

# Vitamins and Minerals for Athletes

Athletes need adequate intakes of vitamins and minerals. Their needs are generally not greater than the levels recommended in the Dietary Reference Intakes (1).

## B Vitamins

Nutrient	Increased Need in Athletes?	RDA/AI, Ages 19-50 y	UL	Foods with $\geq$ 25% RDA per serving
Vitamin B-6	No	1.3 mg	100 mg	Cornflakes Bok choy
Folate	No	400 mcg	1000 mcg	Asparagus Broccoli Spinach Whole wheat bread Tofu
Vitamin B-12	No*	2.4 mcg	None determined	Boiled shrimp Chicken breast Beef Fish Turkey
Thiamin	Sometimes <sup>†</sup>	Women: 1.1 mg Men: 1.2 mg	None determined	Flour tortillas Corn Whole grain breads and cereals
Riboflavin	No	Women: 1.1 mg Men: 1.3 mg	None determined	Enriched breads Milk Fortified cereals
Niacin	No	Women: 14 mg Men: 16 mg	35 mg	Fish Enriched breads and cereals Meat
Pantothenic acid	No	5 mg	None determined	Sunflower seeds Mushrooms Peanuts Brewer's yeast Yogurt

## B Vitamins *(continued)*

<b>Nutrient</b>	<b>Increased Need in Athletes?</b>	<b>RDA/AI, Ages 19-50 y</b>	<b>UL</b>	<b>Foods with ≥ 25% RDA per serving</b>
Biotin	No	30 mcg	None determined	Peanut butter Hard boiled eggs Wheat germ

Abbreviations: AI, Adequate Intake; RDA, Recommended Dietary Allowance; UL, Tolerable Upper Intake Level.

\*Vegan athletes may need to supplement.

†High-carbohydrate diets and intense training may increase need

## Antioxidant Nutrients

<b>Nutrient</b>	<b>Increased Need in Athletes?</b>	<b>RDA/AI, Ages 19-50 y</b>	<b>UL</b>	<b>Foods with ≥ 25% RDA per serving</b>
Vitamin C	Yes: 100 mg/d for athletes; ≤ 500 mg/d for ultra-endurance	Women: 75 mg Men: 90 mg	2000 mg	Kiwi Oranges Red bell pepper Strawberries
Vitamin A	Maybe*	Women: 700 mcg Men: 900 mcg	3000 mcg	Mango Papaya Egg yolk Carrot Cantaloupe
Vitamin E	Maybe†	15 mg	1000 mg	Almonds Canola oil Olive oil Avocado
Copper	No	900 mcg	10,000 mcg	Chocolate ice cream Sunflower seeds Liver Salmon
Selenium	No	55 mcg	400 mcg	Brazil nuts Tofu Tuna Mackerel

Abbreviations: AI, Adequate Intake; RDA, Recommended Dietary Allowance; UL, Tolerable Upper Intake Level.

\*Exercise may increase need; research is not definitive.

†May help to reduce free radicals, but there are no reports of improved performance.

## Other Key Nutrients

<b>Nutrient</b>	<b>Increased Need in Athletes?</b>	<b>RDA/AI, Ages 19-50 y</b>	<b>UL</b>	<b>Foods with ≥ 25% RDA per serving</b>
Vitamin D	Yes for weightlifters and older athletes, and for athletes living at or above 42 degrees latitude*	5 mcg	50 mcg	Milk (fortified) Juice (fortified)
Vitamin K	Yes for some female athletes†	Women: 90 mcg Men: 120 mcg	None determined	Green bell pepper Broccoli Bok choy Brussels sprouts
Calcium	No‡	1000 mg	2500 mg	Milk Cheese Yogurt Soy milk (fortified) Calcium-fortified juice
Chromium	No§	Women: 25 mcg Men: 35 mcg	None determined	Beer Chicken wings Mackerel
Fluoride	No data reported	Women: 3 mg Men: 4 mg	10 mg	Tea Tap water in some communities
Iodine	No data reported	150 mcg	1100 mcg	Iodized salt
Iron	No	Women: 18 mg Men: 8 mg	45 mg	Vegetable soup (canned) Spinach Oysters Beef
Magnesium	No¶	Women: 320 mg Men: 420 mg	350 mg from supplements	Collard greens Okra Baked potato

## Other Key Nutrients *(continued)*

Nutrient	Increased Need in Athletes?	RDA/AI, Ages 19-50 y	UL	Foods with $\geq 25\%$ RDA per serving
Phosphorus	No	700 mg	4000 mg	Beef Turkey Cottage cheese Milk
Zinc	No <sup>#</sup>	Women: 8 mg Men: 11 mg	40 mg	Milk Cheese Beef

Abbreviations: AI, Adequate Intake; RDA, Recommended Dietary Allowance; UL, Tolerable Upper Intake Level.

\*Weightlifters and older athletes (age > 51 years) may require more than the RDA. Athletes living in northern latitudes make less vitamin D from ultraviolet rays in the winter months; these athletes need to increase Vitamin D intake to meet the RDA by choosing foods or supplements with additional Vitamin D.

†Female athletes may need higher amounts of vitamin K because of the vitamin's role in bone mineralization.

‡Needs are not higher for athletes, but athletes should strive for RDA. Also, those who sweat heavily may need more calcium to replace calcium lost in sweat.

§Urinary losses are greater on exercise days. No data support the claim that chromium increases lean mass or decreases fat mass.

||Endurance athletes who consume insufficient calories may be iron depleted. Females are at greater risk for iron-deficiency than males.

¶Athletes on low-calorie diets who exercise intensely may lose magnesium in sweat and may be required to consume more than the RDA.

#Athletes do not always consume adequate amounts.

## Reference

1. Volpe SL. Vitamins, minerals and exercise. In: Dunford M, ed. *Sports Nutrition: A Practice Manual for Professionals*. 4th ed. Chicago, Ill: American Dietetic Association; 2005.