



The Dark Side of Beauty: An Analysis of the Toxic Risks in Cosmetics w.s.r. to Dushi Visha

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DOI:10.21760/jaims.10.4.34

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Cosmetics have been used by humans for thousands of years, not only to enhance beauty but also to protect the skin from environmental damage. This shows that caring for the skin has always been an essential part of human life. In recent times, however, the popularity of cosmetic products has grown rapidly. As a result, manufacturers are producing cosmetics in large quantities to meet this rising demand. But this fast-paced production often lacks sufficient attention to safety standards, regulations and quality control. Today, many people use a variety of cosmetic products every day, such as skincare creams, lotions, cleansers, lipsticks, nail polishes, deodorants and more. These products contain harmful ingredients such as Hydroquinone, Parabens, Phthalates and heavy metals like Lead and Arsenic. Prolonged use of these products leads to their accumulation in the body, potentially causing issues like skin irritation, heightened vulnerability to infections, kidney and liver damage, reproductive toxicity and even carcinogenic effects. The skin is an important part of how a person looks. Throughout history and even today, people have cared a lot about outer beauty. Ayurveda is highly valued in beauty care because it offers natural, affordable and effective treatments. In Ayurveda, the concept of "Dushi Visha" (impotent or weak poison) aligns with the toxicity of cosmetics. According to Acharya Sushruta, this type of poison remains in the body for a long time, having been partially neutralized by anti-poisonous treatment. It is described as weak in potency, not causing immediate harm but staying within the body for years, covered by the Kapha Dosha. This article explores the connection between cosmetic chemical toxicity and the Ayurvedic concept of Dushi Visha, offering insight into the health effects of cosmetics and possible solutions from the perspective of ancient toxicology.

Keywords: Skin, Beauty, Cosmetics, Dushi Visha, Heavy metals, Cumulative toxicity

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How to Cite this Article

Soni S, Shakyawar A, Shukla U, Rajput S, *The Dark Side of Beauty: An Analysis of the Toxic Risks in Cosmetics w.s.r. to Dushi Visha*. J Ayu Int Med Sci. 2025;10(4):226-231.
Available From
<https://jaims.in/jaims/article/view/4264/>

To Browse



Manuscript Received
2025-03-14

Review Round 1
2025-03-24

Review Round 2
2025-04-04

Review Round 3
2025-04-14

Accepted
2025-04-24

Conflict of Interest
None

Funding
Nil

Ethical Approval
Not required

Plagiarism X-checker
12.64

Note



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Introduction

Beauty is a universal desire, and it's not just women who seek it. Beauty not only captures the attention of others but also promotes psychological well-being and boosts self-confidence. The word "cosmetic" comes from the Greek word "kosmetike," meaning "the art of decorating and beautifying."^[1]

According to the Drugs and Cosmetics Act (India), 1940, cosmetics are defined as any substance intended to be applied to the human body for cleansing, beautifying or enhancing attractiveness. Cosmetics have been utilized since the time of the Indus Valley civilization in India. Before the 20th century, beauty products like skincare and hair care were predominantly homemade, created from locally available herbs and natural ingredients. Many beauty rituals were practiced regularly, while others were observed seasonally. In *Ayurveda*, oils (*Tailams*) and clarified butter (*Ghrithas*) were applied for facial enhancement. As globalization took hold, beauty and personal care products from other countries became more accessible and affordable in India. A significant example of this shift is the substitution of *Shikakai*, a traditional powder from a dry shrub, with shampoos containing surfactants.^[2]

Numerous modern products include chemical additives to improve aesthetic qualities (such as lead in lipsticks and progressive hair dyes for enhanced color) boost the effectiveness of the product (like phthalates in nail products that act as solvents for dyes and plasticizers to prevent brittleness in nail polish) or extend the product's shelf life (for example, triclosan to prevent microbial and fungal growth).^[3]

People are regularly exposed to these harmful chemicals in their everyday lives. Prolonged use of chemical products can lead to various toxic and hazardous effects on the human body.

These toxins enter the system through multiple pathways. Once in the body, they circulate through the bloodstream and the accumulation of these toxins results in toxicity, gradually impacting the organ and immune systems, potentially leading to various diseases. After exposure, some components of these substances are not entirely eliminated from the body and over time, continuous accumulation leads to cumulative toxicity.^[4] Cosmetics are products applied externally to improve one's appearance and increase self-confidence. However, the desired effect is not always reached, as it relies on the quality of the product, which can vary depending on skin type—whether oily, dry, normal or combination. The use of low-quality products, lack of experience or insufficient knowledge can prevent someone from achieving their intended results.

