Cadmium in the Maternal Diet - Background

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4. Cadmium (Cd) is a soft malleable metallic element that is silvery-white or bluish white in appearance and exists in various mineral forms. Early uses include the use of cadmium compounds as pigments with more recent uses being in rechargeable batteries and coatings for prevention of corrosion of iron and steel. Cadmium can be released into the environment by natural activities (e.g., volcanic activity, erosion and weathering), and anthropogenic activities such as mining, smelting and refining non-ferrous metals.

5. In the non-smoking population, the diet is the main source of cadmium exposure (approximately 90%), with less than 10% of exposure being due to inhalation from ambient air and drinking water (EFSA, 2009). Cereals and vegetables (e.g., potatoes) are the main food sources that contribute to cadmium exposure with levels dependent on the usage of phosphate fertilisers where

cadmium is present as a contaminant. The uptake of cadmium by plants is influenced by the pH of the soil, with a low pH enhancing uptake (Jarup et al. 1998). In animal products, the main sources of cadmium are the kidney and liver due to cadmium accumulation in these organs.

6. Smoking is the main non-dietary source of exposure of cadmium in smokers due to the accumulation of cadmium in the tobacco leaves via the soil and can lead to a similar internal exposure as that acquired from the diet (EFSA, 2009).

7. There are no data that indicate cadmium is an essential micronutrient for animals, plants, or microorganisms (EFSA 2009, Khan et al., 2017).