REVIEW OF TOXIC CHEMICALS IN COSMETICS

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Abstract: Cosmetic products play a significant role in personal care routines worldwide, including in Sri Lanka. Cosmetics are made of mixtures of ingredients. Concerns regarding the quality and safety of these products have grown due to the potential presence of harmful chemical ingredients and inconsistent product formulations. In recent years, the use of this cosmetically based personal care has increased throughout the world. Initially the cosmetics consisting of natural products. However, in present days, a high assimilation of chemical substances in formulation as preservatives, fragrances, surfactants, stabilizers are significant. The chemical additives which are used in the formulation of cosmetic products are bioactive and pose toxic effects to the human body. This study reviews current regulatory frameworks, industry practices, and consumer awareness, highlighting gaps that allow the continued use of hazardous ingredients focusing on commonly used ingredients such as parabens, phthalates, formaldehyde-releasing agents, heavy metals and synthetic fragrances. The presence and implications of such ingredients despite their potential adverse effects on human health. These ingredients in cosmetics are linked to adverse effects including endocrine disruption, carcinogenicity, neurotoxicity, immune-toxicity, geno-toxicity, skin sensitization, and environmental toxicity. Long-term exposure of these substances may lead serious health outcomes, including hormonal imbalances, reproductive and development disorders, allergic reactions and skin barrier damage. Furthermore, emerging trends in green chemistry and sustainable alternatives are discussed here as viable solutions to mitigate these risks. This comprehensive analysis aims to empower consumers, stakeholders including researchers and policymakers to prioritize health and pressing need for safer cosmetic formulations and stricter oversight.

Keywords: Biological risk, Chemical components, Cosmetics, Harmful effects, Human health, Risk mitigation, Toxics.