

Mushroom	Study	Authors	Journal	Year	Treatment	Condition	Duration	Outcome Measures	Outcome
Reishi	Phase I/II Study of a Ganoderma lucidum Extract in Patients with Advanced Cancer	Yihuai Gao, Shufeng Zhou, Guoliang Chen, Xihu Dai, Jingxian Ye	International Journal of Medicinal Mushrooms	2002	1800 mg of Ganopoly three times daily	143 patients with advanced, previously treated cancer	12 weeks	Disease progression; Quality of life (FACT-G questionnaire); Hematologic, biochemical, and immune function parameters	26.6% of patients experienced stable disease for 12 weeks or more; palliative effects on cancer-related symptoms like sweating and insomnia, and significantly improved quality of life scores; enhanced lymphocyte reactivity and natural killer cell activity
	A Phase I/II Study of a Ganoderma lucidum (Curt.: Fr.) P. Karst. (Ling Zhi, Reishi Mushroom) Extract in Patients with Chronic Hepatitis B	Yihuai Gao, Shufeng Zhou, Guoliang Chen, Xihu Dai, Jingxian Ye	International Journal of Medicinal Mushrooms	2002	Ganopoly (G. lucidum extract) or placebo for 12 weeks	90 patients with chronic hepatitis B, HBV DNA positivity, and elevated aminotransferase levels		Levels of HBV DNA and aminotransferase activities in serum; Hepatitis B e antigen (HBeAg) status	25% of patients receiving Ganopoly responded by reducing HBeAg and HBV DNA, compared to 4% in the placebo group; 33% of treated patients had normal aminotransferase levels, and 13% cleared hepatitis B surface antigen (HBsAg) from serum
	Effects of Ganopoly1 (A Ganoderma lucidum Polysaccharide Extract) on the Immune Functions in Advanced-Stage Cancer Patients	Yihuai Gao, Shufeng Zhou, Wenqi Jiang, Min Huang, and Xihu Dai	Immunological Investigations	2003	1800 mg Ganopoly three times daily orally before meals	34 advanced-stage cancer patients	12 weeks	Plasma cytokine concentrations (IL-1, IL-2, IL-6, IFN- γ 03b3, and TNF- α 03b1); Lymphocyte subsets (CD3+, CD4+, CD8+, and CD56+); Mitotic response to phytohemagglutinin (PHA); Natural killer (NK) cell activity	Ganopoly1 significantly increased plasma concentrations of IL-2, IL-6, and IFN- γ 03b3, while decreasing levels of IL-1 and TNF- α 03b1; mean absolute number of CD56+ cells (NK cells) increased significantly, while CD3+, CD4+, and CD8+ cell counts increased marginally
	A Randomized, Placebo-Controlled, Multicenter Study of Ganoderma lucidum (W.Curt.: Fr.) Lloyd (Aphyllphoromycetideae) Polysaccharides (Ganopoly γ 00ae) in Patients with Advanced Lung Cancer	Yihuai Gao, Xihu Dai, Guoliang Chen, Jingxian Ye, Shufeng Zhou	International Journal of Medicinal Mushrooms	2003	Ganopoly (600 mg three times daily) or placebo	68 patients with histologically confirmed advanced lung cancer	12 weeks	Disease stability; Quality of life (Karnofsky Performance Status [KPS] score); Cancer-related symptoms (fever, cough, weakness, sweating, insomnia); Immune function (lymphocyte reactivity, CD3, CD4, CD8 percentages, natural killer cell activity)	stable disease in 35.1% of patients, which was significantly higher than the 22.6% in the placebo group; significantly improved quality of life, as measured by KPS scores, and reduced cancer-related symptoms such as fever, cough, weakness, sweating, and insomnia; enhanced several immune functions, including lymphocyte reactivity, CD3 percentage, and natural killer cell activity
	A Phase I/II Study of Ling Zhi Mushroom Ganoderma lucidum (W.Curt.:Fr.)Lloyd (Aphyllphoromycetideae) Extract in Patients with Type II Diabetes Mellitus	Yihuai Gao, Jin Lan, Xihu Dai, Jingxian Ye, Shufeng Zhou	International Journal of Medicinal Mushrooms	2004	1800 mg of Ganopoly (polysaccharide fractions extracted from G. lucidum) or placebo three times daily	71 patients with type II diabetes mellitus	12 weeks	Glycosylated hemoglobin (HbA1c); Fasting plasma glucose (FPG); Postprandial plasma glucose (PPG); Insulin and C-peptide levels	significantly decreased HbA1c, FPG, and PPG level; significantly reduced fasting and postprandial insulin and C-peptide levels
