

**Dietary Reference Intakes
Reference Values for Elements**

	Arsenic ¹⁶		Boron		Calcium ^{**}			Chromium		Copper			Fluoride		Iodine		
Unit	N/A		mg/day		mg/day			µg/day		µg/day			mg/day		µg/day		
	AI	UL ¹⁷	AI	UL	EAR	RDA/AI	UL	AI	UL ¹⁷	EAR	RDA/AI	UL	AI	UL	EAR	RDA/AI	UL
Infants																	
0-6 mo	ND	ND	ND	ND	<i>ND</i>	200*	1000	0.2*	ND	<i>ND</i>	200*	ND	0.01*	0.7	<i>ND</i>	110*	ND
7-12 mo	ND	ND	ND	ND	<i>ND</i>	260*	1500	5.5*	ND	<i>ND</i>	220*	ND	0.5*	0.9	<i>ND</i>	130*	ND
Children																	
1-3 y	ND	ND	ND	3	<i>500</i>	700	2500	11*	ND	260	340	1000	0.7*	1.3	65	90	200
4-8 y	ND	ND	ND	6	<i>800</i>	1000	2500	15*	ND	340	440	3000	1*	2.2	65	90	300
Males																	
9-13 y	ND	ND	ND	11	<i>1100</i>	1300	3000	25*	ND	540	700	5000	2*	10	73	120	600
14-18 y	ND	ND	ND	17	<i>1100</i>	1300	3000	35*	ND	685	890	8000	3*	10	95	150	900
19-30 y	ND	ND	ND	20	<i>800</i>	1000	2500	35*	ND	700	900	10000	4*	10	95	150	1100
31-50 y	ND	ND	ND	20	<i>800</i>	1000	2500	35*	ND	700	900	10000	4*	10	95	150	1100
51-70 y	ND	ND	ND	20	<i>800</i>	1000	2000	30*	ND	700	900	10000	4*	10	95	150	1100
>70 y	ND	ND	ND	20	<i>1000</i>	1200	2000	30*	ND	700	900	10000	4*	10	95	150	1100
Females																	
9-13 y	ND	ND	ND	11	<i>1100</i>	1300	3000	21*	ND	540	700	5000	2*	10	73	120	600
14-18 y	ND	ND	ND	17	<i>1100</i>	1300	3000	24*	ND	685	890	8000	3*	10	95	150	900
19-30 y	ND	ND	ND	20	<i>800</i>	1000	2500	25*	ND	700	900	10000	3*	10	95	150	1100
31-50 y	ND	ND	ND	20	<i>800</i>	1000	2500	25*	ND	700	900	10000	3*	10	95	150	1100
51-70 y	ND	ND	ND	20	<i>1000</i>	1200	2000	20*	ND	700	900	10000	3*	10	95	150	1100
>70 y	ND	ND	ND	20	<i>1000</i>	1200	2000	20*	ND	700	900	10000	3*	10	95	150	1100
Pregnancy																	
≤ 18 y	ND	ND	ND	17	<i>1100</i>	1300	3000	29*	ND	785	1000	8000	3*	10	160	220	900
19-30 y	ND	ND	ND	20	<i>800</i>	1000	2500	30*	ND	800	1000	10000	3*	10	160	220	1100
31-50 y	ND	ND	ND	20	<i>800</i>	1000	2500	30*	ND	800	1000	10000	3*	10	160	220	1100
Lactation																	
≤ 18 y	ND	ND	ND	17	<i>1100</i>	1300	3000	44*	ND	985	1300	8000	3*	10	209	290	900
19-30 y	ND	ND	ND	20	<i>800</i>	1000	2500	45*	ND	1000	1300	10000	3*	10	209	290	1100
31-50 y	ND	ND	ND	20	<i>800</i>	1000	2500	45*	ND	1000	1300	10000	3*	10	209	290	1100

This table presents *Estimated Average Requirements (EARs) in italics, Recommended Dietary Allowances (RDAs) in bold type* and Adequate Intakes (AIs) in ordinary type followed by an asterisk (*). Tolerable Upper Intake Levels (ULs) are in shaded columns.

** New 2010 values have replaced previous 1997 values.

¹⁶ Although a UL was not determined for arsenic, there is no justification for adding arsenic to food or supplements.

¹⁷ Due to lack of suitable data, ULs could not be established for arsenic and chromium. This does not mean that there is no potential for adverse effects resulting from high intakes.

NOTE: These are reference values for normal, apparently healthy individuals eating a typical mixed North American diet. An individual may have physiological, health, or lifestyle characteristics that may require tailoring of specific nutrient values.

