Executive summary

Health Council of the Netherlands. Dietary reference intakes: calcium, vitamin D, thiamin, riboflavin, niacin, pantothenic acid, and biotin. The Hague: Health Council of the Netherlands, 2000; publication no. 2000/12.

In 1992 the Food and Nutrition Council published dietary reference intakes. These recommendations were principally designed to prevent the occurrence of ‘classic’ deficiency diseases. Over the last few years, however, increasingly more study results have become available that indicate a preventive effect of certain nutritients on the occurrence of chronic diseases. This is one of the reasons why revision of the 1992 values has become desirable.

The Health Council’s Committee on Dietary reference intakes has assumed this task and will publish its findings in a series of documents. This report contains recommendations for calcium, vitamin D and five vitamins from the so-called B group, namely thiamin, riboflavin, niacin, pantothenic acid, and biotin. In particular calcium and vitamin D play a role in the prevention of chronic diseases. It is very likely that the intake of these two nutrients, throughout all stages of life, affects the risk of osteoporosis and bone fractures in later life.

‘Nutritional requirement’ is defined as the smallest intake of a nutrient that both prevents symptoms of deficiency and at which, at the same time, the risk of chronic diseases — to the extent that this is influenced by the nutrient concerned — is minimal. The ‘recommended dietary allowance’ is defined as the mean requirement plus twice the standard deviation of the requirement, and is thus sufficient for almost all people in a group. If the mean requirement is not known, the Committee defines an ‘adequate intake’; this also provides for the needs of almost all those in the group. Lastly, the Committee defines ‘tolerable upper intake levels’, above which there is a risk of adverse effects.

The table below presents an overview of the Dietary reference values.

Table Dietary Reference Values.

nutrient	type of reference value	age										
		months		years								
		0-5	6-11	1-3	4-8	9-13	14-18	19-50	51-70	>70	preg.[a]	lact.[b]
calcium, g/day	AI[c] ♂	0,21[c]	0,45	0,5	0,7	1,2	1,2	1,0	1,1	1,2	-	-
	AI ♀	0,21	0,45	0,5	0,7	1,1	1,1	1,0	1,1	1,2	1,0	1,0
	UL[d]	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5
vitamin D, µg/day	AI[f]	10	10	10	5	5	5	5	10	15	10	10
	AI[g]	5	5	5	2,5	2,5	2,5	2,5	5; 7,5[h]	12,5	7,5	7,5
	UL	25	25	50	50	50	50	50	50	50	50	50
thiamin, mg/day	RDA[i]	-	-	-	-	-	-	1,1	-	-	1,4	1,7
	AI	0,2	0,2	0,3	0,5	0,8	1,1	-	1,1	1,1	-	-
	UL	?	?	?	?	?	?	?	?	?	?	?
riboflavin, mg/day	RDA ♂	-	-	-	-	-	-	1,5	1,5	1,5	-	-
	RDA ♀	-	-	-	-	-	-	1,1	1,1	1,1	1,4	1,7
	AI ♂	0,4	0,4	0,5	0,7	1,0	1,5	-	-	-	-	-
	AI ♀	0,4	0,4	0,5	0,7	1,0	1,1	-	-	-	-	-
	UL	?	?	?	?	?	?	?	?	?	?	?
niacin, mg NE[j]/day	RDA ♂	-	-	-	-	-	-	17	17	17	-	-
	RDA ♀	-	-	-	-	-	-	13	13	13	-	-
	AI ♂	2[k]	2	4	7	11	17	-	-	-	-	-
	AI ♀	2[k]	2	4	7	11	13	-	-	-	17	20
	UL[k]	-	-	35	35	35	35	35	35	35	35	35
pantothenic acid, mg/day	AI	2	2	2	3	4	5	5	5	5	5	7
	UL	?	?	?	?	?	?	?	?	?	?	?
biotin, µg/da	AI	4	?	?	?	?	?	?	?	?	?	?
	UL	?	?	?	?	?	?	?	?	?	?	?

[a] pregnant women; [b] lactating women; [c] adequate intake; [d] tolerable upper intake level; [e] for breast-feeding; for bottle feeding 0,32 g/day; [f] no exposure to sunlight; [g] light-coloured skin, and remain outdoor for at least 15 minutes a day with at least hands and face uncovered; [h] for 51- to 60- and 61- to 70-year olds; [i] recommended dietary allowance; [j] nicotinic acid equivalents; [k] mg niacin per day; - = does not apply; ? = unknown