	A Phase I/II Study of Ling Zhi Mushroom Ganoderma lucidum (W.Curt.:Fr.) Lloyd (Aphyllphoromycetideae) Extract in Patients with Coronary Heart Disease	Yihuai Gao, Guoliang Chen, Xihu Dai, Jingxian Ye, Shufeng Zhou	International Journal of Medicinal Mushrooms	2004	Ganopoly 3 times a day	168 patients with confirmed coronary heart disease (CHD)	12 weeks	Improvement of major symptoms (chest pain, palpitation, angina pectoris, shortness of breath); Electrocardiogram (ECG) changes; Serum cholesterol level; Blood pressure	significantly improved the primary symptoms of CHD, including chest pain, palpitation, angina pectoris, and shortness of breath; percentage of abnormal ECGs also decreased significantly; significant decrease in blood pressure and serum cholesterol levels
	Phase I Study of a Methanol Extract of Ganoderma Lucidum, Edible and Medicinal Mushroom, in Men with Mild Symptoms of Bladder Outlet Obstruction	M. Noguchi, T. Kakuma, K. Tomiyasu, F. Konishi, S. Kumamoto, R. Kondo, K. Matsuoka	Urology	2005	0.6 mg, 6 mg, or 60 mg of methanol extract of Ganoderma lucidum or placebo once daily	50 male volunteers (50+ years old) with mild symptoms of bladder outlet obstruction (BOO) and a prostate-specific antigen (PSA) value \leq 4 ng/ml	8 weeks	International Prostate Symptom Score (I-PSS); Peak urine flow rate (Qmax); Prostate volume and residual urine (estimated by ultrasonography); Blood tests, including PSA levels	6 mg and 60 mg doses showed statistically significant reductions in the International Prostate Symptom Score (I-PSS)
	Immune Responses to Water-Soluble Ling Zhi Mushroom Ganoderma lucidum (W.Curt.: Fr.) P. Karst. Polysaccharides in Patients with Advanced Colorectal Cancer	Min Huang, Yihuai Gao, Wenbo Tang, Xihu Dai, He Gao, Guoliang Chen, Jingxian Ye, Eli Chan, and Shufeng Zhou	International Journal of Medicinal Mushrooms	2005	5.4 g/day of water-soluble Ganoderma lucidum polysaccharides (Ganopoly)	47 patients with advanced colorectal cancer	12 weeks	Mitogenic reactivity to phytohemagglutinin (PHA); Counts of CD3, CD4, CD8, and CD56 cells; Plasma concentrations of interleukin (IL)-2, IL-6, and interferon (IFN)- γ 03b3; NK activity Plasma concentrations of IL-1 and tumor necrosis factor (TNF)- α 03b1	Not significant

	Effects of Water-Soluble Ganoderma lucidum Polysaccharides on the Immune Functions of Patients with Advanced Lung Cancer	Yihuai Gao, Wenbo Tang, Xihu Dai, He Gao, Guoliang Chen, Jinxian Ye, Eli Chan, Hwee Ling Koh, Xiaotian Li, and Shufeng Zhou	Journal of Medicinal Food	2005	5.4 g/day of water-soluble Ganoderma lucidum polysaccharides (Ganopoly)	36 patients with advanced lung cancer	12 weeks	Mitogenic reactivity to phytohemagglutinin (PHA); Counts of CD3, CD4, CD8, and CD56 cells; Plasma concentrations of interleukin (IL)-2, IL-6, and interferon (IFN)- γ 03b3; NK activity	Not significant
	A Randomized, Double-Blind and Placebo-Controlled Study of a Ganoderma lucidum Polysaccharide Extract in Neurasthenia	Wenbo Tang, Yihuai Gao, Guoliang Chen, He Gao, Xihu Dai, Jinxian Ye, Eli Chan, Min Huang, and Shufeng Zhou	Journal of Medicinal Food	2005	1800 mg of Ganoderma lucidum polysaccharide extract (Ganopoly) or placebo three times a day	132 patients with neurasthenia	8 weeks	Clinical Global Impression (CGI) improvement of severity scale; Visual Analogue Scales (VAS) for fatigue and well-being	significant improvements in CGI severity score and fatigue levels compared to the placebo group
