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EDC Insights No.2 - Parabens

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What are Parabens? [para-bens]

Parabens are synthetic esters of para-hydroxybenzoic acid (PHBA) and are widely used for their preservative and antibacterial properties to keep cosmetics, toiletries, food, and pharmacy products fresh for longer.

PHBA also occurs naturally in fruits and vegetables and is formed within the human body.

Parabens are absorbed through the skin and the body usually excretes them within 2 days in urine, but they have been detected in other body fluids, including breast milk.

However, daily use suggests they may be ever present. Every time we touch something we transfer bacteria; to keep facial skincare, cosmetics, and many of our personal care products free of bacteria parabens are usually added.



What are the most common parabens?

The four most common groups are methyl, ethyl, propyl, butyl paraben and paraben. They are permitted for use in a wide range of products, but only at low concentrations.

Health risks of parabens

Parabens can mimic the actions of hormones, especially oestrogens and androgens in the reproductive system, so they are described as endocrine disrupting chemicals (EDCs).

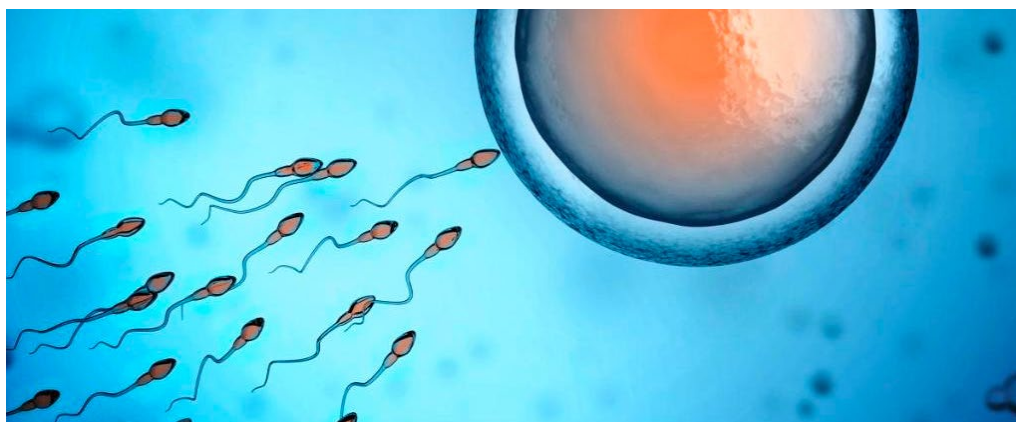
Two parabens, propylparaben and butylparaben are classed as endocrine disruptors because they can mimic estrogenic and antiandrogen in the human body.

The cosmetic industry is heavily reliant on parabens as product ingredients, with opinion divided still divided about how safe it is to use them.

PREGNANCY AND FOETAL DEVELOPMENT

Parabens are structurally similar to oestrogen so they can mimic the hormonal actions and interfere with prenatal development. **Parabens have been detected in breast milk** and have been detected at higher levels in **pregnant women who had used toiletries** such as shampoo and body lotion in the past 24 hours.

Paraben use is tightly restricted and only permitted at low concentrations. We don't fully understand what a safe level for human contact is yet, but there is a growing body of evidence to suggest that parabens can harm our health, especially during sensitive periods of development when hormones are working at force.



MALE FERTILITY

It's unclear whether exposure to parabens adversely impact on sperm function, but their ability to mimic the natural actions of androgens (male hormones) is a cause for concern. Some correlations have been found between parabens detected in urine and sperm health, but the evidence isn't strong yet; more studies are needed.

Leading scientist Shanna Swan published her book 'Count Down' in 2021 where she revealed that sperm counts in Western countries have dropped by 50% in the past four decades.

Watch her talk about it here: [Shanna Swan | Count Down: The Future of the Human Race | Talks at Google](#)

BREAST CANCER

Parabens mimic the actions of oestrogens including the normal actions of breast cell tissue, so they are thought to be a risk factor in the **formation of abnormal cells and breast cancer**. It's been suggested that deodorants containing parabens might increase breast cancer risk, but causal links haven't been fully established.



Where are parabens found?

Millions of tonnes of parabens are manufactured each year mostly by the cosmetics industry to preserve product shelf life, preserving products which otherwise would have to be refrigerated or thrown away quite quickly.

They are also used in some food and household products using methyl or ethyl parabens, appearing on packaging as E218 and E214.

Can parabens be detected in the body?

This chemical group can be detected in urine and breast milk.

Does the body store parabens?

Parabens usually pass through the body in a couple of days via the liver where toxins and other unwanted substances are removed before excreting in urine.

Can you reduce your exposure to parabens?

It's relatively easy to avoid this chemical group in cosmetic and toiletry products. There is a viable choice of brands who promote 'paraben free' products, so you can either avoid them altogether, or ensure you follow the product recommendations about when to dispose and replace the product within its use by date.



COSMETICS AND TOILETRIES

Read product labels to avoid paraben ingredients. For example, choose a deodorant using only natural ingredients. It may not be as effective in managing perspiration but switching between products could reduce your overall exposure to parabens.

Avoid using products containing parabens especially during sensitive periods such as pregnancy and breast feeding if you are concerned.

FIND OUT MORE ABOUT WHAT'S IN THE PRODUCTS YOU BUY

Download an app to check the chemicals used in products for your personal or household use. We recommend [Yuka](#) which provides a helpful breakdown and rating of 1000's of products and recommends alternatives in some cases, and it's free to use.

How are parabens regulated?

THE UK SVHC LIST

The Health and Safety Executive (HSE) enforces a list of **Substances of Very High Concern (SVHCs)** for substances known to have detrimental effects on human health. Substances on the list legally are restricted and manufacturers must apply for permission to use chemicals on the list.

Two parabens appear on the UK list, propylparaben and butylparaben. They are classed as SVHCs because they are known to be toxic for reproduction or known to have endocrine disrupting properties in human health.

CHEMICAL SUBSTITUTIONS - THE SIN LIST

ChemSec, the International Chemical Secretariat, is an independent non-profit organisation that advocates for substitution of toxic chemicals to safer alternatives.

ChemSec have developed the **SIN list**. Two parabens appear on the list, propylparaben and butylparaben.

FURTHER READING:

WHO & UN Environment Programme **[The State of the Science, Endocrine Disrupting Chemicals](#)**