7 Purported Slippery Elm Benefits & Uses

Slippery elm inner bark is a mucilage-rich Native American remedy for various inflammatory conditions. It's believed to soothe a sore throat and irritated gut, help heal wounds, and encourage the healing of damaged mucous membranes. Yet, only a few small clinical trials on slippery elm have been carried out so far. How solid is the scientific evidence on its use?

What is Slippery Elm?

Slippery elm (*Ulmus rubra*) is a tall tree that grows throughout parts of eastern and central Canada and the United States.

In times of famine, people chewed on its sweet-tasting inner bark to quench thirst and hunger. Saliva or water mixed with mucilage hiding in the tree's inner bark creates a slippery, wet feel—hence how slippery elm earned its name. It is also known under a host of other names, including Indian elm, moose elm, red elm, and sweet elm (Braun, 2006).

Thanks to its polysaccharide-rich mucilage, slippery elm is among the best known herbal *demulcents*: remedies believed to soothe irritated tissue and coat and protect the digestive tract (Braun, 2006).

The inner bark of slippery elm is usually dried and made into a fine powder that's used for medicinal purposes. Traditional preparations also mention poultices for wounds, burns, and skin problems.

Sadly, slippery elm is increasingly becoming an endangered species, although it can be sustainably harvested. During warm weather, its bark peels easily away from the tree trunk. Only small amounts should be collected to enable the bark to regrow and the tree to live.

Be careful not to confuse slippery elm with American elm (*Ulmus americana*) or with other elm species that grow in different parts of the world.

Slippery Elm Uses (Traditional & Modern)

Native Americans have used slippery elm as a traditional remedy for coughs, diarrhea, inflammation, swelling, and gastrointestinal tract diseases. A decoction of the bark was used as a laxative and to aid childbirth. Slippery elm is also believed to be a mild diuretic that may help soothe bladder and urinary tract inflammation. To date, there is no clinical evidence to support these claims (Watts, 2012).

Allegedly, the same infusion of the inner bark is used in smaller amounts as a laxative and in larger amounts to soothe diarrhea. No studies have yet tested this either.

Recently, the antioxidants in the bark of slippery elm started being researched for improving symptoms of irritable bowel syndrome (IBS). The available studies are limited (Joo, 2014, Watts, 2012)

In the United States, slippery elm is marketed as a remedy for coughs and upper airway inflammatory conditions. It's also popular among individuals with voice disorders. However, there's not enough scientific evidence to support its use for any of these conditions (Watts, 2012)

Proponents claim that slippery elm may also help with psoriasis, syphilis, herpes, gout, upper respiratory tract infections, and even some types of cancer. Evidence is currently lacking to back up these claims.

Slippery Elm's Active Compounds & How They Work

The main active compound in slippery elm is mucilage, a mixture of simple (hexose, pentose) and complex sugars (polyuronides). These compounds form a strong, semi-solid matrix that holds in water without getting dissolved (Watts, 2012).

For this reason, powder preparations of slippery elm can form a protective coating over tissues and mucous membranes of the mouth and throat when mixed with water.

The mucilage in slippery elm also acts as dietary fiber (along with celluloses, lignin, and gums in the bark) that feeds good gut bacteria and supports digestive health. Plus, the inner bark contains some starch, which aids digestion too (Braun, 2006).

The second most important compounds in slippery elm are tannins. Tannins are *astringents*, which means that they can help "shrink" tissues. This is useful in the case of wounds, diarrhea, and excessive bleeding. Tannins are also anti-inflammatory and antioxidant (Watts, 2012; Newall et al., 1996).

Slippery elm contains up to 3% tannins. Another Essiac herb, sheep sorrel, is also high in tannins (Newall et al., 1996; Tamayo et al., 2000).

