There is nothing that says the strides have to be in addition to the run, though that obviously works as well. You must get in the

strides; doing them as part of your easy run, rather than in addition to your easy run, makes a lot of sense, especially since so many runners fail to do the strides when they're assigned at the end of the run.

Weekly Long Run

This one is simple. If you want to develop your aerobic metabolism, then you need to do a weekly long run. Even milers like Jenny Simpson focus much of their training on this workout, as they know that the aerobic benefits of this workout are enormous. So many athletes see their performances flatten out, or worse, take a nosedive, when they stop including the weekly long run.

However, there's a caveat for high school runners with the long run. You do not want to run such a slow pace that you're shuffling and running with poor mechanics at the end of the run. For instance, you're much better off running 60-75 minutes and running with great posture, than running 90-105 minutes and running (shuffling?) hunched over with posture you would never want to employ when racing.

To ensure you're running with good posture, you need to make sure your fastest running comes at the end of the run. There are many ways to do this. Simply run a bit faster for the last 10-15 minutes of the run and focus on "running up tall," a cue that will ensure good posture (and ensure that your foot is landing under your hip). You can also do some gentle fartlek of 1 minute on, 2-3 minutes steady, for the last 10-15 minutes of the long run. Finally, you can simply put in some 20-30 seconds strides, done at cross country effort, with roughly 90 seconds between the strides. All three of these will ensure that you're running with good posture during your long run.

Key point: you need to finish the long run saying, "I could have run another 5-10 minutes at the final pace," or "I could have run a bit faster at the end of the run and still be training well under 100% effort." The long run should be challenging, but it should also be controlled.

Intelligent Increase in Volume (if necessary)

Most high school athletes wrongly assume that the only way to improve between seasons is to bump up the minutes/miles in their running. That's incorrect. An athlete who simply replicates the volume and intensity they did in the fall for several months will, come outdoor track time, have gained enough fitness to run a modest PR. Obviously, you want to be significantly fitter, but it's important to acknowledge that in a young athlete, who is likely growing, the stimulus doesn't have to change much, if at all, to improve. Consistency will help you run PRs, especially when your training age is 0-2 years (this is the number of years you've been training year-round, with a serious focus on running).

No doubt you want to make a jump in fitness in the winter. Remember that you are doing foundational work – you're doing LMLS and SAM, you're doing strides most days, you're doing your rope stretching most days (I'll cover that shortly). Do all of these things and you'll gain significant fitness in the winter, even if you don't run more minutes/miles or run at a higher intensity. But yes, it's reasonable that you should increase your training volume in the winter. So how should you go about increasing your volume? Here is my suggestion:

First, you're probably wondering how many more miles should you run? I think you should be logging your running in minutes rather than miles in the winter. The reason minutes make so much sense in the off season is that when the weather is horrible, or if you are simply having a rough day, you just have to get in the minutes. So what if you run a half mile or a mile less than you normally would – you got in a run and you'll be ready to train hard again in a couple of days.

Figure out how many minutes you ran the last couple of weeks, then do the following:

- For the first two weeks back, run the same volume as you were doing two to three weeks prior to your last cross country race. This should be a volume that was a bit lower than you were doing in the middle of the season. If those weeks go well, proceed to the next bullet point.
- Increase your volume by 5%. If you were running 300 minutes your first two weeks of winter training, run 315 minutes for the next two weeks, with a long run that is over 20% of your weekly volume. You may hear that the long run should be 20% of your weekly volume. That's absolutely true for collegiate and professional runners running 100 miles a week, as a 20 mile long run makes

sense for many of them. But, for a high school athlete, 20% probably isn't enough. You can run more than 63 minutes (which is 20% of 315 minutes). Run 70-75 minutes for your long run in these two weeks. The first week, keep the long run at an easy pace, then the second week you need to try to keep the long run faster in the last 20-35 minutes. If you can't do that, then don't advance to the next bullet point and simply do a third week at the 315 volume. The flip side is, if the faster long run goes well, move on to the next bullet point.

- Now, you'll increase your volume 3-5% for the next three weeks. Again, the long run should be more than 20% of your weekly volume. Same approach to these three weeks in terms of the long run - easy for the first long run and then a bit faster the second and third long run. If that second and third long run goes well, move on to the next bullet point. If these two long runs don't go well, do a third week at this volume and attempt the faster long run again.
- Now, you'll increase your volume 2-4%. Using our 300-minute example, we'd now be at 344 minutes after seven weeks of training if you did 5%, 5% and 4% and the long runs all went well. There is a very good chance things won't go this smoothly, but rather it will take eight to ten weeks to get to this volume, following the instruction that faster long runs are your indication to move forward in your volume progression. Be patient and know that if the long runs aren't going well, then you likely need to stay at that volume for another week and acclimate to that amount of running.

