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Nanotechnology and hair products

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Hair colouring trends raise a huge demand for hair colouring products that usually contain many harmful chemicals and lead to severe hair damages. Studies have shown that the usage of synthetic dyes results in hypersensitivity reactions and also increases the risk of non-Hodgkin’s lymphoma and multiple myeloma. This has resulted in the entry of nanotechnology, which utilises non-toxic techniques to develop non-damaging and natural hair colouring products. Hair colouring formulations produced from nanotechnology do not use any chemical reactions but instead, they rely on physical forces acting at a very close range. Nanometric tubes are added to water-based or dye solutions and they can be applied and washed simply. This process is mostly self-assembly of clay nanotubes in which the dye is loaded and applied on hair where physical absorption takes place. Nanomaterials are seen incorporated not only in hair colouring products but also in every haircare product, for instance, shampoos, anti-lice hair products, hair loss prevention cosmetics, etc. An improved hair cosmesis can be achieved in the future with extensive research and a better understanding of toxicity.

Keywords: Hair, Nanotechnology, Chemical, Dye, Nanotubes, Shampoos, Haircare products, Non-toxic

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