Dietary Reference Intakes (DRIs): Elements
Food and Nutrition Board, Institute of Medicine, National Academies

Nutrient	Function	Life Stage Group	RDA/AI*	UL[a]	Selected Food Sources	Adverse Effects of Excessive Consumption	Special Considerations
Arsenic	No biological function in humans although animal data indicate a requirement.	*Infants* 0−6 mo 7−12 mo *Children* 1−3 y 4−8 y *Males, Females* 9−13 y 14−18 y 19−30 y 31−50 y 50−70 y > 70 y *Pregnancy* ≤ 18 y 19−30y 31−50 y *Lactation* ≤ 18 y 19−30y 31−50 y	 ND[b] ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND	 ND[b] ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND	Dairy products, meat, poultry, fish, grains and cereal.	No data on the possible adverse effects of organic arsenic compounds in food were found. Inorganic arsenic is a known toxic substance. Although the UL was not determined for arsenic, there is no justification for adding arsenic to food or supplements.	None.

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Nutrient	Function	Life Stage Group	RDA/AI*	UL[a]	Selected Food Sources	Adverse Effects of Excessive Consumption	Special Considerations
Boron	No clear biological function in humans although animal data indicate a functional role.	*Infants* 0−6 mo 7−12 mo *Children* 1−3 y 4−8 y *Males, Females* 9−13 y 14−18 y 19−30 y 31−50 y 50−70 y > 70 y *Pregnancy* ≤ 18 y 19−30y 31−50 y *Lactation* ≤ 18 y 19−30y 31−50 y	 ND[b] ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND	 ND[b] ND 3 mg/d 6 mg/d 11 mg/d 17 mg/d 20 mg/d 20 mg/d 20 mg/d 20 mg/d 17 mg/d 20 mg/d 20 mg/d 17 mg/d 20 mg/d 20 mg/d	Fruit-based beverages and products, potatoes, legumes, milk, avocado, peanut butter, peanuts.	Reproductive and developmental effects as observed in animal studies.	None.

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Nutrient	Function	Life Stage Group	RDA/AI*	UL[a]	Selected Food Sources	Adverse Effects of Excessive Consumption	Special Considerations
Calcium	Essential role in blood clotting, muscle contraction, nerve transmission, and bone and tooth formation.	*Infants* 0−6 mo 7−12 mo *Children* 1−3 y 4−8 y *Males, Females* 9−13 y 14−18 y 19−30 y 31−50 y 51−70 y, males 51−70y, females > 70 y *Pregnant/Lactating* 14−18 y 19−50 y	 200 mg/d* 260 mg/d* **700 mg/d** **1,000 mg/d** **1,300 mg/d** **1,300 mg/d** **1,000 mg/d** **1,000 mg/d** **1,000 mg/d** **1,200 mg/d** **1,200 mg/d** **1,300 mg/d** **1,000 mg/d**	 1,000 mg/d 1,500 mg/d 2,500 mg/d 2,500 mg/d 3,000 mg/d 3,000 mg/d 2,500 mg/d 2,500 mg/d 2,000 mg/d 2,000 mg/d 2,000 mg/d 3,000 mg/d 2,500 mg/d	Milk, cheese, yogurt, corn tortillas, calcium-set tofu, Chinese cabbage, kale, broccoli, as well as other fortified foods and beverages.	Kidney stones, hypercalcemia, hypercalciuria, prostate cancer, constipation, soft tissue calcification	None.

