

Oil Pulling and Oral Health: A Review

Poonam Tomar¹, Sudheer Hongal², Manish Jain², Kuldeep Rana³, Vrinda Saxena⁴

¹Postgraduate Student, Department of Public Health Dentistry, People's Dental Academy, People's University, Bhopal, Madhya Pradesh, India,

²Reader, Department of Public Health Dentistry, People's Dental Academy, People's University, Bhopal, Madhya Pradesh, India, ³Postgraduate

Student, Department of conservative and Endodontics, People's Dental Academy, People's University, Bhopal, Madhya Pradesh, India, ⁴Professor and

Head, Department of Public Health Dentistry, People's Dental Academy, People's University, Bhopal, Madhya Pradesh, India

Oil pulling is extensively used as a traditional Indian folk remedy without the scientific proof for many years to prevent decay, bleeding gums, oral malodor, dryness of throat, cracked lips and for strengthening teeth, gums, and jaws. This paper reviewed the literature on oil pulling based on the scientific articles available under the following subheadings: (1) Introduction (2) history (3) procedure (4) mechanism (5) benefits (6) discussion (7) summary (8) conclusion. Oil pulling or oil swishing is the ayurvedic way of maintaining oral health and improving overall immune system. Oil also pulling acts as an excellent detoxifying agent in healing the body inside. Oil pulling is a procedure in which the practitioners rinse their mouth with approximately one tablespoon of an ordinary cooking oil for 3-20 min, then spits it out. This procedure is typically performed daily. In this narrative review, authors try to illustrate different types of oil used for oil pulling and their oral benefits and general benefits on the health. Various oils used for swishing (pulling) the oral cavity-coconut oil, palm oil, corn oil, rice bran oil, sesame oil, sunflower oil, soybean oil, etc. Though oil pulling is effective, none of the studies considered it as a replacement for the tooth brushing, but can definitely be a supplemental oral hygiene aid.

Keywords: Coconut oil, Herbal remedies, Oil-pulling therapy, Oral health, Sesame oil, Sunflower oil, Traditional medicine

INTRODUCTION

Oil pulling is an ancient procedure in Ayurveda, which involved swishing oil in the mouth for oral health and systemic health benefits. In ayurveda text *Charaka Samhita*, it is mentioned as *Kavala* or *Gandusha*. Oil pulling has been used extensively as a traditional Indian folk remedy for many years to prevent decay, bleeding gums, oral malodor, dryness of throat, cracked lips and for strengthening teeth, gums, and jaws.¹

The concept of oil pulling really isn't new, but it is a modified version of oil gargling, which comes from ayurvedic medicine and dated thousands of years ago.² Various oils have been used for oil gargling. Oil pulling therapy can be done using edible oils like sunflower or sesame oil. Sesame plant (*Sesamum indicum*) of the pedaliaceae family has been considered a gift of nature to mankind for its nutritional qualities and desirable health effects.³

Scientific evidence shows that the oil-pulling therapy could reduce the plaque index, modify gingival scores and the total oral bacteria count in gingivitis patients.⁴

Moreover, it can convert dental caries susceptibility from marked susceptibility to slight or moderate susceptibility.⁵

HISTORY

In ancient times, the practice of oil (Thaila in Sanskrit) pulling was (Aabarh in Sanskrit) a popular Indian

ayurvedic treatment. "Oil pulling" or oil swishing is a procedure that involves swishing oil in the mouth for oral and systemic health benefits. Oil pulling therapy with sesame oil has been used as a traditional Indian folk extensively for many years. The modern version of oil pulling was coined by Ukrainian physician Dr. Karach during 1990's in Union of Soviet Socialist Republics (USSR), after he experimented swishing oil in the above-mentioned method and cured himself from a blood disease. He further studied it, systematized it and propagated it across the world. Dr. Karach says: "With the oil therapy, I healed my chronic blood disease of 15 years. With the use of this therapy; I healed within 3 days of an acute arthrosis that had forced me to lie in bed."⁶

Dr. Karach, presented a paper before the All-Ukrainian Association. The meeting was attended by oncologists and bacteriologists belonging to the Academy of Science of the USSR. Dr. Karach explained an unusual simple healing process using cold-pressed oils.

