

ABC's of XC

A BRIEF HANDBOOK FOR HIGH SCHOOL RUNNERS AND THEIR PARENTS

Cross country is where many runners begin in the sport. Plunging into competitive racing often creates numerous questions for runners and their parents. We asked a panel of top high school coaches what questions they get most, and what advice they would give. Their answers all included questions about shoes, nutrition and injuries, so we called in some experts for advice in these areas, then added a few comments by top coaches on other essential topics. Here's to a great season.

illustrations by ALEX RIEGERT-WATERS

Cross Country Nutrition

by EMILY BROWN

Nutrition is one of the most modifiable and controllable factors in athletic success, but too often it's also the most ignored. Paying special attention to good sports nutrition, especially starting at a young age, may be the key to reaching new heights. The following are some of the questions that I've been asked, and have asked myself, through my years of training.

01 WHAT SHOULD I EAT BEFORE I RACE?

This depends first on when you eat the meal.

Let's start with the night before a morning race. It's best to have a dinner that's high in carbohydrates and moderate in fat and protein. Fat and protein will slow the digestion of the meal and allow your glycogen stores to fill up throughout the night. Choose complex carbohydrates with a low to medium glycemic index such as whole-wheat pasta, brown or wild rice, lentils and beans, and whole fruits and vegetables. Go easy on foods that are oily, greasy, or very high in fiber. Also take it easy on protein, as it digests slowly; 2-3 ounces should be enough. If you eat an earlier dinner and know that you'll have a tough time eating in the morning, have a small bedtime snack that has twice as much carbohydrate as protein, such as a bowl of cereal with milk. It's not necessary to overload on carbohydrates the night before, and the marathoner's practice of carboloading is overkill for most athletes, especially high school athletes running a 5K or shorter.

If you have at least three to four hours before your morning race, you can have a relatively large meal of up to 700-800 calories, with a minimum of 400-500 calories. Similar to the previous night's dinner, make it high in carbohydrate, moderate in protein, low in fat. Good examples of race-morning breakfasts are:

- 1 CUP OF CEREAL WITH MILK OR YOGURT, 1 SLICE OF TOAST, AND 1 PIECE OF FRUIT
- 1 MEDIUM BAGEL WITH 1 TABLESPOON OF PEANUT BUTTER AND 1-2 CUPS OF A SPORTS DRINK
- 2 PIECES OF TOAST OR BREAD, 1 OUNCE OF LEAN MEAT OR CHEESE, AND 1 PIECE OF FRUIT

These are just a few of many possible combinations. Any foods that you like and are comfortable with will work fine as long as they fall within the above guidelines.

If you only have one or two hours to eat before the competition stick with foods that digest quickly and easily, and limit the snack to 300-400 calories at the most, with a minimum of 150-250 calories. Good choices would be a granola bar or sports bar, 1-2 cups of dry cereal, a handful of trail mix and/or dried fruit, or an ounce or two of whole-grain crackers with a little peanut butter. If you're too nervous to eat solid food, nibble on snacks that are tolerable, and try drinking 2-3 cups of a full-calorie (non-diet) sports drink.

For afternoon meets, the above guidelines are appropriate, but there are additional challenges to keep in mind. The major challenge is finding appropriate foods among the

many high-fat, high-sugar options that are prominent in school cafeterias. On race days or days of tough workouts, the best option is to pack your lunch with familiar foods that follow the guidelines for pre-workout meals.

If you forget your lunch or can't pack it that day, don't despair. Although they may be hidden, healthy choices can be found in the cafeteria. Good choices include a sandwich with lean meat, a small plate of pasta with sauce, even a granola bar with a bottle of sports drink. Be creative and don't fall victim to filling up on junk food or not eating at all. Also pay attention to the time gap between your lunch and your race. If it's longer than three hours, be sure to have a pre-race snack planned out that you can have one to two hours before.

