

Committee on Toxicity of Chemicals in Food, Consumer Products and the Environment

Scope of the Nutrition and maternal health project

In 2019, the Scientific Advisory Committee on Nutrition (SACN) agreed to conduct a risk assessment on nutrition and maternal health focusing on maternal outcomes during pregnancy, childbirth and up to 24 months after delivery. As part of this project, SACN sought the advice of the COT on whether excess exposure to a variety of substances could pose a risk to maternal health. Substances are only to be covered if they are related to a toxicological mechanism rather than inadequate nutrition. This Annex contains information on the scope of the SACN maternal health and nutrition project, the proposed endpoints and the current list of substances to be assessed by the COT.

The following maternal life history stages will be assessed (Figure 1): pre-mating to conception (stage A), conception to implantation (stage B), implantation to parturition (stage C) and post-partum, including lactation (stage D).

SACN has considered preconception (stage A) from a biological perspective, defining it as the critical period spanning the days to weeks before embryo development. However, the COT may wish to define this period more precisely for the purposes of this project.

The pre-implantation (stage B) is defined as the time from conception to implantation, while pregnancy (stage C) covers the period from implantation to parturition.

The post-partum period (stage D) includes any maternal outcomes occurring up to 24 months after delivery, including adverse effects on lactation. However, it does not include effects on the offspring that are mediated through lactation. More broadly, this stage excludes the growth, development and sexual maturation of the offspring, as these were considered outside the scope of the project.

Infant outcomes may be considered in specific instances but only where they relate to the neonatal period. The relevant time window for neonatal effects would be determined on a case-by-case basis for each review as this timescale may vary; however, the COT would normally consider this period to be up to 28 days after birth. The rationale for the agreed period during which neonatal effects are considered to be in scope will be presented in the final report for each substance.

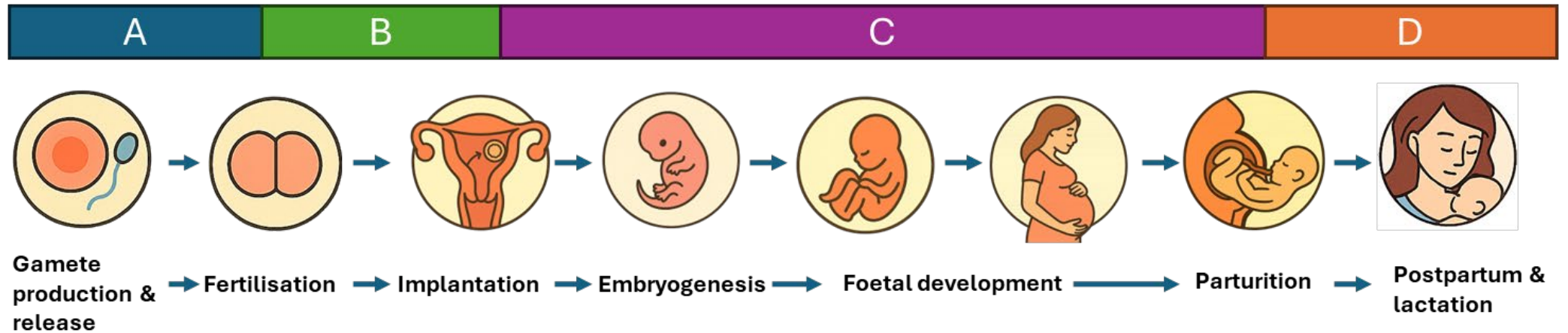


Figure 1: The maternal life history stages, including stage A (pre-mating to conception), B (conception to implantation), C (implantation to parturition), D (post-partum including lactation). Stage A shows gamete production and fertilisation. Stage B shows the fertilised egg dividing and implanting in the uterus. Stage C shows development in the uterus from early embryo to foetus, ending with birth. Stage D shows a newborn being held, representing the post-partum period and lactation.

Proposed endpoints

A range of maternal outcomes during pregnancy, childbirth and up to 24 months after delivery will be considered. These align with the range of relevant endpoints identified by SACN to be examined from a toxicological perspective.

