

# Parabens

## Summary

Parabens are preservatives found in cosmetics and personal care products, and occasionally in certain processed foods. Many of us are exposed to parabens on a regular basis. Parabens have been measured in breast tissue, breast milk and placental tissue. High concentrations of parabens have been found to mimic the actions of oestrogen. Oestrogen is associated with increased breast cancer risk. Breast Cancer UK believes it is important to take precautionary measures to protect ourselves and our families, including reducing our exposures to oestrogen mimics, where possible.

## What are Parabens, what are they used for and where are they found?

Parabens and para-hydroxybenzoic acid are synthetically produced compounds used as preservatives to prolong the shelf life of products. They are often found in cosmetics and personal care products such as shampoos, conditioners, deodorants, makeup, lotions, skin cleansing products and mouth wash. They are generally listed in ingredients as methyl paraben, ethyl paraben, propyl paraben and butyl paraben.

Parabens are also used as preservatives in some food products, pharmaceuticals and medicines, where they are often listed as E numbers. Food additives include E214, E217, E218 and E219. Currently, the regulation of parabens falls under EU legislation. The EU restricts the concentration of each paraben in specific products, with some not allowed at all for certain uses (1, 2). This is to protect the general population, and children under three specifically, from possible harmful effects. For more details see Breast Cancer UK's full parabens brief.

Due to their common use in personal care products and food, many of us are exposed to parabens and para-hydroxybenzoic acid on a daily basis. When consumed in food, the body rapidly breaks down and excretes these compounds (3). Parabens applied to the skin in leave-on products, (e.g. cosmetics) are most likely to contribute to any build-up of these chemicals within our bodies (4). Parabens have been measured in human blood and urine, breast milk and breast tissue, and in placental tissue, amniotic fluid and cord blood, suggesting they can cross the placenta (5, 6, 7).

Parabens have become widespread in the environment, and are measurable in drinking and river water (8, 9, 10), soil (11), aquatic organisms (12) including farmed fish and shrimp (13), as well as house dust and indoor and outdoor air (14).

## Are parabens linked to breast cancer?

Scientific research suggests that parabens and para-hydroxybenzoic acid may be able to interfere with the natural hormone, oestrogen. High levels of oestrogen increase our risk of breast cancer (15), mainly because oestrogen encourages a high rate of cell division, increasing the possibility of mutations occurring, including those that lead to breast cancer.

At high concentrations, parabens can trigger similar actions to those initiated by naturally occurring oestrogen. It is this ability that suggests that parabens may play a role in breast cancer risk (16).

Research also suggests that parabens might increase the spread of existing breast cancer (17). Although these effects have been shown clearly in cell culture and in tests on animals, scientists disagree about how relevant this research is to people, as studies on the direct effects of parabens on humans have not been carried out. For more details about this area of research see Breast Cancer UK's full parabens brief.

### Are we exposed to high levels of parabens?

Some tests have found that parabens can be present in our bodies at high concentrations (18). This might increase breast cancer risk, particularly if exposure to parabens occurs during the three main periods of breast tissue development, which occur in the womb, around puberty, and during pregnancy (19). It is unclear whether it is high exposure to parabens that leads to high concentrations in our bodies, or if different individuals store parabens in their bodies in different amounts. Also, we do not know how long it takes for paraben concentrations in our tissues to go down once we reduce our exposure, although lowering exposure does rapidly reduce levels in urine (20). Studies are needed to assess the possible long-term effects of exposure on people.

For a list of references cited above please see [here](#).

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