	A Prospective, Randomized, Double-Blind, Placebo-Controlled Study of the Platelet and Global Hemostatic Effects of Ganoderma Lucidum (Ling-Zhi) in Healthy Volunteers	Yung Kwok, Kwok F. J. Ng, Carina C. F. Li, Clarence C. K. Lam, and Ricky Y. K. Man	Anesthesia & Analgesia	2005	1.5 g Ganoderma lucidum capsules or placebo daily	40 healthy volunteers	4 weeks	Routine hematology tests (complete blood count, prothrombin time, activated partial thromboplastin time); von Willebrand ristocetin cofactor (vWF:Rco) activity and fibrinogen concentration; Thrombelastography (TEG); Platelet function analyzer (PFA-100)	no significant differences; does not impair blood clotting or platelet function in healthy individuals
	Safety and Tolerability of Ganoderma lucidum in Healthy Subjects: A Double-Blind Randomized Placebo-Controlled Trial	Sheila M. Wicks, Robin Tong, Chong-Zhi Wang, Michael O'Connor, Theodore Karrison, Shang Li, Jonathan Moss, and Chun-Su Yuan	The American Journal of Chinese Medicine	2007	4000 mg/day (1.89% terpenoids and 15.8% polysaccharides)	16 healthy volunteers	10 days	Subjective questionnaires; Electrocardiograms; Complete blood counts; Blood chemistry analysis; Urinalysis; Blood tests reflecting immunity (CD4, CD8, CD19, CD56)	no significant changes in CD4, CD8, or CD19 cell counts; increase in CD56 cell count;
	Effect of an Extract of Ganoderma Lucidum in Men with Lower Urinary Tract Symptoms: A Double-Blind, Placebo-Controlled Randomized and Dose-Ranging Study	Masanori Noguchi, Tatsuyuki Kakuma, Katsuro Tomiyasu, Yoshiko Kurita, Hiroko Kukiwara, Fumiko Konishi, Shoichiro Kumamoto, Kuniyoshi Shimizu, Ryuichiro Kondo, and Kei Matsuoka	Asian Journal of Andrology	2008	0.6 mg, 6 mg, or 60 mg of Ganoderma lucidum extract or placebo once daily	88 men over the age of 50 with mild-to-moderate lower urinary tract symptoms (LUTS)	12 weeks	International Prostate Symptom Score (IPSS); Peak urine flow rate (Qmax); Prostate volume; Residual urine; Prostate-specific antigen (PSA) levels; Blood tests	statistically significant improvements in IPSS scores; No other significant changes
	Study of Potential Cardioprotective Effects of Ganoderma Lucidum (Lingzhi): Results of a Controlled Human Intervention Trial	Tanya T. W. Chu, Iris F. F. Benzie, Christopher W. K. Lam, Benny S. P. Fok, Kenneth K. C. Lee, and Brian Tomlinson	British Journal of Nutrition	2011	1.44 g Lingzhi (Ganoderma lucidum) daily or matching placebo	26 patients with borderline elevations of blood pressure and/or cholesterol	12 weeks	Body weight, blood pressure, metabolic parameters (lipids, glucose, insulin); Urine catecholamines and cortisol; Antioxidant status; Lymphocyte subsets	Lingzhi did not significantly affect blood pressure, body mass index (BMI), or most lipid levels; lower plasma insulin and insulin resistance;
	Spore Powder of Ganoderma Lucidum Improves Cancer-Related Fatigue in Breast Cancer Patients Undergoing Endocrine Therapy: A Pilot Clinical Trial	Hong Zhao, Qingyuan Zhang, Ling Zhao, Xu Huang, Jincai Wang, and Xinmei Kang	Evidence-Based Complementary and Alternative Medicine	2011	Spore powder of Ganoderma lucidum (1000 mg three times a day) or placebo	48 breast cancer patients with cancer-related fatigue undergoing endocrine therapy	4 weeks	Functional Assessment of Cancer Therapy-Fatigue (FACT-F); Hospital Anxiety and Depression Scale (HADS); EORTC Quality of Life Questionnaire (QLQ-C30); Concentrations of TNF- γ 03b1 and IL-6 (inflammatory markers)	the group receiving G. lucidum showed significant improvements in physical well-being, fatigue, emotional well-being, functional well-being, anxiety, depression, and overall quality of life; levels of inflammatory markers TNF- γ 03b1 and IL-6 were significantly reduced

