

# Cancer Association of South Africa (CANSA)



## CANSA Fact Sheet and Position Statement on Henna Temporary Tattoos

### Introduction

Today, temporary henna tattoos drawn on the skin are very fashionable and have become more and more popular. At the same time, allergic reactions following these tattoos has increased worldwide. In most cases, allergic reactions are caused by the mixtures used by the so-called 'artists' which contain not only natural henna but also many chemical colouring agents such as diaminotoluenes and diaminobenzenes. The long duration of skin contact, the high concentrations of sensitising materials, and the lack of a neutralising agent dramatically increases the risk of skin sensitisation (Kazandjieva, J., Grozdev, I. & Tsankov, N. 2007).

[Picture Credit: Henna Art]



Diaminotoluenes are highly irritating to the skin and eyes, and the fumes are irritating to the respiratory tract. Diaminotoluenes are readily absorbed through the skin, and exposure may result in methaemoglobinaemia, a disorder characterised by the presence of a higher than normal level of methaemoglobin (metHb, i.e., ferric  $[\text{Fe}^{3+}]$  rather than ferrous  $[\text{Fe}^{2+}]$  haemoglobin) in the blood. Methaemoglobin is a form of haemoglobin that contains ferric  $[\text{Fe}^{3+}]$  iron and has a decreased ability to bind oxygen (International Program on Chemical Safety).

Exposure to the chemical diaminobenzene has the ability to cause skin, eye and respiratory irritation.

### Henna Tattoos to Cover Mastectomy Scars

A small, but growing, number of women are choosing to tattoo their mastectomy scar area rather than have reconstruction surgery. There is also evidence that some women, on special occasions, may indulge in the possibly harmful practice of having a temporary henna tattoo done.

[Picture Credit: Blue Henna Tattoo]



## **Safety and Regulatory Information**

The US Food and Drug Administration (FDA) received reports of adverse reactions to some temporary skin-staining products like henna. The following information is intended to respond to questions about the safety of such products.

### **'Decal'-Type Temporary Tattoos**

Temporary tattoos, such as those applied to the skin with a moistened wad of cotton, fade several days after application. Under United States law, colour additives used in them must be approved by the Food and Drug Administration (FDA) for use on the skin. Similar South African legislation could not be found.

The FDA also receive reports of allergic reactions to some decal-type temporary tattoos. In the United States an 'Import Alert' is in effect for several foreign-made temporary tattoos. The temporary tattoos, subject to the import alert, are not allowed into the United States because they contain colours not permitted for use in cosmetics applied to the skin or they do not have the required ingredient declaration on the label.

Temporary tattoos can last anywhere from three days to several weeks. Although it is not injected into the skin, it does come with some risks, said Dr Linda Katz, director of the FDA's Office of Cosmetics and Colours. According to Katz said consumers are still at risk for allergic reactions, which can be severe and can last even longer than the tattoo itself.

MedWatch, the FDA's Safety Information and Adverse Event Reporting Program, has received many reports of serious, long-lasting reactions which consumers did not expect when they first got the temporary tattoo. Problems include redness, blisters, raised red weeping lesions, loss of skin pigmentation, increased sensitivity to sunlight and even permanent scarring. The FDA said some consumers had to seek medical attention after getting one of the tattoos, including trips to the emergency room. Sometimes these trips occurred right after the tattoo was placed on the skin, and sometimes they occurred weeks after the event.

Some reactions have led people to seek medical care, including visits to hospital emergency rooms. Reactions may occur immediately after a person gets a temporary tattoo, or even up to two or three weeks later.

### **Henna, or Mehndi, and 'Black Henna'**

Henna, a colouring made from a plant, is approved only for use as a hair dye. It is not approved for direct application to the skin, as in the body-decorating process known as mehndi. This unapproved use of a colour additive makes these products adulterated and, therefore, illegal in the United States of America. In the United States an import alert is in effect for henna intended for use on the skin. The existence of similar control measures for South Africa could not be established.

Because henna typically produces a brown, orange-brown, or reddish-brown tint, other ingredients must be added to produce other colours, such as those marketed as 'black henna' and 'blue henna'. Even brown shades of products marketed as henna may contain other ingredients intended to make them darker or make the stain last longer on the skin.



*[Allergic reaction on a man's hand. J. Cole / Photo Researchers]*

So-called 'black henna' may contain the 'coal tar' colour p-phenylenediamine, also known as PPD, which is only permitted for use as a hair dye. In some cases, the so-called 'black henna' consists only of hair dye, which the artist mixes straight from the package and applies to the customer's skin.

According to Thyssen & White (2008) exposure to p-phenylenediamine may cause allergic contact sensitisation, acute dermatitis, and severe facial oedema (swollen face due to allergic reaction).

*[Allergic reaction on a 14-year-old girl. Dr. P. Marazzi / Photo Researchers]*

PPD and some other hair dye ingredients may cause reactions in some individuals. That is the reason hair dyes have a caution statement and instructions to do a 'patch test' on a small area of the skin before using them.



FDA has received reports of injuries to the skin from products marketed as henna and products marketed as 'black henna'.



*[Allergic reaction on an arm. Dr. P. Marazzi / Photo Researchers]*

It is well documented that many individuals experience skin reactions after henna tattoos. The cause is almost always contact allergy to the azo compound paraphenylenediamin, which is added to speed up the process and make the colour darker. Most people, including children, get henna tattoos during vacations in Asia or the Mediterranean. Established contact allergy is permanent. Many

hair-colour products contain paraphenylenediamin, and persons with contact allergy against the product may develop a very strong contact allergic eczema by use of such substances. Acute reactions are treated with local cortisone products, or with systemic steroids. Cross reaction to substances with a similar chemical structure may also occur (Steinkjer, Stangeland, & Mikkelsen).

