

## Kava (*Piper methysticum* G. Forst)

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While some complementary and alternative techniques have been studied scientifically, high-quality data regarding safety, effectiveness, and mechanism of action are limited or controversial for most therapies. Whenever possible, it is recommended that practitioners be licensed by a recognized professional organization that adheres to clearly published standards. In addition, before starting a new technique or engaging a practitioner, it is recommended that patients speak with their primary healthcare provider(s). Potential benefits, risks (including financial costs), and alternatives should be carefully considered. The below monograph is designed to provide historical background and an overview of clinically-oriented research, and neither advocates for or against the use of a particular therapy.

### Related Terms:

- (+) -dihydrokawain-5-ol, 11-methoxy-5, 5-hydroxydihydrokawain, 6-dihydroyangonin, antares, ava, ava pepper, ava pepper shrub, ava root, awa, bornyl cinnamate, cavain, flavokavines A and B, Fijian kava, gea, gi, grog, intoxicating long pepper, intoxicating pepper, kao, kava kava extract LI 140, kava kava rhizome, kavakava, kavalactones, kavapiper, kavapyrones, kavarod, kava root, kavasporal forte, kavain, kave-kave, kawa, kawa kawa, kawa pepper, Kawa Pfeffer, kew, LI150, long pepper, *Macropiper latifolium*, malohu, maluk, maori kava, meruk, milik, pepe kava, olanzapine, *Piper methysticum*, pipermethystine, piperis methystici rhizoma, Rauschpfeffer, rhizoma piperis methystici, rhizome di kava-kava sakaua, risperidone, sakau, sakua, tonga, wurzelstock, WS 1490, yagona, yangona, yaqona, yongona.

### BACKGROUND

- Kava beverages, made from dried roots of the shrub *Piper methysticum*, have been used ceremonially and socially in the South Pacific for hundreds of years and in Europe since the 1700s.
- Several well-conducted human studies have demonstrated kava's efficacy in the treatment of anxiety with effects observed after as few as one to two doses and progressive improvements over one to four weeks. Preliminary evidence suggests possible equivalence to benzodiazepines.
- Many experts believe that kava is neither sedating nor tolerance-forming in recommended doses. Some trials report occasional mild sedation, although preliminary data from small studies suggest lack of neurological-psychological impairment.
- There is growing concern regarding the potential for liver toxicity from kava. Multiple cases of liver damage have been reported in Europe, including hepatitis, cirrhosis, and liver failure. Kava has been removed from shelves in several countries due to these safety concerns. The U.S. Food and Drug Administration (FDA) has issued warnings to consumers and physicians. It is not clear what dose or duration of use is correlated with the risk of liver damage. The quality of these case reports has been variable; several are vague, describe use of products that do not actually list kava as an ingredient, or include patients who also ingest large quantities of alcohol. Nonetheless, caution is warranted.
- Chronic or heavy use of kava has also been associated with cases of neurotoxicity, pulmonary hypertension, and dermatologic changes. Most human trials have been shorter than two months, with the longest study being six months in duration.

**SCIENTIFIC EVIDENCE**

<p><b>Uses</b>  <i>These uses have been tested in humans or animals. Safety and effectiveness have not always been proven. Some of these conditions are potentially serious, and should be evaluated by a qualified healthcare provider.</i></p>	<p><b><u>Grade</u></b><sup>*</sup></p>
<p><b><u>Anxiety</u></b></p> <p>Human studies have found at least moderate benefit of kava in the treatment of anxiety, and early evidence suggests that kava may be as effective as benzodiazepine drugs such as diazepam (Valium®). Kava's effects were reported to be similar to the prescription drug buspirone (Buspar®) used for Generalized Anxiety Disorder (GAD) in one study. However, there is concern regarding the potential danger from taking kava based on multiple reports from Europe and the United States that included hepatitis, cirrhosis, and liver failure. The U.S. Food and Drug Administration (FDA) has issued warnings to consumers and physicians. Many products have been pulled from the market. Natural Standard has collaborated with the World Health Organization (WHO) to prepare a detailed report of kava and associated adverse effects, which is now available.</p>	<p><b><u>A</u></b></p>
<p><b><u>Insomnia</u></b></p> <p>Kava may cause sedation or lethargy. However, early research suggests that kava may not be effective for insomnia.</p>	<p><b><u>C</u></b></p>
<p><b><u>Parkinson's disease</u></b></p> <p>There is unclear evidence for the use of kava for Parkinson's disease. Kava has been shown to increase 'off' periods in Parkinson's patients taking levodopa and can cause a semicomatose state when given with alprazolam. Consult with a qualified healthcare professional before taking kava due to the risk of harmful side effects.</p>	<p><b><u>C</u></b></p>
<p><b><u>Stress</u></b></p> <p>Early study results suggest that kava and valerian may be beneficial to health by reducing the body's reactions during stressful situations and stress induced insomnia. Further research is needed to confirm these results.</p>	<p><b><u>C</u></b></p>
<p><i>*Key to grades: <b>A:</b> Strong scientific evidence for this use; <b>B:</b> Good scientific evidence for this use; <b>C:</b> Unclear scientific evidence for this use; <b>D:</b> Fair scientific evidence against this use (it may not work); <b>F:</b> Strong scientific evidence against this use (it likely does not work).</i></p>	

**TRADITION/THEORY**

*The below uses are based on tradition, scientific theories, or limited research. They often have not been thoroughly tested in humans, and safety and effectiveness have not always been proven. Some of these conditions are*

potentially serious, and should be evaluated by a qualified healthcare provider. There may be other proposed uses that are not listed below.