Table from: Dietary Reference Intakes for US and Canada:

https://www.canada.ca/content/dam/hc-sc/migration/hc-sc/fn-an/alt_formats/hpfb-dgpsa/pdf/nutrition/dri_tables-eng.pdf

**Dietary Reference Intakes
Reference Values for Elements**

Unit	Iron ¹⁸			Magnesium			Manganese		Molybdenum			Nickel		Phosphorus		
	mg/day			mg/day			mg/day		µg/day			mg/day		mg/day		
	EAR	RDA/AI	UL	EAR	RDA/AI	UL ¹⁹	AI	UL	EAR	RDA/AI	UL	AI	UL	EAR	RDA/AI	UL
Infants																
0-6 mo	<i>ND</i>	0.27*	40	<i>ND</i>	30*	ND	0.003*	ND	<i>ND</i>	2*	ND	ND	ND	<i>ND</i>	100*	ND
7-12 mo	6.9	11	40	<i>ND</i>	75*	ND	0.6*	ND	<i>ND</i>	3*	ND	ND	ND	<i>ND</i>	275*	ND
Children																
1-3 y	3.0	7	40	65	80	65	1.2*	2	13	17	300	ND	0.2	380	460	3000
4-8 y	4.1	10	40	110	130	110	1.5*	3	17	22	600	ND	0.3	405	500	3000
Males																
9-13 y	5.9	8	40	200	240	350	1.9*	6	26	34	1100	ND	0.6	1055	1250	4000
14-18 y	7.7	11	45	340	410	350	2.2*	9	33	43	1700	ND	1.0	1055	1250	4000
19-30 y	6	8	45	330	400	350	2.3*	11	34	45	2000	ND	1.0	580	700	4000
31-50 y	6	8	45	350	420	350	2.3*	11	34	45	2000	ND	1.0	580	700	4000
51-70 y	6	8	45	350	420	350	2.3*	11	34	45	2000	ND	1.0	580	700	4000
>70 y	6	8	45	350	420	350	2.3*	11	34	45	2000	ND	1.0	580	700	3000
Females																
9-13 y	5.7 ^e	8^e	40	200	240	350	1.6*	6	26	34	1100	ND	0.6	1055	1250	4000
14-18 y	7.9 ^e	15^e	45	300	360	350	1.6*	9	33	43	1700	ND	1.0	1055	1250	4000
19-30 y	8.1 ^e	18^e	45	255	310	350	1.8*	11	34	45	2000	ND	1.0	580	700	4000
31-50 y	8.1 ^e	18^e	45	265	320	350	1.8*	11	34	45	2000	ND	1.0	580	700	4000
51-70 y	5 ^e	8^e	45	265	320	350	1.8*	11	34	45	2000	ND	1.0	580	700	4000
>70 y	5 ^e	8^e	45	265	320	350	1.8*	11	34	45	2000	ND	1.0	580	700	3000
Pregnancy																
<18 y	23	27	45	335	400	350	2.0*	9	40	50	1700	ND	1.0	1055	1250	3500
19-30 y	22	27	45	290	350	350	2.0*	11	40	50	2000	ND	1.0	580	700	3500
31-50 y	22	27	45	300	360	350	2.0*	11	40	50	2000	ND	1.0	580	700	3500
Lactation																
<18 y	7	10	45	300	360	350	2.6*	9	35	50	1700	ND	1.0	1055	1250	4000
19-30 y	6.5	9	45	255	310	350	2.6*	11	36	50	2000	ND	1.0	580	700	4000
31-50 y	6.5	9	45	265	320	350	2.6*	11	36	50	2000	ND	1.0	580	700	4000

This table presents *Estimated Average Requirements (EARs) in italics, Recommended Dietary Allowances (RDAs) in bold type* and Adequate Intakes (AIs) in ordinary type followed by an asterisk (*). Tolerable Upper Intake Levels (ULs) are in shaded columns.

¹⁸ The requirement for iron is 1.8 times higher for vegetarians due to the lower bioavailability of iron from a vegetarian diet.

¹⁹ The UL for magnesium represents intake from a pharmacological agent only and does not include intake from food and water.

^e For the EAR and RDA, it is assumed that girls younger than 14 years do not menstruate and that girls 14 years and older do menstruate. It is assumed that women 51 years and older are post-menopausal.

NOTE: These are reference values for normal, apparently healthy individuals eating a typical mixed North American diet. An individual may have physiological, health, or lifestyle characteristics that may require tailoring of specific nutrient values.

Table from: Dietary Reference Intakes for US and Canada:

https://www.canada.ca/content/dam/hc-sc/migration/hc-sc/fn-an/alt_formats/hpfb-dgpsa/pdf/nutrition/dri_tables-eng.pdf