In addition, scientists identified the following compounds in slippery elm (Watts, 2012; Romm, 2010; Anderson, 1934; Braun, 2006; Wijesundara & Rupasinghe, 2019):

- **Flavonoids**, antioxidants that support general health
- **Phytosterols**, which may support cholesterol balance
- **Salicylic acid**, an anti-inflammatory that's also known as "nature's aspirin"
- **Betulinic and ursolic acid**, potential antiviral and anticancer compounds

- **Fatty acids** with potential antibacterial, antifungal, and anti-inflammatory properties (capric, caprylic, oleic, and palmitic acid)
- **Minerals and vitamins** (magnesium, iron, calcium, potassium, beta-carotene, and B vitamins)

Health Benefits of Slippery Elm

No published clinical trials have yet investigated slippery elm, other than in combination with other herbs. The first two benefits rely on these small, low-quality clinical trials.

The alleged benefits of slippery elm listed from number 3 onward lack human evidence. Findings rely on animal and cellular data that cannot be applied to people. Clinical research is needed.

All in all, there is not enough evidence to recommend slippery elm for any of the purported health benefits listed below until more research comes out.

1) IBS

A mixture of slippery elm and other ingredients (lactulose, oat bran, and licorice root) **improved symptoms of constipation-predominant IBS** in one pilot trial on 10 people after 5 weeks. The supplement improved stool frequency by 20% and stool consistency by 29%. It also reduced straining, stomach pain, and bloating (Hawrelak & Myers, 2010).

A different slippery elm mixture (containing dried bilberries, cinnamon, and agrimony) reduced straining, stomach pain, bloating, and flatulence in 21 people with diarrhea-predominant IBS after 5 weeks. However, it increased stool frequency by 9%—an unwanted effect in people with diarrhea (Hawrelak & Myers, 2010).

It is unclear if these findings are due to slippery elm, other ingredients, or the combination. Larger studies are needed.

2) Soothing Coughs & Sore Throats

Lozenges containing slippery are popularly taken to relieve cough and sore throat. Some consider them a better option than typical herbal preparations as they provide sustained release of mucilage to the throat. However, clinical research is sparse.

Slippery elm bark tea had a stronger throat-soothing effect than Lipton tea in one pilot study on 24 graduates with laryngitis or throat inflammation and voice problems. However, the results weren't statistically significant (Watts, 2012).

In another clinical trial with 60 people with a sore throat, tea made from slippery elm, licorice root, and marshmallow root **reduced pain and eased swallowing** better than the placebo. The effect lasted for about 30 minutes and it's uncertain which herb had the strongest soothing action (BMJ, 2003).

Scientists think that some compounds in slippery elm may help kill microbes, but this hasn't been proven. In cells, slippery elm extract was active against a bacterium that causes sore throat (*Streptococcus pyogenes*) and its biofilms, a type of plaque that contributes to antibiotic resistance. However, other tested herbs like sage and purple coneflower had a stronger effect (Wijesundara & Rupasinghe, 2019).

3) Healthy Gut Flora

When mucilage from slippery elm is mixed with water, it swells. Human digestive enzymes can't break down mucilage, but bowel flora can transform it into **beneficial metabolites such as short-chain fatty acids** (SCFA). SCFAs have anti-inflammatory properties and are also a source of nutrients and prebiotic fiber (Bone & Mills, 2013).

According to some scientists, this may explain the traditional use of slippery elm bark as a food for people recovering from illness or medical treatment (Bone & Mills, 2013).

In one small study on 12 healthy people, slippery elm (Peterson et al., 2018)

- Increased beneficial gut bacteria (*Bifidobacteria*, *Lactobacilli*, and *Bacteroides*)
- Reduced the harmful gut bacteria linked with disease, inflammation, and infection (*Citrobacter, Pseudocitrobacter, Enterococcus,* and *Enterobacter*)

Additional research is needed.

4) IBD

Inflammatory bowel disease (IBD) is marked by dysbiosis and a lower diversity of beneficial gut bacteria. **Theoretically, slippery elm might help by supporting a healthy gut flora and soothing gut inflammation, but it hasn't been tested in clinical trials of IBD patients** (Stojanov et al., 2020).

Slippery elm had antioxidant effects in a study on colon tissue samples from people with IBD. The authors concluded that further research is needed to test whether slippery elm would have the same effects in animals and humans (Langmead et al., 2002).