	Control of Oral Human Papillomavirus (HPV) by Medicinal Mushrooms, <i>Trametes versicolor</i> and <i>Ganoderma lucidum</i> : A Preliminary Clinical Trial	Bruno Donatini	International Journal of Medicinal Mushrooms	2014	Group 1: <i>Laetiporus sulphureus</i> (LS) 400 mg/day Group 2: <i>Trametes versicolor</i> (TV) + <i>Ganoderma lucidum</i> (GL) 400 mg/day (200 mg of each)	61 patients with oral human papillomavirus (HPV) types 16 or 18	8 weeks	Clearance of oral HPV16 or HPV18 infection (measured by PCR)	Group 1: 5% clearance; Group 2: 88% clearance
	Triterpenoids and Polysaccharide Peptides-Enriched <i>Ganoderma lucidum</i> : A Randomized, Double-Blind Placebo-Controlled Crossover Study of Its Antioxidation and Hepatoprotective Efficacy in Healthy Volunteers	Hui-Fang Chiu, Hui-Yu Fu, Yan-Ying Lu, Yi-Chun Han, You-Cheng Shen, Kamesh Venkatakrishnan, Oksana Golovinskaia & Chin-Kun Wang	Pharmaceutical Biology	2017	225mg capsule of triterpenoids and polysaccharide-enriched <i>Ganoderma lucidum</i> (GL) or placebo	42 healthy subjects (22 male and 20 female) with mild liver dysfunction	6 months (each group took GL or placebo for 6 months, with a 1-month washout period in between)	Plasma total antioxidant capacity (TEAC), total thiols, glutathione content; Plasma levels of thiobarbituric acid reactive substances (TBARS) and 8-hydroxy-deoxyguanosine (8-OH-dG); Activities of antioxidant enzymes in erythrocytes (SOD, CAT, GPx, G-6-PDH, GR); Plasma levels of hepatic marker enzymes (GOT, GPT); Abdominal ultrasound examination	GL significantly increased plasma antioxidant capacity and the activity of antioxidant enzymes, while decreasing markers of oxidative stress and liver damage; abdominal ultrasound examinations revealed that GL reversed mild fatty liver conditions
	Cost-Utility Analysis of a Six-Weeks <i>Ganoderma lucidum</i> -Based Treatment for Women with Fibromyalgia: A Randomized Double-Blind, Active Placebo-Controlled Trial	Miguel A. Garcia-Gordillo, Daniel Collado-Mateo, Miguel A. Hernández-Mocholi, Francesco Pazzi, Narcis Gusi, Francisco J. Dominguez-Muñoz & Jose C. Adsuar	MYOPAIN	2017	6 g/day of micro-milled <i>Ganoderma lucidum</i> (GL) or <i>Ceratonia Siliqua</i> (active placebo)	26 women with fibromyalgia	6 weeks	Quality-adjusted life years (QALYs) using EQ-5D-5L; Fibromyalgia Impact Questionnaire (FIQ)	GL improved quality of life; incremental cost-utility ratio (ICUR) was €1348.55 /QALY; cost-utility acceptability curve showed a 90% probability that GL is a cost-effective treatment; participants in the GL group experienced improvements in usual activities, pain/discomfort, and anxiety/depression
	β -1,3/1,6-d-glucan Of Indonesian <i>Ganoderma lucidum</i> Mycelium Extract Reduces Systolic Blood Pressure & Inflammation In Hypertensive Patients	Peter Sugita, MR Fadlan, Djanggan Sargowo, and A Rizal	Hypertension	2019	<i>Ganoderma lucidum</i> Mycelium Extract (GLME) 540mg/day + CCB/ACEI/ARB or placebo + CCB/ACEI	50 hypertensive adults (age 50-70 years)	90 days	Systolic blood pressure (SBP); Diastolic blood pressure (DBP); Mean arterial pressure (MAP); Heart rate (HR), LVEF, LVMI; Inflammatory markers (hsCRP, MDA, TNF- α , IL-1, & IL-6)	GLME significantly reduced systolic blood pressure; most significant reduction in systolic blood pressure was observed in the group receiving GLME alongside ACE inhibitors (ACEI) or angiotensin II receptor blockers (ARB); showed anti-inflammatory effects, particularly in the group receiving it with ACEI/ARB, as evidenced by a significant decrease in hsCRP, LVMI, TNF- α , IL-6, and IL-1 levels