The results of this therapy invoked astonishment and doubt concerning the contents of his report. However, after further examining the workings of the oil pulling therapy, one has but to then test it on oneself to prove its validity and effectiveness. It is most astonishing that such results can be achieved with this absolutely harmless biological healing method. This simple method makes it possible to effectively treat the most varied diseases, in some cases enabling one

Corresponding Author:

Dr. Poonam Tomar, People's Dental Academy, People's University, Bhanpur, Bhopal, Madhya Pradesh. Mobile: +91-7898118100.

E-mail: drsudhirhongal@gmail.com

to avoid surgical intervention and the taking of medications that can have harmful side effects.⁷

Procedure^{4,5,8-10}

Step 1: First thing in the morning on an empty stomach and before drinking any liquids (including water), pour exactly one tablespoon of coconut oil or sesame oil into your mouth.

Step 2: Swish the oil around in your mouth without swallowing it. Move it around in your mouth and through your teeth, as if it was mouthwash (don't tilt your head back to gargle though). You'll find that the oil will start to get watery as your saliva mixes with it. Keep swishing. If your jaw muscles get sore while swishing, you're putting too much into it. Relax your jaw muscles and use your tongue to help move the liquid around the inside of your mouth. When you do this correctly, you'll feel very comfortable. Pretty soon, it will become second nature.

Step 3: As the end of the oil pulling session approaches, you may notice the oil/saliva mixture in your mouth has become thicker. This is quite normal, since it is pulling out toxins from your body. When 20 min is up, spit out the oil into the toilet. Don't be alarmed if it looks yellowish-this is also normal.

Step 4: Rinse out your mouth a couple of times with warm salt water and spit into the toilet. Rinse and spit with a good mouthwash. I prefer to dilute with water (or use full strength), regular hydrogen peroxide, and I rinse and spit with that. The hydrogen peroxide is very effective in rinsing out any toxins which may be left in the mouth.

The oil pulling/swishing is done best before breakfast. To accelerate the healing process, it can be repeated 3 times a day, but always before meals on an empty stomach.⁷

Various oils used for swishing^{4,5,8-10}

1. Coconut oil
2. Corn oil
3. Rice bran oil
4. Palm oil
5. Sesame oil
6. Sunflower oil
7. Soya bean oil.

Mechanism of action

The oil acts as a cleanser. When you put it in your mouth and work it around your teeth and gums it "pulls" out bacteria and other debris. Oil pulling has a very powerful detoxifying effect. Toxins are pulled from the body the very first time you try it. One of the first cleansing symptoms you will experience is an increased flow of mucous from your throat and sinuses. Mucous drainage is one of the body's

methods of removing toxins. While you are pulling, mucous may build in the back of your throat. You may even have to expel the oil and clear the mucous from your throat before reaching a full 20 min.^{10,11}

This process makes oil thoroughly mixed with saliva. Swishing activates the enzymes and the enzymes draw toxins out of the blood. The oil must not be swallowed, for it has become toxic. As the process continues, the oil gets thinner and white. If the oil is still yellow, it has not been pulled long enough. It is then spit from the mouth, the oral cavity must be thoroughly rinsed and mouth must be washed thoroughly.⁷

The mechanisms of oil-pulling action are not known. It has been proposed, however, that the viscosity of the oil can inhibit bacterial adhesion and plaque coaggregation.¹²

The other possible mechanism might be the saponification process that occurs as a result of alkali hydrolysis of oil by bicarbonates in saliva.¹³

Sesame (*S. indicum* L., pedaliaceae) is a very old cultivated crop and thought to have originated in Africa (Ram *et al.*, 1990).¹⁴ Chlorosesamone obtained from roots of sesame has antifungal activity (Hasan *et al.* 2000).¹⁵ Sesame lignans have antioxidant and health promoting activities (Kato *et al.*, 1998).¹⁶ High amounts of both sesamin and sesamolin have been identified in sesame (Sirato-Yasumoto *et al.*, 2001).¹⁷ Both sesamin and sesamolin were reported to increase both the hepatic mitochondrial and the peroxisomal fatty acid oxidation rate. Sesame seed consumption appears to increase plasma gamma tocopherol and enhanced vitamin E activity which is believed to prevent cancer and heart disease (Cooney *et al.*, 2001).¹⁸

Sesame oil is found to be effective in reducing bacterial growth and adhesion. Toxins and bacteria from the body might be expelled through the tongue and trapped in the oil and removed from the body.⁵

Sesame oil was demonstrated to have antibacterial activity against *Streptococcus mutans*. It contains high amounts of unsaturated fatty acids. Linoleic acid and oleic acid are the predominant compositions. Oil-pulling therapy with sesame oil significantly reduced *S. mutans* counts in plaque and saliva of adolescents within 1 week.¹⁰

