

Lion's Mane

Hericium erinaceus (Bull.) Pers.; yamabushitake, hou tou gu, bearded tooth fungus. Sold as fruiting-body extract, mycelium-on-grain biomass, and erinacine-A-enriched extract.

Lion's Mane has a compelling mechanism, an enormous market, and a thin clinical file. Hericenones and erinacines stimulate nerve growth factor synthesis in vitro, but the human record is five to eight small randomized trials whose results do not converge. The largest, a manufacturer-funded trial of 109 adults released April 2026, reported modest gains in visual attention, sleep and mood; a 2025 crossover in 18 adults found no effect on global cognition and worse executive-function scores. Tolerability is good. The harder problem is that the label rarely tells you what is in the capsule.

SUMMARY TABLE

ATTRIBUTE	SUMMARY
What it is	An edible medicinal mushroom. Fruiting bodies contain hericenones; mycelium contains erinacines, of which erinacine A crosses the blood-brain barrier in animals. Both raise NGF synthesis in vitro.
Best-evidenced use	None established. The most consistent signals are subjective — sleep, mood, perceived focus. Objective cognitive results are inconsistent and, in two trials, worse than placebo on a specific measure.
Clinical dose	Trials used 0.5–3.2 g/day for 4 weeks to 1 year; the 2026 trial used 2 g/day of fruiting body plus mycelial biomass.
Time to effect	Trials showing benefit ran 8–16 weeks; in the 16-week MCI trial, gains disappeared within four weeks of stopping.
Evidence grade	Low. Small samples, short durations, heterogeneous preparations, no human pharmacokinetic data, industry funding in the largest trial.
Key risks & interactions	Well tolerated: GI discomfort or diarrhea in under 10% of participants; rare dermatitis and allergic reactions. LiverTox likelihood score E. No established drug interactions; no pregnancy or pediatric data.
Product quality note	The central issue. Mycelium-on-grain products are largely starch. Require a certificate of analysis reporting beta-glucan — not 'polysaccharides,' which counts grain starch.

THE HUMAN TRIAL RECORD, IN ORDER

Mori and colleagues (Phytotherapy Research, 2009) randomized 30 adults with mild cognitive impairment to 3 g/day of *Herichium* powder or placebo for 16 weeks. Cognitive scores improved during treatment and returned toward baseline within four weeks of stopping. Docherty et al. (Nutrients, 2023) studied 41 healthy adults for 28 days, reporting faster Stroop performance and lower subjective stress — alongside worse delayed word recall than placebo. A 49-week Alzheimer's trial improved activities of daily living but not cognition.

The two newest entries pull in opposite directions. A double-blind crossover in *Frontiers in Nutrition* (2025) gave 18 adults 3 g of a 10:1 fruiting-body extract and tested them 90 minutes later: no effect on the composite outcome or mood, better pegboard dexterity, worse Flanker and Trail Making B. A placebo-controlled trial of 109 adults released as a preprint in April 2026 gave 2 g/day for eight weeks and found improvements in visual attention, sleep quality and mood (all $p<0.05$) with no adverse events — manufacturer-funded, and not peer reviewed.

WHAT IS ACTUALLY IN THE BOTTLE

A systematic review published September 1, 2025 in *Frontiers in Nutrition* assembled 26 studies — five randomized trials, three pilot trials, the rest laboratory work — at 0.5 to 3.2 g/day over four weeks to one year. Its conclusion is about heterogeneity: extraction method, source tissue and bioactive content vary so widely that trial results cannot be transferred to a retail purchase.

The distinction that matters commercially is tissue type. Hericenones occur in the fruiting body; erinacines come from mycelium in submerged culture. Most inexpensive US products are mycelium grown on sterilized grain and sold with the

grain, diluting active content with starch — which is why labels reporting total 'polysaccharides' mislead and labels reporting beta-glucan do not. With no human pharmacokinetic data, no product can claim a validated dose.

SAFETY PROFILE AND REGULATORY POSTURE

Safety is the strongest part of the file. The NIH LiverTox monograph assigns a likelihood score of E — an unlikely cause of clinically apparent liver injury — with no cases across large herbal hepatotoxicity series. Adverse events in trials are mild gastrointestinal complaints in fewer than 10% of participants, with rare dermatitis and one case report of acute respiratory distress. No prospective safety trial has been run; there is no pregnancy or pediatric data.

Regulatory history belongs in the assessment. Mushroom and nootropic sellers have repeatedly drawn FDA and FTC warning letters for marketing products as Alzheimer's treatments, including a joint 2019 sweep. Lion's Mane carries structure/function claims only; a package positioned against dementia is making an unapproved drug claim.

BOTTOM LINE

A low-risk, low-confidence purchase that should be budgeted as such: some users report better sleep, steadier mood and easier focus, and objective cognitive testing does not reliably agree with them.

If you run the experiment: buy fruiting-body extract from a supplier publishing a certificate of analysis with beta-glucan content (target $\geq 25\%$) and heavy-metal testing, and avoid anything labeled mycelium-on-grain or reporting only 'polysaccharides.' Take 1–3 g/day for eight weeks with the outcome defined in advance — sleep quality or subjective focus, tracked weekly. Stop for GI symptoms or rash; avoid it in mushroom allergy and in pregnancy. Do not buy it for dementia prevention: the MCI gains washed out four weeks after dosing stopped.

SOURCES

1. Mori K, et al. Effects of *Herichium erinaceus* on mild cognitive impairment: a double-blind placebo-controlled trial. *Phytother Res.* 2009;23(3):367–372 (n=30).
2. Docherty S, et al. Acute and chronic effects of Lion's Mane on cognition, stress and mood. *Nutrients.* 2023;15(22) (n=41).
3. Acute effects of a standardised *Herichium erinaceus* extract on cognition and mood. *Frontiers in Nutrition.* 2025 (n=18, crossover).
4. Benefits, side effects, and uses of *Herichium erinaceus* as a supplement: a systematic review. *Frontiers in Nutrition.* September 1, 2025 (26 studies; 5 RCTs; 0.5–3.2 g/day).
5. Randomized placebo-controlled study of *Herichium erinaceus* on cognitive performance and wellbeing. *medRxiv preprint*, April 17, 2026 (n=109; manufacturer-funded; not peer reviewed).
6. LiverTox: Lion's Mane. NIDDK, National Institutes of Health (likelihood score E).
7. FTC and FDA joint warning letters to supplement sellers claiming to treat Alzheimer's disease (2019).

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