

## Dietary Reference Intakes Reference Values for Vitamins

Unit	Vitamin A <sup>1,2</sup>						Vitamin D <sup>**</sup>						Vitamin E <sup>5</sup>			Vitamin K	
	µg/day (RAE)			IU/day (RAE)			µg/day <sup>4</sup>			IU/day <sup>4</sup>			mg/day			µg/day	
	EAR	RDA/AI	UL <sup>3</sup>	EAR	RDA/AI	UL <sup>3</sup>	EAR	RDA/AI	UL	EAR	RDA/AI	UL	EAR	RDA/AI	UL <sup>6</sup>	AI	UL <sup>7</sup>
Infants																	
0-6 mo	<i>ND</i>	400*	600	<i>ND</i>	1333*	2000	<i>ND</i>	10*	25	<i>ND</i>	400*	1000	<i>ND</i>	4*	ND	2.0*	ND
7-12 mo	<i>ND</i>	500*	600	<i>ND</i>	1667*	2000	<i>ND</i>	10*	38	<i>ND</i>	400*	1500	<i>ND</i>	5*	ND	2.5*	ND
Children																	
1-3 y	210	<b>300</b>	600	<i>700</i>	<b>1000</b>	2000	<i>10</i>	<b>15</b>	63	<i>400</i>	<b>600</b>	2500	5	<b>6</b>	200	30*	ND
4-8 y	275	<b>400</b>	900	<i>917</i>	<b>1333</b>	3000	<i>10</i>	<b>15</b>	75	<i>400</i>	<b>600</b>	3000	6	<b>7</b>	300	55*	ND
Males																	
9-13 y	445	<b>600</b>	1700	<i>1483</i>	<b>2000</b>	5667	<i>10</i>	<b>15</b>	100	<i>400</i>	<b>600</b>	4000	9	<b>11</b>	600	60*	ND
14-18 y	630	<b>900</b>	2800	<i>2100</i>	<b>3000</b>	9333	<i>10</i>	<b>15</b>	100	<i>400</i>	<b>600</b>	4000	12	<b>15</b>	800	75*	ND
19-30 y	625	<b>900</b>	3000	<i>2083</i>	<b>3000</b>	10000	<i>10</i>	<b>15</b>	100	<i>400</i>	<b>600</b>	4000	12	<b>15</b>	1000	120*	ND
31-50 y	625	<b>900</b>	3000	<i>2083</i>	<b>3000</b>	10000	<i>10</i>	<b>15</b>	100	<i>400</i>	<b>600</b>	4000	12	<b>15</b>	1000	120*	ND
51-70 y	625	<b>900</b>	3000	<i>2083</i>	<b>3000</b>	10000	<i>10</i>	<b>15</b>	100	<i>400</i>	<b>600</b>	4000	12	<b>15</b>	1000	120*	ND
>70 y	625	<b>900</b>	3000	<i>2083</i>	<b>3000</b>	10000	<i>10</i>	<b>20</b>	100	<i>400</i>	<b>800</b>	4000	12	<b>15</b>	1000	120*	ND
Females																	
9-13 y	420	<b>600</b>	1700	<i>1400</i>	<b>2000</b>	5667	<i>10</i>	<b>15</b>	100	<i>400</i>	<b>600</b>	4000	9	<b>11</b>	600	60*	ND
14-18 y	485	<b>700</b>	2800	<i>1617</i>	<b>2333</b>	9333	<i>10</i>	<b>15</b>	100	<i>400</i>	<b>600</b>	4000	12	<b>15</b>	800	75*	ND
19-30 y	500	<b>700</b>	3000	<i>1667</i>	<b>2333</b>	10000	<i>10</i>	<b>15</b>	100	<i>400</i>	<b>600</b>	4000	12	<b>15</b>	1000	90*	ND
31-50 y	500	<b>700</b>	3000	<i>1667</i>	<b>2333</b>	10000	<i>10</i>	<b>15</b>	100	<i>400</i>	<b>600</b>	4000	12	<b>15</b>	1000	90*	ND
51-70 y	500	<b>700</b>	3000	<i>1667</i>	<b>2333</b>	10000	<i>10</i>	<b>15</b>	100	<i>400</i>	<b>600</b>	4000	12	<b>15</b>	1000	90*	ND
>70 y	500	<b>700</b>	3000	<i>1667</i>	<b>2333</b>	10000	<i>10</i>	<b>20</b>	100	<i>400</i>	<b>800</b>	4000	12	<b>15</b>	1000	90*	ND
Pregnancy																	
≤ 18 y	530	<b>750</b>	2800	<i>1767</i>	<b>2500</b>	9333	<i>10</i>	<b>15</b>	100	<i>400</i>	<b>600</b>	4000	12	<b>15</b>	800	75*	ND
19-30 y	550	<b>770</b>	3000	<i>1833</i>	<b>2567</b>	10000	<i>10</i>	<b>15</b>	100	<i>400</i>	<b>600</b>	4000	12	<b>15</b>	1000	90*	ND
31-50 y	550	<b>770</b>	3000	<i>1833</i>	<b>2567</b>	10000	<i>10</i>	<b>15</b>	100	<i>400</i>	<b>600</b>	4000	12	<b>15</b>	1000	90*	ND
Lactation																	
≤ 18 y	885	<b>1200</b>	2800	<i>2950</i>	<b>4000</b>	9333	<i>10</i>	<b>15</b>	100	<i>400</i>	<b>600</b>	4000	16	<b>19</b>	800	75*	ND
19-30 y	900	<b>1300</b>	3000	<i>3000</i>	<b>4333</b>	10000	<i>10</i>	<b>15</b>	100	<i>400</i>	<b>600</b>	4000	16	<b>19</b>	1000	90*	ND
31-50 y	900	<b>1300</b>	3000	<i>3000</i>	<b>4333</b>	10000	<i>10</i>	<b>15</b>	100	<i>400</i>	<b>600</b>	4000	16	<b>19</b>	1000	90*	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.

