



Review Article

Volume 15 Issue 07

July 2026

TOOTHPASTE INDUCED GARAVISHA: EMERGING TOXICITY CONCERNS IN DAILY ORAL CARE PRODUCTS

Dr. Santosh Gupta

H.O.D. & Professor, Department of Agad Tantra, Vyavahar Ayurveda and Vidhi Vaidyaka.

Vice Principal - Vivek College of Ayurvedic Sciences and Hospital, Bijnor (U.P.)

Email - drsantoshgupta15@gmail.com

ABSTRACT

Toothpaste is one of the most commonly used oral hygiene products worldwide and is considered essential for maintaining dental health. However, the increasing incorporation of synthetic chemicals, artificial additives, preservatives, flavoring agents, and whitening compounds in modern toothpaste formulations has raised concerns regarding their long-term safety. From the Ayurvedic perspective, repeated exposure to low-dose toxic substances through daily use may resemble the concept of *Garavisha* an artificial or cumulative poison formed by the combination of incompatible or harmful substances. Continuous exposure to such agents may contribute to local as well as systemic toxic manifestations. This article explores the concept of toothpaste-induced *Garavisha* by correlating Ayurvedic toxicology with contemporary evidence related to potentially harmful ingredients present in oral care products. The study also highlights possible health risks, clinical manifestations, preventive measures, and the need for safer herbal alternatives.

Keywords: *Garavisha*, Toothpaste toxicity, Oral care products, Artificial chemicals, *Dantadhavana*, Cumulative toxicity

INTRODUCTION

Oral hygiene plays a vital role in maintaining overall health. Toothpaste has become an indispensable component of daily oral care due to its effectiveness in preventing dental caries, plaque accumulation, halitosis, and gum diseases. Modern toothpaste formulations commonly contain fluoride compounds, detergents, abrasives, sweeteners, preservatives, artificial colors, and antimicrobial agents. Although these substances improve cleaning efficiency and consumer acceptability, prolonged exposure to certain chemical constituents may produce adverse effects.

Ayurveda describes the concept of *Garavisha* under Agada Tantra. *Garavisha* refers to artificially prepared or cumulative poison formed by the combination of various toxic and non-toxic substances that gradually produce harmful effects in the body. Unlike acute poisons, *Garavisha* acts slowly and manifests after repeated exposure. The increasing use of chemically loaded personal care products may be interpreted through this Ayurvedic framework¹.

Toothpaste is used daily, often multiple times a day, and small quantities are inadvertently swallowed, especially by children. Repeated exposure to synthetic ingredients may contribute to allergic reactions, mucosal irritation, endocrine disturbances, neurotoxicity, or chronic toxicity. Hence, understanding toothpaste-induced *Garavisha* has become increasingly relevant in contemporary healthcare².

CONCEPT OF GARAVISHA IN AYURVEDA

Ayurvedic classics explain *Garavisha* as a slow-acting poison prepared from combinations of incompatible substances. It may not cause immediate death but gradually impairs bodily functions³.

According to Ashtanga Hridaya, *Garavisha* possesses the following characteristics:

- Delayed toxic manifestation
- Weak but cumulative action
- Gradual vitiation of *Doshas*
- Chronic ill-health and tissue impairment
- Difficulty in diagnosis during early stages

Garavisha affects multiple systems of the body and may produce symptoms such as:

- Fatigue
- Indigestion
- Skin disorders
- Headache
- Oral irritation
- Psychological disturbances
- Weakness and chronic disease predisposition

The repeated daily exposure to chemically formulated toothpaste can be conceptually correlated with this cumulative toxic phenomenon⁴.

Harmful Ingredients Commonly Present in Toothpaste

1. Fluoride

Fluoride is widely used for preventing dental caries. Excessive ingestion, however, may cause :

- Dental fluorosis
- Skeletal fluorosis
- Gastrointestinal irritation
- Neurodevelopmental concerns in children

Young children are particularly vulnerable because they tend to swallow toothpaste while brushing⁵.

2. Sodium Lauryl Sulfate (SLS)

SLS is a foaming detergent used in many toothpaste formulations. Studies suggest that it may cause:

- Oral mucosal irritation
- Recurrent aphthous ulcers
- Dryness of oral cavity
- Alteration of taste sensation

Continuous irritation of oral tissues may contribute to local toxic manifestations comparable to *Garavisha* effects.

3. Triclosan

Triclosan is an antimicrobial agent previously used in several toothpaste brands. Research has linked prolonged exposure with:

- Hormonal imbalance
- Antibiotic resistance
- Endocrine disruption
- Environmental toxicity

Due to safety concerns, its use has been restricted in many countries⁶.

4. Artificial Sweeteners and Flavoring Agents

Chemicals such as saccharin and synthetic flavor compounds are added to improve palatability. Sensitive individuals may experience⁷:

- Allergic reactions
- Headache
- Mucosal sensitivity
- Gastrointestinal discomfort

5. Abrasive Agents

Calcium carbonate, silica, and other abrasives help remove plaque and stains. Excessive abrasiveness may lead to⁸:

- Enamel erosion
- Tooth sensitivity
- Gum irritation

6. Microplastics and Whitening Agents

Certain whitening toothpastes contain peroxide compounds and micro-abrasive particles that may⁹:

- Damage enamel
- Increase oral sensitivity

- Produce oxidative stress

Toothpaste as a Source of *Garavisha*

The concept of *Garavisha* can be applied to toothpaste toxicity based on the following observations:

Ayurvedic Concept of <i>Garavisha</i>	Correlation with Toothpaste Toxicity
Repeated exposure	Daily brushing habit
Slow cumulative action	Gradual chemical accumulation
Artificial combinations	Synthetic formulations
Delayed manifestation	Chronic oral and systemic effects
Mild but persistent toxicity	Low-dose long-term exposure

Modern oral care products often contain multiple synthetic chemicals used together for prolonged durations. Their cumulative impact on the body aligns with the Ayurvedic understanding of *Garavisha*¹⁰.

