

**COMMITTEE ON TOXICITY OF CHEMICALS IN FOOD,
CONSUMER PRODUCTS AND THE ENVIRONMENT**

Final Draft Statement on potassium-based replacements for sodium chloride and sodium-based additives. Revised version.

Introduction and background

1. In 2013, the Department of Health (DH) asked the Scientific Advisory Committee on Nutrition (SACN) to review current recommendations on the use of potassium-based replacements for sodium chloride and sodium-based additives.
2. DH policy has been to lower sodium intakes in the population by gradually reducing levels of salt in food products in a way that will progressively accustom the palates of consumers to less salt. The DH has not recommended the use of potassium-based replacements for sodium chloride and sodium-based additives as a means of achieving salt reduction, as their use would continue to maintain a higher salt flavour in food. Furthermore, there has been concern that some population groups such as infants, the elderly and people with kidney disease, might be vulnerable to increased levels of potassium in food because of immature or impaired renal function. Some patients with diagnosed kidney disease are advised to restrict their intake of potassium, but other people with undiagnosed renal impairment who would benefit from moderating potassium intake might also be adversely affected if their consumption of potassium increased.
3. Companies that produce food have asked the DH to reconsider its recommendations, as some would like to use (and may already be using) potassium-based replacements to achieve lower levels of sodium in food. The products concerned are those for which further reductions in sodium are difficult to achieve by reformulation, and include items such as bakery goods (e.g. scones, scotch pancakes, crumpets) and meat products (e.g. sausages and bacon) in which the sodium compound has a culinary function – for example, as a raising agent or preservative – as well as flavouring properties. Potassium cannot totally replace sodium as it has a metallic aftertaste, and does not exactly replicate the flavour of sodium. However, it has been suggested that up to 25-30% of added sodium could be replaced by potassium (personal communication, Department of Health). Information from the bakery products sector suggested that replacement would be up to 15% in bread.
4. The COT was asked by the SACN to advise on the possible adverse effects of increased potassium intakes as a consequence of salt replacement. The Committee agreed that various population groups should be considered: healthy adults; healthy infants; healthy children at older ages; and people with chronic kidney

disease (CKD), other relevant morbidity, or taking medicines that could make them more vulnerable to higher potassium intakes.

Revisions to the COT statement

5. As COT members will recall, the COT statement on potassium based replacements for sodium chloride and sodium-based additives was finalised by Chairman's action in May 2015.

6. As the Scientific Advisory Committee on Nutrition (SACN) was working on the potential benefits of increasing the use of potassium based replacements for sodium chloride and sodium based additives by both reducing sodium intakes and increasing potassium intakes, it was agreed that there should be a risk benefit assessment so that unified advice could be given to risk managers. A joint COT/SACN working group was established to undertake this task. It is hoped that the risk benefit assessment report will be published in spring 2017.

7. As a result of the risk-benefit work, some new data have become available which would be useful to include in the COT statement. Some additional references have been included and a number of the estimates revised to reflect the most recent population data. The revised version of the statement is attached at Annex A.

8. The exposure assessment was also expanded and updated for the joint Working Group so differs from the version seen by COT; the most recent version of the document being attached as Annex B. The mean intake of potassium after sodium substitution is up to 4% lower in the latest modelling than in the earlier modelling exercise. In part, this is because the latest modelling is more refined, with sodium substitution in fewer foods and at a lower level in bread. Furthermore, the NDNS Nutrient databank indicates that the sodium concentrations of many foods are lower than before, so sodium substitution has less effect.

9. In summary, changes in the assumptions used and the availability of more recent data have slightly reduced the estimated increase in potassium intakes.

10. The amendments in the revised statement are present as tracked changes but the key points are noted below:

- New text on the velocity of hyperkalaemia (paragraph 62).
- Updating of the section on the prevalence of CKD (paragraphs 75-6)
- Additional data on the prevalence of hyperkalaemia in hospital populations (paragraph 90)
- Updating of section on exposure assessment

Questions for the Committee

11. Members are asked:

- a) Whether they have any comments on the new text
- b) Whether the new data affects the conclusions
- c) If they have any other comments.

Secretariat
November 2016

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Draft COT Statement

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