\*\* New 2010 values have replaced previous 1997 values.

<sup>1</sup> As Retinol Activity Equivalents (RAE). See conversion factors for more details.

<sup>2</sup> No DRIs are established for beta-carotene or other carotenoids. However, existing recommendations for consumption of carotenoid-rich fruits and vegetables are supported.

<sup>3</sup> UL as preformed vitamin A only. Beta-carotene supplements are advised only to serve as a provitamin A source for individuals at risk of vitamin A deficiency.

<sup>4</sup> These reference values assume minimal sun exposure.

<sup>5</sup> EAR and RDA/AI as alpha-tocopherol (2R-stereoisomeric forms) only. See conversion factors for more details.

<sup>6</sup> The UL for vitamin E applies only to synthetic vitamin E (all isomeric forms) obtained from supplements, fortified foods, or a combination of the two.

<sup>7</sup> Due to lack of suitable data, a UL could not be established for vitamin K. 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](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 Vitamins

Unit	Vitamin C <sup>8</sup>			Thiamin			Riboflavin			Niacin <sup>10</sup>			Vitamin B6		
	mg/day			mg/day			mg/day			mg/day (NE)			mg/day		
	EAR	RDA/AI	UL	EAR	RDA/AI	UL <sup>9</sup>	EAR	RDA/AI	UL <sup>9</sup>	EAR	RDA/AI	UL <sup>11</sup>	EAR	RDA/AI	UL
Infants															
0-6 mo	<i>ND</i>	<b>40*</b>	<i>ND</i>	<i>ND</i>	<b>0.2*</b>	<i>ND</i>	<i>ND</i>	<b>0.3*</b>	<i>ND</i>	<i>ND</i>	<b>2* <sup>a</sup></b>	<i>ND</i>	<i>ND</i>	<b>0.1*</b>	<i>ND</i>
7-12 mo	<i>ND</i>	<b>50*</b>	<i>ND</i>	<i>ND</i>	<b>0.3*</b>	<i>ND</i>	<i>ND</i>	<b>0.4*</b>	<i>ND</i>	<i>ND</i>	<b>4*</b>	<i>ND</i>	<i>ND</i>	<b>0.3*</b>	<i>ND</i>
Children															
1-3 y	<i>13</i>	<b>15</b>	400	<i>0.4</i>	<b>0.5</b>	<i>ND</i>	<i>0.4</i>	<b>0.5</b>	<i>ND</i>	<i>5</i>	<b>6</b>	10	<i>0.4</i>	<b>0.5</b>	30
4-8 y	<i>22</i>	<b>25</b>	650	<i>0.5</i>	<b>0.6</b>	<i>ND</i>	<i>0.5</i>	<b>0.6</b>	<i>ND</i>	<i>6</i>	<b>8</b>	15	<i>0.5</i>	<b>0.6</b>	40
Males															
9-13 y	<i>39</i>	<b>45</b>	1200	<i>0.7</i>	<b>0.9</b>	<i>ND</i>	<i>0.8</i>	<b>0.9</b>	<i>ND</i>	<i>9</i>	<b>12</b>	20	<i>0.8</i>	<b>1.0</b>	60
14-18 y	<i>63</i>	<b>75</b>	1800	<i>1.0</i>	<b>1.2</b>	<i>ND</i>	<i>1.1</i>	<b>1.3</b>	<i>ND</i>	<i>12</i>	<b>16</b>	30	<i>1.1</i>	<b>1.3</b>	80