While this may not be as aggressive as some approaches, remember that we're making injury free running and consistency our main goals. With that said, you and your coaches need to come up with a plan for volume that fits the philosophy of the program and is realistic given the weather conditions you will deal with. There are many ways to make a jump in volume over the winter - this is but one suggestion.

Sleep Enough to Support Your Training

Let's keep this simple. You need more sleep. If you want to reach your potential as an athlete, then you need 8 hours at a minimum, with 9 hours being the sweet spot for most HS athletes. Ten hours has been shown in the Stanford Sleep Study to greatly improve performance in both basketball players and swimmers. Think about it – if student-athletes at Stanford can get 10 hours of sleep, you should be able to as well

(though I acknowledge that to get into Stanford, many of them likely didn't get that amount of sleep in high school). At some point, you'll have to make a choice: you may need to take just two AP classes, rather than four, to get 30-60 minutes more sleep per night if you want to run fast enough in high school to be a part of a good college team. (Note: every HS athlete can run in college – it may be a smaller college and it may be a college that you've not considered in your sophomore and junior year, but there is a place for every high school runner at the collegiate level.)

Be honest about what is important to you; running may not be enough of a priority to get in another 30-60 minutes of sleep each night. And studying for an AP class in a subject you dislike, a subject in which you have no intention of taking the test in, is not in your best interest if running is your passion. If running is the one thing in your life you go to bed dreaming about, the thing you want to do to the best of your ability, then you need to re-evaluate your daily routine and find a way to get more sleep #sleeptoracefast.

Rope Stretching

Just like LMLS and SAM, this one is binary as well: you either rope stretch every day that you run or cross train, or you don't. Rope stretching is something we teach at the Boulder Running Camps because it's a key to staying injury free (see it in action [here](#)). You can do a simple routine that is just 10 minutes, or you can do a 20-minute routine after long runs and hard workouts. There is also a foot/ankle routine that is fantastic if you've had lower leg problems, from shin splints to Achilles tendon issues.

If you're serious about your running, then you need to invest in the videos from WhartonHealth.com – get the Flexibility for Runners video – and either get a rope from the website or go to a hardware store and get a 8.5 foot rope that is $\frac{3}{4}$ " in diameter.

Static stretching is dead; rope stretching, aka Active Isolated Flexibility (AIF), is a must for every serious runner. And just like LMLS and SAM, you need to value this non-running work as much as you value the running work. And it's binary – you either got out your rope and used it, or you failed to do so.

Go to WhartonHealth.com to get the rope stretching video (and a rope, if you need one).

WhartonHealth.com is offering us a discount on their products – use the coupon "BRCWINTER" for 25% off your total cart purchase. (Note: We do not get a percentage of the sale).

Nutrition and Hydration

Eat clean, meaning you simply take out processed foods and add in whole foods. You can eat the rainbow when it comes to salads – it's not just a bowl of greens. Small changes in diet can be felt and positively impact your running. There are good studies that show the importance of getting in a balance of carbs, fat and protein after hard workouts. Researchers simply used chocolate milk, and athletes made aerobic gains compared to those athletes who did not consume these macronutrients after their workout. With this knowledge, some of the best high school programs in the country have chocolate milk ready for their athletes at the end of hard workouts. It works.

Hydration is not only getting enough water, but also enough electrolytes. A small glass of water with a pinch of sea salt goes a long way towards keeping you properly hydrated. Coconut water is a great way to balance pH after hard workouts. Carry a water bottle to class and drink 40-64 oz. of water a day.

Have Fun!!!

Running should be fun and you should enjoy winter training, knowing that putting in solid foundational work in the winter can lead to PRs in the spring. Will every day be fun? Maybe. My friend Phil Wharton, the rope stretching guy, enjoys nearly every run, workout and long run that he does. But for most runners, there are going to be days where you don't feel good, when the weather is horrible, or you simply don't want to train. It's the last one you need to be weary of; if you don't want to train, that may mean you need a few days away from running, allowing you to remember what you love about it. No shame in doing that – you're not a collegiate runner with a scholarship obligation, and you're not a professional runner who has to train hard to make a living. You're in high school, and you should love running in a way that you can't imagine not being a runner. Your coaches and parents should want you to be a lifelong runner, so if running ceases to be fun, take a bit of a break.

