

RECOMMENDED DAILY INTAKES FOR MACRONUTRIENTS

UK Recommended Daily Amounts

Reference Nutrient Intakes for Vitamins

Age	Thiamin mg/d	Riboflavin mg/d	Niacin mg/d	Vitamin B6 mg/d	Vitamin B12 mg/d	Folate mg/d	Vitamin C mg/d	Vitamin A mg/d	Vitamin D mg/d
Infants									
0-3 months	0.2	0.4	3	0.2	0.3	50	25	350	8.5-10***
4-6 months	0.2	0.4	3	0.2	0.3	50	25	350	8.5-10***
7-9 months	0.2	0.4	4	0.3	0.4	50	25	350	8.5-10***
10-12 months	0.3	0.4	5	0.4	0.4	50	25	350	8.5-10***
Children									
1-3 years	0.5	0.6	8	0.7	0.5	70	30	400	10
4-6 years	0.7	0.8	11	0.9	0.8	100	30	400	10
7-10 years	0.7	1.0	12	1.0	1.0	150	30	500	10
Males									
11-14 years	0.9	1.2	15	1.2	1.2	200	35	600	10
15-18 years	1.1	1.3	18	1.5	1.5	200	40	700	10
19-50 years	1.0	1.3	17	1.4	1.5	200	40	700	10
50+ years	0.9	1.3	16	1.4	1.5	200	40	700	10
Females									
11-14 years	0.7	1.1	12	1.0	1.2	200	35	600	10
15-18 years	0.8	1.1	14	1.2	1.5	200	40	600	10
19-50 years	0.8	1.1	13	1.2	1.5	200	40	600	10
50+ years	0.8	1.1	12	1.2	1.5	200	40	600	10
Pregnancy	+ 0.1**	+ 0.3	*	*	*	+ 100	+ 10**	+ 100	10
Lactation									
0-4 months	+ 0.2	+ 0.5	+ 2	*	+ 0.5	+ 60	+ 30	+ 350	10
4+ months	+ 0.2	+ 0.5	+ 2	*	+ 0.5	+ 60	+ 30	+ 350	10

US Dietary Reference Intakes (DRIs)

Recommended Dietary Allowances and Adequate Intakes, Elements

Life stage group	Calcium mg/d	Chromium µg/d	Copper µg/d	Fluoride mg/d	Iodine µg/d	Iron mg/d	Magnesium mg/d	Manganese mg/d	Molybdenum µg/d	Phosphorus mg/d	Selenium µg/d	Zink mg/d	Potassium g/d	Sodium g/d	Chloride g/d
Infants															
0-6 mo	200*	0.2*	200*	0.01*	110*	0.27*	30*	0.003*	2*	100*	15*	2*	0.4*	0.12*	0.18*
6-12 mo	260*	5.5*	220*	0.5*	130*	11*	75*	0.6*	3*	275*	20*	3*	0.7*	0.37*	0.57*
Children															
1-3 y	700	11*	340	0.7*	90	7	80	1.2*	17	460	20	3	3.0*	1.0*	1.5*
4-8 y	1,000*	15*	440	1*	90	10	130	1.5*	22	500	30	5	3.8	1.2*	1.9*
Men															
9-13 y	1,300	25*	700	2*	120	8	240	1.9*	34	1,250	40	8	4.5*	1.5*	2.3*
14-18 y	1,300	35*	890	3*	150	11	410	2.2*	43	1,250	55	11	4.7*	1.5*	2.3*
19-30 y	1,000	35*	900	4*	150	8	400	2.3*	45	700	55	11	4.7*	1.5*	2.3*
31-50 y	1,000	35*	900	4*	150	8	420	2.3*	45	700	55	11	4.7*	1.5*	2.3*
51-70 y	1,000	30*	900	4*	150	8	420	2.3*	45	700	55	11	4.7*	1.3*	2.0*
70+ y	1,200	30*	900	4*	150	8	420	2.3*	45	700	55	11	4.7*	1.2*	1.8*
Women															
9-13 y	1,300	21*	700	2*	120	8	240	1.6*	34	1,250	40	8	4.5*	1.5*	2.3*
14-18 y	1,300	24*	890	3*	150	15	360	1.6*	43	1,250	55	9	4.7*	1.5*	2.3*