5) Heartburn & GERD

Mucilage in slippery elm is believed to help with heartburn and gastroesophageal reflux disease (GERD) by coating the esophagus. This might protect the esophagus from the damaging effects of regurgitated stomach acid.

Three case reports mention symptom improvement in people with GERD using slippery elm along with other herbs, minerals, and vitamins. Slippery elm was usually used as part of a complementary approach to help heal the damaged esophagus in addition to conventional treatment (Kines & Krupczak, 2016; Elliot, 2016; Martin & Seaman, 2015).

Although sometimes useful, case studies are considered weak scientific evidence. Clinical trials would need to explore this potential benefit.

6) Mouth & Stomach Ulcers

Slippery elm is thought to help with mouth and stomach ulcers by creating a protective coating over damaged mucosa. In theory, it might act in part through the same mechanism as mentioned for GERD.

Additionally, mucilage from slippery elm might stimulate nerve endings in the gut, **triggering a reflex that increases the body's own mucus production**. Mucus helps protect the gut lining from ulcers caused by drugs or excess stomach acid (Newall et al., 1996).

Despite interest in using slippery elm for mouth and stomach ulcers, there is still no reliable information about its clinical effects.

7) Immune Support & Antioxidant Effects

The immune and antioxidant effects of slippery elm are limited to cellular studies. Have in mind that it's impossible to know if and how their findings would translate to animals and humans.

In one cellular study, slippery elm prevented the formation of reactive species that can damage cells (Choi et al., 2002).

In another cellular study, slippery elm neutralized free radicals that can cause inflammation, DNA damage, and cancerous mutations (Langmead, 2002).

Other studies explored different elm species. For example, Chinese elm bark was investigated for its anti-inflammatory and antioxidant properties in cells. Japanese elm bark increased the immune response in animals. Slippery elm may not carry these effects (Cho et al., 1996; Lee et al., 2007)

Cancer Research

In Essiac

The original Essiac formula contains about 8% slippery elm inner bark. Read about Essiac and cancer in this post (coming soon).

Slippery Elm Alone

In cells, the inner bark of slippery elm reduced the production of an inflammatory compound called interleukin 8 (IL-8). IL-8 may be involved in the development of cancer (Wijesundara & Rupasinghe, 2019).

Scientists hypothesize that compounds like oleanolic, ursolic, and betulinic acid in slippery elm inner bark may have anti-tumor potential. Future studies would need to investigate this (Braun, 2006).

Allegedly, the mucilage in slippery elm is also said to help with appetite by sustaining the stomach lining in people undergoing chemotherapy. However, studies have not yet tested this claim either.

If you want to learn more about herbs in Essiac and chemotherapy, read this post (coming soon).

Precautions

Slippery elm is considered to be safe when used by mouth or applied onto the skin and mucous membranes at the recommended doses.

Some people are allergic to slippery elm and may experience skin irritation.

Drug interactions after oral use are possible. The mucilage in slippery elm may reduce the absorption of drugs. For this reason, some practitioners recommend taking slippery elm 2 hours before or after other herbs or medications.

There is not enough safety information about the use of slippery elm in pregnant or breastfeeding women. Slippery elm may have been used in the past to induce abortions when inserted vaginally. According to historical records, it's unlikely to have an abortive effect when taken by mouth. However, human data are lacking.

Be sure to consult your doctor before using slippery elm to avoid any potential disease, drug, or other unwanted interactions.

In Summary

No clinical studies have yet investigated the effects of slippery elm alone on any purported health benefit.

According to pilot trials using multi-ingredient formulations, slippery elm may ease the symptoms of constipation-predominant IBS. Science has validated that slippery elm is a rich source of mucilage, tannins, and other potentially beneficial active compounds. It also contains antioxidants and nutrients that support general wellbeing.

Limited evidence suggests that mucilage in slippery elm may help soothe a sore throat, irritated gut, and damaged stomach lining. Mucilage and fiber in slippery elm may also support a balanced gut microbiome. Overall, more research is needed.