Why and how training improves your performance

By Charles Clines

It should be obvious that training will improve performances regardless of the sport, but why and how?

When I was studying material used for fitness trainers, I increased my knowledge of how the body reacts to different types of training. For athletes, especially runners, one of the things accomplished by training increases blood volume, maybe by as much as a quart. The red blood count increases as well, and those are the cells that deliver oxygen to our muscles. And when a runner is tiring, that extra oxygen comes in handy.

Also, exercise helps build an athlete's heart. Part of this is the development of new capillaries and the enlargement of existing blood vessels. These capillaries help saturate the heart and muscles with blood, which is carrying oxygen to our muscles.

And, of course, athletes want and need good lungs. Lungs have little muscle, so breathing capability is related to the condition of the surrounding muscles. A conditioned athlete has the capability of inhaling more air for longer periods and exhaling more wastes (carbon dioxide) because the muscles surrounding the lungs have been trained to do more work.

Sedentary people will lose a lot of their lung power. One way to test your lung power is to hold your breath. Most adults in moderate to good condition should be able to hold their breath for 50 seconds or longer.

Then there is the Specificity Principle. That basically means that if you're training for a marathon, then you'll be better off running long distances rather than cycling long distances. Cross training, even lifting weights, will help as a runner trains toward a marathon (other other distance). But the closer the runner gets to the race, the better it is to focus on running.

It's better to condition the whole body, though. There is the axiom of ``use it or lose it.'' It also takes less time to become ``unconditioned'' than it does to be conditioned. It a person stops stressing muscles, these muscles will adapt to meet the lowered stress. That's why running intervals and hills help raise the stress level and conditions the body to handle the extra stress.

One thing many regular runners should be wary of is overtraining.

Overtraining is a result of microtrauma that begins to accumulate if a runners fails to rest enough between workouts. Microtrauma is muscular damage referred to as cumulative

microtrauma. Runners, as other athletes, should get enough rest between workouts, which includes at least eight hours of sleep. The training I was studying recommended nine hours, but I have a hard time staying in bed for eight, so everyone probably is somewhat different.

Another important factor to improving performance is to eat well. Carbohydrates should be the major percent of a runner's caloric intake. But it should be the correct type of carbos. And that is why runners should learn the foods that are high or low on the Glycemic Index. Consuming foods that are lower on the Glycemic Index will result in a more stabilized blood sugar level. This helps for a runner to have sustained energy through a run. Runners also need fiber, protein and fat. One study says an endurance athlete (runners) should incorporate a ratio of 1:2:5. That means calorie consumption should be a ratio of 1 part fats, 2 parts protein and 5 parts carbohydrates.

Of course, there are other factors of improving performance, but regular training, good diet and proper rest are three of the more important factors. It doesn't hurt to have great genes, too.