- Addiction, anesthesia, anorexia, antifungal, anti-inflammatory, antipsychotic, aphrodisiac, arthritis, asthma, birth control, bladder inflammation, brain damage, bust enhancement, cancer, colds, depression, diuretic, dizziness, gonorrhea, hemorrhoids, incontinence, indigestion, infections, inflammation (ear), jet lag, joint pain or stiffness, kidney stones, leprosy, menopausal symptoms (hot flashes, sleep disturbances), menstrual disorders, migraine headache, muscle spasms, neuroprotective, pain, parasite infection, premenstrual syndrome (PMS), premenstrual dysphoric disorder (PMDD), protection of brain tissue against ischemic damage, renal colic, respiratory tract infections, rheumatism, seizures, stroke, syphilis, toothache, tuberculosis, urinary tract disorders, uterus inflammation, vaginal prolapse, vaginitis, weight reduction, wound healing.

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## DOSING

*The below doses are based on scientific research, publications, traditional use, or expert opinion. Many herbs and supplements have not been thoroughly tested, and safety and effectiveness may not be proven. Brands may be made differently, with variable ingredients, even within the same brand. The below doses may not apply to all products. You should read product labels, and discuss doses with a qualified healthcare provider before starting therapy.*

### Adults (18 years and older)

- Many doctors recommend starting with a low dose and gradually increasing intake over time. Typical doses range from 50 to 280 milligrams of kava lactones per day at bedtime. Sixty to 120 milligrams of kavapyrones have been taken daily. A dose of 50 to 100 milligrams taken by mouth has been used for up to two months. A dose of 100 milligrams of kava extract (WS 1490) has been taken three times daily. Doses as high as 800 milligrams daily of kava extract have been taken for short periods, but have not been studied over the long term and safety is not clear.

### Children (younger than 18 years)

- There is not enough scientific evidence to recommend the use of kava in children.

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## SAFETY

*The U.S. Food and Drug Administration does not strictly regulate herbs and supplements. There is no guarantee of strength, purity or safety of products, and effects may vary. You should always read product labels. If you have a medical condition, or are taking other drugs, herbs, or supplements, you should speak with a qualified healthcare provider before starting a new therapy. Consult a healthcare provider immediately if you experience side effects.*

### Allergies

- People with allergies to kava or kavapyrones should not take kava. Skin rashes have been reported after taking kava.

### Side Effects and Warnings

- Until recently, kava was generally thought to be safe: when used in otherwise healthy people not taking any other drugs, herbs, or supplements; over short periods of time (one to two months); and at recommended doses. However, there have been numerous reports of severe liver problems in people using kava. Multiple cases of liver toxicity, including liver failure, have

been reported following the use of kava in Europe. The U.S. Food and Drug Administration (FDA) has issued warnings to consumers and physicians and has requested that physicians report cases of liver toxicity that may be related to kava use. Although many natural medicine experts still believe that kava is safe at recommended doses, there is not enough scientific information to make a clear conclusion. Therefore, kava should be used only under the supervision of a qualified healthcare professional, should never be used above recommended doses, and should be avoided by people with liver problems or taking drugs that affect the liver.

- Other serious side effects that have been observed with chronic or heavy use of kava include: skin disorders, blood abnormalities, apathy, kidney damage, seizures, psychotic syndromes, and increased blood pressure in the lungs (pulmonary hypertension). Blood in the urine has also been reported.
- Mild side effects may include gastrointestinal (stomach) upset, allergic rash, or mild headache.
- Several cases of abnormal muscle movements have been reported after short-term use of kava (one to four days), including tightening, twisting, or locking of the muscles of the mouth, neck (torticollis), and eyes (oculogyric crisis). Worsening of symptoms of Parkinson's disease and several cases of abnormal whole body movements (choreoathetosis) following high doses of kava have also been noted. Tremor, poor coordination, headache, drowsiness, and fatigue have uncommonly been reported, particularly with large doses. A case of muscle cell breakdown (rhabdomyolysis) was reported in a 29 year-old man after taking an herbal combination of ginkgo, guarana, and kava.
- Sedation (drowsiness) has occasionally been reported with kava use, although there is early evidence from several small human studies that kava may not significantly cause this effect. Because this issue remains unclear, driving and operating heavy machinery is not recommended while taking kava.
- Eye disturbances and eye irritation have rarely been associated with chronic or heavy kava use. Rapid heart rate, electrocardiogram (ECG) abnormalities, and shortness of breath have been reported in heavy kava users. Laboratory tests suggest that kava may increase the risk of bleeding through effects on blood platelets.
- Kava may affect electroconvulsive therapy (ECT) outcome. It has also been associated with meningismus (pain caused by irritation in the layers around the brain and spinal cord), urinary retention, skin lesions, enhanced or decreased cognitive performance, anorexia, sleeplessness, abnormal sensations called paresthesias, vomiting, and dangerously high blood pressure.