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Dietary Reference Intakes (DRIs): Elements
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Chromium	Helps to maintain normal blood glucose levels.	*Infants*			Some cereals, meats, poultry, fish, and beer.	Chronic renal failure.	None.
		0−6 mo	0.2 mg/d*	ND[b]			
		7−12 mo	5.5 mg/d*	ND			
		Children					
		1−3 y	11 mg/d*	ND			
		4−8 y	15 mg/d*	ND			
		Males					
		9−13 y	25 mg/d*	ND			
		14−18 y	35 mg/d*	ND			
		19−30 y	35 mg/d*	ND			
		31−50 y	35 mg/d*	ND			
		51−70 y	30 mg/d*	ND			
		> 70 y	30 mg/d*	ND			
		Females					
		9−13 y	21 mg/d*	ND			
		14−18 y	24 mg/d*	ND			
		19−30 y	25 mg/d*	ND			
		31−50 y	25 mg/d*	ND			
		51−70 y	20 mg/d*	ND			
		> 70 y	20 mg/d*	ND			
		Pregnancy					
		≤ 18 y	29 mg/d*	ND			
		19−30y	30 mg/d*	ND			
		31−50 y	30 mg/d*	ND			
		Lactation					
		≤ 18 y	44 mg/d*	ND			
		19−30y	45 mg/d*	ND			
		31−50 y	45 mg/d*	ND			

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Dietary Reference Intakes (DRIs): Elements
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Nutrient	Function	Life Stage Group	RDA/AI*	UL[a]	Selected Food Sources	Adverse Effects of Excessive Consumption	Special Considerations
Copper	Component of enzymes in iron metabolism.	*Infants* 0−6 mo 7−12 mo *Children* 1−3 y 4−8 y *Males, Females* 9−13 y 14−18 y 19−30 y 31−50 y 50−70 y > 70 y *Pregnancy* ≤ 18 y 19−30y 31−50 y *Lactation* ≤ 18 y 19−30y 31−50 y	 200 µg/d* 220 µg/d* **340 µg/d** **440 µg/d** **700 µg/d** **890 µg/d** **900 µg/d** **900 µg/d** **900 µg/d** **900 µg/d** **1,000 µg/d** **1,000 µg/d** **1,000 µg/d** **1,300 µg/d** **1,300 µg/d** **1,300 µg/d**	 ND[b] ND 1,000 µg/d 3,000 µg/d 5,000 µg/d 8,000 µg/d 10,000 µg/d 10,000 µg/d 10,000 µg/d 10,000 µg/d 8,000 µg/d 10,000 µg/d 10,000 µg/d 8,000 µg/d 10,000 µg/d 10,000 µg/d	Organ meats, seafood, nuts, seeds, wheat bran cereals, whole grain products, cocoa products.	Gastrointestinal distress, liver damage.	Individuals with Wilson's disease, Indian childhood cirrhosis and idiopathic copper toxicosis may be at an increased risk of adverse effects from excess copper intake.

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Nutrient	Function	Life Stage Group	RDA/AI*	UL[a]	Selected Food Sources	Adverse Effects of Excessive Consumption	Special Considerations
Fluoride	Inhibits the initiation and progression of dental caries and stimulates new bone formation.	*Infants*			Fluoridated water, teas, marine fish, fluoridated dental products.	Enamel and skeletal fluorosis.	None.
		0−6 mo	0.01 mg/d*	0.7 mg/d			
		7−12 mo	0.5 mg/d*	0.9 mg/d			
		Children					
		1−3 y	0.7 mg/d*	1.3 mg/d			
		4−8 y	1.0 mg/d*	2.2 mg/d			
		Males					
		9−13 y	2 mg/d*	10 mg/d			
		14−18 y	3 mg/d*	10 mg/d			
		19−30 y	4 mg/d*	10 mg/d			
		31−50 y	4 mg/d*	10 mg/d			
		51−70 y	4 mg/d*	10 mg/d			
		> 70 y	4 mg/d*	10 mg/d			
		Females					
		9−13 y	2 mg/d*	10 mg/d			
		14−18 y	3 mg/d*	10 mg/d			
		19−30 y	3 mg/d*	10 mg/d			
		31−50 y	3 mg/d*	10 mg/d			
		51−70 y	3 mg/d*	10 mg/d			
		> 70 y	3 mg/d*	10 mg/d			
		Pregnancy					
		≤ 18 y	3 mg/d*	10 mg/d			
		19−30y	3 mg/d*	10 mg/d			
		31−50 y	3 mg/d*	10 mg/d			
		Lactation					
		≤ 18 y	3 mg/d*	10 mg/d			
		19−30y	3 mg/d*	10 mg/d			
		31−50 y	3 mg/d*	10 mg/d			