Life stage group	Calcium mg/d	Chromium µg/d	Copper µg/d	Fluoride mg/d	Iodine µg/d	Iron mg/d	Magnesium mg/d	Manganese mg/d	Molybdenum µg/d	Phosphorus mg/d	Selenium µg/d	Zink mg/d	Potassium g/d	Sodium g/d	Chloride g/d
19-30 y	1,000	25*	900	3*	150	18	310	1.8*	45	700	55	8	4.7*	1.5*	2.3*
31-50 y	1,000	25*	900	3*	150	18	320	1.8*	45	700	55	8	4.7*	1.5*	2.3*
51-70 y	1,200	20*	900	3*	150	8	320	1.8*	45	700	55	8	4.7*	1.3*	2.0*
70+ y	1,200	20*	900	3*	150	8	320	1.8*	45	700	55	8	4.7*	1.2*	1.8*
Pregnancy															
14-18 y	1,300	29*	1,000	3*	220	27	400	2.0*	50	1,250	60	12	4.7*	1.5*	2.3*
19-30 y	1,000	30*	1,000	3*	220	27	350	2.0*	50	700	60	11	4.7*	1.5*	2.3*
31-50 y	1,000	30*	1,000	3*	220	27	360	2.0*	50	700	60	11	4.7*	1.5*	2.3*
Lactation															
14-18 y	1,300	44*	1,300	3*	290	10	360	2.6*	50	1,250	70	13	5.1*	1.5*	2.3*
19-30 y	1,000	45*	1,300	3*	290	9	310	2.6*	50	700	70	12	5.1*	1.5*	2.3*
31-50 y	1,000	45*	1,300	3*	290	9	320	2.6*	50	700	70	12	5.1*	1.5*	2.3*

NOTE: This table (taken from the DRI reports, see www.nap.edu) presents Recommended Dietary Allowances (RDAs) in bold type and Adequate Intakes (AIs) in ordinary type followed by an asterisk (*). An RDA is the average daily dietary intake level sufficient to meet the nutrient requirements of nearly all (97–98 percent) healthy individuals in a group. It is calculated from an Estimated Average Requirement (EAR). If sufficient scientific evidence is not available to establish an EAR, and thus calculate an RDA, an AI is usually developed. For healthy breast-fed infants, an AI is the mean intake. The AI for other life stage and gender groups is believed to cover the needs of all healthy individuals in the groups, but lack of data or uncertainty in the data prevent being able to specify with confidence the percentage of individuals covered by this intake.

SOURCES: Dietary Reference Intakes for Calcium, Phosphorous, Magnesium, Vitamin D, and Fluoride (1997); Dietary Reference Intakes for Thiamin, Riboflavin, Niacin, Vitamin B6, Folate, Vitamin B12, 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 Water, Potassium, Sodium, Chloride, and Sulfate (2005); and Dietary Reference Intakes for Calcium and Vitamin D (2011). These reports may be accessed via www.nap.edu.

US Dietary Reference Intakes (DRIs)

Recommended Dietary Allowances and Adequate Intakes, Vitamins

Life Stage Group	Vitamin A µg/d *a	Vitamin C mg/d	Vitamin D mg/d *b,c	Vitamin E mg/d *d	Vitamin K µg/d	Thiamin mg/d	Riboflavin mg/d	Niacin mg/d *e	Vitamin B6 mg/d	Folate µg/d *f	Vitamin B12 µg/d	Pantothenic Acid mg/d	Biotin µg/d	Choline mg/d *g
Infants														
0-6 mo	400*	40*	10*	4*	2.0*	0.2*	0.3*	2*	0.1*	65*	0.4*	1.7*	5*	125*
6-12 mo	500*	50*	10*	5*	2.5*	0.3*	0.4*	4*	0.3*	80*	0.5*	1.8*	6*	150*
Children														
1-3 y	300	15	15	6	30*	0.5	0.5	6	0.5	150	0.9	2*	8*	200*
4-8 y	400	25	15	7	55*	0.6	0.6	8	0.6	200	1.2	3*	12*	250*
Men														
9-13 y	600	45	15	11	60*	0.9	0.9	12	1.0	300	1.8	4*	20*	375
14-18 y	900	75	15	15	75*	1.2	1.3	16	1.3	400	2.4	5*	25*	550*
19-30 y	900	90	15	15	120*	1.2	1.3	16	1.3	400	2.4	5*	30*	550*
31-50 y	900	90	15	15	120*	1.2	1.3	16	1.3	400	2.4	5*	30*	550*
51-70 y	900	90	15	15	120*	1.2	1.3	16	1.7	400	2.4*h	5*	30*	550*
70+ y	900	90	20	15	120*	1.2	1.3	16	1.7	400	2.4*h	5*	30*	550*
Women														
9-13 y	600	45	15	11	60*	0.9	0.9	12	1.0	300	1.8	4*	20*	375*
14-18 y	700	65	15	15	75*	1.0	1.0	14	1.2	400*i	2.4	5*	25*	400*