I love the quote from Al Carius, one of the best collegiate coaches in history and the men's cross country and track coach at North Central College (IL) (they just won their 44th conference championship in cross country). He says, "Run for fun and personal bests." Simple advice from a sage coach.

Conclusion

The winter is a great time to make a jump in your training. You simply need to have the mindset that “I’m building a foundation of fitness this winter,” and then do all of the things outlined above. Simple...and as I like to say, Simple Ain’t Easy (quote from the iconic jazz pianist Thelonious Monk). Training will not be easy this winter. If training gets to be something you dread, then talk to your coach and consider taking a couple of days off. Training should be fun, even though it won’t be easy.

Don’t hesitate to email me at BoulderRunningCamps@gmail.com or CoachJayJohnson@gmail.com.

If you’re a senior, I wish you the best in this final year of high school running; if you choose to run in college, I hope you have a great experience.

If you’re an underclassman, I hope you’ll join us in Boulder or San Diego for camp. You will learn a great deal in those five days of camp (or come for ten days in Boulder by attending our camp 2-3 option) and you’ll have a great time. It may very well be the highlight of your summer. We have a really cool offer that ends on November 30th. Sign up by November 30th and we’ll send you a free camp t-shirt, a shirt that we’re only printing once. The campers who got a shirt last year loved it and we’re excited about this year’s design. You only have to pay the \$300 non-refundable deposit to reserve your spot at camp and get the shirt. Again, this offer ends on November 30th.

Resources for Athletes, Parents and Coaches

Athletes

Peak Performance by Brad Stulberg and Steve Magness. It’s the most important book you can read regarding training and the science of how to improve. Steve has coached at the high school, collegiate and professional levels, in addition to having run a 4:01 mile in high school. The book references many scientific studies, yet Brad and Steve give you the take home message for each one. There are really nice summaries at the end of each section, making this a book that you will use as a resource (not just a book that will sit on your nightstand).

Endurance: Shackleton's Incredible Voyage by Alfred Lansing. If you live in a cold weather climate this is a must read, as it will put into perspective what it means to be out in the cold. It's an amazing book and was one of my favorites to read in college during the winter, helping me put into perspective going for two hour runs in the cold and the snow. These guys were cold for months on end. Simply amazing.

Geek Outs from *Simple Marathon Training*. In my book, *Simple Marathon Training*, there is a Geek Out section that includes a few paragraphs on specific points that relate to running. I've included one on Growth Mindset by Travis Macy, Pool Walking by Dr. Richard Hansen and one on imagery that I wrote. I hope you'll find these useful. To download them, go to:

CoachJayJohnson.com/Growthmindset

CoachJayJohnson.com/Poolwalking

CoachJayJohnson.com/Imagery

Parents and Coaches

Grit by Angela Duckworth. As a parent, this book's message is so important. We want to nurture grit in our kids, which is different than simply encouraging them to do their best in the things that they do best. Extremely well written. If you don't have time for the book, check out her TED talk (type Grit and her name into google). I'm a better parent after having read this book.

Peak Performance, mentioned above, should be the next book on your list. A quick read, it's packed with research based, actionable points that can help all of the athletes in your family – and it can help you be a better you!

Email Lists and Websites

I share information each month through my email lists. Go to the following sites to join a list. I'll be sharing information for high school parents via the Boulder Running Camps list throughout the year.

My CoachJayJohnson.com newsletter comes out weekly on Thursday and Sunday and many parents tell me that even though the content is often geared toward adult runners, they find value in the common themes that apply to high school running as well. Many

parents are just learning about the sport and there are more commonalities than differences in running when talking about a 45 year old running the Boston marathon and a 16 year old running the 1,600m at the league meet.

HighSchoolRunningCoach.com is a site that I curate. The format is simple: twenty-two of the best coaches in the country share three to five months of training, then we record interviews to tease out the key aspects of the training (we transcribe this interview as well), then the coach answers questions in our members only forum. In December 2017, we will launch our third season of HSRC, with a new group of ten coaches. Check out the website for more information. We've had booster clubs buy memberships for coaches as end of the year gifts. And membership never runs out – once you are a member for a given season, you're a member for life.