Coconut oil has a unique role in the diet as an important physically functional food. Besides the health and nutritional benefits, coconut oil has been shown to have anti-carcinogenic effects against colon tumors.¹⁹ What makes coconut oil different from most other dietary oils are the basic building blocks, or fatty acids, making up

the oil. The predominant composition of coconut oil is a medium chain fatty acid, whereas the majority of common edible fats in our diet are composed almost entirely of long chain fatty acids. This influences the physical and chemical properties of the oil. Coconut oil contains 92% saturated acids, approximately 50% of which is lauric acid. Recently, results from many studies revealed that the monolaurin, the monoglycerides of lauric acid from coconut oil had antimicrobial activity against various Gram-positive and Gram-negative organisms, including *Escherichia vulneris*, *Enterobacter* spp.,²⁰ *Helicobacter pylori*,²¹ *Staphylococcus aureus*,²² *Candida* spp., including *Candida albicans*, *Candida glabrata*, *Candida tropicalis*, *Candida parapsilosis*, *Candida stellatoidea* and *Candida krusei*,²³ as well as enveloped viruses though the exact antibacterial mechanism of the action of coconut oil is still unclear, it was hypothesized that monolaurin and other medium chain monoglycerides had the capacity to alter bacterial cell walls, penetrate and disrupt cell membranes, inhibit enzymes involved in energy production and nutrient transfer, leading to the death of the bacteria.¹⁰

Ozonized sunflower oil (oleozon) showed antimicrobial activity against *S. aureus*, *Escherichia coli*, *Pseudomonas aeruginosa*, *Enterococcus faecalis*, *Mycobacterium* spp., *Streptococcus pyogenes* and *C. albicans*.^{24,25} However, the activity might be due to the powerful oxidant properties of the ozone itself. Considering the antimicrobial effect of other oils, including corn oil, palm oil, rice bran oil and soybean oil, it was proposed that small amounts of saturated fatty acid, i.e. lauric acid, in these oils may play a role in their antimicrobial properties.

Health benefits

Oil pulling isn't only good at preventing oral infections, but can actively fight them as well. The oil pulls the infection (bacteria, toxins, and pus) out of the tissues, allowing the body to heal itself. Inflammation is quieted, gums stop bleeding, loose teeth tighten, and pain and sensitivity vanish. Teeth become whiter, and gums become pinker and healthier looking.²

Oral health benefits^{1,4,5,8,10}

1. Prevent dental caries
2. Oral malodor
3. Bleeding gums
4. Dryness of the throat and cracked lips.

Oil pulling benefits also include helping to support and strengthen the body's immune system, which in turns helps the entire body be healthier and function better.

General health benefits^{1,4,5,8,10}

1. Thrombosis

2. Eczema
3. Intestinal infection
4. Diabetes
5. Bronchitis
6. Asthma
7. Headaches
8. Chronic skin problems
9. Stop the growth of malignant tumors.

Advantages

Oil pulling is cheap; the only expense is for the oil you use. It is very easy; you simply swish oil in your mouth. Compared to other forms of detoxification it is relatively effortless. It doesn't require dieting, fasting, or consuming unpleasant, and often bowel loosening mixes of herbs and pills. And it is completely harmless. It is claimed to have advantages over commercial mouthwashes since it causes no staining, has no lingering aftertaste, causes no allergic reactions and is readily available in the household.^{3,10}

Precautions

Do not swallow, however, inadvertently if you swallow, there is nothing to worry. It will go out through motion if not digested. Do not spit where people walk or on vegetation. You can spit in the toilet and flush it. If you are allergic to a particular brand, change the brand of oil or to different oil. Make sure the oil is good and refined. Keep chin up so that pulling covers the back of the oral cavity and the molar teeth. For children of 5 years and above, only one teaspoon full (5 mL) of oil will do.¹¹

DISCUSSION

Oil pulling or oil swishing is an old age process mentioned in *Charaka Samhita* and *Shushruta's Arthashastra*. Oil pulling has been used extensively as a traditional Indian folk remedy for many years to prevent decay, oral malodor, bleeding gums, dryness of the throat, and cracked lips and for strengthening teeth gums and jaws.¹

Online searches in PubMed and other databases provided six scientific articles on oil pulling therapy in India. Of the five articles found two *in vivo* studies tried to find the effect of oil pulling on plaque and gingivitis and one study found out its effect on bacteria causing dental caries. One *in vitro* study evaluates the antibacterial activity of sesame oil and lignans isolated from sesame oil oral microorganism and checked whether saponification or emulsification occurs during oil pulling therapy.