Life Stage Group	Vitamin A µg/d *a	Vitamin C mg/d	Vitamin D mg/d *b,c	Vitamin E mg/d *d	Vitamin K µg/d	Thiamin mg/d	Riboflavin mg/d	Niacin mg/d *e	Vitamin B6 mg/d	Folate µg/d *f	Vitamin B12 µg/d	Pantothenic Acid mg/d	Biotin µg/d	Choline mg/d *g
19-30 y	700	75	15	15	90*	1.1	1.1	14	1.3	400*i	2.4	5*	30*	425*
31-50 y	700	75	15	15	90*	1.1	1.1	14	1.3	400*i	2.4	5*	30*	425*
51-70 y	700	75	15	15	90*	1.1	1.1	14	1.5	400	2.4*h	5*	30*	425*
70+ y	700	75	20	15	90*	1.1	1.1	14	1.5	400	2.4*h	5*	30*	425*
Pregnancy														
14-18 y	750	80	15	15	75*	1.4	1.4	18	1.9	600*j	2.6	6*	30*	450*
19-30 y	770	85	15	15	90*	1.4	1.4	18	1.9	600*j	2.6	6*	30*	450*
31-50 y	770	85	15	15	90*	1.4	1.4	18	1.9	600*j	2.6	6*	30*	450*
Lactation														
14-18 y	1,200	115	15	19	75*	1.4	1.6	17	2.0	500	2.8	7*	35*	550*
19-30 y	1,300	120	15	19	90*	1.4	1.6	17	2.0	500	2.8	7*	35*	550*
31-50 y	1,300	120	15	19	90*	1.4	1.6	17	2.0	500	2.8	7*	35*	550*

NOTE: This table (taken from the DRI reports, see www.nap.edu) presents Recommended Dietary Allowances (RDAs) in bold type and Adequate Intakes (AIs) in ordinary type followed by an asterisk (*). An RDA is the average daily dietary intake level sufficient to meet the nutrient requirements of nearly all (97–98 percent) healthy individuals in a group. It is calculated from an Estimated Average Requirement (EAR). If sufficient scientific evidence is not available to establish an EAR, and thus calculate an RDA, an AI is usually developed. For healthy breast-fed infants, an AI is the mean intake. The AI for other life stage and gender groups is believed to cover the needs of all healthy individuals in the groups, but lack of data or uncertainty in the data prevent being able to specify with confidence the percentage of individuals covered by this intake.

- As retinol activity equivalents (RAEs). 1 RAE = 1 µg retinol, 12 µg B-carotene, 24 µg a-carotene, or 24 µg B-cryptoxanthin. The RAE for dietary provitamin A carotenoids is two-fold greater than retinol equivalents (REs), whereas the RAE for preformed vitamin A is the same as RE.
- As cholecalciferol. 1 µg cholecalciferol = 40 IU vitamin D.
- Under the assumption of minimal sunlight.

- d. As a-tocopherol. a-tocopherol includes RRR-a-tocopherol, the only form of a-tocopherol that occurs naturally in foods, and the 2R-stereoisomeric forms of a-tocopherol (RRR-, RSR-, RRS-, and RSS-a-tocopherol) that occur in fortified foods and supplements. It does not include the 2S-stereoisomeric forms of a-tocopherol (SRR-, SSR-, SRS-, and SSS-a-tocopherol), also found in fortified foods and supplements.
- e. As niacin equivalents (NE). 1 mg of niacin = 60 mg of tryptophan; 0–6 months = preformed niacin (not NE).
- f. As dietary folate equivalents (DFE). 1 DFE = 1 µg food folate = 0.6 µg of folic acid from fortified food or as a supplement consumed with food = 0.5 µg of a supplement taken on an empty stomach.
- g. Although AIs have been set for choline, there are few data to assess whether a dietary supply of choline is needed at all stages of the life cycle, and it may be that the choline requirement can be met by endogenous synthesis at some of these stages.
- h. Because 10 to 30 percent of older people may malabsorb food-bound B12, it is advisable for those older than 50 years to meet their RDA mainly by consuming foods fortified with B12 or a supplement containing B12.
- i. In view of evidence linking folate intake with neural tube defects in the fetus, it is recommended that all women capable of becoming pregnant consume 400 µg from supplements or fortified foods in addition to intake of food folate from a varied diet.
- j. It is assumed that women will continue consuming 400 µg from supplements or fortified food until their pregnancy is confirmed and they enter prenatal care, which ordinarily occurs after the end of the periconceptional period—the critical time for formation of the neural tube.