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Iodine	Component of the thyroid hormones; and prevents goiter and cretinism.	*Infants* 0−6 mo 7−12 mo *Children* 1−3 y 4−8 y *Males, Females* 9−13 y 14−18 y 19−30 y 31−50 y 50−70 y > 70 y *Pregnancy* ≤ 18 y 19−30y 31−50 y *Lactation* ≤ 18 y 19−30y 31−50 y	 110 µg/d* 130 µg/d* **90 µg/d** **90 µg/d** **120 µg/d** **150 µg/d** **150 µg/d** **150 µg/d** **150 µg/d** **150 µg/d** **220 µg/d** **220 µg/d** **220 µg/d** **290 µg/d** **290 µg/d** **290 µg/d**	 ND[b] ND 200 µg/d 300 µg/d 600 µg/d 900 µg/d 1,100 µg/d 1,100 µg/d 1,100 µg/d 1,100 µg/d 900 µg/d 1,100 µg/d 1,100 µg/d 900 µg/d 1,100 µg/d 1,100 µg/d	Marine origin, processed foods, iodized salt.	Elevated thyroid stimulating hormone (TSH) concentration.	Individuals with autoimmune thyroid disease, previous iodine deficiency, or nodular goiter are distinctly susceptible to the adverse effect of excess iodine intake. Therefore, individuals with these conditions may not be protected by the UL for iodine intake for the general population.

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Iron	Component of hemoglobin and numerous enzymes; prevents microcytic hypochromic anemia.	*Infants* 0−6 mo 7−12 mo *Children* 1−3 y 4−8 y *Males* 9−13 y 14−18 y 19−30 y 31−50 y 51−70 y > 70 y *Females* 9−13 y 14−18 y 19−30 y 31−50 y 51−70 y > 70 y *Pregnancy* ≤ 18 y 19−30y 31−50 y *Lactation* ≤ 18 y 19−30y 31−50 y	 0.27 mg/d* **11 mg/d** **7 mg/d** **10 mg/d** **8 mg/d** **11 mg/d** **8 mg/d** **8 mg/d** **8 mg/d** **8 mg/d** **8 mg/d** **15 mg/d** **18 mg/d** **18 mg/d** **8 mg/d** **8 mg/d** **27 mg/d** **27 mg/d** **27 mg/d** **10 mg/d** **9 mg/d** **9 mg/d**	 40 mg/d 40 mg/d 40 mg/d 40 mg/d 40 mg/d 45 mg/d 45 mg/d 45 mg/d 45 mg/d 45 mg/d 40 mg/d 45 mg/d 45 mg/d 45 mg/d 45 mg/d 45 mg/d 45 mg/d 45 mg/d 45 mg/d 45 mg/d 45 mg/d 45 mg/d	Fruits, vegetables and fortified bread and grain products such as cereal (nonheme iron sources), meat and poultry (heme iron sources).	Gastrointestinal distress.	Non-heme iron absorption is lower for those consuming vegetarian diets than for those eating nonvegetarian diets. Therefore, it has been suggested that the iron requirement for those consuming a vegetarian diet is approximately 2-fold greater than for those consuming a nonvegetarian diet. Recommended intake assumes 75% of iron is from heme iron sources.