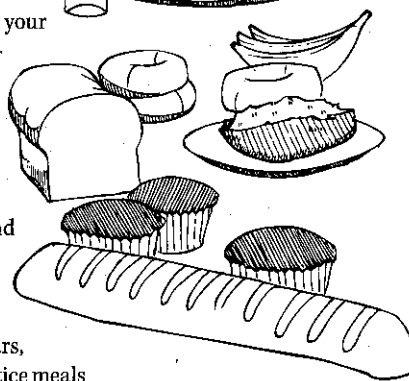
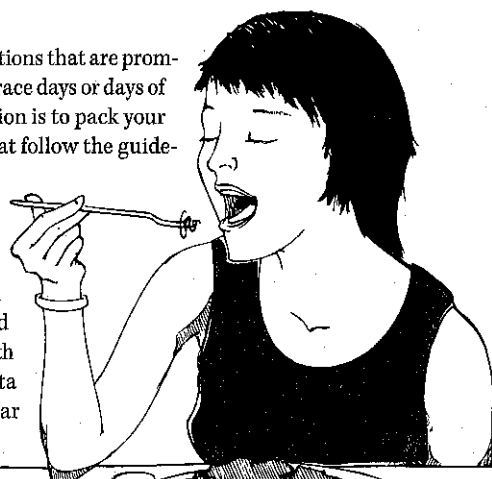
Regardless of when your race is, eat foods that are familiar and avoid foods that are spicy, greasy, or especially high in fiber. Never experiment with new foods or food replacements (energy gels, sports bars, etc.) on race day. Use your pre-practice meals to figure out what foods will work best.

02 HOW MUCH DO I NEED TO DRINK?

This varies greatly depending on your size, sweat rate, climate, and a host of other factors. The general recommendation is to drink plenty throughout the day so that you're never thirsty. Thirst is the first sign of dehydration. You'll probably be drinking at least 2-3 liters of water per day. Leading up to races you should drink four to eight extra glasses of water the day before, another two to three glasses at least two hours before, and one or two glasses 10-15 minutes before competition. The majority of your fluid intake should be plain water; sports drinks can provide extra calories and electrolytes, but sodas and other soft drinks should be limited as much as possible. You'll know you're drinking enough when your urine is clear, you're using the bathroom frequently, and you're not feeling thirsty. Adequate hydration should be practiced all day, every day. Don't try to fit it all in the hour before you race, as water overload is a very real and dangerous condition.

Caffeine is a bigger issue than a lot of people realize. In 10 years of coaching, I've had two kids drop — not drop out, but drop — in races, one in the state cross country meet. In both cases, the doctor described it as a condition produced by consuming caffeine before a race. As a result, I'm very cautious about kids thinking even a little caffeine buzz before a race is a good thing.

Alan Versaw, COACH OF THE CLASSICAL ACADEMY, COLORADO SPRINGS, COLO., 7-TIME GIRLS AND 3-TIME BOYS STATE CROSS COUNTRY CHAMPIONS





03 WILL DRINKING COFFEE OR AN ENERGY DRINK LIKE RED BULL GIVE ME A BOOST IN A RACE?

Short answer: no. Although some studies have shown enhanced performance following caffeine ingestion, these studies are limited to laboratory conditions and laboratory forms of caffeine. Drinking coffee hasn't produced the same results.

Caffeine is a stimulant, and stimulants aren't needed for enhanced performance in athletics because we already produce a natural stimulant, epinephrine, in response to the anticipation and intense physical activity that comes with racing. In addition to caffeine, energy drinks are loaded with extra stimulants plus tons of sugar, and a mixture of herbs and vitamins that can have unknown effects on the body. Ingredients in energy drinks are often not standardized, so one drink could provide way more caffeine or stimulants than anticipated. Side effects of stimulants include dizziness, nausea, anxiety, irritability, the jitters, and possibly even heart palpitations.

Bottom line: Energy drinks don't provide real energy, which can come only from calories, but they do provide a potentially volatile mixture of ingredients that may severely impact performance and health.

04 WHAT KINDS OF SNACKS SHOULD I KEEP IN MY LOCKER AND/OR GYM BAG?

Try to eat a meal or snack every three to four hours to keep your blood sugar up and your glycogen stores full. As a high school athlete, that means you'll need to find a way to snack throughout the day. This is best achieved by keeping non-perishable snacks close at hand to nibble on between classes and on the way to practice. Great foods for this purpose include granola bars and/or sports bars, trail mix and dried fruit, pretzels, whole-grain crackers, dry cereal, sports drinks, 100 percent juice boxes, string cheese, peanut butter sandwiches, and whole fruits and vegetables, just to name a few.

05 WHAT SHOULD I EAT AFTER I RACE?

Post-race or post-exercise nutrition is just as important as pre-competition nutrition. Although the tendency is to celebrate and pig-out, it's important to fill up on something other than just junk food. Sports nutrition should always be a matter of what-I-should-eat versus what-I-can-eat. Eat post-exercise meals as soon as possible, preferably in the first 20-30 minutes, to refuel the body as quickly as possible. Our bodies are most receptive to replenishing our glycogen stores and repairing our muscles during the immediate time period post-exercise. In addition to replacing the fluids and electrolytes lost through sweat, focus on consuming foods high in carbohydrate and moderate in protein. Chocolate milk is a great example of a recovery food because it has a 3:1 carbohydrate-to-protein ratio and is a good source of both. It also aids in replacing fluids and some electrolytes. Furthermore, milk is an excellent source of calcium, which is crucial for young athletes with developing bones.

