



OptMSM[®]

MSM Sports Nutrition Science Brief



Exercise, oxidative stress and MSM

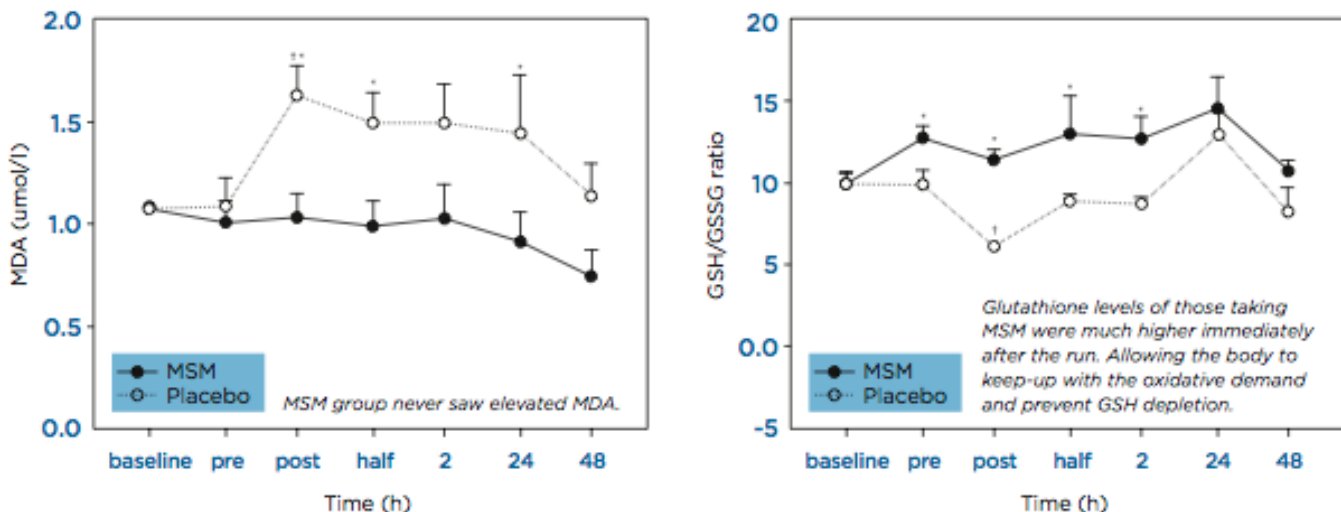
Heavy and sustained exercise generates large quantities of free radicals, which exceed your natural antioxidant defenses, causing oxidative stress. Regardless of what kind of sport you are involved with, strength training, running, cycling, CrossFit, swimming, football, tennis or soccer, if your training is challenging it will cause significant oxidative stress, inflammation and muscle damage, resulting in increased fatigue and reduced performance. However, in order to increase performance, your training must be challenging.

MSM (methylsulfonylmethane) is a well-known, research-backed dietary supplement ingredient that's been shown to mitigate oxidative stress from exercise, and help support exercise recovery and performance.

MSM reduces exercise-induced oxidative stress and increases anti-oxidative capacity

Endurance exercise significantly increases oxidative stress in athletes. Runners participating in a 14 km run showed increased levels of oxidative markers (serum malondialdehyde (MDA), protein carbonyl (PC) and plasma oxidized glutathione (GSSG)). 10 days of MSM supplementation prior to the run not only reduced the levels of the oxidative markers, it even increased plasma anti-oxidative capacity (Nakhostin-Roohi et al., 2011).

Figure 1. Pre-workout supplementation with MSM reduces oxidative stress (left), and increases antioxidant capacity.



MSM reduces resistance and endurance exercise-induced muscle damage and improves recovery

MSM can help to protect muscles from exercise-induced damage and aids recovery in endurance (Barmaki et al., 2012) and resistance exercise (Kalman et al., 2013). Faster recovery allows athletes to return to training more quickly and to train at a level where it will prove to be most productive. Faster recovery results in faster gains. Endurance exercise, a 14k run, significantly increased creatine kinase (CK) levels, a marker of muscle damage, in healthy, active young men. However, 10 days of supplementation with MSM prior to exercise significantly reduced muscle damage (Barmaki et al., 2012). See figure 2 next page