



Oil pulling in dentistry

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ABSTRACT

All patients may not be able to correctly carry out mechanical teeth brushing methods in varied circumstances since they need for dexterity and specific motivation. On the other hand, since over-the-counter mouthwashes have various side effects, more natural counterparts are being researched. Oil pulling is an application that has been applied in India for 3000-5000 years and is good for various systemic diseases. This method, which is applied with different oils, provides various benefits to the teeth and surrounding tissues. The aim of this review is to provide an overview of the research on the oils used in oil pulling and their benefits.

Keywords: Oil, pulling, oral hygiene

INTRODUCTION

The most efficient way to stop plaque buildup and dental cavities is through mechanical plaque removal with brushing and flossing. For many patients, however, maintaining an adequate level of plaque control is challenging since it calls for particular drive and skill. Contrarily, using mouthwash improves oral health protection because of its chemical attributes that fight plaque and bacteria.^{1,2}

In instances where it is difficult or impossible to maintain adequate oral hygiene, studies are looking into chemical antimicrobial treatments as an option to prevent plaque buildup.²⁻⁴

Old traditions are often used when looking for alternative agents. Oil pulling is a mouthwashing technique that has its roots in Ayurveda, an ancient holistic medical system that has been practiced in India for 3,000–5,000 years. It has gained popularity recently as an alternative medicine due to its many health advantages.⁵ Common organic oils include coconut oil, sesame oil, and sunflower oil.⁶

In this review, it is aimed to provide an overview of the studies on how the traditional method of oil pulling is applied, the benefits and limitations of the process, by scanning the current articles in the literature about the oil pulling process.

PROCEDURE OF OIL PULLING

A spoonful of oil is used to rinse the mouth for around 20 minutes in the early morning before breakfast and on an empty stomach. A teaspoon of oil is used for kids older than five years old. The oil is “pulled” and stirred around the entire mouth in order for it to go between every tooth. If everything is carried out properly, the thick oil will turn milky white and grow thinner at the conclusion of this process. After spitting it out, the mouth is completely washed with warm, clean water or salt, and the teeth are then thoroughly cleansed with the fingers or by brushing them as usual.⁷

On an empty stomach, oil pulling should preferably be practiced every morning before brushing. It is important to avoid swallowing the oil.⁸⁻¹⁰ The ideal position for oil pulling is a seated position with the chin up. To hasten the healing process, apply it three times a day on an empty stomach before meals.¹¹

MECHANISM OF OIL PULLING

Oil pulling has an unclear mechanism of effect. One hypothesis is that oil is alkaline hydrolyzed, which results in the “creation of soap” process known as saponification.¹² Another hypothesis is that the oil’s viscosity inhibits bacterial adherence and plaque formation.¹³ The third hypothesis holds that the antioxidants in the oil prevent lipid peroxidation, aid

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in the eradication of germs, and enhance the effects of vitamin E in the oral cavity.¹⁴

Uses and Benefits of Oils

Oil pulling produces antioxidants that damage and kill the cell wall of microorganisms.¹⁵ These oils will pull the lipid layer of the bacterial cell membranes, causing them to stick or be pulled into the oil. During oil extraction, the oil emulsifies and the surface area of the oil increases.⁸ The first five minutes of oil extraction are spent emulsifying the oil.¹⁶ By coating the teeth and gingiva, this oil prevents plaque production and bacterial coaggregation.⁸ Thus, the oral cavity is cleared of the plaque-forming germs that cause tooth cavities, gingivitis, periodontitis, and foul breath. Gums become pink, healthy and the problem of bleeding gums is resolved. Oil pulling also helps relieve symptoms of mouth/throat and chapped lips.¹⁷ Also teeth are whiter; breath is freshened; oral cavity muscles and jaws become stronger.^{7,11} Oil pulling prevents the formation of dental caries, gingivitis, oral candidiasis and periodontitis, helps reduce toothache, corrects moving teeth and provides strong oral hygiene.^{7,11} Regular oil pulling is thought to renew the senses, stimulate the body, and refresh the intellect. Additionally helpful are sore throat, dry skin, vision impairment, taste loss, and appetite loss.¹⁸

Moreover, oil pulling is predicted to improve cells, tissues, and organs of the body and extend human life.⁷ Within two weeks of utilizing the proper oil pulling technique, oral hygiene has improved. Plaque and gingival indices were lowered as a result of utilizing sunflower oil for oil pulling for 45 days.⁸

Although refined oil can also be used to “extract” bacteria, viruses, and protozoa from the oral cavity, organic oils like sunflower, sesame, and coconut oil are advantageous, especially when cold-pressed. Oil pulling is best done using cold pressed oils because they are free of trans fats as compared to commercial oils made from potent oil-based solvents.¹⁹ Sesame oil has long been known to be the preferred oil for use in oil pulling applications.¹⁷ It has also been reported to use olive oil, milk, gooseberry, and mango extracts for oil pulling.²⁰ It has been discovered that sesame oil and sunflower oil can lessen plaque-induced gingivitis.⁸ Chlorosesamon, found in sesame root (*Sesamum indicum*), has antifungal properties.⁹ Moreover, sesame oil’s polyunsaturated fatty acids lessen oral cavity free radical damage.¹⁹

OIL PULLING LIMITATION

There are no clinical guidelines for oil pulling because it is one of the alternative oral hygiene practices that has not been sufficiently studied. However, its use is not recommended for children under 5 years of age as there is a risk of swallowing. In addition, if there is an allergy to the active ingredients, its use is not recommended. Kuroyama et al.²¹ reported rare cases of lipoid pneumonia as a result of repeated oil pulling practice. Reported cases have been associated with involuntary aspiration of small amounts of fat, which can be easily excreted through the feces and should not pose any risk to general health.^{22,23}

