

# Performance Point

## Strength & Conditioning

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### Benefits of an Effective Strength and Conditioning Program for Endurance Athletes

Strength and conditioning is important for all athletes, not just those who participate in strength and power-based sports such as football, rugby or hockey. Traditionally athletes who participate in endurance based sports shy away from the weight room. The latest information suggests that endurance athletes can realize many direct benefits from a sport specific strength training program. A well-designed strength program implemented between the strength coach and technical sport coach, that is in line with the athletes' yearly training plan, can provide a number of benefits:

1. Improved strength and power output relative to body size
  - Beneficial for maintaining higher speed or improving sprint ability
2. Improved strength/power endurance
  - Endurance is relative to maximal strength and power levels. As maximal levels increase so will endurance which will increase resistance to fatigue leading to a decreased chance of injury.
3. Repair/Prevent muscle imbalances
  - Important for injury prevention and maximizing sport specific training time
4. Rehabilitate injuries
  - Getting back to sport as quickly as possible
5. Maintain lean body mass
  - Due to high training volumes, endurance athletes can lose muscle mass; strength training will force the body to maintain its lean body mass
6. Improve balance
  - Balance is critical anytime a single-limb movement occurs. The more stable and balanced the athlete, the more efficient.
7. Improve core stability and strength
  - Mid-torso strength and stability is vital to maintaining efficient sport-specific technique
8. Improved stretch-shortening cycle
  - Very important for runners as the stretch-shortening cycle aids in resisting collapse each time the foot hits the ground. The forces that occur at each foot contact are very high in running and the stronger the athlete, the less collapse at contact, therefore the quicker off the ground and the faster they can move into the second phase of the stride. Foot push off takes place at the end of each foot contact. The stronger the push off, the longer the stride meaning the athlete is covering more ground with each step therefore needing less steps to complete a distance and less energy expended.

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*"A strength component to training in endurance athletes is often overlooked. Since incorporating a routine program into my schedule, I noticed the effects almost immediately in both my training as well as in my racing. I can actually feel my strength and power kick in and help me get through workouts. This new found strength enables me to get the most out of each workout technically before my body begins to rely solely on its energy stores. In racing, I've been able to take myself to new levels by allowing my body to work more efficiently with added power and with consistency."*

Nick Hastie, National Triathlon Centre



Canadian Sport Centre Pacific triathlete Nick Hastie.

## Powering Sport Performance

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