

Temporary Tattoo, Permanent Consequences?

With the advent of contemporary pop and the emergence of hip-hop stars, many children and teenagers are ornamenting themselves with temporary tattoos. The most popular temporary tattoo dye is henna. Apart from its common use as hair dye, henna has served many purposes over the centuries. In Islamic countries, and in India in particular, it is used for decorative body paintings on the hands and feet of married women. Henna tattoos last for about a week or two, so if you don't want to worry about being stuck with the same design on your body for your whole life, or have a fear of being punctured with needles, then henna tattoo is the way to go. It is convenient and safe. Or is it?

Henna is a dark reddish vegetable dye with hydroxynaphthaquinone as its active ingredient. It is obtained from the dried leaves of the *Lawsonia* tree, native to North Africa and Asia. Aside from rare allergic reactions, henna has been safely used for thousands of years. Henna tattooing, however, is a lengthy and tedious procedure. It can be accelerated by the addition of a synthetic dye, para-phenylenediamine (PPD), which darkens the design and also allows for greater precision. Now, this should raise some concerns for people who are interested in getting a henna tattoo. PPD can cause skin rashes, severe contact dermatitis, itching, blisters, open sores and scarring. For these reasons PPD cannot legally be used in products that are to be directly applied to the skin. Applying PPD to the skin may also well lead to sensitivity to other products such as hair dye and some types of black clothing which use this dye.

An even more serious risk related to henna tattoos is possible carcinogenicity. Henna itself is not a carcinogen, but PPD and its derivatives were selected for bioassay by the US National Cancer Institute in 1979 because of the increased incidence of bladder cancer among dye manufacturing industry workers. The widespread exposure to this compound among the general population in the form of hair dye, and the possibility of an increased cancer risk among hairdressers, were additional factors in the selection of this compound for testing. A loss of mean body weight in both sexes was noted after administering different concentrations of PPD (or derivatives) to test animals in their diet for several weeks. Of greater concern was the finding of a higher incidence of liver tumors.

Skin problems, cancer...what a price to pay to be 'cool'! But don't be discouraged just yet. Allergic reactions due to pure henna (without PPD) are extremely rare. Just look at those Indians or Egyptians who have been using it for centuries and show no evidence of a higher incidence of dermatitis or cancer. However, dyes that contain PPD are another question. PPD is an acceptable ingredient in hair dyes that, when used correctly, do not come into contact with skin for prolonged periods of time. But PPD in cosmetics applied to the skin does pose a risk. As such, black henna temporary tattoo ink and paste containing PPD is not considered safe. But how can you tell if PPD is being used? Here is a small tip: PPD is used for its long-lasting properties and intense black colour, so if the formula and resulting tattoo are jet black, the ink or paste probably contains PPD. Moreover, PPD stains typically last one to three weeks without fading. Stick-on tattoos do not contain any PPD, so why not stick to them? They'll also wash off more readily. Chances are that in a couple of days you'll want it off anyway, or at least try another design.

by Melody Ko