Dietary Reference Intakes Reference Values for Elements

Unit	Selenium			Silicon ²⁰		Vanadium ²²		Zinc ²³			Potassium ²⁴		Sodium ²⁵		Chloride ²⁶		Sulfate ²⁷	
	µg/day			N/A		mg/day		mg/day			mg/day		mg/day		mg/day		N/A	
	EAR	RDA/AI	UL	AI	UL ²¹	AI	UL	EAR	RDA/AI	UL	AI	UL ²¹	AI	UL	AI	UL	AI	UL ²¹
Infants																		
0-6 mo	<i>ND</i>	15*	45	ND	ND	ND	ND	<i>ND</i>	2*	4	400*	ND	120*	ND	180*	ND	ND	ND
7-12 mo	<i>ND</i>	20*	60	ND	ND	ND	ND	2.5	3	5	700*	ND	370*	ND	570*	ND	ND	ND
Children																		
1-3 y	17	20	90	ND	ND	ND	ND	2.5	3	7	3000*	ND	1000*	1500	1500*	2300	ND	ND
4-8 y	23	30	150	ND	ND	ND	ND	4.0	5	12	3800*	ND	1200*	1900	1900*	2900	ND	ND
Males																		
9-13 y	35	40	280	ND	ND	ND	ND	7.0	8	23	4500*	ND	1500*	2200	2300*	3400	ND	ND
14-18 y	45	55	400	ND	ND	ND	ND	8.5	11	34	4700*	ND	1500*	2300	2300*	3600	ND	ND
19-30 y	45	55	400	ND	ND	ND	1.8	9.4	11	40	4700*	ND	1500*	2300	2300*	3600	ND	ND
31-50 y	45	55	400	ND	ND	ND	1.8	9.4	11	40	4700*	ND	1500*	2300	2300*	3600	ND	ND
51-70 y	45	55	400	ND	ND	ND	1.8	9.4	11	40	4700*	ND	1300*	2300	2000*	3600	ND	ND
>70 y	45	55	400	ND	ND	ND	1.8	9.4	11	40	4700*	ND	1200*	2300	1800*	3600	ND	ND
Females																		
9-13 y	35	40	280	ND	ND	ND	ND	7.0	8	23	4500*	ND	1500*	2200	2300*	3400	ND	ND
14-18 y	45	55	400	ND	ND	ND	ND	7.3	9	34	4700*	ND	1500*	2300	2300*	3600	ND	ND
19-30 y	45	55	400	ND	ND	ND	1.8	6.8	8	40	4700*	ND	1500*	2300	2300*	3600	ND	ND
31-50 y	45	55	400	ND	ND	ND	1.8	6.8	8	40	4700*	ND	1500*	2300	2300*	3600	ND	ND
51-70 y	45	55	400	ND	ND	ND	1.8	6.8	8	40	4700*	ND	1300*	2300	2000*	3600	ND	ND
>70 y	45	55	400	ND	ND	ND	1.8	6.8	8	40	4700*	ND	1200*	2300	1800*	3600	ND	ND
Pregnancy																		
<18 y	49	60	400	ND	ND	ND	ND	10.5	12	34	4700*	ND	1500*	2300	2300*	3600	ND	ND
19-30 y	49	60	400	ND	ND	ND	ND	9.5	11	40	4700*	ND	1500*	2300	2300*	3600	ND	ND
31-50 y	49	60	400	ND	ND	ND	ND	9.5	11	40	4700*	ND	1500*	2300	2300*	3600	ND	ND
Lactation																		
<18 y	59	70	400	ND	ND	ND	ND	10.9	13	34	5100*	ND	1500*	2300	2300*	3600	ND	ND
19-30 y	59	70	400	ND	ND	ND	ND	10.4	12	40	5100*	ND	1500*	2300	2300*	3600	ND	ND
31-50 y	59	70	400	ND	ND	ND	ND	10.4	12	40	5100*	ND	1500*	2300	2300*	3600	ND	ND

This table presents *Estimated Average Requirements (EARs) in italics*, **Recommended Dietary Allowances (RDAs) in bold type** and Adequate Intakes (AIs) in ordinary type followed by an asterisk (*). Tolerable Upper Intake Levels (ULs) are in shaded columns.

²⁰ Although silicon has not been shown to cause adverse effects in humans, there is no justification for adding silicon to supplements.

²¹ Due to lack of suitable data, ULs could not be established for silicon, potassium, and sulfate. This does not mean that there is no potential for adverse effects resulting from high intakes.

²² Although vanadium in food has not been shown to cause adverse effects in humans, there is no justification for adding vanadium to food and vanadium supplements should be used with caution. The UL is based on adverse effects in laboratory animals and this data could be used to set a UL for adults but not children and adolescents.

²³ The requirement for zinc may be as much as 50 percent greater for vegetarians, particularly for strict vegetarians whose major food staples are grains and legumes, due to the lower bioavailability of zinc from a vegetarian diet.

²⁴ The beneficial effects of potassium appear to be mainly from the forms of potassium found naturally in foods such as fruits and vegetables. Supplemental potassium should only be provided under medical supervision because of the well-documented potential for toxicity.

²⁵ Grams of sodium × 2.53 = grams of salt.

²⁶ Sodium and chloride are normally found in foods together as sodium chloride (table salt). For this reason, the AI and UL for chloride are set at a level equivalent on a molar basis to those for sodium, since almost all dietary chloride comes with sodium added during processing or consumption of foods.

²⁷ An AI for sulfate was not established because sulfate requirements are met when dietary intakes contain recommended levels of sulfur amino acids (protein).

Table from: Dietary Reference Intakes for US and Canada:

https://www.canada.ca/content/dam/hc-sc/migration/hc-sc/fn-an/alt_formats/hpfb-dgpsa/pdf/nutrition/dri_tables-eng.pdf