19-30 y	<i>75</i>	<b>90</b>	2000	<i>1.0</i>	<b>1.2</b>	<i>ND</i>	<i>1.1</i>	<b>1.3</b>	<i>ND</i>	<i>12</i>	<b>16</b>	35	<i>1.1</i>	<b>1.3</b>	100
31-50 y	<i>75</i>	<b>90</b>	2000	<i>1.0</i>	<b>1.2</b>	<i>ND</i>	<i>1.1</i>	<b>1.3</b>	<i>ND</i>	<i>12</i>	<b>16</b>	35	<i>1.1</i>	<b>1.3</b>	100
51-70 y	<i>75</i>	<b>90</b>	2000	<i>1.0</i>	<b>1.2</b>	<i>ND</i>	<i>1.1</i>	<b>1.3</b>	<i>ND</i>	<i>12</i>	<b>16</b>	35	<i>1.4</i>	<b>1.7</b>	100
>70 y	<i>75</i>	<b>90</b>	2000	<i>1.0</i>	<b>1.2</b>	<i>ND</i>	<i>1.1</i>	<b>1.3</b>	<i>ND</i>	<i>12</i>	<b>16</b>	35	<i>1.4</i>	<b>1.7</b>	100
Females															
9-13 y	<i>39</i>	<b>45</b>	1200	<i>0.7</i>	<b>0.9</b>	<i>ND</i>	<i>0.8</i>	<b>0.9</b>	<i>ND</i>	<i>9</i>	<b>12</b>	20	<i>0.8</i>	<b>1.0</b>	60
14-18 y	<i>56</i>	<b>65</b>	1800	<i>0.9</i>	<b>1.0</b>	<i>ND</i>	<i>0.9</i>	<b>1.0</b>	<i>ND</i>	<i>11</i>	<b>14</b>	30	<i>1.0</i>	<b>1.2</b>	80
19-30 y	<i>60</i>	<b>75</b>	2000	<i>0.9</i>	<b>1.1</b>	<i>ND</i>	<i>0.9</i>	<b>1.1</b>	<i>ND</i>	<i>11</i>	<b>14</b>	35	<i>1.1</i>	<b>1.3</b>	100
31-50 y	<i>60</i>	<b>75</b>	2000	<i>0.9</i>	<b>1.1</b>	<i>ND</i>	<i>0.9</i>	<b>1.1</b>	<i>ND</i>	<i>11</i>	<b>14</b>	35	<i>1.1</i>	<b>1.3</b>	100
51-70 y	<i>60</i>	<b>75</b>	2000	<i>0.9</i>	<b>1.1</b>	<i>ND</i>	<i>0.9</i>	<b>1.1</b>	<i>ND</i>	<i>11</i>	<b>14</b>	35	<i>1.3</i>	<b>1.5</b>	100
>70 y	<i>60</i>	<b>75</b>	2000	<i>0.9</i>	<b>1.1</b>	<i>ND</i>	<i>0.9</i>	<b>1.1</b>	<i>ND</i>	<i>11</i>	<b>14</b>	35	<i>1.3</i>	<b>1.5</b>	100
Pregnancy															
< 18 y	<i>66</i>	<b>80</b>	1800	<i>1.2</i>	<b>1.4</b>	<i>ND</i>	<i>1.2</i>	<b>1.4</b>	<i>ND</i>	<i>14</i>	<b>18</b>	30	<i>1.6</i>	<b>1.9</b>	80
19-30 y	<i>70</i>	<b>85</b>	2000	<i>1.2</i>	<b>1.4</b>	<i>ND</i>	<i>1.2</i>	<b>1.4</b>	<i>ND</i>	<i>14</i>	<b>18</b>	35	<i>1.6</i>	<b>1.9</b>	100
31-50 y	<i>70</i>	<b>85</b>	2000	<i>1.2</i>	<b>1.4</b>	<i>ND</i>	<i>1.2</i>	<b>1.4</b>	<i>ND</i>	<i>14</i>	<b>18</b>	35	<i>1.6</i>	<b>1.9</b>	100
Lactation															
< 18 y	<i>96</i>	<b>115</b>	1800	<i>1.2</i>	<b>1.4</b>	<i>ND</i>	<i>1.3</i>	<b>1.6</b>	<i>ND</i>	<i>13</i>	<b>17</b>	30	<i>1.7</i>	<b>2.0</b>	80
19-30 y	<i>100</i>	<b>120</b>	2000	<i>1.2</i>	<b>1.4</b>	<i>ND</i>	<i>1.3</i>	<b>1.6</b>	<i>ND</i>	<i>13</i>	<b>17</b>	35	<i>1.7</i>	<b>2.0</b>	100
31-50 y	<i>100</i>	<b>120</b>	2000	<i>1.2</i>	<b>1.4</b>	<i>ND</i>	<i>1.3</i>	<b>1.6</b>	<i>ND</i>	<i>13</i>	<b>17</b>	35	<i>1.7</i>	<b>2.0</b>	100

