**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.\(^{22,23}\)

**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.\(^{35,36}\)

**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.\(^{5,6,7}\)

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

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

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

**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.\(^{35,36}\)

**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.\(^{27,28}\)

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

**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.\(^{15,16,17}\)

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

**Vitamin D**
Improves bone strength, thus reducing potential for sports-related injuries and stress fractures.\(^{20,21}\)

**Vitamin B12**
Critical 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.\(^{22,23}\)

**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.\(^{24,25,26}\)

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

**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.\(^{35,36}\)

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