Dietary exposure to volatile and non-volatile N-nitrosamines from processed meat products in Denmark - DTU Orbit (03/01/2019)

**Dietary exposure to volatile and non-volatile N-nitrosamines from processed meat products in Denmark**

Recent epidemiological studies show a positive association between cancer incidence and high intake of processed meat. N-nitrosamines (NAs) in these products have been suggested as one potential causative factor. Most volatile NAs (VNAs) are classified as probable human carcinogens, whereas the carcinogenicity for the majority of the non-volatile NA (NVNA) remains to be elucidated. Danish adults (15–75 years) and children (4–6 years) consume 20 g and 16 g of processed meat per day (95th percentile), respectively. The consumption is primarily accounted for by sausages, salami, pork flank (spiced and boiled) and ham. This consumption results in an exposure to NVNA of 33 and 90 ng kg bw−1 day−1 for adults and children, respectively. The exposure to VNA is significantly lower amounting to 0.34 and 1.1 ng kg bw−1 day−1 for adults and children, respectively. Based on a BMDL10 of 29 µg kg bw−1 day−1 a MOE value ≥17,000 was derived for the exposure to NA known to be carcinogenic (VNA including NSAR), indicating an exposure of low concern. The exposure to the NVNA is substantially higher and if found to be of toxicological significance the exposure may be of concern.

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