

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

### Clinician Information Summary

# WHITE WILLOW BARK

(*Salix alba*)

## SUMMARY

White willow bark has been used throughout the world as an antipyretic and analgesic. Since the development of synthetic acetylsalicylic acid in the 1890's, willow bark has fallen into disuse and has not undergone rigorous scientific evaluation as a therapeutic agent. The concentration of salicin is actually much lower in white willow bark than in the roots and leaves of other *Salix* species. The high concentrations of tannin in willow bark (8%-20%) lead to gastrointestinal toxicity before therapeutic concentrations of salicylates are generally achieved. Willow bark does not appear to affect coagulation and has not been evaluated for use in preventing myocardial infarctions, strokes or colorectal cancer. Topical preparations, used as analgesics and wart removers, appear safe. Caution suggests avoiding willow bark in children with influenza or varicella to minimize the risk of Reye's syndrome, and in patients with allergies to aspirin, asthma, active peptic ulcer disease, diabetes, and hepatic or renal disorders. There are no data evaluating its safety during pregnancy or lactation.

**POPULAR USES:** Analgesic, antipyretic, anti-inflammatory. Some use as aspirin replacement to prevent myocardial infarction, stroke and colorectal cancer.

**ACTIVE CONSTITUENTS:** Salicin, salicortin, populin, fragilin, tremulacin, tannins

## SCIENTIFIC DATA

*In vitro:* Salicin has no effect on platelet activity or adhesion. Antimicrobial activity has been noted only against two fungi: *Botrytis cinerea* and *Penicillium digitatum*.

(continued)

*In animals:* No data

*In humans:* Willow bark has long-standing historical use as an antipyretic and analgesic. One randomized controlled trial reported that topical salicin reduced symptoms in adult patients suffering from migraine headaches. No controlled trials have been published in the last 100 years evaluating its effectiveness in treating other disorders.

### **TOXICITY AND SIDE EFFECTS**

*Side effects:* Tannins may cause nausea and vomiting; prolonged exposure may cause hepatic necrosis, renal damage and increased risk of esophageal cancer. Allergic reactions to willow bark have been reported. No long term toxicities have been reported.

*Interactions with other medications:* Unknown. Prudence suggests caution in combining with non-steroidal anti-inflammatory medications (NSAIDs).

*Contraindications:* Caution suggested in patients with bleeding disorders, active peptic ulcer disease, asthma, diabetes or chronic renal disease.

*Pregnancy:* Not typically used. No data evaluating safety.

*Lactation:* No clinical studies evaluating safety. One report of a nursing infant developing a rash after the mother drank willow bark tea.

*Pediatric use:* Prudence suggests avoiding among children with influenza or varicella to avoid risk of Reye's syndrome. No clinical studies or systematic surveillance evaluating safety.

### **ADDITIONAL RESOURCES**

- Willow Bark Complete Monograph: <http://www.mcp.edu/herbal/willowbark/willowbark.pdf>
- Willow Bark Patient Fact Sheet: <http://www.mcp.edu/herbal/willowbark/willowbark.ph.pdf>
- The International Association for the Study of Pain:  
<http://www.rzuser.uni-heidelberg.de/%7Ecn6/iasp-sig-rp/willow.html>
- HOME: <http://www.mcp.edu/herbal/default.htm>