	Randomized Clinical Trial for the Evaluation of Immune Modulation by Yogurt Enriched with β -Glucans from Lingzhi or Reishi Medicinal Mushroom, <i>Ganoderma lucidum</i> (<i>Agaricomycetes</i>), in Children from Medellín, Colombia	Sandra L. Duque Henao, Sergio A. Urrego, Andrea M. Cano, & Edwin A. Higuaita	International Journal of Medicinal Mushrooms	2018	Yogurt enriched with β -glucans from <i>Ganoderma lucidum</i> or placebo yogurt	124 asymptomatic children aged 3 to 5 years old	12 weeks	Circulating CD8+ T lymphocyte and natural killer (NK) cell counts (primary outcomes); Circulating lymphocyte counts (total, CD3+, and CD4+ T cells), serum concentrations of total immunoglobulin A and cytokines, and various hematological parameters (secondary outcomes)	significantly higher number of CD8+ T cells and total lymphocytes; no significant differences in NK cell counts or other immune markers
	Immunostimulatory and Anti-inflammatory Effect of <i>Ganoderma lucidum</i> on Breast Cancer Patients	Nidhal AK. Mohammed Ali, Hakar Abdulkareem Saeed, Ramadhan T. Othman	Asian Pacific Journal of Cancer Biology	2018	<i>Ganoderma lucidum</i> (GL) capsules (1000 mg twice daily) + chemotherapy or chemotherapy alone	40 female breast cancer patients	12 weeks	Levels of interferon-gamma (IFN- γ), tumor necrosis factor-alpha (TNF- α), interleukin-8 (IL-8), and adiponectin	GL in addition to chemotherapy had significantly increased levels of IFN- γ (a marker of immune activation) and significantly decreased levels of TNF- α and IL-8 (markers of inflammation)

	Evaluation of Immune Modulation by β -1,3; 1,6 D-Glucan Derived from Ganoderma lucidum in Healthy Adult Volunteers, A Randomized Controlled Trial	Shiu-Nan Chen, Fan-Hua Nan, Ming-Wei Liu, Min-Feng Yang, Ya-Chih Chang, and Sherwin Chen	Foods	2022	200 mg of Reishi β -1,3; 1,6 D-glucan daily	57 randomized (70 in the intervention group and 65 in the placebo group completed the study)	12 weeks	T lymphocyte subsets (CD3+, CD4+, CD8+, etc.); Natural killer (NK) cell counts; CD4/CD8 ratio and NK cell cytotoxicity	increased the number and activity of several types of immune cells, including T cells and natural killer (NK) cells; NK cell cytotoxicity ($83.1 \pm 30.0\%$ vs. $-4.5 \pm -8.7\%$; $p = 0.0001$); absolute CD4+ T-cell counts ($13.4 \pm 22.2\%$ vs. $-8.0 \pm 17.2\%$; $p = 0.0001$), absolute CD8+ T-cell counts ($14.6 \pm 22.8\%$ vs. $2.4 \pm -22\%$; $p = 0.033$); serum IgA concentration ($10.0 \pm 38.3\%$ vs. $2.1 \pm 11.8\%$; $p = 0.031$) intervention was safe and well-tolerated among healthy adults when taken daily for the entire study
	The Efficacy of Ganoderma lucidum in Overweight Individuals: A Randomized Placebo-controlled trial	Shilan Babamiri, Mansoorh Sadat Mojani Qomi, Maryam Shiehmorteza	Mediterranean Journal of Nutrition and Metabolism	2022	3 capsules of Ganoderma lucidum per day (each containing 220 mg of whole powder and 30 mg of pure aqueous extract) or placebo	72 (36 in the treatment group and 33 in the placebo group)	6 weeks	Anthropometric indices (body weight, body mass index [BMI], waist circumference [WC], mid-upper arm circumference [MAUC], hip circumference, waist-hip ratio); Fasting blood sugar (FBS); Lipid profile (total cholesterol, HDL-cholesterol, LDL-cholesterol, triglycerides); Blood pressure	treatment group showed significant reductions in body weight, BMI, waist circumference, and mid-upper arm circumference; significant improvements in total cholesterol and LDL-cholesterol levels;