06 HOW MANY CALORIES SHOULD I EAT?

Every athlete is different in terms of size, shape, activity level, etc., so it's impossible to give guidelines that will meet the needs of each athlete. However, the general recommendation for distance runners is to consume 55-65 percent of calories from carbohydrate, 15-20 percent from protein, and 20-30 percent from fat. To individualize these recommendations and come up with a personal diet plan, visit the MyPyramid Plan at mypyramid.gov. Remember, restricting your intake is never the way to become a better athlete. Your body needs fuel to perform optimally, and the only way to get that fuel is from food. If you follow these guidelines and eat appropriately, your body will be the size it needs to be for athletic success no matter what your teammates or competitors look like. **RT**

For Parents Only

When Should Mom/Dad Contact the Coach?

Athletes almost never want mom or dad to call the coach! But the reality is that communication between parents and coaches is often beneficial. Of course, if an athlete has a concern, we prefer that she first bring that concern to the coaches. This is simply a good lesson for the athletes as they grow over four years towards adulthood. However, questions or concerns regarding training, scheduling, or just about anything else are bound to occur throughout the season. It's never inappropriate to contact the coach with a question.

Dan Iverson, COACH AT NAPERVILLE NORTH, ILL., WHOSE GIRLS TEAM HAS PLACED IN THE TOP 3 AT 10 OF THE LAST 17 STATE CROSS COUNTRY CHAMPIONSHIPS

Note To Parents Who Are Runners

Parents of runners who are runners themselves often have a tough time. They know a lot about training and racing -- sometimes more than the coach. A few things to keep in mind:

First, training for track and cross country is quite different than training for road racing and especially marathons, and 16-year-olds are quite different than 40-year-olds. While you may be discomfited by some things the coach does, understand that there are a variety of ways to prepare for racing, and many work.

Second, training is only partially physical. Athletes under top coaches regularly report that one key to the coach's success was the confidence they had in the coach's program: It works because they believe it works. By all means, don't express your reservations to your child. If you feel the need to talk to the coach, do so privately and respectfully. Ask questions, make suggestions. If you feel there's a real problem, contact the athletic director.

Roy Benson, COACH OF MARIST HIGH SCHOOL, ATLANTA, GA., 16-TIME BOYS AND GIRLS STATE CROSS COUNTRY CHAMPIONS

Be the Kool-Aid Parent: "Our runners are calorie-burning machines. One way you can help the team is to provide treats for the runners for after meets and long practices. Some good suggestions are fruit, bagels, granola bars, or popsicles on warm days."

Adam Kedge, COACH AT ALBUQUERQUE ACADEMY, N.M., 10-TIME BOYS STATE CROSS COUNTRY CHAMPIONS

When Pain Means No Gain

COMMON SORE SPOTS FOR XC RUNNERS

by CATHY FIESELER, M.D.

Training works by tearing down the body so it can rebuild better. In other words, training can cause pain. But some pain isn't normal. Sorting out what's normal soreness and what's an impending injury can be difficult. When do a cross country runner's aches and pains merit seeing a sports medicine physician?

Talking to your coach is essential. While no one wants to be a complainer, the coach must know how you are responding to the training load, and your times provide only part of the picture. As long as you don't start every conversation with, "Coach, I think I need to take today off," he or she won't think you're slacking if you point out that your hip has been hurting for a couple days or you're feeling really sluggish. Tell your coach what's happening, let the coach decide how to respond, then accept it and give your all. With good feedback, the coach can better optimize your training, and can help you decide if you need to rest or if you need to go to a doctor.

Here are some common problem areas for cross country runners.

TENDER MEAT

Muscle soreness is common for cross country runners, especially early in the season, especially for new runners. Mild muscle tightness following a hard run is normal. Runners may experience some residual discomfort during warm-up the following day, but this should decrease during an easy run.

What to do: Soaking in cold water following the workout can diminish this discomfort. Soreness should resolve during the season, though a post-workout cold soak is worth continuing.

