

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

ECHINACEA

(*Echinacea purpurea*, *E. angustifolia*, & *E. pallida*)

SUMMARY

Data from *in vitro* and animal studies as well as randomized, controlled trials in adults support the use of echinacea in preventing and treating the common cold. Data are conflicting regarding the best formulations, dosages and duration of therapy. There are no studies reporting the effectiveness or safety of using echinacea to prevent or treat upper respiratory tract infections (URTI) in children or to prevent or treat serious bacterial or fungal infections in adults. Use of echinacea to support the immune system in treating cancer, chronic fatigue or immunodeficiency states remains experimental. Despite its long historical use as a wound healing agent, there are no controlled trials suggesting benefits in treating specific dermatologic conditions. Echinacea appears to be safe for oral and topical use, except for patients allergic to it. Recommendations to limit oral use to less than eight weeks or to avoid it in patients with hepatic disease or immune disorders appear to be based on hypothetical concerns, but have not been supported by scientific data.

POPULAR USES

Primary use: Prophylaxis and treatment for upper respiratory tract infections (URTI).

Other purported benefits: Prevention and treatment of viral, bacterial and fungal infections; complementary therapy to support the immune system during cancer chemotherapy; snake bites.

CHEMICAL CONSTITUENTS: Polysaccharides (e.g., echinacin), caffeic acid derivatives (e.g.,

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echinacoside), cynarin, alkylamides (e.g., echinacein), polyacetylenes, and others.

SCIENTIFIC DATA

In Vitro: Echinacea extracts enhance white cell motility, phagocytosis, cytokine release, cellular resistance to viral infection and cytotoxicity against tumor cells.

In Animals: Prophylactic treatment with echinacea protects against lethal infections with *Candida* and *Listeria*. Pre-treatment with echinacea significantly decreases inflammation. A chemical constituent of echinacea inhibits tumor growth. Echinacea ointment enhances wound healing.

In Humans: Historical uses, epidemiologic data, case series and randomized controlled trials strongly support echinacea's use in early treatment of URTIs; mixed data tend to support its use as URTI prophylaxis. Case series but no controlled trials support echinacea's use as a vulnerary. There are no controlled trials on its use as an anti-inflammatory or antibacterial, or as an adjunctive therapy for cancer, AIDS or other serious illnesses. There are no data on its use in children.

TYPICAL DOSES: Not standardized.

TOXICITY AND SIDE EFFECTS

Allergic reactions are rare, but do occur.

Side effects: No serious toxicity with acute or chronic use orally or topically has been reported.

There is no genotoxic, mutagenic or carcinogenic activity in animal models.

Interactions with other medications: None known.

Contraindications: Herbalists recommend avoidance by patients with hepatic disease, autoimmune disease and HIV, but no studies have evaluated toxicity in these conditions. The German Commission E also recommends not using echinacea for more than eight weeks; this recommendation is based on immune suppression in two small studies in which doses were delivered parenterally. Studies of oral administration for periods of 10 –12 weeks have not revealed any toxicity or adverse effects on immune function.

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Pregnancy and lactation: No safety studies.

Pediatric use: No safety studies.

ADDITIONAL REFERENCES OR RESOURCES

- HOME: <http://www.mcp.edu/herbal/default.htm>
- Echinacea Complete Monograph:
<http://www.mcp.edu/herbal/echinacea/echinacea.pdf>
- Echinacea Patient Fact Sheet:
<http://www.mcp.edu/herbal/echinacea/echinacea.ph.pdf>