Amith *et al.* (2007), used refined sunflowers oil as oral swishing agent and its effect on plaque and gingival condition. There was a significant reduction in plaque and gingival scores.

Similar results were found by Ashokan *et al.* (2009), but instead of sunflower oil they used sesame oil as swishing agent. In their study, they observed that oil pulling therapy has been equally effective as chlorhexidine against gingivitis.

Sesame oil has several advantages like no staining, no lingering after taste and no allergy. Sesame is most commonly available in all household and 5-6 times more cost effective than chlorhexidine. The mechanism of action by which oil pulling therapy causes inhibition of plaque is not clear.

Sesame oil has three lignans:

1. Sesamin
2. Sesamol
3. Sesaminol.

Three lignans have antioxidant properties and potentiate vitamin E action. Sesame oil has increased polyunsaturated fatty acids, and lipid peroxidation is reduced there by reducing free radical injury to the tissues.

The inhibition bacterial adhesion and plaque co-aggregation may be attributed to the viscosity of oil. The other possible mechanism of action of sesame oil might be saponification or soap making process. Sesame oil when acted upon by salivary alkali, like bicarbonates, the soap making process is initiated. Soaps are good cleansing agents. This mechanism could have been the reason for the reduction of plaque and gingival scores.¹ Ashokan *et al.* 2011, conducted a randomized clinical trial and concluded that oil pulling was equally effective as chlorhexidine on halitosis and organism associated with halitosis. There were no other studies related to halitosis in India. Durai *et al.*, (2008) used to sesame oil and effect on the reduction of the total count of bacteria, effect on the reduction of the total count of bacteria, effect on the susceptibility of the host to dental caries, antibacterial activity of sesame oil against dental caries causing bacteria. Sesame oil was found to be active in the reduction of bacteria causing dental caries. Of the six studies retrieved oil pulling showed a significant reduction in plaque, gingivitis and reduction in bacteria causing dental caries and halitosis.

Thaweboon *et al.*, (2011) used coconut oil, corn oil, rice bran oil, palm oil, sesame oil, sunflower oil and soybean oil found that coconut oil exhibited antimicrobial activity against *S. mutans* and *C. albicans*. Sesame oil had antibacterial activity against *S. mutans* whereas sunflower oil had antifungal activity against *C. albicans*. However, *Lactobacillus casei* was found to be resistant to all tested oils. Other oils such as corn oil, palm oil, rice bran oil and soybean oil showed no antimicrobial activity against tested microorganisms.

Though oil pulling is effective none of the studies considered it as a replacement for the tooth brushing, but can definitely be a supplemental oral hygiene aid. The most wonderful part of oil pulling is that it can be performed using any cooking oil available at homes. Further studies are required to draw the valid conclusions.

SUMMARY

This review provides information related to oil pulling. It is very simple and very cost effective exercise. All you need is a 10 mL of vegetable oil (one tablespoon) and 20 min time in the early Morning with an empty stomach. This review was done to know the effectiveness of various kind of oil used for oil pulling their comparison. Several studies were reviewed to understand the potentials of various oils in reducing the bacterial load from mouth. Oil is pulling or oil swishing is the ayurvedic way of maintaining oral health and improving overall immune system. Oil also pulling acts as an excellent detoxifying agent in healing the body inside. It is a widely accepted fact that most of the diseases start because of the unhealthy mouth. Most of the chronic illness are directly-related to an unhealthy mouth like gum disease or tooth decay. Oil pulling is incredibly effective in brightening teeth, healing gums, preventing bad breath, quenching inflammation, and healing oral infections oil pulling will be efficacious in treating not only mouth disorders, but other disorders such as asthma, diabetes and migraine headaches, or any chronic illness as well.

CONCLUSION

1. Various oils used for swishing (pulling) the oral cavity- used coconut oil, corn oil, rice bran oil, palm oil, sesame oil, sunflower oil, and soybean oil. Though oil pulling is effective, none of the studies considered it as a replacement for the tooth brushing, but can definitely be a supplemental oral hygiene aid.
2. The most wonderful part of oil pulling is that it can be performed using any cooking oil available at homes. Further research required to identify the most suitable oil for oral use.

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