SOURCES: Dietary Reference Intakes for Calcium, Phosphorous, Magnesium, Vitamin D, and Fluoride (1997); Dietary Reference Intakes for Thiamin, Riboflavin, Niacin, Vitamin B6, Folate, Vitamin B12, 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 Water, Potassium, Sodium, Chloride, and Sulfate (2005); and Dietary Reference Intakes for Calcium and Vitamin D (2011). These reports may be accessed via www.nap.edu.

B COMPLEX VITAMINS

B Vitamin	Type	Main Functions	Best Sources
B1	Thiamin	<ul style="list-style-type: none"> Nervous sytem function synthesis of DNA Converts protein, carbs & fat from food into energy 	<ul style="list-style-type: none"> Grains: cereal, Wheat, rice, oats Spirulina Beans & lentils Flaxseed, other seeds, nuts Animal products: Milk, pork, beef
B2	Riboflavin	<ul style="list-style-type: none"> Converts protein, carbs & fat from food into energy Skin health Eye health 	<ul style="list-style-type: none"> Animal products: milk, dairy products, eggs, fish, liver Green leafy veggies Grains: cereal, whole grains
B3	Niacin	<ul style="list-style-type: none"> Converts protein, carbs & fat from food into energy Fatty acid synthesis Improves cholesterol 	<ul style="list-style-type: none"> Yeast Animal products: meat, fish, milk, dairy, eggs, poultry Seeds Green vegetables Beans Cereal grains Nuts
B5	Pantothenic Acid	<ul style="list-style-type: none"> Converts protein, carbs & fat from food into energy Production of red blood cells Healthy digestion Hormone production 	<ul style="list-style-type: none"> Animal products: meat, fish Vegetables Unprocessed grains
B6	Pyroxidine	<ul style="list-style-type: none"> Protein & amino acid metabolism Release of stored glucose Hormone production Brain function 	<ul style="list-style-type: none"> Animal products: liver, meat, fish, poultry Wheat germ Bananas Beans & legumes Cereal
B7	Biotin	<ul style="list-style-type: none"> Converts protein into energy Carb metabolism Fat synthesis Hair and nail health 	<ul style="list-style-type: none"> Animal products: eggs, nuts, butter Beans, Whole grains Cauliflower, mushrooms Bananas
B9	Folic Acid	<ul style="list-style-type: none"> Protein & amino acid metabolism DNA synthesis 	<ul style="list-style-type: none"> Grains, bread, cereal Vegetables Beans

B Vitamin	Type	Main Functions	Best Sources
		<ul style="list-style-type: none"> Formation of red blood cells 	<ul style="list-style-type: none"> Oranges & bananas
B12	Cobalamin	<ul style="list-style-type: none"> Food metabolism Energy production DNA synthesis Formation of red blood cells Brain & nervous system function 	<ul style="list-style-type: none"> Animal products: liver, dairy, fish & shellfish, salmon, sardines

VITAMINS – FUNCTIONS & DEFICIENCIES

Vitamin	Type	Functions	Where to find?	Deficiencies
Vitamin A	Fat soluble	<ul style="list-style-type: none"> Good vision Cell replication Immunity 	<ul style="list-style-type: none"> Eggs Beef Prawns Liver Animal based foods 	<ul style="list-style-type: none"> Poor vision Low immune function
Vitamin B complex	8 water soluble vitamins	<ul style="list-style-type: none"> Supporting the release of energy from food Maintenance of muscle & nervous structure and function Synthesis of red blood cells & neurotransmitters 	<ul style="list-style-type: none"> Found in most whole/unprocessed foods both animal & veg B12 can only be found in animal products 	<ul style="list-style-type: none"> Anaemia Weakness Depression Skin problems Mouth problems Nerve damage
Vitamin C	Fat soluble	<ul style="list-style-type: none"> Collagen synthesis Antioxidant role in the body 	<ul style="list-style-type: none"> Citrus fruit Green veg – broccoli + kale 	<ul style="list-style-type: none"> Scurvy
Vitamin D	Water soluble	<ul style="list-style-type: none"> Control calcium levels for healthy bones & muscles Regulates cell division & immune function 	<ul style="list-style-type: none"> Animal sources: eggs, oily fish, beef Dairy: cheese Fortified cereals 	<ul style="list-style-type: none"> Softening of bones Problems with immunity Increased risk of diseases

