

GINGER – Good Stuff by Ann Gerhardt, MD

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Bottom line at the top: Ginger works to alleviate nausea and vomiting associated with pregnancy and motion sickness. It may have other clinical benefits, but so far results in humans, using usual doses, either don't exist or are underwhelming. Ginger is usually but not always well tolerated and safe. Ginger root or tea or powdered ginger spice probably work best.

Ginger is the rhizome (underground stem) of *Zingiber officinale*. It has been used **in traditional Asian, Indian and Arabic medicine since ancient times to treat digestive symptoms, like nausea, diarrhea and belly pain.** Reportedly, traditional herbalists also used it for arthritis, toothache, headache, colds and various respiratory and heart ailments. Current websites extol ginger's benefit for atherosclerosis, migraines, bronchitis, rheumatoid arthritis, colic, painful menstrual periods, high cholesterol, burns, ulcers, depression, impotence, liver toxicity, Raynaud's disease, sciatica, ulcerative colitis, seborrhea, sore throat, swelling, chilblains, poor circulation, fever, tendinitis, and viral infections. Bleah!

Nothing is that good. I was OK with the helps-nausea part, and maybe the atherosclerosis, but the I-feel-a-snake-oil-coming-on feeling gets stronger as the list of cures grows longer. The longer list probably makes someone some money at the expense of emptying the pockets of gullible consumers who won't benefit.

Quite a few studies have examined ginger's anti-emetic (nausea and vomiting) effect. Most of the studies were small, but some were done quite well. The documented finding that people can tell they are taking ginger as opposed to placebo makes appropriate 'blinding' of ginger studies problematic.

Beware of ginger supplement pills and capsules: They may not contain much ginger. When ginger's known bio-active components were measured in various commercially available ginger capsules, the quantity of each compound varied from *none* to 1% (by weight). As usual, you and I, the consumers, have no way of telling which ginger capsules are real and which are not. Ginger sold as food spice is probably real ginger.

Meta-analyses of all clinical uses for ginger conclude that firm clinical evidence of superior benefit exists only for pregnancy-related nausea and vomiting. In all pregnancy trials, ginger consistently bettered placebo in relieving nausea. Two trials comparing ginger to vitamin B6 showed equivalent benefit. Ginger did not harm mothers or fetuses in these trials.

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HEALTHY CHOICES FOR MIND AND BODY

Written by Ann Gerhardt, MD

Studies of motion sickness have shown that ginger outperforms placebo, but does not work as well as standard medications (meclizine, dimenhydrinate, and scopolamine) to reduce nausea.

Results are mixed, some studies showing improved and others worse symptoms, when ginger is used for nausea and vomiting after surgery. Even if it were proven to work, ginger has limited utility in this setting, since it only can be taken by mouth. In the face of severe vomiting, getting ginger to stay down long enough to work is problematic. The same applies to chemotherapy-induced nausea and vomiting. Forty-one leukemia patients given ginger experienced reduced, but not cured, nausea after chemotherapy. In other situations ginger did not help at all.

Individual components of ginger demonstrate anti-inflammatory, anti-prostaglandin, anti-oxidant, immunomodulatory, anti-tumor and anti-microbial activity in test tube experiments. Claims that ginger has clinically relevant effects in humans for these purposes are entirely unjustified by current data. **Very small studies suggest that ginger works to relieve arthritis pain better than does placebo and as well as low dose ibuprofen.**

For colds, many people drink a water-based, chilled, carbonated and sweetened ginger extract, well known as Ginger Ale. There are no controlled trials of its use for colds. Except for tasting good and making me think my mother cared, I never noticed any significant benefit.

Many diabetics suffer from abnormal stomach and bowel contractions that lead to nausea, poor stomach emptying and constipation or diarrhea. A Michigan group of scientists found that a single gram dose of ginger partially and temporarily alleviated these problems. **In animals' colons, ginger exerts both contracting and relaxing effects.** The relative strength of these conflicting effects in humans remains to be determined.

Lately herbal companies state as proven fact that ginger lowers cholesterol, prevents heart disease and improves circulation, all blatant misrepresentations. **It's too early to tell whether ginger is beneficial for preventing heart disease in humans.** Ginger reduces the amount of artery-clogging plaque that develops in rabbits fed a high-cholesterol diet, without affecting cholesterol levels. A

water-based ginger extract lowers blood pressure in rats by both lowering heart rate and dilating blood vessels.

One company claims that ginger works to stop bleeding *and* prevent clotting, actions that are usually diametrically opposed. One company claims that ginger's anti-coagulant properties make it an "ideal replacement for synthetic blood thinners." Such claims are dangerous. To take away a tried and true medicine that prevents clots and replace it with an herb with unknown potency incurs a huge risk. Someday ginger's effect may be proven and standardized to the point that one could take it with assurance that it will act at least as well as current medications, but we're not there yet.

Just for kicks I tried making pure ginger tea to treat my Honduras-acquired stomach upset. A quarter teaspoon of powdered ginger (about 500 mg) in hot water made a slurry with quite a kick as it went down. I burped and my belly churned, without any nausea abatement. Sigh.

Dose: The standard dose of 1 to 2 grams (divided into 2-4 doses) of powdered ginger is a lot of ginger. A teaspoon is about 2 grams. Alternative dosing might take the form of 2 to 4 grams of fresh ginger root, 1.5 ml (30 drops) ginger oil, a ginger tea (made by boiling grated ginger root -for how long, I'm not sure), or inhaled steaming water containing ginger oil or fresh root. One source recommends rubbing ginger oil into painful joints or placing fresh root in a warm poultice or compress and apply to painful areas. For motion sickness, start taking it 2 days prior to the anticipated voyage.

Side effects: Some people may feel heartburn, bloating, abdominal churning or burping after ginger ingestion, which in some may be very uncomfortable. Allergies to ginger may be severe. Since ginger may 'thin' the blood, it incurs a danger of excessive bleeding in people who are also taking blood thinners. There are no reports of ginger causing bleeding in people taking aspirin or warfarin, but the absence of reports doesn't mean it doesn't happen. We always just assume that a person taking one of those drugs is bleeding because of the drug and look no further for contributing culprits. Those who undergo surgery should either stop it prior to surgery or warn the surgeon and anesthesiologist about your ginger use.

Why it works: Ginger contains a variety of potentially bio-active compounds which may or may not account for its medicinal effects. The oil has volatile oils and pungent phenol compounds (such as gingerols and shogaols). Water extracts contain natural saponins, flavonoids, amines, alkaloids and terpenoids. Different cultivars vary with respect to their bio-active compound content.

Ginger's blood pressure lowering effect occurs via **muscarinic stimulation and calcium channel-blocking properties**, the former slowing heart rate and the latter dilating blood vessels. Ginger may work to reduce inflammation **by blocking prostaglandin production**. It's

cholinergic (spasmogenic) and prostaglandin reducing (spasmolytic) activities are responsible for the effects on gastrointestinal motility. Ginger exerts anti-clotting effects, possibly via an anti-platelet action.