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Nutrient	Function	Life Stage Group	RDA/AI*	UL[a]	Selected Food Sources	Adverse Effects of Excessive Consumption	Special Considerations
Magnesium	Cofactor for enzyme systems.	*Infants* 0–6 mo 7–12 mo *Children* 1–3 y 4–8 y *Males* 9–13 y 14–18 y 19–30 y 31–50 y 51–70 y > 70 y *Females* 9–13 y 14–18 y 19–30 y 31–50 y 51–70 y > 70 y *Pregnancy* ≤ 18 y 19–30y 31–50 y *Lactation* ≤ 18 y 19–30y 31–50 y	 30 mg/d* 75 mg/d* **80 mg/d** **130 mg/d** **240 mg/d** **410 mg/d** **400 mg/d** **420 mg/d** **420 mg/d** **420 mg/d** **240 mg/d** **360 mg/d** **310 mg/d** **320 mg/d** **320 mg/d** **320 mg/d** **400 mg/d** **350 mg/d** **360 mg/d** **360 mg/d** **310 mg/d** **320 mg/d**	 ND[b] ND 65 mg/d 110 mg/d 350 mg/d 350 mg/d 350 mg/d 350 mg/d 350 mg/d 350 mg/d 350 mg/d 350 mg/d 350 mg/d 350 mg/d 350 mg/d 350 mg/d 350 mg/d 350 mg/d 350 mg/d 350 mg/d 350 mg/d 350 mg/d	Green leafy vegetables, unpolished grains, nuts, meat, starches, milk.	There is no evidence of adverse effects from the consumption of naturally occurring magnesium in foods. Adverse effects from magnesium containing supplements may include osmotic diarrhea. The UL for magnesium represents intake from a pharmacological agent only and does not include intake from food and water.	None.

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SOURCES: *Dietary Reference Intakes for Calcium, Phosphorous, Magnesium, Vitamin D, and Fluoride* (1997); *Dietary Reference Intakes for Thiamin, Riboflavin, Niacin, Vitamin B_6, Folate, Vitamin B_{12}, Pantothenic Acid, Biotin, and Choline* (1998); *Dietary Reference Intakes for Vitamin C, Vitamin E, Selenium, and Carotenoids* (2000); *Dietary Reference Intakes for Vitamin A, Vitamin K, Arsenic, Boron, Chromium, Copper, Iodine, Iron, Manganese, Molybdenum, Nickel, Silicon, Vanadium, and Zinc* (2001); *Dietary Reference Intakes for Energy, Carbohydrate, Fiber, Fat, Fatty Acids, Cholesterol, Protein, and Amino Acids* (2002/2005); and *Dietary Reference Intakes for Calcium and Vitamin D* (2011). These reports may be accessed via www.nap.edu.

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Nutrient	Function	Life Stage Group	RDA/AI*	UL[a]	Selected Food Sources	Adverse Effects of Excessive Consumption	Special Considerations
Manganese	Involved in the formation of bone, as well as in enzymes involved in amino acid, cholesterol, and carbohydrate metabolism.	*Infants* 0−6 mo 7−12 mo *Children* 1−3 y 4−8 y *Males* 9−13 y 14−18 y 19−30 y 31−50 y 51−70 y > 70 y *Females* 9−13 y 14−18 y 19−30 y 31−50 y 51−70 y > 70 y *Pregnancy* ≤ 18 y 19−30y 31−50 y *Lactation* ≤ 18 y 19−30y 31−50 y	 .003 mg/d* 0.6 mg/d* 1.2 mg/d* 1.5 mg/d* 1.9 mg/d* 2.2 mg/d* 2.3 mg/d* 2.3 mg/d* 2.3 mg/d* 2.3 mg/d* 1.6 mg/d* 1.6 mg/d* 1.8 mg/d* 1.8 mg/d* 1.8 mg/d* 1.8 mg/d* 2.0 mg/d* 2.0 mg/d* 2.0 mg/d* 2.6 mg/d* 2.6 mg/d* 2.6 mg/d*	 ND[b] ND 2 mg/d 3 mg/d 6 mg/d 9 mg/d 11 mg/d 11 mg/d 11 mg/d 11 mg/d 6 mg/d 9 mg/d 11 mg/d 11 mg/d 11 mg/d 11 mg/d 9 mg/d 11 mg/d 11 mg/d 9 mg/d 11 mg/d 11 mg/d	Nuts, legumes, tea, and whole grains.	Elevated blood concentration and neurotoxicity.	Because manganese in drinking water and supplements may be more bioavailable than manganese from food, caution should be taken when using manganese supplements especially among those persons already consuming large amounts of manganese from diets high in plant products. In addition, individuals with liver disease may be distinctly susceptible to the adverse effects of excess manganese intake.

