Ginseng
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- Natural substance—ginseng is the common name of several species of Panax herbs belonging to the family Araliaceae.
- Used to improve or prolong performance, especially during fatigue.
- The recommended daily dose for dry ginseng root is generally 0.5 to 2.0 g.
- While studies with animals show ginseng, or its active components, may prolong survival to physical and chemical stress, there is generally a lack of controlled research demonstrating ginseng’s ability to improve or prolong performance in fatigued humans.
- Ginseng is thought to be relatively safe and well tolerated by most; however, children, pregnant women, and people with hypertension, psychological disturbances, headaches, heart palpitations, insomnia, asthma, inflammation, and infections with high fever should avoid ginseng.
- Ginseng is a legal substance and its use is permitted by sports governing bodies.

Name
Ginseng (Sang)

Description
Ginseng is the common name of several species of Panax herbs belonging to the family Araliaceae. Hence, it is classified as a natural substance and the root of the plant is considered the most important part. Several species of ginseng are known to exist: American, Chinese, Korean, Japanese, and Siberian. Three medicinal species of ginseng are currently recognized: Panax ginseng C.A. Meyer (Araliaceae), Panax japonicus C.A. Meyer (Araliaceae), and Panax quinquefolius L. (Araliaceae). Siberian or Russian ginseng is an entirely different plant, Eleutherococcus senticosus.
Usage
Ginseng has been used in the Orient for several thousand years as an adaptogen as well as a restorative agent. It has been used to treat nervous disorders, anemia, wakefulness, dyspnea, forgetfulness and confusion, prolonged thirst, decreased libido, chronic fatigue, angina, and nausea. Ginseng is purported to provide energy and strength to enhance recovery from illness, glandular disturbances, or nervous prostration, and to regulate carbohydrate metabolism for sustained improvement of oxygen utilization. Ginseng is considered by many to be a panacea or cure-all and an ergogenic aid to performance.

Prevalence
Prevalence rates and incidence of use of ginseng by athletes and consumers are unknown. However, annual sales of ginseng supplements, one of the most popular botanicals, are over 10 million, representing more than 2 percent of sales in the supplement market. Current sales of ginseng are estimated to be over $300 million annually.

Chemical Mechanism
The mechanisms underlying the alleged effects of ginseng are yet to be analyzed. However, the main active constituents of ginseng are recognized to be triterpenoid glycosides or saponins, whose structures and distribution vary with species and variety. There is indirect evidence, from animal studies, that enhanced performance and mood following ginseng administration might be due to central neuroendocrine changes. Some stimulant effects of ginseng, such as the antifatigue action and enhanced performance reported by users, may be associated with ginseng-induced alteration of the carbohydrate metabolism and increased synthesis of glycogen and phosphorus compounds.

Clinical Evidence
The efficacy of ginseng has been established primarily through anecdotes, testimonials, and clinical experience, as opposed to scientific verification of its pharmacological effects.

Scientific Research
There is extensive literature dealing with the effects of ginseng on animals’ cardiovascular systems, central nervous systems, endocrine functions, metabolisms, and immune functions. However, while studies using animals show that ginseng, or its active components, may prolong survival to physical or chemical stress, there is generally a lack of controlled research demonstrating the ability of ginseng to improve or prolong performance in fatigued humans. The lack of unanimity in this research can be explained on the basis of various methodological problems such as inadequate sample size and lack of double-blind, control, and placebo paradigms. Also, the absence of acceptable approaches to the problem of “sourcing,” in concert with an absence of compliance data in human research, further complicates the interpretation of this research literature.
Administration
Ginseng root is processed and distributed in various forms, including powder, liquid extracts, tablets, capsules, gum, and sport and soft drinks. Ginseng tea is made by steeping the root.

Dosage
The recommended daily dose for dry ginseng root is generally 0.5 to 2.0 g. Although the acute oral toxicity for ethnologic extract of ginseng has been determined in mice, its toxic dose in humans is not known. There are no reports of acute toxicity of high-dose ginseng in humans. German Commission E recommends that ginseng be taken as 1 to 2 g of crude root daily or as 100 to 300 mg of ginseng extract three times daily. Researchers examining the effects of ginseng on performance in humans have used several different ginseng dosages. According to the manufacturers of one of the most popular ginseng products, each capsule of Ginsana (G115) contains 100 mg of a concentrated aqueous extract of Panax ginseng C.A. Meyer, which is titrated at 4% ginsenosides and equivalent to 500 mg Panax ginseng root. This is an important consideration because some research studies have used 200 mg of a 7 percent ginsenoside concentration.

Contraindications
Ginseng is thought to be relatively safe and well tolerated by most. However, children, pregnant women, and people with hypertension, psychological disturbances, headaches, heart palpitations, insomnia, asthma, inflammation, and infections with high fever should avoid ginseng.

Precautions/Warnings
Hypertension, euphoria, restlessness, nervousness, insomnia, skin eruptions, edema, and diarrhea have been reported in long-term ginseng users averaging 3 g of ginseng root daily. Case reports suggest causal relationships between ginseng and mania, diuretic resistance, cerebral arteritis, mastalgia, Stevens-Johnson syndrome, elevated serum digoxin levels, and mental distress. Also, an interaction between warfarin and ginseng has been reported, with ginseng resulting in a decreased response to warfarin.

Banned/Permitted
Neither the International Olympic Committee nor the U.S. Olympic Committee currently includes ginseng on their lists of banned substances. According to the U.S. Olympic Committee on Substance Abuse Research and Education, there is no scientific evidence available to support the claim of performance enhancement or efficacy for ginseng. However, while ginseng per se is not banned by the USOC, certain ginseng preparations may contain banned ingredients. Athletes who test positive due to the use of substances that contain additives that are banned by the USOC and the IOC will be disqualified.

Legality
Ginseng is a legal substance.
References


Degree of Confidence

1.0

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