

Chinese Herb Shows Promise Against Tooth Decay

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February 19, 2024

STORY AT-A-GLANCE

- › Water extract of the Chinese herb *Galla chinensis* has potent anticaries effects, effectively inhibiting acid production caused by caries-associated bacteria and increasing teeth's resistance to acid
- › The health of your teeth is largely dependent on your diet, which affects not only your gut microbiome but also your oral microbiome. Like your bones, your teeth need certain nutrients to remain strong and healthy
- › Omega-3 fats may help ward off gum disease. People who consumed the highest levels of the animal-based omega-3 fats were 23% to 30% less likely to have gum disease
- › Research shows topical fluoride is unlikely to provide any significant protection against cavities. Other studies show fluoride is a neurotoxic endocrine disruptor that does more harm than good
- › Coconut oil is a natural antibacterial alternative that can significantly improve your oral health. Oil pulling with coconut oil has been shown to significantly reduce plaque formation and gum disease with consistent use

Editor's Note: This article is a reprint. It was originally published December 4, 2017.

Your dental health is an important component of your physical health. While often ignored or overlooked, dental issues such as cavities and root canals can have a significant systemic influence, and the state of your soft tissues and teeth often offer a clear reflection of what's going on in the rest of your body.

Tooth decay is often misconstrued as a "fluoride insufficiency," but nothing could be further from the truth. The health of your teeth is largely dependent on your diet, which affects not only your gut microbiome but also your oral microbiome. Like your bones, your teeth also need certain nutrients to remain strong and healthy.

Interestingly, Chinese researchers discovered that water extract of the herb *Galla chinensis* has potent anticaries effects, effectively inhibiting acid production caused by caries-associated bacteria and increasing teeth's resistance to acid.^{1,2}

The Anticaries Activity of *Galla Chinensis*

*Galla chinensis*³ (Wu Bei Zi, also known as Chinese gall or Chinese sumac) – one of hundreds of Chinese herbs tested by this research team – was found to have "strong potential to prevent dental caries due to its antibacterial capacity and tooth mineralization benefit."⁴ The herb also has antiviral, anticancer, hepatoprotective, antidiarrheal and antioxidant activities.

According to the authors, "*Galla chinensis* water extract has been demonstrated to inhibit dental caries by favorably shifting the demineralization/remineralization balance of enamel and inhibiting the biomass and acid formation of dental biofilm."

Unfortunately, it's still far too early to start using the herb in dental applications, because the researchers have yet to identify the active ingredient responsible for these anticaries activities. As reported by ScienceBlog:⁵

*"In the present study, several *Galla chinensis* extracts with different main ingredients were obtained and determined by liquid chromatography-mass spectrometry analysis. The antibacterial capacity was determined using the polymicrobial biofilms model, which can generate reproducible plaque-like biofilms that occur in vivo.*

The effect of inhibiting tooth demineralization was tested using an in vitro pH-cycling regime, which mimicked the periodic pH change in mouth. 'Medium

molecular weight gallotannins are the most active constituent in terms of caries prevention' concluded Xuelian Huang, Ph.D., DDS, the lead author."

Dietary Guidelines for Strong, Healthy Teeth

While *Galla chinensis* may someday be added to dental products as an aid against tooth decay, your best answer is already at hand. If you want to have healthy teeth, you must start from the inside out, and that means cleaning up your diet.

Much of the dietary advice for oral health is founded on the findings of the late Dr. Weston A. Price,⁶ a Cleveland dentist who sought to determine what makes for good dental health by studying indigenous tribes who, he said, had "fine teeth" and few chronic health problems. While studying the oral health and diets of various native tribes, he noticed distinct similarities:

- The foods were natural, unprocessed and organic (and contained no sugar except for the occasional bit of honey or maple syrup)
- The people ate foods that grew in their native environment. In other words, they ate locally grown, seasonal foods
- Many of the cultures ate unpasteurized dairy products, and all of them ate fermented foods
- A significant portion of the food was eaten raw
- All of the cultures ate animal products, including animal fat, full-fat butter and organ meats

When Price analyzed his findings, he found the native diets contained 10 times the amount of fat-soluble vitamins, and at least four times the amount of calcium, other minerals and water-soluble vitamins as that of Western diets at that time. Their diets were also rich in enzymes because they ate fermented and raw foods (enzymes help you to digest cooked foods).