SHIN SPLINTS

Pain in the lower leg, often called "shin splints," is a common problem in young runners. This pain is due to mild tearing of the muscles at the bony attachments. Runners usually feel the pain along the inside aspect of the tibia (large shin bone), usually along a large portion of the bone. Pain develops while running and stops when the running stops. Overpronation (foot rolling in too much) and running on hard surfaces, such as concrete, increase the risk of developing this problem.

What to do: Many runners will find relief by applying ice following workouts and working on stretching and strengthening the muscles of the lower leg, but some will have persistent pain. Adding arch supports to running shoes and running on softer surfaces can sometimes help. Strengthen your leg muscles by placing an ankle weight on your foot and pointing the foot up, in and out; do three sets of 10 reps in each direction. You can continue running as long as the pain doesn't increase.

STRESS FRACTURE

If the pain persists or increases with continued training, there's concern for a stress fracture — a microscopic fracture due to repetitive stress on the bone. Bone responds to stress by resorbing and rebuilding bone. When the stress is too great, the resorption overrides the rebuilding and, over time, a stress fracture develops.

The symptoms initially present like shin splints, but over time, the pain increases and may be present while walking and even at rest. Stress fractures in runners are most common in the tibia. Other bones that may be injured include the metatarsals of the foot, the fibula and, less commonly, the femur (thigh), heel and other foot bones.

It can be difficult to differentiate between shin splints or tendinitis and a possible stress fracture. A screening test that I've found helpful is to have the athlete stand on the affected leg and hop. If you're unable to hop or experience significant pain with hopping, the concern for a stress fracture increases significantly.

What to do: If you have a stress fracture, continuing to run may result in an outright break in the bone. A stress fracture of the hip can have serious consequences, and running needs to be stopped. Medical evaluation should be sought promptly.

RUNNER'S KNEE

Young runners commonly complain of knee pain.

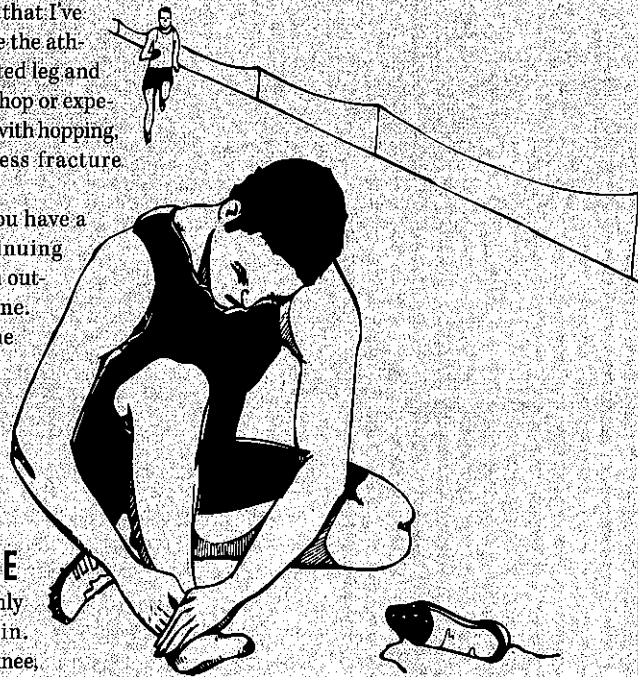
Pain in the front of the knee, often called "runner's knee," is typically due to irritation of the kneecap (patella).

Runners feel pain with all activities that involve bending of the knee. Risk factors for this problem include tight hamstrings, poor strength of the inner quadriceps, knock knees and overpronation.

What to do: Treatment includes icing following activities and doing exercises that strengthen the inner quadriceps and improve hamstring flexibility. Avoiding aggravating activities, such as squatting, helps speed the recovery.

Pain along the outside of the knee is also common. This is usually caused by inflammation of the iliotibial band. Sudden increases in mileage, running on a banked surface (side of many roads), bowed legs, and hip weakness all contribute to developing this problem.

What to do: Working on strength and flexibility of the core and hips is a major component in the treating iliotibial band syndrome. Ice massage and using a foam roller are helpful. Avoid running on banked surfaces whenever possible. For more on iliotibial band syndrome, go to runningtimes.com/oct10.





HIP POINTERS

Young runners often develop hip pain. The growth plate along the top of the pelvis (iliac apophysis) doesn't fuse in boys until 15–16 years of age and in girls until 13–15 years. Some of the trunk muscles attach to the pelvis, as do many of the hip and leg muscles. The repetitive pulling of the muscles attached to the growth plate can cause a painful inflammation known as apophysitis. An explosive muscle contraction, such as during sprinting, can sometimes pull the growth

plate away from the rest of the pelvic bone (avulsion fracture). Apophysitis can be painful enough to stop running for a brief period; an avulsion fracture often requires the use of crutches for a week or two.