### **Pregnancy & Breastfeeding**

- Use of kava cannot be recommended during pregnancy or breastfeeding. There may be decreases in the muscle strength of the uterus with the use of kava, which may have harmful effects on pregnancy. Chemicals in kava may pass into breast milk with unknown effects, and therefore this herb should be avoided during breastfeeding.

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### **INTERACTIONS**

*Most herbs and supplements have not been thoroughly tested for interactions with other herbs, supplements, drugs, or foods. The interactions listed below are based on reports in scientific publications, laboratory experiments, or traditional use. You should always read product labels. If you have a medical condition, or are taking other drugs, herbs, or supplements, you should speak with a qualified healthcare provider before starting a new therapy.*

## Interactions with Drugs

- Based on multiple human reports of liver toxicity, including hepatitis, cirrhosis, and liver failure, a theoretical increased risk of liver damage may occur if kava is taken with drugs that may injure the liver such as alcohol or acetaminophen (Tylenol®). Chronic use of kava may lead to kidney damage. Agents broken down by the kidneys should be used cautiously with kava due to increased risk of kidney damage.
- In theory, kava may increase the effects of alcohol or other drugs that cause sedation (drowsiness). In theory, kava may interfere with the effects of dopamine or drugs that are similar to dopamine and may worsen the neurologic side effects of drugs that block dopamine such as haloperidol (Haldol®).
- Kava may have chemical properties similar to monoamine oxidase inhibitors (MAO-I). In theory, kava may add to the effects of MAO-I antidepressants, such as isocarboxazid (Marplan®), phenelzine (Nardil®), or tranylcypromine (Parnate®). Due to this possible effect, kava may also cause the effects of anesthesia to last longer and some practitioners recommend stopping kava two to three weeks before surgery.
- Laboratory tests suggest that kava may increase the risk of bleeding through effects on blood platelets. However, human evidence is lacking in this area. People using aspirin, anticoagulants ("blood thinners") such as warfarin (Coumadin®) and heparin, or anti-platelet drugs such as clopidogrel (Plavix®) should be aware of possible interactions.
- Since kava has diuretic properties, it may have additive effects when taken with diuretic drugs such as furosemide or with ACE-inhibitors such as benazepril or captopril. Avoid in Parkinson's disease or in patients with a history of medication-induced extrapyramidal effects because kava may cause additive effects. Kava may cause excessive drowsiness when taken with SSRI antidepressant drugs such as fluoxetine or sertraline. Buspirone and opi Pramol may have additive effects when taken with kava.
- Early evidence shows that kava may interfere with the way the body processes certain drugs using the liver's "cytochrome P450" enzyme system. As a result, the levels of these drugs may be altered in the blood, which may cause different effects or potentially serious adverse reactions.
- Kava may have additive sedative effects when taken concomitantly with the opioid analgesics oxycodone and propoxyphene.
- Kava may also interact with anti-cancer drugs or hormonal drugs, such as birth control pills.

## Interactions with Herbs and Dietary Supplements

- Based on multiple human reports of liver toxicity, including hepatitis, cirrhosis, and liver failure, a theoretical increased risk of liver damage may occur if kava is taken with herbs or supplements that may damage the liver.
- Kava may increase the amount of sedation (drowsiness) caused by some herbs or supplements, such as valerian. Caution is advised while driving or operating machinery.
- In theory, kava may add to the effects of herbs and supplements that act like monoamine oxidase inhibitor (MAO-I) drugs, such as evening primrose oil. It may also add to the effects of herbs that have activity similar to the class of antidepressants known as selective serotonin reuptake inhibitors (SSRIs).
- Based on laboratory tests, it is suggested that kava may increase the risk of bleeding through effects on blood platelets. However, human evidence is lacking in this area. People using

other herbs or supplements that may increase the risk of bleeding should speak with a healthcare professional before starting kava.

- Since kava has diuretic properties, it may have additive effects when taken with diuretic herbs or supplements like horsetail or licorice.
- Use cautiously with herbs or supplements that are broken down by the kidneys because kidney damage may occur.
- Preliminary evidence shows that kava may interfere with the way the body processes certain herbs or supplements using the liver's "cytochrome P450" enzyme system. As a result, the levels of other herbs or supplements may be too high in the blood.
- Kava may interact with herbs and supplements with anti-cancer or hormonal activity; use cautiously.

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## AUTHOR INFORMATION

- This information is based on a systematic review of scientific literature edited and peer-reviewed by contributors to the Natural Standard Research Collaboration ([www.naturalstandard.com](http://www.naturalstandard.com)).

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## REFERENCES

*Natural Standard developed the above evidence-based information based on a thorough systematic review of the available scientific articles. For comprehensive information about alternative and complementary therapies on the professional level, go to [www.naturalstandard.com](http://www.naturalstandard.com). Selected references are listed below.*

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