Importantly, the native diets also had at least 10 times more omega-3 fat than modern diets and far less omega-6 fats. Today, there's ample evidence showing diets lacking in omega-3 fats while being heavy on omega-6s from vegetable oils (now found in most processed foods), are a recipe for disaster.

Modern research supports Price's early observations, showing that even moderate amounts of omega-3 fats may help ward off gum disease. In one study,⁷ researchers divided nearly 9,200 adults into three groups based on their omega-3 consumption. Dental exams showed those in the middle and upper third for consumption of the omega-3 fats DHA and EPA were 23% to 30% less likely to have gum disease.

What About Fluoride?

While fluoride is commonly touted as the best prophylactic and answer to caries-prone teeth, the evidence to support these claims is flimsy at best. Dental caries is caused by demineralization of your teeth (enamel and dentin) by the acids formed during the bacterial fermentation of dietary sugars.

Demineralization is countered by the deposit of minerals from your saliva, or remineralization, which is a slow process, and fluoride is said to prevent dental caries by enhancing this mineralization.

Alas, your teeth do not actually rely on fluoride for remineralization. In fact, fluoride serves no beneficial biological role in the human body at all. It does, however, cause harm. For example, evidence shows fluoride is an endocrine disruptor that can affect your bones, brain, thyroid gland, pineal gland and even your blood sugar levels. Importantly, it's a known neurotoxin, shown to lower IQ in children.

Research⁸ has also concluded that the protective shield fluoride forms on teeth is up to 100 times thinner than previously believed. It has long been believed that fluoride changes the main mineral in tooth enamel, hydroxyapatite, into a more decay-resistant material called fluorapatite. However, the researchers found that the fluorapatite layer

formed in this way is only 6 nanometers thick – meaning it would take almost 10,000 such layers to span the width of a human hair.

As noted by the authors, "... [I]t has to be asked whether such narrow ... layers really can act as protective layers for the enamel." Considering the systemic toxicity of fluoride and its questionable effectiveness as an anticaries aid, I personally see no reason to use it. There are far safer and more effective ways to protect your teeth from cavities.

Poor Diet Is the Primary Cause of Dental Decay

By far, excess dietary sugar is the most significant factor in driving dental decay. Other primary causes of tooth decay cited in the medical literature include:

- Children going to bed with a bottle of sweetened drink in their mouth, or sucking at will from such a bottle during the day
- Poor dental hygiene and poor access to and use of dental health services, usually related to socioeconomic status
- Mineral deficiencies, like magnesium, which can weaken bones and teeth⁹
- Vitamin K2 is crucial for bone mineralization and unless you consume grass fed organic animal products and nonpasteurized fermented foods on a regular basis, there is a good chance you might be deficient in this important nutrient
- More than 600 medications promote tooth decay by inhibiting saliva

Research¹⁰ published in 2014 shows there is a robust log-linear relationship of dental caries to sugar intakes, meaning your risk of cavities increases the more sugar you eat – and this was found to be true despite regular use of fluoridated water and/or fluoridated toothpaste. According to this study, to minimize your risk of cavities, sugar should make up no more than 3% of your total energy intake (with 5% noted as a "pragmatic" or more realistic goal).

In an interview with Medical Research, Aubrey Sheiham, Professor Emeritus of dental public health, University College London, explained that current approaches are really

missing the boat when it comes to preventing cavities:¹¹

"Current approaches to controlling dental caries are failing to prevent high levels of caries in adults in all countries and this relates to the current high level of sugar intake across the globe. Thus, for multiple reasons, including obesity and diabetes prevention, we need to adopt a new and radical policy of progressive sugar reduction.

The progressive accumulation of dental caries, despite widespread use of fluoride, shows that sugars intakes should be <3% to minimize the disability and cost of dental caries in a population."

Foods That Fight Bad Breath

Certain dietary choices can also contribute to or prevent a common side effect of poor oral health, namely bad breath (halitosis), caused by oral bacteria that produce foul-smelling sulfur compounds during protein breakdown. Clearly, if you struggle with bad breath, you need to address your overall diet and/or daily oral hygiene. That said, the following foods may also help fight bad breath:¹²

- **Cinnamon**, thanks to the presence of antimicrobial cinnamic aldehyde, which helps prevent odor-causing bacteria
- **Water** — Dry mouth promotes microbial growth that can lead to bad breath. Making sure you're well-hydrated by drinking more water can help stimulate saliva production
- **Strawberries** — Their high water content and vitamin C help deter odor-causing bacteria
- **Green tea** contains antioxidants that help deter and destroy odor-causing bacteria
- **Parsley, apple and spinach** — All three of which contain polyphenols that help break down foul-smelling sulfur compounds

Coconut Oil Is Excellent for Oral Health

Coconut oil is a powerful inhibitor of a large variety of pathogenic organisms, from viruses to bacteria to protozoa, largely due to its naturally high lauric acid content. Your body converts lauric acid into monolaurin, a monoglyceride that can destroy lipid-coated viruses – including herpes, influenza and measles – as well as gram-negative bacteria and protozoa.

