

Review Article

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“GANDUSHA AND KAVALA (OIL PULLING) IN ORAL HEALTH: CLASSICAL BASIS, CLINICAL EVIDENCE AND SAFETY”

Dr. Jalpa Gandhi¹

AFFILIATIONS:

1. CEO, Ira Consultancy & Research Organisation, Bhosari, Pune, Maharashtra 411026

CORRESPONDENCE:

Dr. Jalpa Gandhi

EMAIL ID: ceo@icro.co.in

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ABSTRACT

Background: Gandusha (holding liquid in the mouth) and Kavala (swishing liquid in the mouth) are Ayurvedic oral procedures described in classical texts as part of the daily regimen and as treatments for oral diseases. Oil pulling, a popular form of Gandusha and Kavala using sesame or coconut oil, has gained worldwide interest as a natural oral hygiene measure. **Objective:** To review the classical description of Gandusha and Kavala, the clinical evidence for oil pulling in plaque, gingivitis and oral bacteria, and its safety. **Methods:** Narrative review of classical Ayurvedic texts, systematic reviews, meta-analyses and randomised trials of oil pulling. **Results:** Classical texts describe Gandusha with sesame oil as strengthening the teeth, jaws and voice and preventing dryness and cracking of the lips and mouth. Several randomised trials, many from India, report reductions in plaque, gingival inflammation and *Streptococcus mutans* counts with oil pulling. A 2022 meta-analysis of nine trials found reduced salivary bacterial counts but no significant effect on plaque or gingival indices. A 2023 meta-analysis of 25 trials found chlorhexidine superior for plaque, with possible benefit of oil pulling for gingival health, but rated the certainty of all evidence as very low. Lipoid pneumonia due to aspiration of oil has been reported. **Conclusion:** Oil pulling is a low-cost, culturally acceptable practice that may modestly benefit gingival health and oral bacterial load. It should complement, not replace, tooth brushing, interdental cleaning and professional dental care. People at risk of aspiration should avoid it.

KEYWORDS: Gandusha; Kavala; oil pulling; sesame oil; coconut oil; gingivitis; dental plaque; *Streptococcus mutans*

INTRODUCTION

Oral diseases, mainly dental caries and periodontal disease, affect billions of people worldwide and are largely preventable^[1]. Dental plaque, a biofilm of bacteria on the teeth, is the main cause of both. Mechanical plaque removal by tooth brushing and interdental cleaning, fluoride toothpaste and, where needed, antimicrobial mouthwashes such as chlorhexidine are the mainstays of prevention^[1,2].

Ayurveda describes Gandusha and Kavala as part of Dinacharya (daily regimen) and as treatments for oral diseases^[3-5]. Oil pulling, in which oil is swished in the mouth for several minutes and spat out, became widely known in the 1990s and is now practised worldwide. Its appeal lies in its simplicity, low cost and natural ingredients.

This review summarises the classical basis of

Gandusha and Kavala and the clinical evidence for oil pulling in oral health.

METHODS

Classical sources included Charaka Samhita Sutra Sthana 5, Sushruta Samhita Chikitsa Sthana 40 and Ashtanga Hridaya Sutra Sthana 22^[3-5]. Modern literature was identified through PubMed, Google Scholar and dental journals using the terms oil pulling, Gandusha, Kavala, sesame oil, coconut oil, plaque, gingivitis and *Streptococcus mutans*. Priority was given to systematic reviews and randomised trials. This is a narrative review.

CLASSICAL DESCRIPTION

Definitions

Types of Gandusha

Sushruta and Vagbhata describe four types of Gandusha according to purpose^[4,5]:

Table 1: Definitions of Gandusha and Kavala

Procedure	Description
Gandusha	The mouth is filled completely with liquid and held without movement until secretions appear from the eyes and nose
Kavala	A smaller quantity of liquid is swished around the mouth and then spat out

Classical benefits

Table 2: Types of Gandusha

Type	Purpose	Examples of liquids
Snehana (Snaigdika)	Oleation; for Vata disorders	Sesame oil, ghee, milk
Shamana	Pacification; for Pitta disorders	Sweet, cold liquids
Shodhana	Purification; for Kapha disorders	Pungent, bitter, astringent decoctions
Ropana	Healing; for ulcers and wounds	Astringent, bitter decoctions

Charaka describes the benefits of daily Gandusha with sesame oil, including strength of the jaws, depth of voice, nourishment of the face, good taste perception and relish for food, and prevention of dryness of the throat, cracked lips, dental caries and weak teeth^[3]. Charaka also notes that the teeth of a person who regularly practises oil Gandusha do not become weak or decayed and can chew hard foods.