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Nutrient	Function	Life Stage Group	RDA/AI*	UL[a]	Selected Food Sources	Adverse Effects of Excessive Consumption	Special Considerations
Molybdenum	Cofactor for enzymes involved in catabolism of sulfur amino acids, purines and pyridines.	*Infants* 0−6 mo 7−12 mo *Children* 1−3 y 4−8 y *Males, Females* 9−13 y 14−18 y 19−30 y 31−50 y 50−70 y > 70 y *Pregnancy* ≤ 18 y 19−30y 31−50 y *Lactation* ≤ 18 y 19−30y 31−50 y	 2 µg/d* 3 µg/d* **17 µg/d** **22 µg/d** **34 µg/d** **43 µg/d** **45 µg/d** **45 µg/d** **45 µg/d** **45 µg/d** **50 µg/d** **50 µg/d** **50 µg/d** **50 µg/d** **50 µg/d** **50 µg/d**	 ND[b] ND 300 µg/d 600 µg/d 1,100 µg/d 1,700 µg/d 2,000 µg/d 2,000 µg/d 2,000 µg/d 2,000 µg/d 1,700 µg/d 2,000 µg/d 2,000 µg/d 1,700 µg/d 2,000 µg/d 2,000 µg/d	Legumes, grain products and nuts.	Reproductive effects as observed in animal studies.	Individuals who are deficient in dietary copper intake or have some dysfunction in copper metabolism that makes them copper-deficient could be at increased risk of molybdenum toxicity.

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Nutrient	Function	Life Stage Group	RDA/AI*	UL[a]	Selected Food Sources	Adverse Effects of Excessive Consumption	Special Considerations
Nickel	No clear biological function in humans has been identified. May serve as a cofactor of metalloenzymes and facilitate iron absorption or metabolism in microorganisms.	*Infants*			Nuts, legumes, cereals, sweeteners, chocolate milk powder, chocolate candy.	Decreased body weight gain. (Note: As observed in animal studies.)	Individuals with preexisting nickel hypersensitivity (from previous dermal exposure) and kidney dysfunction are distinctly susceptible to the adverse effects of excess nickel intake.
		0−6 mo	ND[b]	ND[b]			
		7−12 mo	ND	ND			
		Children					
		1−3 y	ND	0.2 mg/d			
		4−8 y	ND	0.3 mg/d			
		Males, Females					
		9−13 y	ND	0.6 mg/d			
		14−18 y	ND	1.0 mg/d			
		19−30 y	ND	1.0 mg/d			
		31−50 y	ND	1.0 mg/d			
		50−70 y	ND	1.0 mg/d			
		> 70 y	ND	1.0 mg/d			
		Pregnancy					
		≤ 18 y	ND	1.0 mg/d			
		19−30y	ND	1.0 mg/d			
		31−50 y	ND	1.0 mg/d			
		Lactation					
		≤ 18 y	ND	1.0 mg/d			
		19−30y	ND	1.0 mg/d			
		31−50 y	ND	1.0 mg/d			

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Nutrient	Function	Life Stage Group	RDA/AI*	UL[a]	Selected Food Sources	Adverse Effects of Excessive Consumption	Special Considerations
Phosphorus	Maintenance of pH, storage and transfer of energy and nucleotide synthesis.	*Infants*			Milk, yogurt, ice cream, cheese, peas, meat, eggs, some cereals and breads.	Metastatic calcification, skeletal porosity, interference with calcium absorption.	Athletes and others with high energy expenditure frequently consume amounts from food greater than the UL without apparent effect.
		0−6 mo	100 mg/d*	ND[b]			
		7−12 mo	275 mg/d*	ND			
		Children					
		1−3 y	**460 mg/d**	3,000 mg/d			
		4−8 y	**500 mg/d**	3,000 mg/d			
		Males, Females					
		9−13 y	**1,250 mg/d**	4,000 mg/d			
		14−18 y	**1,250 mg/d**	4,000 mg/d			
		19−30 y	**700 mg/d**	4,000 mg/d			
		31−50 y	**700 mg/d**	4,000 mg/d			
		50−70 y	**700 mg/d**	4,000 mg/d			
		> 70 y	**700 mg/d**	3,000 mg/d			
		Pregnancy					
		≤ 18 y	**1,250 mg/d**	3,500 mg/d			
		19−30y	**700 mg/d**	3,500 mg/d			
		31−50 y	**700 mg/d**	3,500 mg/d			
		Lactation					
		≤ 18 y	**1,250 mg/d**	4,000 mg/d			
		19−30y	**700 mg/d**	4,000 mg/d			
		31−50 y	**700 mg/d**	4,000 mg/d			