Vitamin	Type	Functions	Where to find?	Deficiencies
Vitamin E	Fat soluble	<ul style="list-style-type: none"> Antioxidant function, protecting the body from free radical damage 	<ul style="list-style-type: none"> Vegetable oils Nut oils Green leafy vegetables 	<ul style="list-style-type: none"> Problems with nervous system Problems with vision
Vitamin K	Fat soluble	<ul style="list-style-type: none"> Supports blood clotting 	<ul style="list-style-type: none"> Broccoli, kale, green lettuce Cauliflower Parsley Chard Liver White cheese Fermented soya 	<ul style="list-style-type: none"> Lack of blood clotting Easy bruising

MAJOR MINERALS

Major Mineral	Functions	Where to find?	Deficiencies
Calcium	<ul style="list-style-type: none"> Bone formation Muscle contraction 	<ul style="list-style-type: none"> Dairy products Dark green veg Legumes 	<ul style="list-style-type: none"> Retarded growth Loss of bone mass
Phosphorus	<ul style="list-style-type: none"> Bone synthesis DNA synthesis 	<ul style="list-style-type: none"> Dairy products Meats Grains 	<ul style="list-style-type: none"> Weakness Loss of minerals from bone Calcium loss
Sodium	<ul style="list-style-type: none"> Acid base balance Water balance Nerve function 	<ul style="list-style-type: none"> Table salt 	<ul style="list-style-type: none"> Muscle cramps Reduced appetite
Potassium	<ul style="list-style-type: none"> Acid base balance Nerve function Gastric juice formation Osmotic balance 	<ul style="list-style-type: none"> Meat & dairy Fruits & veg Grains 	<ul style="list-style-type: none"> Muscular weakness Paralysis Nausea Heart failure
Chlorine	<ul style="list-style-type: none"> Acid base balance Nerve function Gastric juice formation Osmotic balance 	<ul style="list-style-type: none"> Table salt 	<ul style="list-style-type: none"> Muscle cramps Reduced appetite
Sulphur	<ul style="list-style-type: none"> Hormone & antibody synthesis Creation of new proteins 	<ul style="list-style-type: none"> Protein (animal & veg) 	<ul style="list-style-type: none"> Protein deficiency symptoms
Magnesium	<ul style="list-style-type: none"> Regulating blood glucose, nerve & muscle function Blood pressure 	<ul style="list-style-type: none"> Whole grains Green leafy veg 	<ul style="list-style-type: none"> Nervous system imbalance

TRACE MINERALS

Trace Mineral	Functions	Where to find?	Deficiencies
Iron	<ul style="list-style-type: none"> • Red blood synthesis • Oxygen carriage • Release of energy from food 	<ul style="list-style-type: none"> • Meats, eggs • Legumes, grains • Green leafy veg 	<ul style="list-style-type: none"> • Anemia • Weakness • Low immunity
Zinc	<ul style="list-style-type: none"> • Enzyme function • Strong immune system 	<ul style="list-style-type: none"> • Meat • Seafood • Grains 	<ul style="list-style-type: none"> • Growth failure • Impaired immunity • Skin inflammation
Copper	<ul style="list-style-type: none"> • Red blood cell synthesis • Bone development • Nerve tissue maintenance 	<ul style="list-style-type: none"> • Seafood • Nuts • Legumes • Organ meats 	<ul style="list-style-type: none"> • Anemia • Bone & cardio changes
Iodine	<ul style="list-style-type: none"> • Thyroid hormone synthesis • Regulating metabolic rate 	<ul style="list-style-type: none"> • Seafood • Dairy • Iodized salt 	<ul style="list-style-type: none"> • Goiter (enlarged thyroid)
Selenium	<ul style="list-style-type: none"> • Enzyme reactions • Anti-oxidant functions • Vital for health of the liver & immune function 	<ul style="list-style-type: none"> • Seafood • Meats • Whole grains 	<ul style="list-style-type: none"> • Muscle pain • Muscle deterioration
Chromium	<ul style="list-style-type: none"> • Helps to regulate glucose by aiding insulin 	<ul style="list-style-type: none"> • Brewer's yeast • Meat & liver • Seafood • Veg 	<ul style="list-style-type: none"> • Impaired glucose metabolism
Manganese	<ul style="list-style-type: none"> • Activates enzymes • Building fatty acids • Detoxifies ammonia in the body 	<ul style="list-style-type: none"> • Grains • Nuts • Leafy vegetables • Teas 	<ul style="list-style-type: none"> • Inhibited production of collagen