

Parabens and Their Effects on Human Health

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Parabens are a group of chemical compounds widely used in various industries due to their antimicrobial and antioxidant properties. Their primary role is to inhibit the growth of microbes, molds, and fungi, thereby enhancing product shelf life. As a result, parabens are commonly found in cosmetics, personal care, pharmaceuticals, and even some food products, primarily as preservatives. Sunscreens are among the most prevalent paraben-containing products used daily and continuously. However, in recent years, scientific and public concerns about the adverse effects of parabens on human health have escalated. Numerous studies have highlighted the negative impacts of these compounds. Parabens are synthetic chemicals with estrogen-like effects and are classified as endocrine-disrupting compounds (EDC) and xenoestrogens. By binding to estrogen receptors, they interfere with natural hormonal functions. Research indicates that parabens may lead to hormonal imbalances, menstrual disorders, infertility, and an increased risk of estrogen-dependent tumors, including breast cancer. Moreover, parabens are easily absorbed through the skin, potentially causing allergies and skin irritation. Continuous and daily use of paraben-containing sunscreens significantly increases the likelihood of such adverse effects. Additionally, under sun exposure, certain photodegradation products of parabens may damage collagen and elastin in the skin. These synthetic compounds are not readily degradable in the body and tend to accumulate in fatty tissues, leading to a phenomenon known as bioaccumulation. This study examines parabens' structure, applications, and health consequences to provide a deeper understanding of these compounds and emphasize the necessity of safer alternatives.

Keywords: Parabens, Microorganisms, Preservatives, Skin Absorption, Bioaccumulation, Inflammation And Neurological Disorders, Lifestyle

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