Literature on this Subject

In a study by Siripaiboonpong et al.,²⁴ 36 volunteers with gingivitis were divided into 2 groups and instructed to apply coconut oil and palm oil extraction for 28 days in addition to their oral hygiene regimen. This was done to compare the microbiological effects of the two products. The individuals switched their oil type and repeated the experiment after a 21-day washout period. In the beginning, after the first oil-drawing period, after washing, and after the second oil-drawing period, plate samples were taken for microbial culture. Controlling plaque bacteria with coconut oil extraction did not outperform palm oil extraction. Palm oil has been demonstrated to decrease the baseline amount of *Mutans streptococci* when used as an additional oral hygiene measure. This finding, however, does not conclusively demonstrate whether the risk of dental caries is decreased. Oil pulling is recommended as an extra oral hygiene technique because it has a minimal risk of side effects compared to conventional treatments. During the course of the trial, none of the participants reported experiencing any side effects.²⁴

In their study to evaluate the efficacy of probiotic mouthwash, sesame oil therapy, and chlorhexidine-based mouthwash on plaque accumulation and gingivitis in school children aged 10 to 12 years, Kandaswamy et al.²⁵ used modified gingival index (GI) scores as well as full-fledged oral prophylaxis. They were told to use the recommended mouthwashes once a day, and their parents watched over them as they did so. The kids underwent the same clinical evaluations on days 15 and 30. For both the GI and PI scores, within-group comparisons were statistically significant in all three groups ($p \leq 0.001$). Only the chlorhexidine group’s difference in GI scores between days 15 and 30 was statistically significant ($p = 0.024$). Comparisons between the three groups within each intergroup did not demonstrate statistical significance.

In a study by Griessl et al.²⁶ comparing whether the overall microbial load of the oral cavity was reduced in oil pulling and saline withdrawal conditions, oil pulling resulted in a higher saliva production and the oil/saliva emulsion appeared to contain more bacteria than saline-extracted samples. They came to the conclusion that oil pulling can momentarily lessen the total amount of microbes in the mouth and that the microbiota found in oil pulling samples is representative of the oral microbiome.

According to Peng et al.’s²⁷ meta-analysis, oil pulling may potentially reduce the number of salivary bacterial colonies, but it had no discernible impact on plaque index results or gingival index score.

The plaque index and bleeding index were initially assessed and assessed after 30 days in the pilot study by Ripari et al.,²⁸ which sought to determine the efficacy of coconut oil extraction as an adjuvant in reducing plaque formation and in the treatment of plaque-induced gingivitis. Twenty patients with gingivitis were included in the sample. The collected data were found to be important and promising in reducing plaque formation and gingivitis.

Oil pulling has become popular as a home whitening treatment due to its low cost and harmlessness. Oil pulling does not have complex procedures and the fact that natural oils are readily available in the market contributes to its popularity. In addition, the possibility of allergic reactions and bad taste sensations to oils is very low. However, the disadvantages of this method are that the treatment result does not appear immediately and requires longer patient compliance to achieve expectations. Coconut oil has become popular for oil pulling due to its pleasant taste and various benefits. Coconut oil can be used safely because it does not contain acids and other corrosives.²⁹

In a study by Rajab et al.,³⁰ 60 female patients were divided into two main groups and used “coconut oil swish” and “crest 3D white,” with the aim of evaluating the whitening effectiveness, tooth sensitivity, and soft tissue irritation of coconut oil extraction as a home bleaching method, in comparison to over-the-counter whitening mouthwash. Color measurement at week 1 and week 2 was done three times using the VITA Easyshade® Advance device. “tooth sensitivity and soft tissue irritation” pain assessment was performed using the “Wong-Baker FACES” Pain Rating Scale. Whitening mouthwash containing 1.5% hydrogen peroxide reported stronger color change after one or two weeks of usage, even though the elimination of coconut oil demonstrates a whitening efficacy after two weeks of use. When compared to mouthwashes that contain 1.5% hydrogen peroxide for teeth whitening, they discovered that using coconut oil regularly resulted in decreased tooth sensitivity and/or soft tissue irritation.

Ludwar et al.,³¹ in their study to determine the subjective effectiveness of oil pulling on drug-induced xerostomia in terms of symptom relief, quality of life, taste, mucosal moisture, and oral parameters, showed that participants with drug-induced xerostomia had xerostomia burden, symptom relief and symptom relief with weekly use as a result of sunflower oil withdrawal. At baseline and at the conclusion of the follow-up, oral examinations (gingivitis index, plaque index, completely stimulated and unstimulated salivation rates) were looked at. Oil pulling alleviated the overall xerostomia burden. There was no difference in symptom relief between oil and water in the comparison.

CONCLUSION

Oil pulling has been the subject of various studies as a method that has been around for many years. Although the studies had various results, they generally had an effect on bacterial colonies in saliva. In the light of the studies carried out, more comprehensive studies should be planned and the benefits of oil pulling should be supported.

ETHICAL DECLARATIONS

Referee Evaluation Process

Externally peer-reviewed.

Conflict of Interest Statement

The authors have no conflicts of interest to declare.

Financial Disclosure

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Author Contributions

All of the authors declare that they have all participated in the design, execution, and analysis of the paper, and that they have approved the final version.

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