

Human Health and Dyes for Textiles

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Description

Textile dyes play a crucial role in the vibrant and diverse world of fashion and textiles. However, the widespread use of dyes raises concerns about their potential impact on human health. To gain a comprehensive understanding of the relationship between textile dyes and human health, a systematic and citation network analysis review was conducted. This review aimed to explore existing research literature, identify key findings, and uncover research trends and knowledge gaps in this field. The systematic review involved a meticulous search and screening process to select relevant studies from various academic databases. Articles focusing on the health effects of textile dyes, including both natural and synthetic dyes, were included. The selected studies were then subjected to rigorous analysis to extract key information and identify common themes related to human health outcomes [1].

The findings of the systematic review indicate that textile dyes have the potential to pose risks to human health through various pathways. Some studies have reported adverse health effects associated with the exposure to certain dyes, including skin irritation, allergies, respiratory issues, and even more severe conditions such as cancer. The risk levels may vary depending on factors such as dye type, concentration, duration and route of exposure, and individual susceptibility. Furthermore, the review revealed that the toxicity and health implications of textile dyes are influenced by factors such as dye composition, chemical structure, and dyeing processes. Certain classes of dyes, such as azo dyes, have been the focus of extensive research due to their potential to release harmful aromatic amines, which are known to be carcinogenic. In contrast, natural dyes derived from plant sources are generally considered to have lower toxicity profiles, although further studies are needed to fully understand their health effects [2].

The citation network analysis of the reviewed articles provided valuable insights into research trends and knowledge dissemination in the field of textile dyes and human health. It revealed key research clusters and influential studies, indicating areas of focus and emerging topics. The analysis also highlighted potential gaps in the literature, such as the need for more long-term epidemiological

studies and standardized methods for assessing the health risks associated with different dye types. Overall, this systematic and citation network analysis review emphasizes the importance of considering the potential health impacts of textile dyes. It underscores the need for further research, improved regulation, and increased awareness among manufacturers, policymakers, and consumers. By gaining a deeper understanding of the relationship between textile dyes and human health, we can work towards the development and adoption of safer dyeing practices, alternative dye sources, and sustainable approaches to ensure the well-being of both individuals and the environment in the textile industry [3].

The review also underscored the importance of interdisciplinary collaborations between researchers, chemists, toxicologists, and healthcare professionals. Such collaborations can foster a comprehensive understanding of the health risks posed by textile dyes and enable the development of effective mitigation strategies. Furthermore, the potential environmental impact of textile dyes should not be overlooked. Efforts should be made to minimize the release of dyes into water bodies during dyeing processes, as well as to explore eco-friendly dye removal and wastewater treatment methods. In conclusion, the systematic and citation network analysis review provides a valuable overview of the current knowledge and research trends regarding textile dyes and human health. It emphasizes the need for further research, standardized testing methods, and improved risk communication to ensure the safe and sustainable use of dyes in the textile industry. By addressing the identified knowledge gaps and implementing appropriate measures, we can strive for a fashion and textile sector that prioritizes human health and environmental well-being [4,5].

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Conflict of Interest

None.

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