Pregnancy related outcomes, including:

- Time to conceive,
- Congenital anomalies (COT expanded to this to include other adverse effects on embryonic and foetal development),
- Miscarriage,
- Stillbirth,
- Preterm delivery,
- Gestational age at delivery,
- Birthweight and size for gestational age,
- Perinatal and neonatal morbidity and mortality,
- Placental health.

Maternal health outcomes, including:

- Blood pressure and hypertensive disease in pregnancy, including the risk of gestational hypertension and pre-eclampsia.
- Mental health (when clearly linked to chemical exposure).
- Glycaemic control, including risk of gestational diabetes.
- Anaemia,
- Bone health, including maternal bone mineral density and bone mass.
- Effects on lactation but not mediated by lactation.

Additional outcomes the COT may regard as relevant, including infant outcomes, may be considered in specific instances, but only where they relate to the neonatal period.

The following endpoints were considered to be outside the scope of the COT:

- Mode of delivery,
- Oral health,
- Weight loss, weight gain and weight retention during pregnancy (gestational weight) and up to 24 months after delivery.

Proposed list of substances for consideration

The proposed substances to be considered by the COT are listed below. Substances will only be included where their effects are associated with a toxicological mechanism rather than inadequate nutrition. It should be noted that the list of substances may be subject to change; additions may be made where SACN and the COT consider this appropriate.

Vitamins and minerals

- Vitamins A, C, D (including calcidiol), E,
- Selenium, iodine.

Heavy metals

Lead, arsenic, mercury, cadmium. This was subsequently expanded to include a more general consideration of pica behaviour.

Other food components/herbal supplements

Tea (Green and black), caffeine, ergot alkaloids, raspberry leaf, echinacea, camomile, peppermint, evening primrose oil, dandelion, resveratrol, phytoestrogens.

Dietary contaminants

- Mycotoxins: citrinin, aflatoxins, fumonisins, ochratoxin A, Zearalenone, deoxynivalenol, nivalenol, patulin, T2 and HT2.
- Oily fish.

Process contaminants

Acrylamide, heterocyclic amines.

Organic contaminants

- Dioxins and dioxin-like polychlorinated biphenyls (PCBs),
- Non-dioxin-like (NDL) PCBs,
- Bisphenol A (BPA),
- Pesticides/legacy pesticides.

Completed papers

The table below lists the substances that have been reviewed by the COT and published as final statements.

Table 1. List of substances with completed discussion papers and statements published by the COT before the publication of this Annex A (Scope of the Nutrition and maternal health project) *

Substance	Statement	Link
Vitamin D	Statement on the potential effects of excess vitamin D intake during preconception, pregnancy and lactation	Vitamin D - GOV.UK
Iodine	Statement on the potential effects that excess iodine intake may have during preconception, pregnancy and lactation	Iodine - GOV.UK
Vitamin A	Statement on the effects of excess Vitamin A on maternal health	Vitamin A - GOV.UK
Cadmium	Statement on the potential risks from cadmium in the maternal diet	Cadmium - GOV.UK
Effects on Pica during pregnancy	Discussion paper on the effects of pica during pregnancy	Pica - GOV.UK

Lead	Statement on the potential risks from lead in the maternal diet	Lead - GOV.UK
Raspberry leaf tea	Statement on the potential health effects of raspberry leaf tea in the maternal diet	Raspberry leaf tea - GOV.UK
Ginger	Safety of Ginger Supplement Use in Pregnancy	Ginger - GOV.UK
Ergot alkaloids	Statement on the potential risks from ergot alkaloids in the maternal diet	Ergot alkaloids - GOV.UK
Mercury	Statement on the effects of mercury on the maternal health	Mercury - GOV.UK
Citrinin	Statement on the potential risks from citrinin in the maternal diet	Citrinin - GOV.UK

*Papers published before publication of Annex A may have slight deviations in the scope of endpoints assessed.

Table 2. List of substances with completed discussion papers and statements published with Annex A (Scope of the Nutrition and maternal health project)*

Substance	Statement	Link
Echinacea	Statement on the potential health effects of <i>Echinacea</i> in the maternal diet	To be published shortly.

May 2026