

THE HEALTH IMPLICATIONS OF USING HAIR DYES

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How to cite: Arshad H, Ranjha KU, Allahi I. The Health Implications of Using Hair Dyes. JAIMC 2024;22(1): 1-2

The global utilization of hair coloring agents is on the rise for the purposes of masking gray hair and for cosmetic enhancements, with usage observed across genders.¹ Hair dyes may be of 3 types: permanent, semi-permanent and temporary. Permanent dyes are oxidative while temporary and semi-permanent dyes are nonoxidative in nature. These products differ from each other in their ability to penetrate hair shaft and frequency of their use. Regardless of their socioeconomic or educational background, individuals dye their hair as a means of enhancing their physical appearance. However, the safety of hair coloring products has consistently been a source of apprehension among users and non-users equally. Many people dye their hair without knowing what health implication it can have on their body and how dangerous their preference of beauty over health can cause.

In a meta-analysis conducted by Ahmadi et al., it was concluded that there is 10% increase risk of cancer with use of any type of hair dye.¹ Further they found that there was a significant association between duration and type of hair dye used i.e. they observe a 9% increase in risk of cancer among people who use dark hair dye and 14% increase in risk of cancer among people who use hair dye for more than 10 years.¹ Another study performed by Qin et al. concluded that with use of hair dye, there is statistically significant increase in hematological malignancy.² In another study by Gera et al, there was a 18.8% increase risk of breast

cancer with use of any type of dye.³ The findings of a study suggest that nitrosamines, which are formed from secondary amines, are a significant constituent of oxidative hair coloring products. According to the guidelines of the European Scientific Committee on Consumer Safety (SCCS), nitrosamines must be exposed for at least 30 minutes to be considered a potential risk factor.⁴ Thus, it can be inferred that nitrosamines may contribute to the carcinogenic properties of hair dyes. Oxidative hair dyes also contain Paraphenylenediamine (PPD) and its derivatives, which causes delayed hypersensitivity among both hair-dressers and consumers as shown by study conducted by Ahmad S et al which concluded that hair-dressers are at risk for occupational asthma, rhinitis and contact urticaria due to oxidative hair dyes.⁵

We can infer that hair dyes are double edged sword; they make people pretty but their association with cancer among consumers and delayed hypersensitivity reactions among both hairdressers and consumers are a matter of concern. Consequently, awareness regarding the potential harms associated with use of hair dyes should be given so that individuals should value their natural hair color and prioritize their health over aesthetic concerns. Moreover, for those who still desire to dye their hair, safer options should be suggested like use of ammonia-free cream hair dyes without para-phenylenediamine (PPD), which have been deemed safe according to a study conducted by Zoe Diana Draeos.⁶ The biggest responsibility lies on the manufacturers who should refrain from incorporating hazardous and carcinogenic chemicals in hair dyes, and prioritize the health and safety of consumers over profit margins.

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Submission Date: 16-08-2023

1st Revision Date: 15-01-2024

Acceptance Date: 16-02-2024

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