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.

<sup>8</sup> Because smoking increases oxidative stress and metabolic turnover of vitamin C, the requirement for smokers is increased by 35 mg/day.

<sup>9</sup> Due to lack of suitable data, ULs could not be established for thiamin and riboflavin. This does not mean that there is no potential for adverse effects resulting from high intakes.

<sup>10</sup> As Niacin Equivalents (NE). See conversion factors for more details.

<sup>11</sup> The UL for niacin applies only to synthetic forms obtained from supplements, fortified foods, or a combination of the two.

<sup>a</sup> As preformed niacin, not NE, for this age group.

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](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 Vitamins**

Unit	Folate <sup>12</sup>			Vitamin B12			Pantothenic Acid		Biotin		Choline <sup>15</sup>	
	µg/day (DFE)			µg/day			mg/day		µg/day		mg/day	
	EAR	RDA/AI	UL <sup>13</sup>	EAR	RDA/AI	UL <sup>14</sup>	AI	UL <sup>14</sup>	AI	UL <sup>14</sup>	AI	UL
Infants												
0-6 mo	<i>ND</i>	<b>65*</b>	ND	<i>ND</i>	<b>0.4*</b>	ND	<b>1.7*</b>	ND	<b>5*</b>	ND	<b>125*</b>	ND
7-12 mo	<i>ND</i>	<b>80*</b>	ND	<i>ND</i>	<b>0.5*</b>	ND	<b>1.8*</b>	ND	<b>6*</b>	ND	<b>150*</b>	ND
Children												
1-3 y	<i>120</i>	<b>150</b>	300	<i>0.7</i>	<b>0.9</b>	ND	<b>2*</b>	ND	<b>8*</b>	ND	<b>200*</b>	1000
4-8 y	<i>160</i>	<b>200</b>	400	<i>1.0</i>	<b>1.2</b>	ND	<b>3*</b>	ND	<b>12*</b>	ND	<b>250*</b>	1000
Males												
9-13 y	<i>250</i>	<b>300</b>	600	<i>1.5</i>	<b>1.8</b>	ND	<b>4*</b>	ND	<b>20*</b>	ND	<b>375*</b>	2000
14-18 y	<i>330</i>	<b>400</b>	800	<i>2.0</i>	<b>2.4</b>	ND	<b>5*</b>	ND	<b>25*</b>	ND	<b>550*</b>	3000
19-30 y	<i>320</i>	<b>400</b>	1000	<i>2.0</i>	<b>2.4</b>	ND	<b>5*</b>	ND	<b>30*</b>	ND	<b>550*</b>	3500
31-50 y	<i>320</i>	<b>400</b>	1000	<i>2.0</i>	<b>2.4</b>	ND	<b>5*</b>	ND	<b>30*</b>	ND	<b>550*</b>	3500
51-70 y	<i>320</i>	<b>400</b>	1000	<i>2.0</i>	<b>2.4<sup>d</sup></b>	ND	<b>5*</b>	ND	<b>30*</b>	ND	<b>550*</b>	3500
>70 y	<i>320</i>	<b>400</b>	1000	<i>2.0</i>	<b>2.4<sup>d</sup></b>	ND	<b>5*</b>	ND	<b>30*</b>	ND	<b>550*</b>	3500
Females												
9-13 y	<i>250</i>	<b>300</b>	600	<i>1.5</i>	<b>1.8</b>	ND	<b>4*</b>	ND	<b>20*</b>	ND	<b>375*</b>	2000
14-18 y	<i>330</i>	<b>400<sup>b</sup></b>	800	<i>2.0</i>	<b>2.4</b>	ND	<b>5*</b>	ND	<b>25*</b>	ND	<b>400*</b>	3000
19-30 y	<i>320</i>	<b>400<sup>b</sup></b>	1000	<i>2.0</i>	<b>2.4</b>	ND	<b>5*</b>	ND	<b>30*</b>	ND	<b>425*</b>	3500