Procedure

Classically, the patient sits in a place free from wind, the neck and face are massaged and fomented, and the liquid is held or swished until the mouth fills with secretions or the eyes and nose water^[4,5]. The liquid is then spat out, and the procedure may be repeated.

MODERN PRACTICE OF OIL PULLING

Modern oil pulling typically involves^[6]:

- About one tablespoon (10 to 15 mL) of sesame, coconut or sunflower oil.
- Swishing the oil around the mouth and between the teeth for 10 to 20 minutes, usually in the morning before breakfast.
- Spitting out the oil (into a bin rather than a sink, to avoid blocking drains).
- Rinsing the mouth with water and brushing the teeth.

Proposed mechanisms include mechanical removal of bacteria and plaque, emulsification and saponification of oil producing a soap-like cleansing effect, antimicrobial effects of fatty acids such as lauric acid in coconut oil, and antioxidant effects of sesame oil lignans such as sesamin and sesamol^[6]. These

mechanisms have not been firmly established.

CLINICAL EVIDENCE

Individual randomised trials

Several randomised trials from India were among the first to evaluate oil pulling:

- In a triple-blind randomised trial in adolescents, sesame oil pulling reduced *S. mutans* counts in plaque and saliva, with effects comparable to chlorhexidine mouthwash^[7].
- In a triple-blind randomised trial in adolescents

with plaque-induced gingivitis, sesame oil pulling reduced plaque and gingival indices, comparable to chlorhexidine^[8].

- In a study of coconut oil pulling in plaque-related gingivitis, plaque and gingival indices fell over 30 days^[9].

These trials were small, short and often involved adolescents with good baseline hygiene. Several came from the same research group.

Table 3: Systematic reviews and meta-analyses of oil pulling

Review	Trials	Main findings	Certainty
Gbinigie et al., 2016 ^[10]	Randomised trials up to 2015	Possible benefit on oral hygiene; trials small and at high risk of bias	Low
Woolley et al., 2020 ^[11]	Coconut oil studies	Possible reductions in plaque, gingivitis and bacteria	Low
Peng et al., 2022 ^[12]	9 RCTs, 344 participants	Reduced salivary bacterial count; no significant effect on <i>S. mutans</i> , plaque or gingival indices	Low; possible publication bias
Jong et al., 2023 ^[13]	25 RCTs, 1,184 participants	Chlorhexidine superior for plaque; oil pulling better than non-chlorhexidine mouthwashes for modified gingival index; no difference from chlorhexidine for gingival index or <i>S. mutans</i>	Very low (GRADE)

Interpretation

Taken together, these reviews suggest that oil pulling may have modest benefits for gingival health and oral bacterial load, but the evidence is of low to very low certainty because of small trials, short follow-up, high risk of bias, lack of masking and possible publication bias^[12,13]. Chlorhexidine remains more effective for plaque reduction^[13]. There is no evidence that oil pulling prevents dental

caries or periodontitis over the long term, or that it has the systemic “detoxifying” effects sometimes claimed.

CHOICE OF OIL

There is no convincing evidence that any one oil is superior. Patient preference, availability, allergy and cost are reasonable bases for choice.

GANDUSHA IN SPECIFIC CONDITIONS

Table 4: Choice of oil for Gandusha

Oil	Classical or modern basis	Proposed properties	Practical notes
Sesame oil	Classical oil of choice for Snehana Gandusha ^[3]	Lignans with antioxidant activity; Vata-pacifying in Ayurveda	Most studied in early Indian trials; sesame allergy is a contraindication
Coconut oil	Widely used in South India and in modern practice	Lauric acid with antimicrobial activity	Solid at cool temperatures; pleasant taste for many
Sunflower oil	Used in some modern studies	Neutral taste	Less classical basis
Medicated oils	Classical formulations for oral diseases	Herbal constituents with astringent and antimicrobial effects	Composition varies; limited trial data

Oil	Classical or modern basis	Proposed properties	Practical notes
Ghee or milk	Classical Shamana Gandusha for Pitta conditions	Soothing	Used for burning, ulcers and dryness

Classical texts also recommend Gandusha for conditions such as dryness of the mouth, oral ulcers, dental sensitivity and loose teeth^[4,5]. Modern clinicians may be asked about oil pulling in several situations:

- **Dry mouth (xerostomia):** oil Gandusha may give temporary lubrication and comfort; underlying causes, such as medications, diabetes or Sjögren's syndrome, need assessment. Patients with dry mouth after head and neck radiotherapy are also at higher risk of aspiration and should take specialist advice.
- **Orthodontic appliances:** plaque control is difficult around brackets; oil pulling could be studied as an adjunct but does not replace careful brushing and interdental cleaning.
- **Halitosis:** reduction of oral bacteria may reduce bad breath, but persistent halitosis needs dental and medical evaluation.
- **Oral ulcers and mucositis:** Ropana Gandusha with healing decoctions is described classically; recurrent or non-healing ulcers need specialist assessment to exclude malignancy.

