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Supplement Use in Youth and Adolescents: Creatine

Locknane Athletic Medicine takes a cautionary stance on the use of supplements by youth and adolescents. The first recommendation is for an individual to get proper nutrition from their regular diet. A healthy, well-balanced diet will have all the proper nutrients for a young, growing and active child or adolescent. The use of supplements will sometimes lead to sacrificing a regular and healthy diet. More concerning, is the fact that supplements are not regulated and approved by the Food and Drug Administration (FDA), thus sometimes leading to not getting what you believe you are purchasing and ingesting.

Even the use of a simple protein supplement or creatine should be cautioned. Instead, start with the addition of a Carnation Instant Breakfast added to a glass of milk.

Locknane Athletic Medicine does recognize that there are both opponents and proponents to supplementation, even for youth and adolescents. We encourage you to take a cautionary stance and educate yourself about supplements prior to use. If you have specific questions about individual supplements, or are thinking about using a supplement we encourage you to consult your family physician or other medical professional prior to use.

Specific information about creatine can be found on the web, and we have put an excerpt from a website below.

From the website: <http://www.educatedsportsparent.com/supplements.html>

What is creatine?

Creatine is a substance, which the body uses to produce energy. It is necessary for high intensity activities. Creatine comes from two sources. It is naturally produced in the body, and it also comes from foods such as red meats and fish. The combination of diet and the natural production in the body generally satisfies the body's requirement of 2 grams per day (6). Some athletes have chosen to ingest additional creatine in the form of a supplement. Creatine supplementation is thought to aid athletes involved in high power and high intensity sports, but not aerobic sports. The added creatine is thought to allow the athlete to perform repeated training bouts at a higher intensity due to the fact that the energy supply from the CK system (one of three main ways in which the body produces energy) is not as diminished (7). Being able to perform at a higher intensity allows for the muscles to be pushed harder and requires them to subsequently adapt and gain strength.

What are the risks of using creatine?

The studies conducted on creatine use so far have all used adult subjects to gather information on short-term creatine supplementation. To date only one study of creatine use has been conducted with adolescents (7), and no studies have examined the long-term consequences of use. The safety and effectiveness of long-term use cannot be guaranteed, especially among adolescents. Therefore, the risks to adolescent users are unknown, and creatine use for this population should be discouraged.

In adult populations, creatine use has been shown to enhance the ability of the muscle to exert force and power, especially in bouts of repeated high-intensity movements (7). In addition, it is not banned by the NCAA. However, the NCAA cautions that since over the counter supplements are not regulated by the FDA, they may contain substances that could result in a positive drug test. (8)

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Despite the apparent benefit of creatine supplementation for adult athletes involved in high intensity sports, caution is advised in using this supplement. There have been reports of creatine use being associated with short-term side effects such as nausea, vomiting, diarrhea, cramping, heat exhaustion, hypertension, kidney problems, and liver problems. But according to the American College of Sports Medicine, there is insufficient evidence to directly link these problems to creatine use (7). In addition, the effects of long-term use are unknown. Steroids were once thought relatively safe and acceptable in the 1960s and 70s. Twenty years later the link between steroids and cancer became clear (9).

What is the rate of creatine use among adolescents?

Creatine is one of the more popular performance-enhancing supplements used by adolescents. A national survey by the National Institute on Drug Abuse found in 2004 that the annual use rate among 8th, 10th and 12th grade boys, respectively, was 3%, 10% and 16%. This means that one-in-six 12th grade boys used creatine at least once in the prior 12 months. The annual rate among 8th, 10th, and 12th grade girls was 0.6%, 0.9%, and 1.0% (10).

Works cited:

- (6) Cumming, S. & Bartee, T. (2001). The use of creatine supplements in youth sports. *Spotlight on Youth Sports*, 25(1), 1,3-4.
- (7) American College of Sports Medicine. (2000). The physiological and health effects of oral creatine supplementation. *Medicine & Science in Sports & Exercise*, 32, 706-717.
- (8) Meiggs, R. (2004). *Committee Continues to Monitor Creatine Use in Sports*, Retrieved January 15, 2006 from http://www1.ncaa.org/membership/ed_outreach/health-safety/Creatine04.pdf
- (9) Eldridge, J. (2005). *University of Texas of the Permian Basin Training & Conditioning Methods Course Notes*. Retrieved January 20, 2005 from <http://uttc.blackboard.com>.
- (10) Johnston, L. D., O'Malley, P. M., Bachman, J. G. & Schulenberg, J. E. (2004). *Monitoring the Future National Survey Results on Drug Use 1975-2004: Volume 1 Secondary School Students*. Retrieved January 15, 2006 from http://www.monitoringthefuture.org/pubs/monographs/vol1_2004.pdf

Other links:

Protein Shakes for Kids? –

http://pediatrics.about.com/od/weeklyquestion/a/708_protein_shk.htm

An article in support of use of Creatine –

http://www.dotfit.com/sites/63/templates/categories/images/1292/Creatine_Supplementation_and_Youth.pdf