To the State Secretary for Health, Welfare and Sport

Gezondheidsraad
Health Council of the Netherlands

Date:	March 7, 2023	Your ref:	-	Our ref:	3534274/CS/idv/042
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Subject: advisory report *Tolerable upper intake levels for vitamins and minerals*

Dear State Secretary,

This advisory report is about the tolerable upper intake levels for vitamins and minerals. It is part of a series of advisory reports on dietary reference intakes.[1-4] The Health Council periodically reviews dietary reference values; this is one of the routine tasks of the Health Council of the Netherlands. This advisory report has been drawn up by the permanent Committee on Nutrition. An overview of the composition of the committee can be found at the end of this letter. The report has been reviewed by two members of the Health Council's standing committee.

Overdose prevention

People can obtain vitamins and minerals from food (which may be enriched, or fortified, with extra vitamins and minerals) and from food supplements. The body needs vitamins and minerals, but above a certain intake level, undesirable health effects may occur. Accordingly, tolerable upper intake levels have been set for vitamins and minerals. These upper levels relate to the total intake of vitamins and minerals from foods and supplements combined. They are derived by the European Food Safety Authority (EFSA), among other sources.[5-11]
Upper levels are different from other types of dietary reference values[1] because they are not target intake values. They serve as a tool to prevent an overdose of vitamins and minerals. Exceeding the upper levels is almost always a consequence of consuming too many supplements or supplements with an excessive dosage or an excessive amount of fortified foods. The upper levels for vitamins and minerals are seldom exceeded through the consumption of non-fortified foods alone.[2] Accordingly, the main method of overdose prevention is through regulations on maximum levels in supplements and fortified foods.

European regulations

To determine the maximum levels of vitamins and minerals in supplements and fortified foods, an estimate is made of the intake levels of vitamins and minerals people obtain from non-fortified foods. Maximum amounts in supplements and fortified foods are then established at levels that would ensure that, when combined with the estimated intakes from non-fortified foods, the tolerable upper intake levels would not be exceeded.

[1] Dietary reference intakes give information on the amounts of nutrients and energy that healthy individuals should consume to stay healthy. This advisory report only relates to the tolerable upper intake levels. There are three other types of dietary reference intakes (average requirements, population reference intakes and adequate intakes) that are covered in other advisory reports in this series.

[2] Although the upper levels for vitamins and minerals are seldom exceeded through the consumption of non-fortified foods, there are certain exceptions. For example, the consumption of liver and liver products can lead to the upper level for vitamin A being exceeded. This upper level is based on undesirable effects during pregnancy. Therefore, the recommendation to not eat liver and to limit the consumption of liver products applies specifically to pregnant women.

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The EU intends to establish European maximum levels of vitamins and minerals in food supplements (EC Directive 2002[12]) and fortified foods (EC Regulation 2006[13]), but no European maximum levels have been established yet, so the maximum levels set at national level are still in force.
In the Netherlands, it has been standard practice for many years to apply the EFSA tolerable upper intake levels for vitamins and minerals, based on the assumption that the EFSA upper levels will form the basis for the European legislation on maximum levels for food supplements and fortified foods.[14-23] Mainly for this reason, in 2014, the Health Council recommended the State Secretary for Health, Welfare and Sport to provisionally apply the EFSA upper levels in the Netherlands.[24]
It has recently become clear that the European legislation will indeed be based on the EFSA upper levels. This is apparent from the mandate that the EFSA received from the European Commission in 2021 to review the upper levels for multiple vitamins and minerals.[9-11]
Accordingly, the provisional status of the 2014 advisory report should be ended.

Recommendation
The committee recommends adopting the EFSA upper levels for the Dutch population, anticipating the release of legally established European maximum levels. This recommendation applies to the existing EFSA upper levels[5-8] and, in principle, also applies to any new or adjusted upper levels the EFSA may release in the future. It relates to all target groups for which the EFSA has formulated upper levels or may formulate upper levels in the future.

This recommendation has no implications for the Netherlands Nutrition Centre; the EFSA upper levels have already been incorporated into public nutrition information.

I endorse the reasoning and recommendations of the committee.

Yours faithfully

Prof. J.M. Geleijnse,
Vice President

Members of the Committee on Nutrition for the advisory report *Tolerable upper intake levels for vitamins and minerals*:

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- Prof. J.W.J. Beulens, Professor of lifestyle and cardiometabolic disease epidemiology, Amsterdam UMC, vice chairperson
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Scientific secretaries:

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- C.J.K. Spaaij PhD, Health Council, The Hague

Incidentally consulted expert[c]:

- J.J.M. Castenmiller PhD, Netherlands Food and Consumer Product Safety Authority (NVWA), Utrecht

[c] Consulted experts are consulted by the committee because of their expertise. Consulted experts and observers are entitled to speak during the meeting. They do not have any voting rights and do not bear any responsibility for the content of the committee's advisory report.

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