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Sprinting Versus Cross Country

When most people think of sprinting and cross country, they categorize them into one event, running. It is true that these two sports possess some similarities, but there are many differences between them. Sprinting and cross country contain different mindsets, physiological builds, and step techniques.

Sprinting requires a very short-term mindset. The sprinter must possess a drive for speed and agility to accomplish the rapid movement through races shorter than 400 meters. The sprinter can think about only one thing: the finish line. Sprinters ignore their opponents and the outside world and clear their minds in order to focus on crossing the white tape.

Similar to a quick mindset, the sprinter's physiological build is dominated by "fast-twitch muscles" intended for speed. A sprinter has to finish his race in a very short amount of time. Because the races are so fast, oxygen cannot travel to the muscle groups fast enough for normal aerobic respiration; thus anaerobic respiration takes place in the muscles due to the lack of oxygen. After performing anaerobic respiration so many times, the muscle groups transform into a bulky white muscle that responds almost instantaneously to stimulation from the brain. These muscles grow quickly, making their combined efforts very powerful. It is this mixture of power and speed that gives the sprinter his amazing acceleration on the track.

Similar to the trained "fast-twitch muscles," the sprinter's steps are also trained for acceleration. Sprinters are trained from the very beginning to stay on their toes (or the balls of

their feet). The reason for this is so that they can utilize their calves and quadriceps, which are the most powerful muscles in the leg. As a sprinter starts off, he keeps the tips of his feet on the starting block so as to make an explosive start. After the gun fires, he continues to slowly bring his torso up from the horizontal position in order to keep more pressure on his toes. Finally, when the sprinter is vertical, his steps are still short so that his heels never touch the ground, which keeps all the pressure on the balls of his feet. Throughout the entire race, the sprinter stays on the tips of his feet in order to acquire the greatest amount of acceleration.

In every area that sprinters are built for speed and acceleration, cross country runners are built for stride and perseverance. A cross country runner (c.c. runner) must possess both patience and determination to reach his goal in races that are typically longer than one mile. A c.c. runner must think about multiple variables at once: his pace, his breathing, his stride, his time, and his opponents. This thought process forces the c.c. runner to think about the race with a long-term mindset.

Like a c.c. runner's mindset, the c.c. runner's physiological build is meant for long, grueling races. Because most distance races are well over twenty minutes, c.c. runners have enough time to allow the transfer of oxygen to their muscles. The presence of oxygen allows for aerobic respiration. After training often in aerobic respiration, the muscle groups will take on a very dark, lean, and dense form called "slow-twitch muscles." These muscles are suited to pushing the runner for long periods of time without rest. It is these muscle groups that allow for c.c. runners to complete races in excess of one hundred miles in mega-marathons.

Complementing the c.c. runner's "slow-twitch" muscles are the c.c. runner's steps. Every step that the c.c. runner takes is designed to work each muscle group in the leg so as not to wear out any particular muscle group throughout the course of a long race. The catch phrase

among c.c. runners in “heel toe.” This means that the c.c. runner is supposed to hit his heel first when he steps and then, as the stride is taking place, roll to the toe of his foot for a final push before the stride is over. When the runner extends his leg forward to hit his heel, the calf and hamstring muscles pull the leg back under the runner, thus moving him forward. As the leg comes behind the c.c. runner’s torso, the foot rolls onto the toe and pushes the runner forward with a final burst of strength. This final movement utilizes the last two muscles groups: the shin and the quadriceps. This form of a c.c. runner allows him to work his legs with the greatest amount of efficiency in order to carry him across many miles through a race.

A sprinter has to clear his mind to concentrate on the finish line, while a c.c. runner has to think about many race variables at once. The sprinter’s muscles are trained for burst acceleration; on the other hand, a c.c. runner’s muscles are trained for endurance. Lastly, every step that the sprinter takes is conformed for speed, as opposed to the c.c. runner’s steps which are built for utilizing as much energy as possible. The sprinter and c.c. runner are definitely not as similar as one might think.