



GINKGO

Common Names: *Fossil Tree, Maidenhair Tree, Yin Xing*

Scientific Names *Ginkgo biloba*

Effectiveness: No evidence supports the use of Ginkgo biloba for rheumatic conditions.

Safety: Likely safe when the leaf extract is used orally in appropriate doses (for up to 6 years).

What is Ginkgo?

- Ginkgo biloba is one of the oldest living tree species in the world.
- The leaf extract (and seeds) are used for medical purposes.

What it is it used for in people with rheumatic conditions?

- Ginkgo has been used in Raynaud's syndrome to decrease the number and severity of painful attacks.

How is it thought to work?

- The Ginkgo leaf contains certain chemicals that might have medical effects, such as antioxidant effects. These chemicals include flavonoids terpenoids, and amino acids.
- They also block a certain signalling chemical (platelet activating factor) that results in various effects throughout the body. This includes increased blood flow and reduced clumping of platelets (platelet aggregation).
- There are many other ideas on how Ginkgo works. It is not fully understood how it works.

Does it Work? What the Science Says:

- There are no studies of Ginkgo biloba in patients with inflammatory arthritis or osteoarthritis
- Small studies of moderate-poor methodological quality have not demonstrated benefit of Ginkgo (doses ranging from 120–360mg/day) compared to placebo or nifedipine for reducing the number or severity of Raynaud flares

What are possible side effects and what can I do about them?

- Ginkgo is generally well tolerated when taken orally. It can cause stomach upset, headache, dizziness, constipation and allergic skin reactions.
- The main side effect of Ginkgo is bleeding. Bleeding can be minor (nosebleeds) or serious (bleeding in the brain).
- In the high doses used in animal studies, Ginkgo was more toxic and may have caused cancer. There have been no reports of these side effects in humans.
- Fresh Ginkgo seeds are unsafe and toxic. More than 10 roasted seeds a day can cause difficulty breathing, seizures and shock.

Interactions

With drugs:

- Ginkgo may reduce the amount platelets clump together (platelet aggregation). Ginkgo can increase the risk of bruising and/or bleeding in patients taking anticoagulant/antiplatelet drugs.
- Common antiplatelet and anticoagulant drugs may include: *warfarin (Coumadin)*, *ASA (Aspirin)*, and *clopidogrel (Plavix)*, *ticagrelor (Brilinta)*, *prasugrel (Effient)*, *enoxaparin (Lovenox)*, *dalteparin (Fragmin)*, *dabigatran (Pradaxa)*, *rivaroxaban (Xarelto)*, *apixaban (Eliquis)* and others.
- Ginkgo may inhibit or induce certain liver enzymes that break down other medications (Inhibits: CYP 1A2, 2C9, 2D6, 3A4. Induces: 2C19 (moderate)). Consult your pharmacist before using Ginkgo.

With Other Diseases:

- Ginkgo may affect blood sugar levels. People with diabetes should monitor levels more closely.
- A chemical in Ginkgo (Ginkgotoxin) may cause seizures. Ginkgo should be avoided or used with caution in patients with seizure disorders. This chemical is found in much higher concentration in Ginkgo seeds than the leaf extract.
- Ginkgo affects how the blood clots. This may increase risk of bleeding during surgeries. Stop Ginkgo at least 2 weeks prior to surgical procedures.

With Other Natural Health Products:

- Ginkgo may reduce the amount platelets clump together (platelet aggregation). Ginkgo can interact with other natural health products that also affect blood clotting. This would increase the risk of bruising and/or bleeding.
- Such as: *garlic, ginger, certain types of ginseng, red clover, and others.*

For more information about Ginkgo, consult your physician and pharmacist.