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Nutrient	Function	Life Stage Group	RDA/AI*	UL[a]	Selected Food Sources	Adverse Effects of Excessive Consumption	Special Considerations
Selenium	Defense against oxidative stress and regulation of thyroid hormone action, and the reduction and oxidation status of vitamin C and other molecules.	*Infants* 0−6 mo 7−12 mo *Children* 1−3 y 4−8 y *Males, Females* 9−13 y 14−18 y 19−30 y 31−50 y 50−70 y > 70 y *Pregnancy* ≤ 18 y 19−30y 31−50 y *Lactation* ≤ 18 y 19−30y 31−50 y	 15 µg/d* 20 µg/d* **20 µg/d** **30 µg/d** **40 µg/d** **55 µg/d** **55 µg/d** **55 µg/d** **55 µg/d** **55 µg/d** **60 µg/d** **60 µg/d** **60 µg/d** **70 µg/d** **70 µg/d** **70 µg/d**	 45 µg/d 60 µg/d 90 µg/d 150 µg/d 280 µg/d 400 µg/d 400 µg/d 400 µg/d 400 µg/d 400 µg/d 400 µg/d 400 µg/d 400 µg/d 400 µg/d 400 µg/d 400 µg/d	Organ meats, seafood, plants (depending on soil selenium content).	Hair and nail brittleness and loss.	None.

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Nutrient	Function	Life Stage Group	RDA/AI*	UL[a]	Selected Food Sources	Adverse Effects of Excessive Consumption	Special Considerations
Silicon	No biological function in humans has been identified. Involved in bone function in animal studies.	*Infants*			Plant-based foods.	There is no evidence that silicon that occurs naturally in food and water produces adverse health effects.	None.
		0−6 mo	ND[b]	ND[b]			
		7−12 mo	ND	ND			
		Children					
		1−3 y	ND	ND			
		4−8 y	ND	ND			
		Males, Females					
		9−13 y	ND	ND			
		14−18 y	ND	ND			
		19−30 y	ND	ND			
		31−50 y	ND	ND			
		50−70 y	ND	ND			
		> 70 y	ND	ND			
		Pregnancy					
		≤ 18 y	ND	ND			
		19−30y	ND	ND			
		31−50 y	ND	ND			
		Lactation					
		≤ 18 y	ND	ND			
		19−30y	ND	ND			
		31−50 y	ND	ND			

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Vanadium	No biological function in humans has been identified.	*Infants*			Mushrooms, shellfish, black pepper, parsley, and dill seed.	Renal lesions as observed in animal studies.	None.
		0−6 mo	ND[b]	ND[b]			
		7−12 mo	ND	ND			
		Children					
		1−3 y	ND	ND			
		4−8 y	ND	ND			
		Males, Females					
		9−13 y	ND	ND			
		14−18 y	ND	ND			
		19−30 y	ND	1.8 mg/d			
		31−50 y	ND	1.8 mg/d			
		50−70 y	ND	1.8 mg/d			
		> 70 y	ND	1.8 mg/d			
		Pregnancy					
		≤ 18 y	ND	ND			
		19−30y	ND	ND			
		31−50 y	ND	ND			
		Lactation					
		≤ 18 y	ND	ND			
		19−30y	ND	ND			
		31−50 y	ND	ND			