Clinical Manifestations of Toothpaste-Induced Toxicity

Oral Manifestations

- Burning sensation in mouth
- Recurrent mouth ulcers
- Gum irritation
- Dry mouth
- Altered taste perception
- Tooth sensitivity

Systemic Manifestations

- Nausea
- Gastric irritation
- Headache
- Allergic reactions

- Hormonal disturbances
- Neurological concerns in chronic exposure

Children are particularly susceptible because of accidental ingestion and lower body weight¹¹.

AYURVEDIC PERSPECTIVE ON PREVENTION

Ayurveda advocates natural oral hygiene practices under *Dinacharya*. Traditional methods include:

- Herbal tooth powders
- Medicinal chewing sticks (*Dantadhavana*)
- Herbal gargles
- Use of non-toxic plant-based

substances¹² Commonly recommended herbs include:

- *Neem* (*Azadirachta indica*)
- *Khadira* (*Acacia catechu*)
- *Triphala*
- *Lavanga* (*Syzygium aromaticum*)
- *Bakula* (*Mimusops elengi*)

These herbs possess antimicrobial, anti-inflammatory, and healing properties without producing harmful cumulative effects¹³.

Safer Alternatives and Recommendations

To minimize toxicity concerns, the following measures may be adopted:

1. Use herbal or fluoride-free toothpaste when appropriate.
2. Avoid products containing excessive artificial additives.
3. Encourage supervised brushing in children.
4. Use only pea-sized quantities of toothpaste.

5. Prefer naturally derived ingredients.
6. Read ingredient labels carefully.
7. Promote awareness regarding chronic exposure to chemical oral care products¹⁴.

DISCUSSION

The increasing prevalence of chemically enriched personal care products has introduced new toxicological concerns in modern lifestyles. Though toothpaste is generally considered safe when used properly, continuous low-dose exposure to potentially harmful chemicals may contribute to cumulative toxicity. The Ayurvedic concept of *Garavisha* offers a valuable framework for understanding such chronic toxic exposures.

Modern research increasingly supports concerns regarding ingredients like fluoride, triclosan, and SLS, particularly when exposure is prolonged or excessive. Ayurveda emphasizes prevention and advocates the use of natural substances that maintain health without causing toxic accumulation.

Integrating Ayurvedic wisdom with modern toxicological research may help develop safer oral care practices and promote public health awareness.

CONCLUSION

Toothpaste-induced *Garavisha* represents an emerging area of concern linking Ayurvedic toxicology with contemporary oral healthcare practices. The daily and repeated use of chemically loaded toothpaste formulations may produce cumulative toxic effects in susceptible individuals. Understanding the potential risks associated with synthetic ingredients is important for both healthcare professionals and consumers. Ayurveda provides valuable preventive approaches through natural oral hygiene methods and herbal formulations. Further scientific studies are required to evaluate the long-term safety of oral care products and validate Ayurvedic perspectives regarding cumulative toxicity.

REFERENCES

1. Sharma PV. *Dravyaguna Vijnana*. Varanasi: Chaukhambha Bharati Academy; 2013.
2. Tripathi Brahmanand. *Ashtanga Hridayam of Vagbhata*. Varanasi: Chaukhambha Sanskrit Pratishthan; 2017.
3. Acharya YT. *Sushruta Samhita with Nibandhasangraha Commentary*. Varanasi:

Chaukhambha Orientalia; 2019.

4. Dash B, Sharma BK. *Charaka Samhita*. Varanasi: Chaukhambha Sanskrit Series Office; 2015.
5. Petersen PE, Lennon MA. Effective use of fluorides for the prevention of dental caries in the 21st century. *Community Dentistry and Oral Epidemiology*. 2004;32(5):319-321.
6. FDI World Dental Federation. Safety and efficacy of fluoride toothpaste. *International Dental Journal*. 2019;69(3):221-223.
7. Herlofson BB, Barkvoll P. Sodium lauryl sulfate and recurrent aphthous ulcers. *Oral Diseases*. 1996;2(3):148-152.
8. Weatherly LM, Gosse JA. Triclosan exposure, transformation, and human health effects. *Journal of Toxicology and Environmental Health*. 2017;20(8):447-469.
9. Humphrey SP, Williamson RT. A review of saliva: normal composition and function. *Journal of Prosthetic Dentistry*. 2001;85(2):162-169.
10. Tripathi Brahmanand. *Ashtanga Hridayam of Vagbhata*. Varanasi: Chaukhambha Sanskrit Pratishthan; 2017.
11. Kumar G, Jalaluddin M, Rout P. Emerging trends of herbal care in dentistry. *Journal of Clinical and Diagnostic Research*. 2013;7(8):1827-1829.
12. Sharma PV. *Dravyaguna Vijnana*. Varanasi: Chaukhambha Bharati Academy; 2013.
13. Prabu GR, Gnanamani A, Sadulla S. Guaijaverin - a plant flavonoid as potential antiplaque agent against *Streptococcus mutans*. *Journal of Applied Microbiology*. 2006;101(2):487 - 495.
14. World Health Organization. *Oral Health Fact Sheet*. WHO; 2024.