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Cordyceps militaris	The Efficacy and Safety of Cordyceps militaris in Korean Adults Who Have Mild Liver Dysfunction	Jin Young Heo, Hyun Wook Baik, Hyuk Jung Kim, Jae Min Lee, Hyung Woo Kim, Yong Sun Choi, Jung Ho Won, Hyun Mi Kim, Won Il Park, Chul Young Kim	Journal of Clinical Nutrition	2015	1.5 g/day of C. militaris (2 capsules per dose, twice per day)	57 Korean adults (28 in the C. militaris group and 29 in the placebo group) aged 20 to 65 years with mild liver dysfunction (alanine aminotransferase levels 1.5 to 3 times the upper limit of normal)	8 weeks	Laboratory tests (white blood cell, hemoglobin, platelet, aspartate aminotransferase, alanine aminotransferase, gamma glutamyltranspeptidase, lactic dehydrogenase, alkaline phosphatase, total bilirubin, blood urea nitrogen, creatinine); Liver computed tomography (CT); Visual analogue scale (VAS) score for subjective symptoms; Fatigue severity scale (FSS)	C. militaris group showed a statistically significant increase in the mean ratio of change of HU compared to the placebo group (21.43% vs. 9.64%, P=0.0987), suggesting a potential beneficial effect on liver fat accumulation; No significant differences were observed in other laboratory tests, VAS scores, or FSS between
	Cordyceps militaris Enhances Cell-Mediated Immunity in Healthy Korean Men	Ho Joon Kang, Hyun Wook Baik, Sang Jung Kim, Seong Gyu Lee, Hong Yup Ahn, Ju Sang Park, Sang Jong Park, Eun Jeong Jang, Sang Woon Park, Jin Young Choi, Ji Hee Sung, and Seung Min Lee	Journal of Medicinal Food	2015	1.5 g/day of ethanol-treated Cordyceps militaris in capsules	79 healthy Korean men aged 19-64 (Experimental:39; control:40)	4 weeks	Natural killer (NK) cell activity at effector-to-target (E:T) ratios of 50:1 (NK50), 100:1 (NK100), and 200:1 (NK200); Lymphocyte proliferation index (PI); T-helper cell 1 (Th1) cytokine cluster (interferon [IFN]- γ , interleukin [IL]-12, IL-2, and tumor necrosis factor [TNF]- α); Safety assessment;	significantly increased NK cell activity (particularly at the NK200 level), lymphocyte proliferation, and the production of certain Th1 cytokines (IL-2 and IFN- γ) compared to the placebo; No significant adverse reactions were reported
	Cordyceps militaris Improves Tolerance to High-Intensity Exercise After Acute and Chronic Supplementation	Katie R. Hirsch, Abbie E. Smith-Ryan, Erica J. Roelofs, Eric T. Trexler, & Meredith G. Mock	Journal of Dietary Supplements	2016	1.3 grams of a mushroom blend (PeakO2, Compound Solutions, Inc., USA)	28 recreationally active adults (16 males, 12 females) between the ages of 18 and 35 years	3 weeks	Maximal oxygen consumption (VO2max); Time to exhaustion (TTE); Ventilatory threshold (VT); Relative peak power output (RPP); Average power output (AvgP); Percent drop in power output (%drop)	one week of supplementation did not lead to significant improvements in any of the measured performance outcomes; three weeks of supplementation, the mushroom group experienced significant improvements in VO2max (44.0 ± 10.5 to 48.8 ± 11.2 ml·kg ⁻¹ ·min ⁻¹), TTE (851.7 ± 192.2 to 921.5 ± 184.2 s), and VT (1.7 ± 0.3 to 2.4 ± 1.0 l·min ⁻¹), suggesting potential benefits for aerobic performance; significant increase in RPP (5.9 ± 1.1 to 6.4 ± 1.8 W·kg ⁻¹) after three weeks, indicating potential benefits for anaerobic performance as well
	Effects of Cordyceps militaris supplementation on the immune response and upper respiratory infection in healthy adults- a randomized, double-blind, placebo-controlled study	The Korean Nutrition Society	Journal of Nutritional Health	2019	Cordyceps militaris extract (300 mg/day)	100 healthy adults aged 20-70 years with a history of at least two colds in the past year	12 weeks	Incidence and symptoms of upper respiratory tract infections (URI); Changes in cytokines, IgA, and natural killer (NK) cell activity	Cordyceps militaris group exhibited significantly higher NK cell activity (40 to 48.1) levels, suggesting potential immunomodulatory effects. The study concluded that while Cordyceps militaris may not directly prevent URI, it could enhance immune function