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Zinc	Component of multiple enzymes and proteins; involved in the regulation of gene expression.	*Infants*			Fortified cereals, red meats, certain seafood.	Reduced copper status.	Zinc absorption is lower for those consuming vegetarian diets than for those eating nonvegetarian diets. Therefore, it has been suggested that the zinc requirement for those consuming a vegetarian diet is approximately 2-fold greater than for those consuming a nonvegetarian diet.
		0–6 mo	2 mg/d*	4 mg/d			
		7–12 mo	**3 mg/d**	5 mg/d			
		Children					
		1–3 y	**3 mg/d**	7 mg/d			
		4–8 y	**5 mg/d**	12 mg/d			
		Males					
		9–13 y	**8 mg/d**	23 mg/d			
		14–18 y	**11 mg/d**	34 mg/d			
		19–30 y	**11 mg/d**	40 mg/d			
		31–50 y	**11 mg/d**	40 mg/d			
		51–70 y	**11 mg/d**	40 mg/d			
		> 70 y	**11 mg/d**	40 mg/d			
		Females					
		9–13 y	**8 mg/d**	23 mg/d			
		14–18 y	**9 mg/d**	34 mg/d			
		19–30 y	**8 mg/d**	40 mg/d			
		31–50 y	**8 mg/d**	40 mg/d			
		51–70 y	**8 mg/d**	40 mg/d			
		> 70 y	**8 mg/d**	40 mg/d			
		Pregnancy					
		≤ 18 y	**12 mg/d**	34 mg/d			
		19–30y	**11 mg/d**	40 mg/d			
		31–50 y	**11 mg/d**	40 mg/d			
		Lactation					
		≤ 18 y	**13 mg/d**	34 mg/d			
		19–30y	**12 mg/d**	40 mg/d			
		31–50 y	**12 mg/d**	40 mg/d			

NOTE: The table is adapted from the DRI reports, see www.nap.edu. It represents Recommended Dietary Allowances (RDAs) in **bold type**, Adequate Intakes (AIs) in ordinary type followed by an asterisk (*), and Tolerable Upper Intake Levels (ULs)[a]. RDAs and AIs may both be used as goals for individual intake. RDAs are set to meet the needs of almost all (97 to 98 percent) individuals in a group. For healthy breastfed infants, the AI is the mean intake. The AI for other life stage and gender groups is believed to cover the needs of all individuals in the group, but lack of data prevent being able to specify with confidence the percentage of individuals covered by this intake.

[a]UL = The maximum level of daily nutrient intake that is likely to pose no risk of adverse effects. Unless otherwise specified, the UL represents total intake from food, water, and supplements. Due to lack of suitable data, ULs could not be established for vitamin K, thiamin, riboflavin, vitamin B12, pantothenic acid, biotin, or carotenoids. In the absence of ULs, extra caution may be warranted in consuming levels above recommended intakes.

[b]ND = Not determinable due to lack of data of adverse effects in this age group and concern with regard to lack of ability to handle excess amounts. Source of intake should be from food only to prevent high levels of intake.

SOURCES: *Dietary Reference Intakes for Calcium, Phosphorous, Magnesium, Vitamin D, and Fluoride* (1997); *Dietary Reference Intakes for Thiamin, Riboflavin, Niacin, Vitamin B_6, Folate, Vitamin B_{12}, Pantothenic Acid, Biotin, and Choline* (1998); *Dietary Reference Intakes for Vitamin C, Vitamin E, Selenium, and Carotenoids* (2000); *Dietary Reference Intakes for Vitamin A, Vitamin K, Arsenic, Boron, Chromium, Copper, Iodine, Iron, Manganese, Molybdenum, Nickel, Silicon, Vanadium, and Zinc* (2001); *Dietary Reference Intakes for Energy, Carbohydrate, Fiber, Fat, Fatty Acids, Cholesterol, Protein, and Amino Acids* (2002/2005); and *Dietary Reference Intakes for Calcium and Vitamin D* (2011). These reports may be accessed via www.nap.edu.