Dermatologists categorize cosmetics into the following groups:

1. Skin Care Cosmetics - Cleansers, moisturizers, etc.
2. Hair Care Cosmetics - Shampoos, hair color, etc.
3. Face Care Cosmetics - Foundations, eye shadows, lipsticks, etc.
4. Nail Care Cosmetics - Nail polish, removers, etc.
5. Fragrance Products - Deodorants, perfumes, etc.
6. UV Protection Products - Sunscreens, etc.

In recent years, the demand for cosmetic products such as lotions, shampoos, face powders, soaps and creams has significantly increased. This growing demand has prompted the cosmetic industry to mass-produce these items, sometimes without following established standards. As a result, some cosmetics may contain harmful substances like lead, cadmium and other toxins, which could lead to serious health problems, including cancer, birth defects, developmental disorders and reproductive issues.^[5]

Major toxins in Cosmetics: [6],[7],[8]

Product	Content	Toxic Effect
Moisturizers	BHA & BHT	<ul style="list-style-type: none"> Endocrine disruption Cancer
Moisturizers, Shampoo, Body lotions, Diaper wipes	DEA-related ingredients Parabens	<ul style="list-style-type: none"> Cancer Endocrine disruption Breast cancer
Almost all cosmetics	Fragrance	<ul style="list-style-type: none"> Clogs lymphatic system Endocrine disruption Organ system toxicity

Product	Content	Toxic Effect
Eye shadow, Blush, Baby powder Deodorant, Face powder	Talc	<ul style="list-style-type: none"> ■ Lung tumor ■ Ovarian cancer
Nail products, Hair dye	Formaldehyde	<ul style="list-style-type: none"> ■ Cancer
Perfumes, Deodorants, Lotions	Phthalates	<ul style="list-style-type: none"> ■ Headache ■ Asthma ■ Dermatitis ■ Endocrine disruption ■ Liver/Kidney damage ■ Lung damage ■ Cancer
Lipstick, Hair dye	Lead	<ul style="list-style-type: none"> ■ Cancer ■ Neurotoxicity
Shampoos, cleansers, soaps	Sodium Lauryl Sulfate (SLS, SLES)	<ul style="list-style-type: none"> ■ Eye and skin irritation ■ Depression ■ Liver damage ■ Cancer
Nail polish, Hair dye	Toluene	<ul style="list-style-type: none"> ■ Reproductive & developmental damage ■ Liver and Kidney damage

Concept of *Dushi Visha*

Acharya Sushruta and *Vagbhata* defined *Dushi Visha* as any form of poison, whether originating from living or non-living sources. It can also refer to poison that remains in the body after partial expulsion or has temporarily undergone detoxification through anti-poisonous medications, natural elements like forest fires, wind or sunlight. This type of poison is known as *Dushi Visha*. [9]

Dushi Visha is a form of poison with diminished potency that gradually becomes latent or concealed within the body. Due to its less *Guna* compared to regular *Visha*, its effects are not immediate but instead develop slowly over time. This type of poison accumulates within the body, causing a delayed onset of symptoms and leading to prolonged toxicity. [10]

Because of the *Avarana* action by *Kapha*, these low-potency poisons is retained in the body for a long period without producing any grave or fatal symptoms. [11]

The poisons which vitiate *Dhatus*, because of factors such as *Desha*, *Kaala*, food and sleeping during day time is called "*Dushi Visha*".

Poorvarupa of *Dushi Visha*

The prodromal symptoms of *Dushi Visha* are narcolepsy, the feeling of heaviness of the body, yawning, laxity of joints, horripilation and body aches. [12]

Signs and Symptoms (*Lakshanas*)

Different kinds of clinical features of *Dushi Visha* according to different classical texts are mentioned in the following table:

Charak Samhita [13]	Rakta Dushti, Arunshika, Kitiva, Kotha
Sushrut Samhita [14]	Avipaka, Arochak, Annamada, Mandal, Kotha, Moh, Paadshopha, Karashopha, Asyashopha, Dakodar, Chhardi, Atisaar, Vaivarnya, Moorcha, Vishamjwara, Trishna, Unmaad, Shukrashaya, Kushtha
Ashtang Sangrah [15]	Bhinna Pureesha, Bhinnavarna, Raktadushti, Trishna, Moorcha, Aruchi, Vami, Gadgadavak, Moha, Dooshyodara.
Ashtang Hridaya [16]	Bhinna Pureesha, Bhinnavarna, Raktadushti, Trishna, Moorcha, Vami, Gadgadavak, Moha, Dooshyodara.
Bhavprakash [17]	Bhinna pureesha, Bhinnavarna, Vami, Gadgadavak, Vicheshta, Arati (restlessness), Vigandhi, Vairasya, Pipasi, Moorcha, Bhrama.
Yogratnakar [18]	Bhinna Purisha Varna, Annamada, Mukha Daurgandhya, Arocaka, Avipaka, Mandala, Kotha, Trishna, Moha, Vamana, Atisara, Mamsakshaya, Pada sophia, Pani sophia, Akshi sophia, Chardi, Murcha, Kustha, Swasha, Jwar, Dathara, Unmada, Aanaha, Sukrakshaya, Gadgadavak.

According to the involvement of the predominance of *Dosha*, different kinds of *Dushi Visha*-related clinical features mentioned below will be observed. [19]

1. Vata	Moha, Arati, Trishna, Murccha, Galagraha, Phena, Chardi
2. Pitta	Kasa, Jwara, Vamathu, Trishna, Klama, Daha, Atisara, Tama
3. Kapha	Shwasa, Kandu, Lala, Vamana, Galagraha

Ayurvedic alternatives for Toxic Chemical Cosmetics are as follows[20],[21],[22]

Skin Care Cosmetics - Cleansers & Body Washes, Scrubs, moisturizing agent etc. can be replaced with the following:

1. *Kumari (Aloe vera)* - Moisturizer, Sunscreen & Emollient
2. *Zendu (Calendula officinalis)* - Wound healing
3. *Kasani (Cichorium intybus)* - Skin blemishes
4. *Haridra (Curcuma longa)* - Antiseptic, Antibacterial, Improves complexion
5. *Gajar (Daucus carota)* - Natural toner and skin rejuvenator
6. *Yashtimadu (Glycyrrhiza glabra)* - Skin whitening
7. *Tulsi (Ocimum sanctum)* - Anti-aging, Antibacterial & Antiseptic
8. *Satapatri/ Gulab (Rosa centifolia / Rosa indica)* - Toning & Cooling
9. *Manjishta (Rubia cordifolia)* - Wound healing & Anti-aging
10. *Godhuma (Triticum sativum)* - Antioxidant, Skin nourisher, anti-wrinkle

Hair Care Cosmetics - Shampoo, Hair remover, Hair Colours & Hair Sprays, etc. can be replaced with the following:

1. *Shikakai (Acacia concinna)* - Natural Detergent & Anti-dandruff
2. *Kumari (Aloe vera)* - Cleanser & Revitalizer
3. *Nimba (Azadirachta indica)* - Reduces hair loss, Anti-dandruff
4. *Brahmi (Bacopa monnieri)* - Hair tonic, Promotes hair growth
5. *Devdaru (Cedrus deodara)* - Anti-dandruff
6. *Mandukparni (Centella asiatica)* - Darkening of hair
7. *Bhringaraj (Eclipta alba)* - Reduces premature graying of hair, Alopecia
8. *Amalaki (Emblica officinalis)* - Toner, Anti-dandruff, Protects & reduces hairloss
9. *Japa (Hibiscus rosa sinensis)* - Natural Hair dye, Prevent hair fall, Anti-dandruff
10. *Shathi (Hedychium spicatum)* - Promotes hair growth.
11. *Madyantika/ Heena (Lawsonia alba)* - Natural Hair dye, Anti-dandruff, Conditioner
12. *Rusmary (Rosmarinus officinalis)* - Nourishes, Softens & restores the hair shafts
13. *Arishtak (Sapindus trifoliatus)* - Natural detergent & Cleanser.

14. *Godhuma (Triticum sativum)* - Provides nourishment, lubrication & luster
15. *Bibhitaka (Terminalia belerica)* - Prevents graying of hair
16. *Tila (Sesamum indicum)* - Promotes hair growth, Blackens the hair.

Face Care Cosmetics

Ayurvedic literature describes over 200 herbs and minerals to maintain and enhance the beauty of the skin. So, instead of using foundation, Powder, etc. for enhancing fairness, herbs from *Varṇya Mahakashaya*, *Lodhradi Varṇya Gaṇa*, *Eladi Varṇa Prasadana Gaṇa* and a few *Varṇya* formulations viz. *Haridra Khaṇḍa*, *Nimbadi Churna*, *Chandanadi Taila*, *Kuikumadi Taila*, *Kanakarishta* can be used.