	Efficacy and Safety of Cordyceps militaris as an Adjuvant to Duloxetine in the Treatment of Insomnia in Patients With Depression: A 6-Week Double-Blind, Randomized, Placebo-Controlled Trial	Jiaojiao Zhou, Xu Chen, Le Xiao, Jingjing Zhou, Lei Feng, and Gang Wang	Frontiers in Psychiatry		Duloxetine (60 mg/day) plus Cordyceps militaris (3 g/day) for 6 weeks; Duloxetine (60 mg/day) plus placebo for 6 weeks	59 outpatients diagnosed with major depressive disorder (MDD) with insomnia	6 weeks	Primary outcome: Mean change in total Athens Insomnia Scale (AIS) score and its subscales; Secondary outcome: Change in total 17-item Hamilton Depression Scale (HAM-D-17) score and its sleep factor score; Safety assessment: Physical examination, vital signs, adverse events, clinical laboratory tests, and 12-lead electrocardiograms (ECGs)	Cordyceps militaris was safe and well-tolerated; Cordyceps militaris did not significantly improve sleep symptoms compared to the placebo

	Early Trends to Show the Efficacy of Cordyceps militaris in Mild to Moderate COVID Inflammation	Siddharth Dubhashi, Sagar Sinha, Sankalp Dwivedi, Jaishree Ghanekar, Sameer Kadam, Parineeta Samant, Vibha Datta, Sarman Singh, Irshad H. Chaudry, Padma Gurmet, Harshawardhan Kelkar, Rakesh Mishra, Sagar Galwankar, Amit Agrawal	Cureus	2023	Cordyceps capsules (500 mg) three times a day for 15 days	65 patients with mild to moderate COVID-19 infection	15 days	Time to improvement of clinical symptoms; Time to recovery of clinical symptoms; Proportion of patients with a negative COVID-19 test by day 10; Improvement in oxygenation indices by day 10; Reduction of inflammatory markers; Proportion of patients having IgG antibodies on day 16; Length of hospital stay; Safety assessment (hematology, biochemistry, adverse events)	higher proportion of recoveries on day 5 and a faster improvement in clinical symptoms in the Cordyceps group compared to the placebo group; Time to recovery was faster for cordyceps group (6.6 vs. 7.3 days); greater number of patients in the Cordyceps group tested negative for COVID-19 by day 10; noted significant changes in certain biomarkers, suggesting potential anti-inflammatory effects of Cordyceps; no severe adverse events were reported
	Improved Oxygen Saturation and Performance of Athletes using Cordyceps militaris	Shaik Muzammil Pasha, Anju Nitin Rajan, Laxmikanth Rathod, Shaik Musfera, Chand Pasha	Asian Journal of Biological Sciences	2024	Group 1 (Placebo Control): 150 mL black tea Group 2 (Cordyceps militaris): 150 mL black tea with 1g active live (fresh, non-dried) Cordyceps militaris mushroom infusion Group 3 (Whey Protein Control): 150 mL black tea with 10g whey protein Group 4 (Dried Cordyceps militaris): 150 mL black tea with 1g dried Cordyceps militaris infusion	48 young, non-obese athletes (24 males, 24 females) aged 16-35 years	3 weeks	Oxygen saturation (SpO2); Fatigue time (treadmill and track running); Hematological parameters (RBC count, RBC size, hemoglobin, hematocrit, lactate, clotting time, blotting time)	significant increase in oxygen saturation (SpO2) and a reduction in fatigue time, allowing athletes to perform better in both treadmill tests and 5km/200m runs; increased red blood cell (RBC) size in enhancing oxygen-carrying capacity and oxygen flow; fresh Cordyceps was effective compared to controls using the dried Coryceps
