General

Lay Summary of the Statement on the potential effects that excess iodine intake may have during preconception, pregnancy and lactation

1. In 2019, The Scientific Advisory Committee on Nutrition (SACN) agreed to conduct a risk assessment on nutrition and maternal health focusing on outcomes during pregnancy, childbirth and up to 24 months after delivery; this would include the effects of chemical contaminants and excess nutrients in the diet. The Committee on Toxicity was consulted and decided that iodine should be considered for a detailed risk assessment.

2. In the environment, iodine is usually found in the form of iodate salts, or in the form of organo-iodide compounds produced by algae and bacteria.

3. Iodine is essential in the human diet because it is required for the synthesis of the thyroid hormones tri-iodo- and tetra-iodothyronine (T3 and T4, which is also known as thyroxine). This takes place in the thyroid gland. The thyroid hormones help regulate metabolism and ensure that the heart, brain and other organs function in a healthy manner. They are also involved in brain development and bone growth especially in the fetus. The fetus is exposed to iodine via the placenta, and both maternal iodine deficiency and excess can have profound effects on both mother and offspring.

4. Excess iodine may lead to the occurrence of goitre in adults and children. Goitre is a condition where a lump or swelling develops at the front of the neck caused by a swollen thyroid.

5. The richest dietary sources of iodine are milk and dairy products, fish and seafood, and eggs. The Committee looked at the iodine levels that had been measured in various food samples in a Total Diet Study conducted in 2014. The Committee also looked into iodine levels in seaweed as it was found that seaweed

consumption was greatest in those on a vegan diet and in some cultures.

6. There are currently three health-based guidance values (HGBV) set for iodine. The Joint FAO/WHO Expert Committee on Food Additives (JECFA) established a Provisional Maximum Tolerable Daily Intake (PMTDI) of 17 µg/kg bw/day (equivalent to 1020 µg/day for a 60 kg adult) for iodine from all sources. The Expert Group on Vitamins and Minerals (EVM) in the UK set a guidance level for iodine of 15 µg/kg bw/day, an approximate indication of the level below which adverse effects are not expecteed. The European Scientific Committee on Food (SCF) established an Upper Limit (UL) for total iodine intake of 600 µg/day.

7. Overall, the Committee concluded that there are no toxicological concerns at the levels of iodine exposure in the general population, however, high consumers of seaweed may be exposed to levels of iodine that could pose a toxicological risk to maternal health. Currently, available data are not sufficient to assess the applicability of the HBGVs to pregnant women, and there is a lack of exposure data in relation to pregnancy and lactation to enable a risk assessment to be performed.

The full COT statement can be found at: Statement on the potential effects that excess iodine intake may have during preconception, pregnancy and lactation | Committee on Toxicity (food.gov.uk)

Lay Summary to COT Statement 2022/02