Researchers in Ireland found that coconut oil treated with enzymes (in a process similar to digestion) strongly inhibits the growth of most Streptococcus bacteria strains; microbes commonly found in your mouth can lead to plaque buildup, cavities and gum disease. This included Streptococcus mutans, the acid-producing bacterium identified as a major cause of tooth decay.¹³

While the product used in this study was a special enzyme-treated formulation, natural organic coconut oil can have similarly beneficial effects. Not only can you create your own toothpaste from coconut oil, baking soda and natural, unprocessed salt, you can also use coconut oil for oil pulling.

Oil Pulling Explained

Oil pulling¹⁴ is a practice dating back thousands of years, having its origins in Ayurvedic medicine. Basically, it involves rinsing your mouth with coconut oil, much like you would with a mouthwash. The oil is worked around your mouth by pushing, pulling and drawing it through your teeth for a period of 15 minutes. In the beginning, your cheeks and jaw may tire after just a few minutes, so you may need to work your way up to 15, but it's well worth the effort.

This process allows the oil to "pull out" bacteria, viruses, fungi and other debris from between your teeth and gums. When done, spit out the oil in the toilet or outdoors to avoid clogging your sink, and rinse your mouth with water. Do not swallow the oil.

When done correctly, oil pulling has a significant cleansing, detoxifying and healing effect, not only for your mouth and sinuses but for the rest of your body as well. Anecdotally, oil pullers have reported relief from systemic health problems such as arthritis, diabetes and even heart disease.

Scientifically, oil pulling has been shown to significantly reduce plaque formation and gingivitis (gum disease) with consistent use.^{15,16,17} According to Bruce Fife, naturopathic physician and expert in the healing effects of coconut, the cleansing effect of oil pulling can be understood with the following analogy:¹⁸

"It acts much like the oil you put in your car engine. The oil picks up dirt and grime. When you drain the oil, it pulls out the dirt and grime with it, leaving the engine relatively clean. Consequently, the engine runs smoother and lasts longer. Likewise, when we expel harmful substances from our bodies our health is improved and we run smoother and last longer."

On a side note, [Manuka honey](#) from New Zealand, which is well-known for its potent medicinal properties, has also been shown to be effective in reducing plaque.¹⁹

Researchers found Manuka honey worked as well as chemical mouthwash, and better than the cavity fighting sugar alcohol, xylitol.

This is most likely due to the honey's antibacterial properties. Clinical trials have shown that Manuka honey can effectively eradicate more than 250 clinical strains of bacteria, including antibiotic-resistant varieties.

Take Control of Your Oral Health

Proper dental hygiene is important for optimal health, as discussed by Dr. Bill Osmunson in the interview above. When it comes to preventing cavities, drinking fluoridated water and brushing your teeth with fluoridated toothpaste are not the answer you're looking for. The key is your diet, along with daily dental health care in the form of tooth brushing and flossing.

You can learn more about proper brushing and flossing techniques by following the hyperlinks provided. Practicing twice daily brushing and flossing, along with regular cleanings by your biological dentist and hygienist, will ensure that your teeth and gums are as healthy as they can be.

You may also try oil pulling to enhance your dental hygiene routine. Importantly, by avoiding sugars and processed foods and replacing them with fresh whole foods, healthy fats and fermented foods, you prevent the proliferation of the bacteria that cause tooth decay in the first place. To recap, here are some basic guidelines for optimizing your dental health, safely and naturally:

- Avoid fluoridated water and fluoridated toothpaste
- Minimize your sugar and grain consumption and avoid processed foods. To really minimize your risk of cavities, limit dietary sugars to 3% of your total energy intake or less
- Increase consumption of fresh vegetables, fermented foods and high-quality animal-based omega-3 fats
- Practice good daily oral hygiene and get regular cleanings from a mercury-free dentist
- Consider oil pulling with coconut oil, which is a powerful inhibitor of a large variety of pathogenic organisms

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