Their skin lightning effect is proven on modern scientific basis by affecting Tyrosinase & other proteins responsible for skin darkness & other cosmetic disorders. Tyrosinase inhibition is still most sought-after mecha. of skin lightening, herbs having such property will show promise as depigmenting agents. Some of these herbs are as follows:

1. *Shweta Chandana (Santalum album)* - For all types of skin, low acute oral and dermal toxicity
2. *Madhuyashti (Glycyrrhiza glabra)* - Lightening, emollient, anti-acne, antiaging, antimicrobial
3. *Manjishta (Rubia cordifolia)* - Enhance complexion even lighten dark spots.
4. *Padmaka (Prunus cerasoides)* - Anti melanogenesis activity by suppression of tyrosinase
5. *Ushira (Vetiveria zizanioides)* - Suppresses the β -MSH-induced melanogenesis
6. *Lodhra (Symplococo racemosa)* - Salireposides isolated from its extract has well documented activity against acne producing bacteria
7. *Kushta (Saussurea lappa)* - As leprosy, erysipelas, as well as to improve complexion
8. *Tvak (Cinnamomum zeylanicum)* - Show anti-tyrosinase activity
9. *Kesar (Crocus sativus)* - Anti-pruritic and complexion promotion effects.
10. *Haridra (Curcuma longa)* - Curcumin has been found to suppress melanogenesis in stimulated melanoma cells. Rhizome has maximum efficacy of 88.56% inhibition of tyrosinase .
11. *Daruharidra (Berberis aristata)* - Antioxidant potential, tyrosinase inhibitory activity.
12. *Nimba (Azadirachta indica)* - Bark has shown significant tyrosinase inhibition.

13. *Khadira (Acasia catechu)* - Methenolic extract has 44.4% tyrosinase inhibitory activity.

14. *Amalaki (Phyllanthus embilica)* - Potent anti-oxidant, inhibit mRNA expressions of tyrosinase.

15. *Haritaki (Termanalia chebula)* - Isoterchebulin had reduced the protein levels of MITF (microphthalmia-associated transcription factor), tyrosinase and its related proteins.

16. *Sunthi (Zingiber officinale)* - Suppresses murine tyrosinase activity and decreases the amount of melanin as well as intracellular reactive oxygen species (ROS) level in a dose-dependent manner acting as a good whitening agent for skin.

17. *Padma (Nelumbo nucifera)* - Tyrosinase inhibitory activity, skin whitening agent.

UV Screening

1. *Kumari (Aloe vera)* - Sun screen, Moisturizer

2. *Musta (Cyperus rotundus)* - Sun tanning

3. *Shigru (Moringa oliefera)* - Sun tanning

Discussion

Cumulative toxicity refers to the slow and progressive accumulation of toxic substances within an organism's body over an extended period, gradually impairing its overall health and well-being.

According to *Ayurveda*, *Dushi Visha* can result from the use of cosmetics or chemicals that disturb the body's natural balance and contain harmful ingredients, leading to the formation of *Ama* (toxic waste). The effects of cumulative toxicity may not be immediately apparent and can manifest over months, years or even decades. It is important to note that the cumulative toxicity of a substance is influenced by factors such as the dose and duration of exposure and individual susceptibility.

The clinical symptoms arising from prolonged exposure to cosmetics resemble those of *Dushi Visha*. In the context of *Dushi Visha*, managing cosmetic toxicity involves minimizing exposure to harmful substances and embracing a more holistic skincare routine. This includes choosing natural and organic cosmetics free from toxic chemicals, irritants and harmful ingredients.

Moreover, adopting a healthy lifestyle, maintaining a balanced diet, managing stress and supporting the body's natural detoxification mechanisms can help prevent the accumulation of toxins and promote overall skin health.

Conclusion

Cosmetic toxicity continues to be a topic of concern and debate. While it is essential to recognize the potential risks posed by certain ingredients in cosmetic products, it is equally important to base decisions on scientific research, regulatory guidelines and informed choices. By promoting consumer education, supporting ethical industry practices and taking a balanced approach to cosmetic safety, we can navigate the cosmetic industry while safeguarding our health and well-being.

In conclusion, the article underscores the importance of awareness and caution regarding the toxicity risks linked to cosmetics. It highlights the need for choosing safer alternatives and exploring *Ayurvedic* principles to combat cosmetic chemical toxicity. Additionally, it draws a parallel between cumulative toxicity and *Dushi Visha*, suggesting that cosmetic toxicity can be treated similarly to *Dushi Visha Janya Vyadhi*.

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