

Allergy to paraphenylenediamine (PPD)

What is paraphenylenediamine and where is it found?

Paraphenylenediamine (PPD) is a chemical substance that is widely used as a permanent hair dye. It may also be found in textile or fur dyes, dark coloured cosmetics, temporary [tattoos](#), photographic developer and lithography plates, photocopying and printing inks, black rubber, oils, greases and gasoline.

The use of PPD as a hair dye is popular because it is a permanent dye that gives a natural look. Hair can also be shampooed without becoming decoloured and perming to achieve waves or curls can be done without difficulty. PPD hair dyes usually come packaged as 2 bottles, one containing the PPD dye preparation and the other containing the developer or oxidizer. PPD is a colourless substance that requires oxygen for it to become coloured. It is this intermediate, partially oxidised state that may cause allergy in sensitive individuals. Fully oxidized PPD is not a sensitiser thus individuals with PPD allergy can wear wigs or fur coats dyed with PPD safely.

What are the reactions to PPD allergy?

Reaction caused by the use of hair dye in mild cases usually only involves dermatitis to the upper eyelids or the rims of the ears. In more severe cases, there may be marked reddening and swelling of the scalp and the face. The eyelids may completely close and the allergic contact dermatitis reaction may become widespread. Severe allergy to PPD can result in contact urticaria and rarely, anaphylaxis. People working with PPD such as hairdressers and film developers may develop dermatitis on their hands; patch testing usually reveals hypersensitivity to PPD.

.Breathe.

NATURAL HEALTH & BEAUTY

Article: Allergic reactions to hair dye rise

Allergic reactions to hair dye are on the increase, researchers have warned.

According to a report in the *British Medical Journal*, allergic reactions are increasing as more and younger people opt to use hair dye. This can lead to dermatitis on the face and in severe cases, facial swelling.

The researchers noted that more than 66% of hair dyes currently contain para-phenylenediamine (PPD) and other related agents.

During the 20th century, allergic reactions to PPD became such a serious problem, it was banned from hair dyes in Germany, France and Sweden.

Current EU legislation allows PPD to comprise up to 6% of the constituents of hair dyes on the consumer market. However no satisfactory or widely accepted alternatives to these agents are available for use in permanent hair dye.

The researchers said that anecdotally, dermatologists in the UK have reported that the frequency of positive reactions to PPD following patch testing is increasing. This trend has also been observed in other countries.

They also highlighted the fact that market research indicates that more people are dyeing their hair and are doing so at a younger age. For example, a Japanese survey carried out in 1992 found that 13% of female teenage school students, 6% of women in their 20s and 2% of men in their 20s reported using hair colouring products. By 2001, these figures had increased to 41%, 85% and 33% respectively.

The researchers also noted that severe hair dye reactions have recently been recorded among children.

"Wider debate on the safety and composition of hair dyes is overdue. Cultural and commercial pressures to dye hair are putting people at risk and increasing the burden on health services", the researchers said.

However they acknowledged that it may not be easy to reverse these trends, as some patients have continued to use such dyes, 'even when advised that they are allergic to them and risk severe reactions'