Some tattoo dyes, especially red, can cause an allergic reaction. The area around a tattoo might itch or swell, or one could develop a rash. It can happen right after one gets the tattoo, or years later. If it is mild, itchy skin and a few bumps – it can be treated with a steroid cream. If the reaction is worse or if it does not go away in a couple of weeks, one should visit one's doctor.

Temporary tattoos, especially those that contain black dyes, have become rampant among teenagers in recent years. Most of these tattoos, in addition to hair dyes include paraphenylenediamine (PPD). PPD is a well-known skin sensitizer, which causes allergic contact dermatitis. Allergic contact

dermatitis skin lesions from PPD are mostly seen as erythema multiforme-like eruption, a bullous contact dermatitis or as an exudative erythema.

**Hussain, A.N., Khanna, R. & Moshell, A.N. 2023.**

“Allergic contact dermatitis (ACD) may occur secondary to devotional practices in various religions. A systematic review of PubMed was conducted from inception of database to September 9, 2022. Key terms were "contact dermatitis" or "devotional dermatosis" in association with major world religions including "Christianity," "Islam," "Hinduism," "Buddhism," "Sikhism," and "Judaism." Inclusion criteria were determined by presence of a religious practice and associated ACD. Articles referencing other cutaneous reactions such as chemical leukoderma were excluded. In total, 36 of 102 unique articles identified met inclusion criteria. Twenty-two articles referenced Hinduism, 8 referenced Judaism, 5 referenced Islam, 3 referenced Christianity, and 1 article each mentioned Buddhism and Sikhism. Four articles referenced multiple religions. Para-phenylenediamine was the most common contact allergen overall and is found in blackening ingredients mixed with henna for temporary tattoos. Henna tattooing is a cultural practice associated with Hinduism, Islam, and Judaism. Nine unique contact allergens associated with religious practices were identified. Increasing awareness of religious practices that cause ACD will facilitate culturally competent dermatological care.”

**Alberola, I.A., Hernández, E.J., Carracedo, J.F.S., Panedas, A.M., Iranzo, N.M., Morate, M.B., López, S.A. & Calleja, J.R. 2023.**

“Allergic contact dermatitis (ACD) is a more frequent pathology in adults than in children, because, in most cases, allergic sensitization requires a prolonged exposure time to the allergen, mostly months or years. In fact, the actual incidence and prevalence of ACD in children and adolescents is unknown. However, there is a hypothesis that ACD is increasing in the pediatric population. Among the allergens involved in ACD, the frequency of paraphenylenediamine (PPDA) is increasing. PPDA is one of the five most common contact allergens in the general population and one of the 10 most common contact allergens in children. The most relevant sources today are henna tattoos and hair dyes. Currently, European Union legislation limits the use of PPDA in hair dyes and prohibits its use in henna tattoos. Despite this legislation, the use of henna tattoos with PPDA is becoming more frequent in younger ages. We report an early presentation of ACD by PPDA, with a permanent hypopigmented skin area as an aftermath, in a 7-year-old male child. We believe that health authorities should advise against making these tattoos in children.”

#### Conflict of interest statement

The authors have no conflicts of interest to declare.

#### **CANSA’s Position**

It is known that cancer and its treatment can weaken the body’s immune system because it affects the blood cells that protect one’s body against disease and germs. As a result cancer survivors have a compromised immune system and their bodies may not be able to adequately fight infection, foreign substances, allergies, and disease as well as a healthy person’s body may be able to do (American Cancer Society).

Any product like henna skin dyes that have the potential to cause any form of infection, irritation and/or allergic reaction, should preferably be totally avoided by individuals diagnosed with cancer, those undergoing cancer treatment as well as cancer survivors.

In the event of someone being determined to have any tattoo, CANSA advises that the individual concerned should discuss this with their treating Oncologist prior to any tattoo being done.

## Medical Disclaimer

This Fact sheet and Position Statement is intended to provide general information only and, as such, should not be considered as a substitute for advice, medically or otherwise, covering any specific situation. Users should seek appropriate advice before taking or refraining from taking any action in reliance on any information contained in this Fact Sheet and Position Statement. So far as permissible by law, the Cancer Association of South Africa (CANSA) does not accept any liability to any person (or his/her dependants/estate/heirs) relating to the use of any information contained in this Fact Sheet and Position Statement.

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### Henna Art

<http://northshorekid.com/event/henna-art-npl>

### Henna Tattoo Reaction

[http://www.webmd.com/skin-problems-and-treatments/ss/slideshow-tattoo-problems?ecd=wnl\\_men\\_040315&ctr=wnl-men-040315\\_nsl-ld-stry&mb=V5sz9QtzqOA6Pk2NX5VnXmdEpmNqbUHL1iiDHYwpneY%3d](http://www.webmd.com/skin-problems-and-treatments/ss/slideshow-tattoo-problems?ecd=wnl_men_040315&ctr=wnl-men-040315_nsl-ld-stry&mb=V5sz9QtzqOA6Pk2NX5VnXmdEpmNqbUHL1iiDHYwpneY%3d)

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**Noboobsaboutit**

<http://noboobsaboutit.org/information/tattooing-rather-than-reconstruction/>

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**Toxicology Data Network**

<http://toxnet.nlm.nih.gov/cgi-bin/sis/search/a?dbs+hsdb:@term+@DOCNO+2895>

**US Food and Drug Administration**

<http://www.fda.gov/Cosmetics/ProductsIngredients/Products/ucm108569.htm>

<http://www.fda.gov/ForConsumers/ConsumerUpdates/ucm343932.htm>

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