

Ginger (*Zingiber officinale*)

History

- Ginger is a perennial plant whose root has a very pungent flavor.
- It is mainly grown in warmer climates such as China, India, Jamaica, and Hawaii.
- Ginger root has a long history of culinary use in these cultures and a history of medicinal use in China, Japan, and India since the 1500s.

Most studied use

Treatment of nausea: pregnancy-related, motion sickness-related, and post-operative

Other common uses

Arthritis, dyspepsia, colic, dysmenorrhea, flatulence.

Summary of the evidence

- A reasonable amount of evidence suggests that ginger root is effective in reducing pregnancy-related nausea, but there is conflicting data, much of it negative for its efficacy in preventing motion sickness or post-operative nausea.
- Ginger is not sedating unlike almost all other commonly used treatments for nausea.
- Ginger appears to be safe. No significant adverse effects or drug interactions known.

Pharmacology

- The most biologically active phenolic compounds, principally gingerols and shogaols, are found in the root.
- Essential oils, such as zingiberene, zingiberol, and curcumene, may also inhibit inflammatory prostaglandins and leukotrienes.

Mechanism of action

- Ginger extract and isolated gingerols have been shown to enhance GI motility and bile excretion in some, but not all, studies.
- There may also be a direct effect on the vestibular system, although results are inconsistent.

Clinical studies

- There have been more than three double-blind RCT's of ginger root for treating pregnancy-related nausea, and all have been positive.
- In the largest and best of these studies, 70 patients in Thailand were randomized to receive ginger or placebo. Symptoms were reduced in 88% of patients in the ginger group vs. 29% in the placebo group ($p < 0.01$). (Vutyavanich 2001)
- For motion sickness, one trial of naval cadets has been positive (Grontved 1988), but several other simulation-type studies have been negative.
- There have been mostly negative trials testing ginger for post-operative nausea. The largest, highest quality study found a trend in favor of placebo. (Eberhart 2003)

Adverse effects

- No known clinical adverse effect, other than rare heartburn.

Contraindications/cautions

- Primarily because ginger is so widespread in food, it is generally considered safe for use in pregnancy. Because there is not much data to rule out rare teratogenicity, however, and because embryotoxic effects have been reported in rats, it is prudent to advise pregnant women to use lower doses (e.g. < 2 grams per day).

Important drug/herb interactions

- No important drug or herb interactions. Patients on anticoagulants should be warned not to greatly exceed the recommended dose (e.g. > 4 grams per day) as this could theoretically have antiplatelet effects.

Formulation and dosage

- The dose tested in most clinic trials is 0.2 to 1 g of dried ginger root , usually administered as a capsule, repeated every 4-6 hours as needed for nausea.
- Lower doses (e.g. 0.25 grams every 4 hours) are recommended for children
- Ginger root is also often used as a medicinal tea using 1-3 tablespoons fresh or 1-3 teaspoons dried ginger per cup used prn up to 4 times per day.

Key Ginger References

1. Eberhart LH, et al. Ginger does not prevent postoperative nausea and vomiting after laparoscopic surgery. *Anesth Analg*. 2003 Apr;96(4):995-8.
2. Vutyavanich T, et al.. Ginger for nausea and vomiting in pregnancy: randomized, double-masked, placebo-controlled trial. *Obstet Gynecol*. 2001 Apr;97(4):577-82.
3. Grontved A, et al. Ginger root against seasickness. A controlled trial on the open sea. *Acta Otolaryngol*. 1988 Jan-Feb;105(1-2):45-9.

For Additional Information

1. Natural Medicines Comprehensive Database. Available through UW Healthlinks.
2. About Herbs. <http://www.fammed.washington.edu/predoctoral/CAM/sites.html>.
3. Herbmed.org for more general background.
4. For information about the quality of specific brands, check Consumerlabs.com.

