

Lemon balm

Melissa officinalis; also known as lemon balm, bee balm, garden balm, Melissa, melissengeist

PREPARATIONS: Leaf preparations are used, and were traditionally taken mainly as a tea. Alcohol-based liquid extracts or tinctures are now commonly dispensed by herbal practitioners, often in combination with other herbs. Tablet, capsule and tea preparations combining lemon balm with other anxiolytic herbs such as valerian and passionflower, and combinations with chamomile, peppermint and other herbs aimed at improving digestive function, are available through pharmacies, health food outlets or herbal practitioners. Creams and ointments containing concentrated extracts are also sold.

ACTIVE CONSTITUENTS: Known constituents include simple phenolic acid compounds, particularly rosmarinic acid, caffeic acid, chlorogenic acid, and metrilic acid; flavonoids such as luteolin, apigenin and derivatives; monoterpene glycosides; sesquiterpenes, including β -caryophyllene and germacrene; triterpenes such as oleanolic and ursolic acids; volatile oil, and tannins. Different constituents contribute to the various pharmacological activities.

MAIN USES: Lemon balm is a herb with a lemon scent native to southern Europe, now naturalised and widely cultivated around the world. It's documented use as a medicine dates back more than 2000 years, traditionally being used as a mild sedative and calming agent, and for a range of nervous system complaints.¹ Usage throughout Europe was widespread by the middle ages, and in the London Dispensary of 1696 it was said to "renew youth, strengthen the brain, relieve languishing nature and prevent baldness".

Summary Message

Evidence to date supports mild relaxant and cognitive enhancing actions by lemon balm in healthy persons, and results from one small trial suggest similar effects in Alzheimer's patients. However, further studies involving much larger numbers of patients are needed. Evidence is less convincing for its efficacy in digestive conditions or herpes simplex. As with all herbal medicines, different lemon balm products vary in their pharmaceutical quality, and the implications of this for dosage, efficacy and safety should be considered.

Lemon balm is also regarded as a gentle antispasmodic and digestive aid, and concentrated extracts are applied topically for the treatment of oral and genital herpes simplex.

Phil Rasmussen
MPharm, MPS, Dip Herb
Med, MNIMH (UK),
FNZAMH, MNHAA

Most published research on lemon balm over the past 10 years relates to its potential activities as an antianxiety agent and cognitive enhancer.²

EVIDENCE FOR EFFICACY: Reduced anxiety and improved mood during laboratory models of psychological stress have been reported in studies on healthy humans, following single doses of lemon balm in placebo-controlled crossover studies.² Similar effects have also been reported for a combination of lemon balm and valerian. Chronic administration reduces anxiety-like reactivity and brain corticosterone concentrations in a mouse model of anxiety (effects that may be partly attributable to increasing GABA levels).

Improvement in memory performance has also been reported after lemon balm ingestion in these laboratory-induced stress studies.³ Findings

Herbal medicines are a popular health care choice, but few have been tested to contemporary standards. **POTION OR POISON?** summarises the evidence for the potential benefits and possible harms of well-known herbal medicines.

from an Iranian placebo controlled clinical trial involving 42 elderly patients with mild to moderate Alzheimer's disease, suggested improvement in cognitive function following four months' treatment with an extract equivalent to 3 g lemon balm daily.² Reduced agitation was also seen in the lemon balm-treated group, as it was in another trial involving lemon balm essential oil aromatherapy in patients with severe dementia.

Various studies have reported significant anti-oxidant activities, including improvement in oxidative stress and reduced DNA damage in radiology staff. In vitro studies using a rat model of dopaminergic neurons have suggested possible neuroprotection against diseases such as Parkinson's and Alzheimer's, as a result of antioxidant properties.

While creams containing a highly concentrated extract of lemon balm have been studied for the treatment of active viral herpes, variable results have been achieved in trials to date.

ADVERSE EFFECTS: Findings from clinical trials indicate that lemon balm is generally well tolerated, with the frequency of adverse effects being similar to that of placebo. Those reported include headache, reduced alertness, palpitations and gastrointestinal complaints. Appraising the significance of each of these is difficult, as different dosage forms, including some containing other herbal medicines, have been studied. Patient and participant numbers in clinical trials have also been relatively low.

Hypersensitivity reactions have been reported, particularly with topical preparations.

Lemon balm has been placed on the GRAS (Generally Regarded As Safe) list of the FDA.

Lemon balm is theoretically contraindicated in those with hypothyroidism, due to its possible thyrotoxic properties with high doses.

DRUG INTERACTIONS: No significant adverse interactions have been reported, although a theoretical potentiation of the effects of sedative and CNS depressant medications exists. The possible antithyroid action of lemon balm in large

doses, suggests the need for caution when taking it alongside either thyroxine, propylthiouracil, carbimazole or methimazole, although no case reports concerning such interactions have been published.

The possibility of as yet unknown interactions between lemon balm and other drug therapies also exists.

Key references

Full reference list available from the author on request: philrasm@ihug.co.nz

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3. Kennedy DO, Little W, Scholey AB. Attenuation of laboratory-induced stress in humans after acute administration of *Melissa officinalis* (lemon balm). *Psychosomatic Med*. 2004;66:607–613.