

September, 2002

THE ENVIRONMENT AFFECTS YOUR TRAINING

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One of the required classes for my master's degree was called Environmental Physiology. I put off taking this class because it sounded boring. When I finally took the class, I still wasn't impressed with what it had to offer. It wasn't until I really adopted running and cycling as a lifestyle that this topic became important. We're out there training and we can see feel how the environment affects our experience. Environmental issues are now one of my greatest concerns. I guess what is important to us evolves over time. The environmental issues I'm speaking of here are the ones that affect our physical and mental well being—air temperature, air quality, and altitude. Now, of course, there are others but I'm going to only address these because they most affect runners and cyclists and fitness advocates.

Our environment affects us physically. The obvious factor that jumps out here in Florida in August is the temperature. Unfortunately for us Floridians, it is the HOT end that affects training and not the COLD end. Studies indicate (except in very rare conditions) the only effect the cold has on training performance is comfort. If you can take the chill, you'll be fine. But heat has a big effect. It is the heat index that matters for the most part, not the temperature. Studies show that athletes can be at an optimal state all the way up to 90 degrees as long as the humidity is zero, I know—when does that happen? A temperature of 90 degrees along with humidity of just 30% will significantly cause fatigue and is considered “dangerous”. Even a modest temperature of 80 degrees' with a humidity percent of 50% has negative effects. Simply, we fatigue due to loss of body water. So the bottom is—higher heat and higher humidity will not lead to a good training session or good race. So in Florida, go out early or go out late and avoid as much of the heat as you can. If you must race in the heat, studies show that you can get 90% acclimated to the heat in 14 days. But this does not mean it is good to train in the heat regularly.

Another environmental concern is air quality. The biggest concern is carbon monoxide, since it has much greater attraction to hemoglobin than oxygen. This is a problem because almost all oxygen is transported through the blood via hemoglobin, so greater concentrations of carbon monoxide hamper the runner's working capacity. Simply, oxygen becomes the odd man out. Even at very low levels of concentrations we can still be affected if we train in these conditions for eight hours. Don't laugh, some “IRONMAN” and road cyclists actually do. Be aware that the greater the concentration, the shorter the time you should train. Ideally, it is best to train where there are no cars! I know—fat chance around Daytona Beach.

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Altitude is also an environmental concern. The percentage of oxygen in the air is the same as sea level as it is at 10,000 feet. What is different is the atmospheric pressure. Atmospheric pressure is less at 10,000 feet than it is at our sea level Florida. The end result is it is more difficult to deliver oxygen to the working muscles. Work capacity is diminished. Although there is little effect on sprinters, it does have a significant effect on distance runners and riders. What we know is that more work can be done at sea level at a given heart rate than at altitude. So if you go higher, be prepared to put out a greater effort to go your usual speed.

Our environment also affects the mental side of training. In a survey published in this summer's RAILS to TRAILS, fitness walkers listed "opportunity to train in a rural countryside" as the most important factor involved in their staying motivated to walk. That really hit home when I went on vacation this summer to New York's Hudson Valley. I could ride the rural roads up the mountain and back then I could lace up the running shoes and run the carriage trails. The whole area was conducive to training. I think I might be able to log a few more weekly miles if I had the place like that to train. And just maybe I'd get fast! Well probably not, but I would train more because it simply would be more enjoyable. By the way, I haven't given up on Daytona Beach et. I think we can and will improve in this department.

It has been suggested that one way to fight obesity in our country is to encourage people to bike or walk to work. Or when that isn't possible to walk or bike more at other times. You burn eight to ten calories a minute while cycling at a commuter's pace, or 480-600 calories for each hour commute—a cheap way to create a calorie deficit.

I hope this introduction got you thinking about the effects of environment on your running. Since we chose this lifestyle, we not only have to adapt ourselves to the environment, but we also must do our best to improve our environment to better meet our needs.