

SPORTS NUTRITION

Asparagine

Increases the capacity of muscle to use fatty acids and spare glycogen, thus increasing time to physical exhaustion; Intensive training lowers asparagine levels.^{32,33,34}

Serine

Keeps an athlete's hormone profile healthy by buffering post-workout cortisol levels, which can cause excess muscle breakdown; May increase aerobic capacity.^{29,30,31}

Magnesium

Key to the production of ATP (adenosine triphosphate) which is the body's main storage form of energy; Supplementation may improve aerobic performance and muscle strength and repair.^{27,28}

Zinc

Interacts with hormones to improve body composition and strength; Deficiency impairs peak oxygen uptake during exercise; Low zinc common in distance runners & gymnasts; Supplementation should be accompanied by copper.^{24,25,26}

Carnitine

Allows cells to use fatty acids as an efficient non-glycogen source of fuel; Improves muscle recovery; Offsets the rise in creatine kinase, an indicator of muscle damage.^{35,36}

Glutamine

Its depletion compromises immunity in many athletes after intense physical training; supplementation by marathoners reduced post-race infections.^{1,2,3,4}

Coenzyme Q10

Mitigates muscle damage after high intensity training; Trials indicate CoQ10 benefits both strength and endurance; 300 mg of CoQ10 increased power in Olympic athletes.^{5,6,7}

Lipoic Acid

This powerful antioxidant reduces cellular damage due to intense physical exercise; Recycles other antioxidants such as glutathione.^{8,9}

Glutathione

Powerful antioxidant; Detoxifies cellular by-products after workouts; Reduced blood levels of glutathione are counterproductive to an athlete in training.^{10,11}

Cysteine

Reduces time to fatigue in endurance sports such as cycling; Precursor to glutathione; Supplementation raises glutathione levels.^{12,13,14}

Vitamin C

Decreases post-workout soreness; Required for collagen synthesis and thus protects muscles from injury due to trauma or training; Reduces cortisol induced muscle catabolism.^{15,16,17}

B Vitamins

Cofactors for efficient energy metabolism from food; Synthesizing red blood cells requires B9 (folate) and B12; Deficiencies in various B vitamins may slow healing in sports injuries.^{22,23}

Vitamin D

Improves bone strength, thus reducing potential for sports-related injuries and stress fractures.^{20,21}

Vitamin E

Intense training causes cellular stress; Vitamin E protects the enzymes responsible for repairing this cellular damage.^{18,19}

Additional nutrients affect athletic performance. This list is non-exhaustive.

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