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## FOR THE MEDIA

Borage may be helpful for rheumatoid arthritis, but there is no evidence that it can treat other medical conditions.

Borage seed oil contains the omega-6 fatty acid known as gamma-linolenic acid. GLA is also produced naturally in the body and thought to have anti-inflammatory activity. Borage also contains mucilage, a sticky mixture of plant sugars that can act as an expectorant to produce phlegm in patients with coughs. Borage has been promoted for rheumatoid arthritis, skin inflammation, diabetic nerve pain, menopausal symptoms, and gastrointestinal issues, but research shows only moderate support for its use to relieve rheumatoid arthritis symptoms.

Although it has been suggested as an alternative source of GLA to [evening primrose oil](#), borage seed oil can have toxic effects on the liver. Its chronic use should be avoided, especially by patients with liver disease or women who are pregnant or breastfeeding.

## What are the potential uses and benefits?

- To relieve arthritis symptoms

Some clinical trials suggest borage oil may help reduce inflammation and pain associated with arthritis.

- As an expectorant and to treat coughs

In a small study, a borage extract improved some asthma symptoms, including cough. Additional studies are needed.

- To treat depression

No scientific evidence supports this use.

- To treat dermatitis

Two clinical trials do not support its use for skin inflammation such as atopic dermatitis.

- To ease menopausal symptoms

No scientific evidence supports this use.

## What are the side effects?

- Occasional headache, abdominal pain, nausea, belching, and loose stools.
- Possible liver damage may occur if taking borage oil for prolonged periods of time.

### Case reports

Continuous seizure activity: In an otherwise previously healthy 41-year-old woman, with short-term use (1 week) of borage oil.

Near-fatal poisoning from mistaken plant identity: Borage was confused with the toxic plant foxglove, causing accidental poisoning in an otherwise healthy 58-year-old woman.

Blue baby syndrome: Multiple cases in Spain clearly linked this infant blood disorder to ingestion of borage, which was tested as a purée and is high in nitrates. Other factors that caused this syndrome included breastfeeding. Infants are unable to process large amounts of nitrates.

## What else do I need to know?

### Patient Warnings:

- Borage oil products should be certified free of toxic compounds called unsaturated pyrrolizidine alkaloids (UPAs), with no more than 0.5-1 microgram of UPAs per gram of borage oil. The German Federal Health Agency recommends that consumption of UPAs should be limited to no more than 1 microgram daily.

## Do Not Take if:

- You are pregnant or breastfeeding: Borage oil may cause birth defects, premature labor, or a blood disorder in infants known as blue baby syndrome.
- You have liver disease: Borage oil may have small amounts of a compound that causes toxic liver effects.
- You are taking drugs that can cause liver toxicity (eg, anabolic steroids, ketoconazole): Borage contains small amounts of compounds also known to be toxic to the liver.
- You are taking blood thinners (eg, warfarin): Borage may increase bleeding risk or the effects of these drugs.
- You are regularly taking NSAIDs (aspirin, Advil™, or COX-2 inhibitors): In theory, NSAIDs can reduce the effects of borage oil.

## Special Point:

- Borage oil products should not be used unless they are certified free of unsaturated pyrrolizidine alkaloids (UPAs) such as amabiline, which can damage the liver. Risk of liver damage increases with length of exposure and cumulative dose.
- Borage plants during non-flowering seasons can be easily confused with foxglove, which is toxic.

If you have questions or concerns, contact your healthcare provider. A member of your care team will answer Monday through Friday from 9 a.m. to 5 p.m. Outside those hours, you can leave a message or talk with another MSK provider. There is always a doctor or nurse on call. If you're not sure how to reach your healthcare provider, call 212-639-2000.

For more resources, visit [www.mskcc.org/pe](http://www.mskcc.org/pe) to search our virtual library.

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