Annex A - Exposure

In this guide

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107. TOX/2021/26 discussed exposure to ginger via the diet and in supplement form. TOX/2020/51 examined in more detail exposure to ginger in the form of highly concentrated juices (‘shots’). This statement reviews ginger from all sources described previously.

108. Many ginger supplements (Tables 1 and 2, Annex C) are recommended to support digestive and joint health, alleviate nausea, upset stomach, and travel sickness. Currently, a number of commercially available pregnancy supplements, including ‘Seven Seas Pregnancy’ and ‘Seven Seas Pregnancy Plus Follow On’, contain ginger extracts in their formulations.

109. The availability of supplements in different forms, along with a lack of information with regards to extraction processes involved and therefore composition of the extracts, meant it was not possible to consider aggregate exposures, as such, ginger exposure from the diet and supplements were separately considered.

110. In addition to supplements, pregnant women may also consume ginger as part of their general diet to various degrees. There are anecdotal

reports of women using ginger products (Tables 3, Annex C) such as ginger biscuits and ginger ale, to alleviate morning sickness and nausea. Some may use these in combination with juice shots or tinctures (Table 4, Annex C).

111. Table 1 shows calculated exposures from the diet, supplements and drinks (including teas and shots). Mean acute ginger exposure from the diet of women aged 16-49 years old was 0.026 g/kg bw/day, and 97.5th percentile exposure was 0.16 g/kg bw/day. The corresponding mean and 97.5th percentile chronic exposures were 0.0083 and 0.058 g/kg bw/day, respectively. The upper value of the range of exposure from drinks and supplements was more than double (%) those estimated from 97.5th percentile acute exposure from the diet.

Table 1: Estimated mean and 97.5th percentile acute and chronic ginger exposures from a variety of sources in women aged 16 – 49 years old.

Source	Range of daily exposures (g/day)	Range of daily exposures (g/kg bw/day)	Mean acute exposure* (g/day)	Mean acute exposure* (g/kg bw/day)	97.5th percentile acute exposure* (g/day)	97.5th percentile acute exposure* (g/kg bw/day)	Mean chronic exposure* (g/day)	M ch ex (g bw
Food[a]	No data	No data	1.7	0.026	11	0.16	0.55	0.
Drinks (Including tea and shots) [b1,b]	0.5 - 32.5	0.0071 - 0.46	No data	No data	No data	No data	No data	N
Supplements [c]	0.010 - 24	0.00014 - 0.34	No data	No data	No data	No data	No data	N

1This assumes only one serving is consumed per day.

a Data obtained from the National Diet and Nutrition surveys years 1-8 calculated from women of a childbearing age (16-49 years) (Bates *et al.*, 2014; 2016; Roberts *et al.*, 2018)

b Data obtained online from retailers, see Appendix 1 for further details

c Data obtained online from retailers, see Appendix 1 for further details

*Rounded to 2 significant figures

112. As previously mentioned, 1 - 1.5 g per day may be advised during pregnancy (NHS, 2022, Healthline, 2020; Mother and baby, 2022). Some highly concentrated ginger shots commercially available contain up to 30 g of fresh ginger per serving, over 30 times that recommended by healthcare professionals.

113. As the NDNS does not provide data for pregnant women, there was uncertainty as to whether the data presented an accurate reflection of consumption during pregnancy. This uncertainty also extended to data presented for drinks and supplements, as the pattern of consumption during pregnancy to alleviate symptoms of sickness is unknown.