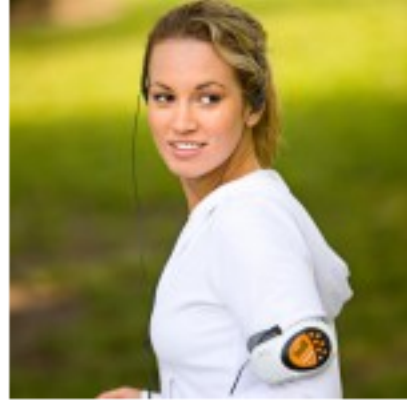


## Do Your Muscles Need CoQ10 During Exercise?

by G. Bossik on November 22nd, 2011 at 7:00 am

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Scientists are finding that the vitamin-like substance, coenzyme Q10 (CoQ10), may play an important role during and after exercise. New studies have determined that Q10 helps protect **muscles** and enhances endurance.<sup>1,2</sup>

One study shows that CoQ10 protects muscles by regulating certain proteins and by preserving the **energy**-producing portions of muscle cells.<sup>1</sup>

The study was published in the October 2011 edition of the European Journal of Nutrition and is entitled, *Coenzyme Q10 Supplementation Ameliorates Inflammatory Signaling and Oxidative Stress Associated with Strenuous Exercise*.

The authors say that CoQ10 limit the actions of TNF- $\alpha$  (tumor necrosis factor-alpha), an inflammatory protein that has been found to cause muscle weakness.<sup>3</sup>

They also describe how CoQ10 helps protect the outer part mitochondria, energy-producing cellular structures that are found in human skeletal muscle.<sup>4</sup> Associate professor Janet Stein Carter says that mitochondria produce what muscles need to relax after contracting — the energy molecule, ATP.<sup>5</sup> So, proper muscle functions depend on ATP.

In addition, coenzyme Q10 (CoQ10) is needed to create ATP, says Jane Higdon of the Linus Pauling Institute.<sup>6</sup>

In one study, people who consumed CoQ10 had greater exercise endurance.<sup>2</sup> "Increased muscle CoQ10 concentration could explain the increased time to exhaustion observed in the current study," say the authors.

Overall, the new discoveries linking CoQ10 to human endurance and muscle health hold promise for mankind's efforts to stay physically fit.

**NR Essentials™ CoQ10** promotes energy metabolism and maintains cellular health.

### Sources:

1. Javier Diaz-Castro et al, "Coenzyme Q10 Supplementation Ameliorates Inflammatory Signaling and Oxidative Stress Associated with Strenuous Exercise," European Journal of Nutrition.
2. Matthew Cooke et al, "Effects of Acute and 14-day Coenzyme Q10 Supplementation on Exercise Performance in Both Trained and Untrained Individuals," Journal of International Society of Sports Nutrition.
3. Brian J. Hardin, "TNF- $\alpha$  acts via TNFR1 and Muscle-Derived Oxidants to Depress Myofibrillar Force in Murine Skeletal Muscle," Journal of Applied Physiology.
4. Elizabeth V. Menshikova et al, "Effects of Exercise on Mitochondrial Content and Function in Aging Human Skeletal Muscle," The Journals of Gerontology.
5. J. Stein Carter, "Muscles," UC Clermont College.
6. Jane Higdon, "Coenzyme Q10," Linus Pauling Institute at Oregon State University.

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### 2 Responses to "Do Your Muscles Need CoQ10 During Exercise?"

**King Y. Ohene-Boateng**  
 Feb 4th, 2012  
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thanks for the info on CoQ10, I will like to know if it is okay for my ten year old son can take CoQ10. Any time he exercise he gets muscle pull.

Thank you.

King

**G. Bossik**  
 Feb 6th, 2012  
[Reply to this comment](#)

Hi, King.

When considering giving CoQ10 to anyone who's younger than 18 years old, it's best to consult with your healthcare provider first.

Best,  
 Glenn

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