Communicating with patients

Patients often encounter strong claims about oil pulling on social media, including whitening teeth, curing systemic diseases and “drawing out toxins”. Clinicians can respect the traditional practice while explaining that its benefits appear to be modest and limited to oral health, that it should be added to, not substituted for, brushing and flossing, and that it is unsuitable for people at risk of choking or aspiration.

GANDUSHA WITH OTHER LIQUIDS

Classical texts describe Gandusha and Kavala with many liquids besides oil, including decoctions of Triphala, Khadira (*Acacia catechu*), Yashtimadhu (liquorice) and Irameda (*Acacia farnesiana*), and with honey, milk or ghee for specific conditions^[4,5]. Herbal mouthwashes containing such ingredients have been evaluated in various studies, but this review focuses on oil pulling, for which the evidence base is largest.

SAFETY

Aspiration and lipid pneumonia

Exogenous lipid pneumonia, caused by inhalation of oil into the lungs, has been reported in people who practise oil pulling, including two women with previous tongue cancer in whom pneumonia resolved only after oil pulling was stopped and bronchoalveolar lavage performed^[14], and two cases associated with repeated sesame oil pulling^[15]. People with swallowing difficulties, previous head and neck cancer or surgery, neurological disease, reduced consciousness, young children and frail elderly people should not practise oil pulling.

Other considerations

- **Replacement of proven measures:** the most important risk is using oil pulling instead of brushing with fluoride toothpaste, interdental cleaning and dental visits.
- **Swallowing:** the oil should not be swallowed, as it contains bacteria and debris.
- **Jaw fatigue:** prolonged swishing can cause jaw discomfort; shorter durations can be used.
- **Allergy:** sesame allergy is common; people with sesame allergy should use another oil or avoid the practice.
- **Calories and lipids:** small amounts are unlikely to matter if not swallowed.
- **Drains:** spitting oil into sinks can block drains.

PRACTICAL RECOMMENDATIONS

1. Oil pulling may be offered as an adjunct to, not a substitute for, twice-daily brushing with fluoride toothpaste, interdental cleaning and regular dental check-ups.
2. Use about 10 mL of sesame or coconut oil and swish for 5 to 15 minutes, then spit into a bin, rinse and brush.
3. Avoid oil pulling in children under about five years and in people at risk of aspiration.
4. Seek dental advice for bleeding gums, pain, loose teeth, persistent bad breath or oral ulcers, which may indicate disease requiring treatment.

RESEARCH PRIORITIES

- Larger, longer randomised trials with masked outcome assessment and standardised oil, volume

and duration.

- Comparison with placebo rinses (such as water swishing for the same duration) and standard care, rather than only with chlorhexidine.
- Clinically important outcomes, including caries incidence, periodontal attachment loss and tooth loss.
- Trials in high-risk groups, such as people with diabetes or orthodontic appliances.
- Systematic safety reporting, including aspiration events.

DISCUSSION

Gandusha and Kavala are among the most widely adopted Ayurvedic practices worldwide, in the form of oil pulling. The classical claims for daily oil Gandusha, including strong teeth and prevention of caries and dryness, are consistent with the modest benefits for gingival health and oral bacteria suggested by trials, but the evidence remains of low certainty. The main risks are aspiration in vulnerable people and neglect of proven oral hygiene. Oil pulling's low cost and cultural acceptability make it a reasonable adjunct, especially where access to dental care and products is limited, provided it is presented honestly.

CONCLUSION

Gandusha and Kavala have a strong classical basis, and oil pulling with sesame or coconut oil may modestly improve gingival health and reduce oral bacteria. The evidence is of low to very low certainty, chlorhexidine is more effective for plaque, and lipoid pneumonia is a rare but serious risk. Oil pulling can be recommended as an adjunct to, not a replacement for, standard oral hygiene and dental care.

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