

The Longwood Herbal Task Force  
(<http://www.mcp.edu/herbal/default.htm>) and  
The Center for Holistic Pediatric Education and Research  
Clinician Information Summary

**RHUBARB**  
(*Rheum officinale*, *R. palmatum*)

**SUMMARY**

Chinese herbalists have relied on rhubarb rhizomes (roots) for thousands of years. The roots contain anthraquinones that act as stimulant laxatives and tannins that act as astringents. Case series support the Chinese use of rhubarb to treat gastric ulcers and chronic renal failure. Toothaches and pregnancy-induced hypertension. The current practice of using rhubarb to treat cancer (as an ingredient in the herbal Essiac formula) lacks the support of controlled clinical trials. Rhubarb root can cause severe diarrhea and abdominal cramps and lead to potassium depletion. Treatment with laxative doses should not exceed 8 –10 days. Persons with a history of renal stones should avoid rhubarb due to its oxalate content. The tannin content may cause upset stomach, renal damage, hepatic necrosis, and increased risk of esophageal and nasal cancer. Rhubarb root is not recommended during pregnancy, lactation or by children less than two years old. There is marked variation in the content of active compounds in commercially available rhubarb products. Medicinal rhubarb is not the same as garden rhubarb used for food.

**POPULAR USES:** Laxative, spring tonic; part of herbal cancer remedy, Essiac; Chinese remedy for bleeding ulcers, chronic renal failure, pregnancy-induced hypertension, toothache.

**CHEMICAL CONSTITUENTS:** Anthraquinone glycosides, tannins, oxalic acid, others.

**SCIENTIFIC DATA**

*In Vitro:* Anthraquinone glycosides inhibit water and electrolyte reabsorption in the gut. Rhubarb inhibits several digestive enzymes and modulates calcium channel activity, increasing colonic motility. Tannins have some anti-inflammatory activity. Studies on

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antimicrobial activity have had mixed results.

*In Animals:* Rhubarb increases electrical excitatory activity in the colon and duodenum of rats; in guinea pigs, it has spasmolytic effects on the small bowel and decreases mortality in rats with experimentally induced pancreatitis. Rhubarb has diuretic activity in rabbits and reduces renal hypertrophy in diabetic rats. Rhubarb improves renal function in rats subjected to partial nephrectomy, cisplatin, or adenine-induced renal failure. In rabbit kidneys, rhubarb blocks the metabolism of arachidonic acid to thromboxane and prostaglandins E2 and F2. Rhubarb extracts have antimutagenic activity and inhibit the growth of some tumor cells in animals, but are without effect against others.

*In Humans:* Numerous case series report the effectiveness of rhubarb as a cathartic and stool softener. Case series and one randomized trial support the use of rhubarb as a therapy for chronic renal failure. Several case series support its use in treating bleeding ulcers in adults. In a randomized controlled trial, rhubarb extracts reduced the rate of pregnancy-induced hypertension. No controlled trials have evaluated rhubarb's use as a remedy for cancer, AIDS, or toothaches.

### **TOXICITY AND SIDE EFFECTS**

*Side effects:* Diarrhea and abdominal cramps, potassium depletion, laxative dependence, renal stones due to oxalic acid, potential contamination with heavy metals or misidentified species.

*Interactions with other medications:* May potentiate other laxatives, may increase potassium loss (e.g., with steroids) and increase toxicity of cardiac glycosides.

#### *Contraindications*

*External use:* No known contraindications.

*Internal use:* Not traditionally recommended for patients with intestinal obstruction, ileus, chronic intestinal inflammation or renal stones.

*Pregnancy:* No clinical studies. Traditionally, purgatives are not recommended during pregnancy.

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*Lactation:* No clinical studies. Traditionally, purgatives are not recommended during lactation.

*Pediatric use:* No clinical studies or systematic surveillance. Traditionally, purgatives are not recommended during early childhood.

**ADDITIONAL REFERENCES OR RESOURCES**

- Napralert<sup>SM</sup>, maintained by the Program for Collaborative Research in the Pharmaceutical Sciences in the Department of Medicinal Chemistry at the University of Illinois at Chicago
- <http://www.childrenshospital.org/holistic/>