

SportsNutrition

Nancy Clark MS, RD, CSSD
www.nancyclarkrd.com

The Athlete's Kitchen Exercise, Injuries & Creatine: Updates from ACSM

"Exercise is medicine" is the slogan for the American College of Sports Medicine's (ACSM) campaign to get people moving. *"Exercise is better than medicine"* would also be a good slogan. According to Dr. Karim Khan of the University of British Columbia and speaker at ACSM's World Congress on Exercise Is Medicine (Denver, May 2011), lack of physical activity is the biggest public health problem in the 21st Century. (I know, I'm "preaching to the choir" given most of my readers are already active—but I'm sure you have friends and loved ones who spend too much time on the couch. Please pass along this message along to them!)

We know that exercise can reduce the risk of heart disease, cancer, dementia, and other diseases of aging. But what most people don't know is 16% of North Americans will die from low fitness/sedentary lifestyle. That's more than the 14% of people who will die from "smokerdiabesity" (smoking, diabetes, and obesity combined).

If exercise is so good for us, why are so many people failing to exercise regularly? And how can we get them to exercise by choice? Incentives work in the short term. That is, employees who get a discount on their health insurance premium will initiate an exercise program. But in the long term, people maintain an exercise program if it gives them pleasure, makes them feel good about themselves, improves their mood, and offers friendship. Wanna-be exercisers should take weight loss out of the equation. That is, if they are exercising just to lose weight, what happens when they reach their goal? They'll still need to keep exercising to maintain that fat loss, so they had better start a program they are interested in enjoying for the rest of their lives!

Just as MDs monitor blood pressure and weight, they should also monitor physical activity. Thanks to ACSM's *Exercise is Medicine* campaign, doctors are now being encouraged to prescribe exercise to their overfat, underfit, (pre)diabetic clients, telling them how often, how hard, and how long to exercise. This written prescription has been shown to help improve exercise compliance.

Nutrition for injuries Unfortunately, part of living an active lifestyle seems to entail being injured; no fun. Athletes with injuries should pay attention to their diet. If they are petrified of gaining weight (yes, petrified is a strong word, but it seems fitting to many injured athletes who seek my counsel), they may severely restrict their food intake. One runner hobbled into my office saying, "I haven't eaten in two days because I can't run..." While injured athletes do require fewer calories if they are exercising less than usual, they still need to eat an appropriate amount of fuel. Injuries heal best with proper nourishment. For example, if you have had surgery (such as to repair a torn ligament), your metabolic rate might increase up to 20%. Using crutches increases energy expenditure by 5 to 8%. If a wound happens to get infected, metabolic rate can increase by 50%.

When injured, you want to eat mindfully, so that you eat enough calories—but not too many. Before you put food into your mouth, ask yourself: *"Does my body need this fuel?"* Your mind may want excessive treats to comfort your sor-

row, but the cookies that help you feel happier for a moment can contribute to undesired fat gain that will increase your misery in the long run.

If you have ever had a broken bone, you have seen firsthand the muscle wasting that occurs when, let's say, a leg has been in a cast for 6 to 8 weeks. The good news is, according to Dr. Stuart Phillips of McMaster University, muscle strength and power returns quicker than muscle size. You can minimize excessive muscle loss by eating adequate protein. The typical (and adequate) protein intake is 0.5 g protein/lb (1.1g/kg) per day. During recovery, a better target is about 0.7 g pro/lb (1.6 g/kg). For a 150-pound athlete, that's 75 to 105 g protein for the day, an amount easily obtained through food. Simply choose a protein-rich food at each meal and snack throughout the day to help maximize healing and minimize muscle loss.

Creatine and health Creatine has been shown to enhance performance in sports that require short bursts of energy (including ice hockey, sprinting, soccer, weight lifting). The question arises: *Is creatine harmful?* According to Eric Rawson, PhD of Bloomsburg University in PA, creatine is safe. Although critics have tried to implicate creatine in athletic events that resulted in death, other factors were involved, such as excessive exercise in extreme heat.

The NCAA and other sports organizations discourage the use of creatine in teenage athletes. Teens who take creatine while their bodies are growing will never know how well they could have performed with simply a good sports diet and hard work. The question arises: Will athletes who take creatine be enticed to try other ergogenic aids, such as harmful and illegal steroids? The answer is unknown.

On a daily basis, the brain uses creatine to help us think and process. (Thinking requires quick energy, and creatine enhances that metabolic pathway.) Taking creatine supplements can increase brain creatine by 4 to 9%.

When the brain is tired, as happens with sleep-deprivation, creatine may be able to enhance brain function. For example, sleep deprived rugby players who took creatine improved their accuracy when throwing a ball (compared to those who did not take creatine). The effect was similar to if they had taken caffeine, another alertness-heightener.

Creatine might be helpful for athletes who suffer a concussion. Research with animals suggests taking creatine pre-concussion enhances recovery. Granted, few athletes know when they will get a concussion, but anecdotes tell us that hockey players who routinely take creatine (and have higher brain creatine status than athletes who do not take creatine) report enhanced recovery. In certain medical situations (such as muscular dystrophy, Parkinson's disease), creatine can have a health-protective role.

Nancy Clark, MS, RD, CSSD (Board Certified Specialist in Sports Dietetics) counsels casual and competitive athletes in her practice at Healthworks, the premier fitness center in Chestnut Hill MA (617-383-6100). Her *Sports Nutrition Guidebook* and food guides for new runners, marathoners, and soccer players are available at www.nancyclarkrd.com. See also sportsnutritionworkshop.com.

References:

Blair, S. Physical inactivity: the biggest public health problem of the 21st century. *Br. J Sports Med.* 2009; 43;1-2

Cook CJ, Crewther BT, Kilduff LP, Drawer S, Gaviglio CM. Skill execution and sleep deprivation: effects of acute caffeine or creatine supplementation - a randomized placebo-controlled trial. *J Int Soc Sports Nutr.* 2011 Feb 16;8:2.

Dalbo VJ, Roberts MD, Stout JR, Kerksick CM. Putting to rest the myth of creatine supplementation leading to muscle cramps and dehydration. *Br J Sports Med.* 2008 Jul;42(7):567-73.

Lopez RM, Casa DJ, McDermott BP, Ganio MS, Armstrong LE, Maresh CM. Does creatine supplementation hinder exercise heat tolerance or hydration status? A systematic review with meta-analyses. *J Athl Train.* 2009 Mar-Apr;44(2):215-23.

Persky AM, Rawson ES. Safety of creatine supplementation. *Subcell Biochem.* 2007;46:275-89.

Sullivan PG, Geiger JD, Mattson MP, Scheff SW. Dietary supplement creatine protects against traumatic brain injury. *Ann Neurol.* 2000 Nov;48(5):723-9.