

Supplement Sampler

Ginger – “Mother Nature’s 7-Up and Crackers!”

Best Indications

- **GI Uses:** Nausea, Vomiting (incl. “morning sickness,” Hyperemesis Gravidarum, post-chemotherapy, end-of-life care), Dyspepsia, Peptic Ulcer Disease (PUD), Motion Sickness, Recurrent Abdominal Pain in Pediatrics, Irritable Bowel Syndrome (IBS).

Background

- Scientific name: *Zingiber Officinale* (most common) and *Alpinia galangal Linnaeus Willdenow*.
 - o 80% of world’s 100,000 ton annual production comes from China.
- Among the 20 top-selling herbal supplements in U.S. and has documented use prior to the 4th century B.C. as an antiemetic and antidiarrheal.

Mechanism of Action

- Gingerols (aromatic ketones) believed to be the pharmacologically active component, though not fully studied.
 - o Also known to contain beta-carotene, capsaicin, salicylate, caffeic acid, curcumin.
- GI: Noted to improve gastric motility/tone WHILE exerting antispasmodic effects
 - o Likely due to antagonism of serotonin receptors directly on gut tissue.
- Anti-inflammatory: May inhibit COX-1 and 2, lipoxygenase pathways, TNF-a, PGE2, and thromboxane B2.

Best Studies

- RCT following 70 pregnant women after 4 d of 1 gm/d ginger (250 mg capsules) vs. identical placebo. Ginger superior on pain scale, # of vomiting episodes, and Likert scale (p<0.02 in all). No adverse effects of ginger on pregnancy. **Conclusion: Ginger is effective in reducing the severity of nausea/vomiting in pregnancy. Vutyavanich et al. Obst & Gyn. Apr, 2001. 97(4): 577-82.**
- Review of efficacy of ginger in pregnancy-induced nausea/vomiting. 6 RCTs (total n=675) and one prospective observational cohort (n=187). 4 RCTs (n=246) showed superiority of ginger over placebo, the other two (n=429) showed ginger as effective as reference drug (Vit B6). Observational study showed absence of adverse effects on pregnancy outcomes. All showed no adverse events during Tx. **Conclusion: Ginger may be an effective Tx, but more data is needed to confirm the encouraging preliminary data on safety. Borrelli et al. Obst & Gyn. Apr, 2005. 105(4): 849-56.**
- Cochrane Review of interventions for nausea and vomiting in early pregnancy. 21 studies w/ Tx entailing antihistamines, Vit B6, Debendox, P6 acupressure, and ginger. **Summary: drugs do help sickness in early pregnancy, but acupressure and ginger may work with limited side effects. Jewell & Young. Cochrane Database of Systematic Reviews. 2003, Issue 4.**



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Products used in Clinical Trials

- Blackmores custom powdered ginger capsules., EV Extract (EV EXT) 77, Martindale powdered ginger capsules, Zintona, EV EXT 33 and 35, Flexagility, Zinaxin, Zincosamine.

Formulations/Preparations

- Oral: dry powdered extract, fresh chopped, oleoresin
 - o Capsules/powdered root, tea/infusions, raw/fresh, pickled, candied
- Topical: fresh juice, essential oil

Dosages (given in powdered/capsule form for most diseases)

- IBS/Abdominal Sx – 250-500 mg 3-4 x/d
 - o Adult (~150 lb): 1-2 gm dry powdered root (10 gm fresh) per day
 - o Child (~75 lb): 0.5-1 gm dry (5 gm fresh) per day
 - o Child (~35 lb): 0.25 – 0.5 gm dry (2.5 gm fresh) per day
- Nausea/Vomiting in Pregnancy – 25 mg, qid (do not exceed 1 gm/d)
- PUD – 250 mg, qid
- ¼ inch slice of fresh ginger = ~10 gm (a piece the size of 5th digit is typically adequate dose for given size of patient).

Adverse Effects

- Anticoagulant effect (theoretical) and/or antiplatelet action – possibly due to inhibition of thromboxane B₂ *[One of the “4 G’s” of botanicals implicated in affecting hemostasis – along w/ ginkgo, ginseng, garlic]*
- GI Irritation – abdominal discomfort/bloating/gas, heartburn, nausea, diarrhea
- Mouth/throat irritation
- Dermatitis w/ topical use in some
- Overdose: arrhythmia, CNS depression
- Avoid if: Gallbladder disease, IBD, Hx of intestinal obstruction
- Main Interaction: Hawthorn may incr. risk of cardiac adverse effects (additive)

Cost

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|---|---------------------------------------|
| - Ginger Slices/Candied – from \$4 | - Ginger Root Tincture (2 oz.) - \$20 |
| - Powdered Ginger Root Extract – \$4 – 20 | - Ginger Essential Oil (1 oz.) - \$10 |
| - Raw Ginger Root - \$2/lb | - Ginger Tea – from \$5 up |

Comments/Bottom Line:

Ginger appears to be an easy, safe, moderately effective botanical for use in treating conditions ranging from its primary use in GI disease (its antiemetic effect plus ability to create simultaneous antispasmodic and pro-motility effects in the gut are unique) to inflammatory conditions. The current evidence is not overwhelmingly in favor of widespread use and the major risks, although mainly theoretical, could be serious, ranging from increased anticoagulation/bleeding time to fetal malformations during pregnancy.

In general, ginger is safe and recommendable, especially when eaten as part of a healthy diet and/or under the supervision of a health professional, even during pregnancy. However, ANY herbals taken



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during pregnancy fall more heavily under this caution. Most side effects are mild and limited to the gastro-intestinal system, or cause a burning sensation linked to the capsaicin in it. Some, however, find the extra kick pleasurable.

Brought to you by Matthew McClanahan, OMS IV; a collaborative effort between your colleagues in the UW Department of Family Medicine Integrative Medicine Program and Des Moines University – College of Osteopathic Medicine.

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