



WINTER TRAINING CONSIDERATIONS FOR CYCLISTS

By Corey Hart, MS Exercise Physiologist at Physio Performance Lab and G-Fit Studio

Most serious cyclists already understand that training for the upcoming spring events will begin in the winter. This may be a combination of cross-training with other endurance activities and strength training, or changing to a different cycling modality. Here's a short list of winter training considerations that are essential to making next season more successful.

Become an Athlete

Most amateur and recreational cyclists can benefit from improvements in their all-around fitness level. Cycling tends to overuse muscles in a very constrained range of motion, which can ultimately lead to imbalances and potential injuries. Find another mode of exercise that works the muscles in a different range of motion than cycling. Some good examples are skate and alpine skiing, trail running, rollerblading, soccer, or hiking. It's always a good idea to supplement strength training with yoga or pilates as well. Working on motor control and stability exercises are excellent complements to your training on the bike.

Weight Control

Too many cyclists fall into the trap of recognizing the fact that they need to lose a few pounds gained over the winter during their first race up a hill in the spring. Additional weight from fat mass is not only a negative influence on performance, but it also has long-term health consequences as well. The solution for coming into the spring season at your optimal body weight is simple: don't put on weight during the winter. This requires that you have a proper training and nutrition plan that focuses on energy balance. Negative energy balance is eating less than you expend and positive energy balance is eating more than you expend. To achieve weight loss, you must be in negative energy balance, but not so negative that it is chronically detrimental to your metabolic rate. Ideally you should attempt to expend more calories through training rather than drastically cutting back on your intake to avoid a blunted metabolism. The periodization of nutrition is similar to the periodization of training. If you're riding less in the winter, you simply don't need as many carbohydrates from grains or simple carbohydrates. The primary source of carbohydrates on less extensive or intensive workouts should be fruits and vegetables. You can drastically reduce your training budget by eliminating sports nutrition products this time of year. If you typically snack on energy bars, switch to whole fruits, nuts, and dairy

(or soy) products. If you really want to get your energy balance equation dialed in, you should know your resting metabolic rate and your individual fat oxidation (use) rates to optimize your aerobic endurance training zones. Knowing the intensity associated with your individual fat oxidation rates will allow you to design a more effective training strategy to losing weight. Unfortunately weight loss is not as easy as calories in/calories out because of our natural starvation defense mechanisms. Research has determined the thermal effect of burning a pound of fat in a bomb calorimeter, but we don't know the caloric variance *in vivo* to burn the same quantity of fat. Fat oxidation (use of fat as a fuel) can be measured in a lab and matched to your heart rate or power-based training zones for optimal endurance training. If you are really struggling, consider consulting with an experienced and qualified Registered Dietician.

Take Care of Your Injuries and Pain

Nothing can be more discouraging than suffering from an overuse injury during the season. Not only will an injury reduce time on the bike during the season, it can potentially limit your ability to continue the same level of riding in the future. Take time during the off-season to work with a qualified PT and/or Sports Medicine doctor who can diagnose and treat the origin of your chronic pains or injuries. Most everyone has imbalances and varying amounts of asymmetry in their body that can potentially set them up for an injury down the road and often it originates from an area that is not currently symptomatic. Chiropractic treatment and massage therapy can be beneficial additions to physical therapy. A good treatment plan will focus on motor control, stability, and flexibility to help prevent future injury. In most cases, being proactive will save a lot of time and pain, as well as making you feel better on the bike.

Establish a Training Plan

It is not uncommon for a self-trained (aka self-coached) cyclist to end up over-trained or under-performing at one point during the season and it is often it goes unrecognized. There are unlimited training plans available on-line or through books, some with very good evidence-based principles and some that have none. The majority of training programs do not account for individual levels of metabolic fitness beyond an average heart rate or power output for a any given time duration (i.e. 8-minute, 20-minute TT, etc.) or a inconsistent heart rate deflection point to establish training zones. These training programs are a good starting point for the beginner, but the performance outcome has a large degree of variability. Use the following recommended steps for formulating a training plan: create long term and short term goals, define your training objectives, determine the average time you can dedicate to training per week, assess your current fitness level to determine what your individual training focus (LT or metabolic fitness test), have a purpose for every workout, re-evaluate your training effectiveness every 4-8 weeks via an assessment (field and lab testing), reformulate training plan based on the adaptation response. Connecting with a coach or exercise physiologist will help you with this process and there are also some good resources on-line from www.trainingpeaks.com or books like *High Performance Cycling* (Jeukendrup) or *Faster, Better, Stronger* (Heiden and Testa). Suggested guidelines for selecting a coach include finding an individual that has competed above your level of competition, has proven success with multiple athletes at your competitive level, and works with a network of equally qualified specialists in sports medicine and sports science. If you decide to implement regular fitness testing, be sure to select an exercise physiologist that has graduate level

training in addition to an extensive background in applied athletic performance. The lab and field testing protocols used to assess changes in fitness are highly specific and a proper interpretation for practical application to training is essential.

Become More Efficient on the Bike

Research indicates that cycling efficiency is highly correlated to genetics and years of experience. However, relative improvements in biomechanics are attainable with proper guidance. These improvements are related to position on the bike (bike fit) and the efficiency of dynamic movement, i.e. biomechanics of pedaling, posture, and breathing. The most optimal time of year to address your position on the bike is before you begin your base miles. Base miles are essential to reprogramming neuromuscular patterns of efficiency on the bike. Adaptations to a new position are better tolerated with lower training loads and in incremental changes. As with everything else, not every bike fit comes with the same level of expertise or evidence-based principles. Thus, be sure to seek guidance from an educated, experienced, and trained specialist in biomechanics. Simply stated, being more efficient on the bike means that you can go faster and longer with less effort.

For more information, please email your question to corey@physiopl.com.

About the Author, Corey Hart, MS

Corey combines over ten years of international racing experience with evidence-based scientific research to improve the performance for athletes of abilities. After racing for five years in France and serving one year as the head coach at the Cycling Center in Belgium, he returned to the US to finish his Master's degree and reinvigorated the performance testing program at Colorado State University's Human Performance and Clinical Research Laboratory. He has coached national champions in the elite and master's categories in cycling. Corey has tested and provided training guidance for athletes from all over the world ranging from amateur athletes to world champions in triathlon, cycling, and hockey. Corey was a sports science consultant specializing in power data analysis for the performance enhancement team that guided the US women's cycling team to the 2004 Olympic Games. He continues to work with members of the US cycling team in addition to many professional and amateur endurance athletes. Corey is actively involved in designing field and lab testing protocols for USA Cycling development and talent identification camps. He has published research in the International Journal of Sports Medicine and in Medicine and Science in Sports and Exercise, published education articles in the USA Cycling Coaching Association's Performance Conditioning Cycling Journal, and provided author contributions to Outside Magazine, PezCyclingNews.com and in the book Triathlon Training Basics (by Gale Bernhardt). Corey is also a sports science consultant for the Baylor Cross Country and Track and Field team. Beyond the 15+ years of competitive, coaching and laboratory experience, Corey has also successfully directed men's and women's teams to victories and podium finishes in domestic and international competitions. Corey is currently the lab director at Physio Performance Lab and G-Fit Studio in Boise Idaho.