31-50 y	<i>320</i>	<b>400<sup>b</sup></b>	1000	<i>2.0</i>	<b>2.4</b>	ND	<b>5*</b>	ND	<b>30*</b>	ND	<b>425*</b>	3500
51-70 y	<i>320</i>	<b>400</b>	1000	<i>2.0</i>	<b>2.4<sup>d</sup></b>	ND	<b>5*</b>	ND	<b>30*</b>	ND	<b>425*</b>	3500
>70 y	<i>320</i>	<b>400</b>	1000	<i>2.0</i>	<b>2.4<sup>d</sup></b>	ND	<b>5*</b>	ND	<b>30*</b>	ND	<b>425*</b>	3500
Pregnancy												
≤ 18 y	<i>520</i>	<b>600<sup>c</sup></b>	800	<i>2.2</i>	<b>2.6</b>	ND	<b>6*</b>	ND	<b>30*</b>	ND	<b>450*</b>	3000
19-30 y	<i>520</i>	<b>600<sup>c</sup></b>	1000	<i>2.2</i>	<b>2.6</b>	ND	<b>6*</b>	ND	<b>30*</b>	ND	<b>450*</b>	3500
31-50 y	<i>520</i>	<b>600<sup>c</sup></b>	1000	<i>2.2</i>	<b>2.6</b>	ND	<b>6*</b>	ND	<b>30*</b>	ND	<b>450*</b>	3500
Lactation												
≤ 18 y	<i>450</i>	<b>500</b>	800	<i>2.4</i>	<b>2.8</b>	ND	<b>7*</b>	ND	<b>35*</b>	ND	<b>550*</b>	3000
19-30 y	<i>450</i>	<b>500</b>	1000	<i>2.4</i>	<b>2.8</b>	ND	<b>7*</b>	ND	<b>35*</b>	ND	<b>550*</b>	3500
31-50 y	<i>450</i>	<b>500</b>	1000	<i>2.4</i>	<b>2.8</b>	ND	<b>7*</b>	ND	<b>35*</b>	ND	<b>550*</b>	3500

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.

<sup>12</sup> As Dietary Folate Equivalents (DFE). See conversion factors for more details.

<sup>13</sup> The UL for folate applies only to synthetic forms obtained from supplements, fortified foods, or a combination of the two.

<sup>14</sup> Due to lack of suitable data, ULs could not be established for vitamin B12, pantothenic acid or biotin. This does not mean that there is no potential for adverse effects resulting from high intakes.

<sup>15</sup> 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.

<sup>b</sup> In view of evidence linking the use of supplements containing folic acid before conception and during early pregnancy with reduced risk of neural tube defects in the fetus, it is recommended that all women capable of becoming pregnant take a supplement containing 400µg of folic acid every day, in addition to the amount of folate found in a healthy diet.

<sup>c</sup> It is assumed that women will continue consuming 400 µg folic acid from supplements until their pregnancy is confirmed and they enter prenatal care. The critical time for formation of the neural tube is shortly after conception.

<sup>d</sup> Because 10 to 30 percent of older people may malabsorb food-bound vitamin B12, it is advisable for those older than 50 years to meet the RDA mainly by consuming foods fortified with vitamin B12 or a supplement containing vitamin B12.

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