

Dietary reference values for vitamins and minerals for adults

No. 2018/19e, The Hague, September 18, 2018

Executive summary

Health Council of the Netherlands



The Health Council of the Netherlands has formulated dietary reference values for 25 vitamins and minerals for adults. For that purpose, the Council's Committee on Nutrition evaluated the European Food Safety Authority's (EFSA) recently released dietary reference values to determine whether they can be applied in the Netherlands. This advisory report only concerns the dietary reference values for adults. In later advisory reports, the Council will explore the dietary reference values for infants, children, pregnant women, and lactating women, tolerable upper intake levels and the dietary reference values for proteins, carbohydrates and fats.

Dietary reference values

Dietary reference values provide information about the intake of nutrients that the body needs to function properly and prevent disease. The parameters from which dietary reference values are derived are based on healthy individuals with a healthy weight. Dietary reference values are used in public information on nutrition, for the detection of groups who are at risk of having

deficiencies, when providing advice on dieting, and in planning diets for individuals and groups. Dietary reference values also play a role in the regulations on nutrition labelling.

Evaluation of the EFSA dietary reference values

When evaluating the EFSA dietary reference values, three questions were key:

- Should the EFSA reference values be rejected based on a specific nutritional context in the Netherlands that differs from (the rest of) Europe?
- Are there objections to the scientific basis used by EFSA for this specific nutrient?
- Do (part of) the EFSA reference values differ 10% or more from the 2014 values for the Netherlands?

The new dietary reference values for adults

The Committee distinguishes between dietary reference values based on relatively strong evidence and values based on weak evidence. Approximately half of the EFSA dietary

reference values based on relatively strong evidence can be adopted. In these cases, the Committee agrees with the scientific basis used by EFSA or this specific nutrient and the Dutch context provides no reason for deviating from the EFSA dietary reference values. With regard to the other vitamins and minerals, the Committee has decided either to maintain or modify existing Dutch dietary reference values, or not to formulate a dietary reference value at all. For three nutrients, this is related to a specific nutritional context in the Netherlands. The EFSA dietary reference values for seven other nutrients were not adopted, because the Committee has objections to the scientific basis used by EFSA. Usually, these EFSA dietary reference values were higher than the current Dutch dietary reference values, without sufficient evidence that a higher intake would lead to genuine health gains. These nutrients could then feature too prominently in public information on nutrition, and when formulating healthy diets (food patterns that comply with the



Dutch dietary guidelines 2015 and with all relevant dietary reference values).

The Committee’s conclusions are summarised in Table 1. It also indicates whether the conclusion implies that the existing Dutch reference values are changed.

For eight other nutrients, a lack of research prevents the EFSA dietary reference values from being properly assessed. As a result, it is also impossible to derive a better dietary reference value. In view of the efforts to harmonise dietary reference values throughout Europe, the Committee has decided to adopt EFSA dietary reference values for these substances, even though they are based on weak evidence (see Table 2). A dietary reference value is needed for these substances because they are essential nutrients that the body requires but cannot produce itself. In practice, these dietary reference values have little relevance for the general population as there do not appear to be any deficiencies of the nutrients in question. The Committee, therefore, recommends that these dietary reference values

Table 1. Conclusions regarding relatively strongly substantiated dietary reference values

	Change compared to 2014			
	Higher value	Lower value	Another type of change	No change
Adopted from EFSA	<ul style="list-style-type: none">• Riboflavin• Iron (population reference intakes)• Potassium (women)• Magnesium (women)	<ul style="list-style-type: none">• Iron (average requirements)	<ul style="list-style-type: none">• Thiamin and niacin: unit has changed• Calcium (young people) and iodine: type of reference value has changed	<ul style="list-style-type: none">• Vitamin K1• Potassium (men)• Magnesium (men)
Not adopted from EFSA	<ul style="list-style-type: none">• Vitamin A (average requirements)	<ul style="list-style-type: none">• Vitamin A (population reference intakes)	<ul style="list-style-type: none">• Fluoride: no reference value required in the Netherlands	<ul style="list-style-type: none">• Vitamin B6• Folate• Vitamin B12• Vitamin C• Vitamin D• Calcium (older adults)• Copper• Zinc

are not used in public information on nutrition or for assessments of the diets of specific groups. These dietary reference values, however, can be used for dietary planning.

Table 2. Conclusions about weakly substantiated dietary reference values

	Change compared to 2014		
	Higher value	Another type of change	No change
Adopted from EFSA	<ul style="list-style-type: none">• Vitamin E• Selenium	<ul style="list-style-type: none">• Choline: no dietary reference value in 2014• Phosphorus: type of dietary reference value has changed	<ul style="list-style-type: none">• Pantothenic acid• Biotin• Manganese• Molybdenum

Limitations of the dietary reference values

Dietary reference values are an important tool for determining whether people are consuming enough vitamins and minerals. Dietary reference values also have clear limitations, which means they must not be used too rigidly in everyday practice. For instance, even in the case of relatively strong evidence, available research is not always good enough to assess whether the requirement differs between men and women or between younger and older adults. If there is too little research, or none at all, then the same reference value is often used for all adults. It



would then be wrong to conclude, on the basis of that reference value, that women – who eat on average less and have a lower nutrient intake than men – are at greater risk of inadequate supply than men.

Dietary reference values are intended primarily for healthy individuals with a healthy body weight. Research on the nutritional requirements of other groups, such as the chronically ill, older

adults (indeed, many older individuals in the Netherlands have one or more chronic disorders) or obese individuals, is often limited. In the absence of specific recommendations for groups like these, it is customary to use the dietary reference values, even though they primarily are intended for healthy people with a healthy body weight.



The Health Council of the Netherlands, established in 1902, is an independent scientific advisory body. Its remit is “to advise the government and Parliament on the current level of knowledge with respect to public health issues and health (services) research...” (Section 22, Health Act).

The Health Council receives most requests for advice from the Ministers of Health, Welfare and Sport, Infrastructure and Water Management, Social Affairs and Employment, and Agriculture, Nature and Food Quality. The Council can publish advisory reports on its own initiative. It usually does this in order to ask attention for developments or trends that are thought to be relevant to government policy.

Most Health Council reports are prepared by multidisciplinary committees of Dutch or, sometimes, foreign experts, appointed in a personal capacity. The reports are available to the public.

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Preferred citation:

Health Council of the Netherlands. Dietary reference values for vitamins and minerals for adults. The Hague: Health Council of the Netherlands, 2018; publication no. 2018/19e.

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