

## **Overview on Tolerable Upper Intake Levels as derived by the Scientific Committee on Food (SCF) and the EFSA Panel on Dietetic Products, Nutrition and Allergies (NDA)**

The Tolerable Upper Intake Level (UL) is the maximum level of total chronic intake of a nutrient from all sources judged to be unlikely to pose a risk of adverse health effects in humans.

Following a request from the European Commission, the Scientific Committee on Food (SCF), which was the predecessor of EFSA, started off in the year 2000 with giving scientific advice in relation to ULs for vitamins and minerals. The task was then taken over by EFSA when it became operational.

This document provides an overview about the outcome of the SCF's and EFSA's scientific deliberations. The detailed reasoning for establishing individual values can be found in the related opinions of the SCF and NDA Panel. Links to the respective documents are included in Table 3 of this document.

**Table 1:** Summary of Tolerable Upper Intake Levels (UL) of **minerals**

	Unit	Age/Life-stage group								
		0-1 y	1-3 y	4-6 y	7-10 y	11-14 y	15-17 y	Adults	Pregnancy	Lactation
<b>Boron</b>	mg/d		3	4	5	7	9	10	10	10
<b>Calcium</b>	mg/d	No adequate data to derive a UL						2500	2500	2500
<b>Chloride</b>		No adequate data to derive a UL								
<b>Chromium (trivalent)</b>		No adequate data to derive a UL								
<b>Copper</b>	mg/d		1	2	3	4	4	5	Insufficient data	
<b>Iodine</b>	µg/d		200	250	300	450	500	600	600	600
<b>Iron</b>		No adequate data to derive a UL								
<b>Magnesium<sup>(a)</sup></b>	mg/d		Insufficient data	250	250	250	250	250	250	250
<b>Manganese</b>		No adequate data to derive a UL								
<b>Molybdenum</b>	mg/d		0.1	0.2	0.25	0.4	0.5	0.6	0.6	0.6
<b>Nickel</b>		No adequate data to derive a UL								
<b>Phosphorus</b>		No adequate data to derive a UL								
<b>Potassium</b>		No adequate data to derive a UL								
<b>Selenium</b>	µg/d		60	90	130	200	250	300	300	300
<b>Silicon</b>		No adequate data to derive a UL								
<b>Sodium</b>		No adequate data to derive a UL								
<b>Tin</b>		No adequate data to derive a UL								
<b>Vanadium</b>		No adequate data to derive a UL								
<b>Zinc</b>	mg/d		7	10	13	18	22	25	25	25
	Unit	Age/Life-stage group								
		0-1 y	1-3 y	4-8 y	9-14 y	15-17 y	Adults	Pregnancy	Lactation	
<b>Fluoride</b>	mg/d		1.5	2.5	5	7	7	7	7	

d, day; y, year

<sup>(a)</sup> Readily dissociable Mg salts (e.g. chloride, sulphate, aspartate, lactate) and compounds like MgO in food supplements, water or added to foods; does not include Mg naturally present in foods and beverages.

**Table 2:** Summary of Tolerable Upper Intake Levels (UL) of **vitamins and certain fatty acids**

	Unit	Age/Life-stage group								
		0-1 y	1-3 y	4-6 y	7-10 y	11-14 y	15-17 y	Adults	Pregnancy	Lactation
<b>VITAMINS</b>										
<b>Biotin</b>		No adequate data to derive a UL								
<b>β-Carotene</b>		No adequate data to derive a UL								
<b>Folic acid (synthetic)</b>	µg/d		200	300	400	600	800	1000	1000	1000
<b>Niacin</b>										
<b>Nicotinamide</b>	mg/d		150	220	350	500	700	900	Inadequate data	
<b>Nicotinic acid</b>	mg/d		2	3	4	6	8	10	Inadequate data	
<b>Pantothenic acid</b>		No adequate data to derive a UL								
<b>Vitamin A<sup>(a)</sup></b>	µg RE/d		800	1100	1500	2000	2600	3000 <sup>(b)</sup>	3000	3000
<b>Vitamin B1</b>		No adequate data to derive a UL								
<b>Vitamin B12</b>		No clearly defined adverse effects								
<b>Vitamin B2</b>		No adequate data to derive a UL								
<b>Vitamin B6</b>	mg/d		5	7	10	15	20	25	25	25
<b>Vitamin C</b>		No adequate data to derive a UL								
<b>Vitamin D</b>	µg/d		25	50	50	50	100	100	100	100
<b>Vitamin E</b>	mg/d		100	120	160	220	260	300	300	300
<b>Vitamin K</b>		No adequate data to derive a UL								
<b>FATTY ACIDS</b>										
<b>DHA, EPA, DPA</b>		No adequate data to derive a UL								

d, day; DHA, docosahexaenoic acid, DPA, docosapentaenoic acid; EPA, eicosapentaenoic acid; RE, retinol equivalents

<sup>(a)</sup> Retinol and retinyl esters

<sup>(b)</sup> Does not apply to post-menopausal women, as it may not provide adequate margin of safety in relation to the possible decrease in bone density and the risk of bone fracture.

**Table 3:** Links to Scientific Opinions on Tolerable Upper Intake Levels

<b>General principles</b>	<b>Fatty acids</b>
<a href="http://www.efsa.europa.eu/sites/default/files/efsa_rep/blobserver_assets/ndatolerableuil.pdf">http://www.efsa.europa.eu/sites/default/files/efsa_rep/blobserver_assets/ndatolerableuil.pdf</a>	EPA, DHA, DPA: <a href="http://www.efsa.europa.eu/en/efsajournal/pub/2815">http://www.efsa.europa.eu/en/efsajournal/pub/2815</a>
<b>Vitamins</b>	<b>Minerals</b>
Biotin, $\beta$ -Carotene, Folate, Niacin, Pantothenic acid, Vitamin A, Vitamin B1, Vitamin B12, Vitamin B2, Vitamin B6, Vitamin E, Vitamin K: <a href="http://www.efsa.europa.eu/sites/default/files/efsa_rep/blobserver_assets/ndatolerableuil.pdf">http://www.efsa.europa.eu/sites/default/files/efsa_rep/blobserver_assets/ndatolerableuil.pdf</a> Vitamin D: <a href="http://www.efsa.europa.eu/en/efsajournal/pub/2813">http://www.efsa.europa.eu/en/efsajournal/pub/2813</a>	Boron, Chloride, Chromium, Copper, Fluoride, Iodine, Iron, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Sodium, Tin, Vanadium, Zinc: <a href="http://www.efsa.europa.eu/sites/default/files/efsa_rep/blobserver_assets/ndatolerableuil.pdf">http://www.efsa.europa.eu/sites/default/files/efsa_rep/blobserver_assets/ndatolerableuil.pdf</a> Calcium: <a href="http://www.efsa.europa.eu/en/efsajournal/pub/2814">http://www.efsa.europa.eu/en/efsajournal/pub/2814</a>

DHA, docosahexaenoic acid, DPA, docosapentaenoic acid; EPA, eicosapentaenoic acid