What to do: Ice the affected area and stretch and strengthen the core and hip muscles.

RULES FOR BACKING OFF

Other than some stress fractures, none of the above present serious medical complications. Ice painful sites following workouts; a cold bath can prevent a lot of post workout soreness.

If pain develops at the end of the workout but resolves by the next day, cut mileage by 25 percent. Do some non-impact cross-training to supplement aerobic conditioning. Work on improving flexibility and strength of the affected site.

If pain develops during the run, decrease mileage by 50 percent. If pain is persistent, impact activities should be stopped for at least a few days.

Have a knowledgeable person assess your running shoes and gait. Review your training over time for sudden increases in intensity. If you have reduced training, are icing regularly and doing rehabilitative exercises, and the pain doesn't at least improve, if not resolve, seek medical evaluation. **rr**

Rest and Recovery Expectations

As athletes, rest and recovery are extremely important to performing at a high level and preventing injuries. High school students are involved and often spread thin; however, it's important to understand that your body needs appropriate amounts of sleep. According to research, adolescent bodies need eight to 10 hours of sleep even when inactive. Obtaining this much sleep isn't always possible, but is nonetheless worth trying to do. As meet days near, getting a good night's sleep is especially important for the two nights preceding the race. The remainder of the week, aim to get at least seven to eight hours of sleep. This is especially important for varsity athletes. Make this a priority in your life.

Roy Benson, COACH OF MARIST HIGH SCHOOL, ATLANTA, GA.,
16-TIME BOYS AND GIRLS STATE CROSS COUNTRY CHAMPIONS



Shoe Buying Tips for the Cross Country Athlete

by DAVID SPETNAGEL, with BRUCE WILLIAMS, D.P.M. and ROB CONENELLO, D.P.M.

TRAINING SHOES

The typical high school cross country season is slightly over three months long. During that period of high-intensity training and racing, the body is subject to tremendous loads and torques — and a significant injury risk. The primary purpose of a training shoe is to provide a protection level that will allow you to train hard while remaining injury-free.

If you have a local specialty running store that can provide help in fitting and choosing your shoes, be sure to tell your fitter that you're a cross country athlete and describe your injury history, if any. The fitter will then assist you in finding a well-fitting shoe that's suited for a short season that consists of multi-speed training on varied terrain. For example, most styles that are in the "lightweight stability" category are particularly well-suited for those conditions.

If you must choose your shoe yourself, focus on flexibility and fit. Every shoe company has good models; choose the one that fits you best. Examine each style by first grabbing it around the back of the heel and pushing the toe straight into the ground. The shoe should bend in the front, where your foot bends, but not in the middle, where your foot doesn't. Ensure a proper fit by tying and then standing in both shoes and checking to see that the widest part of the ball of your foot sits in the widest part of the shoe, that you have a thumbnail's length between your longest toes and the end of the shoe, and that the midfoot fit is comfortably snug. Finally, make sure that you feel some support under the rear portion of your arch, under your ankle bone, but recognize that off-road running requires a shoe that twists and adapts.

Steer clear of both overbuilt and underbuilt shoes. Cross

country athletes don't need a shoe designed for a year's use of slower running on concrete roads, or heavy trail shoes designed for mountain treks. Alternatively, training shoes that do little more than cover your foot have no ability to absorb impact loads or reduce unwanted twisting unless you are already an accomplished athlete used to such shoes.

Consider buying running shoes an investment, even if that means paying a little more than you would like. Saving a few dollars on a cheaper but inappropriate model can become quite expensive if injury and medical treatment is the result later in the season.

RACING SHOES

On race day it's acceptable to throw caution to the wind and choose performance over protection. Cross country racers are designed with that philosophy in mind. There are only two ways to run faster: increase your cadence or increase your stride length. Switching from a training shoe to a cross country racing shoe should result in both. A cadence increase results when a lighter shoe is worn — and the typical cross country racing shoe is one-third lighter than the typical trainer. Stride length also increases as shoe weight decreases — and as traction increases, as well. Cross country racers provide excellent traction through the use of aggressive outsoles, which can be spiked in most states.

There's little to no performance difference between the various cross country racers. When shopping, therefore, choose based on fit. Choose a style that fits like a glove from heel to toe, with no pressure points. If choosing a spike, make sure that the shoe still flexes under the ball of your foot. **rr**