	The effects of Cordyceps militaris fruiting bodies in micturition and prostate size in benign prostatic hyperplasia patients- A pilot study	Shao-An Hsieh, Tien-Huang Lin, Jen-Shu Wang, Jian-Jung Chen, Wen-Kuang Hsu, Li-Chih Ying, Zeng-Chin Liang	Pharmacological Research – Modern Chinese Medicine	2022	Cordyceps militaris capsule (250mg, containing cordycepin 6.0 mg, adenosine 0.09mg, and polysaccharides 10mg) twice daily for three months		12 weeks	Maximum urinary flow rate (Q-max); Post-void residual volume (PVR); Prostate volume; International Prostate Symptom Score (IPSS); International Index of Erectile Function (IIEF); Blood tests for prostate-specific antigen (PSA), blood urea nitrogen (BUN), creatinine (Cr), testosterone (T), estradiol (E2), and luteinizing hormone (LH)	significant increase in maximum urinary flow, a decrease in prostate volume, and improvements in both micturition symptoms and sexual function after three months of Cordyceps militaris supplementation

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Heridium erinaceus	Improving Effects of the Mushroom Yamabushitake (Heridium erinaceus) on Mild Cognitive Impairment: A Double-blind Placebo-controlled Clinical Trial	Koichiro Mori, Satoshi Inatomi, Kenzi Ouchi, Yoshihito Azumi, and Takashi Tuchida	Phytotherapy Research	2009	4 tablets containing 96% Yamabushitake dry powder three times a day Treatment:14, Control:15	30 Japanese men and women aged 50 to 80 with mild cognitive impairment	22 weeks	Cognitive function scale based on the Revised Hasegawa Dementia Scale (HDS-R)	Yamabushitake group had significantly increased scores on the cognitive function scale compared to the placebo group at weeks 8, 12, and 16 of the trial (200% change in score compared to increase in placebo)
	Reduction of Depression and Anxiety by 4 Weeks Heridium erinaceus Intake	Mayumi Nagano, Kuniyoshi Shimizu, Ryuichiro Kondo, Chickako Hayashi, Daigo Sato, Katsuyuki Kitagawa, and Koichiro Ohnuki	Biomedical Research	2010	HE group (n = 12): 4 cookies containing 0.5 g of powdered fruiting body of Heridium erinaceus (HE) per day Placebo group (n = 14)	30 females (26 completed the study) aged 41.3 ± 5.6 years with a variety of indefinite complaints and no specified diseases	4 weeks	Kupperman Menopausal Index (KMI) for menopause symptoms; Center for Epidemiologic Studies Depression scale (CES-D) for depression; Pittsburgh Sleep Quality Index (PSQI) for sleep quality; Indefinite Complaints Index (ICI) for indefinite complaints	HE intake significantly reduced scores on the CES-D (depression) and ICI (indefinite complaints) scales; HE intake may have the potential to reduce depression and anxiety
	Improvement of Cognitive Functions by Oral Intake of Heridium erinaceus	Yuusuke Saitsu, Akemi Nishide, Kenji Kikushima, Kuniyoshi Shimizu, and Koichiro Ohnuki	Biomedical Research (Tokyo)	2019	HE group (n = 16): 4 tablets containing 0.8 g (3.2 g) of powdered fruiting body of Heridium erinaceus (HE) three times a day (9.6 g/day total); Placebo group (n = 15)	31 Japanese men and women over 50 years old with normal Mini Mental State Examination (MMSE) scores	12 weeks	Mini Mental State Examination (MMSE); Benton visual retention test; Standard verbal paired-associate learning test (S-PA)	oral intake of HE significantly improved cognitive functions as measured by the MMSE
	Heridium erinaceus Improves Mood and Sleep Disorders in Patients Affected by Overweight or Obesity: Could Circulating Pro-BDNF and BDNF Be Potential Biomarkers?	Luisella Vigna, Federica Morelli, Gianna M. Agnelli, et al.	Evidence-Based Complementary and Alternative Medicine	2019	H. erinaceus group (n = 40): 3 capsules/day of H. erinaceus supplement for 8 weeks, along with a low-calorie diet; Control group (n = 37): Low-calorie diet only	77 volunteers (62 females, 15 males) with BMI ≥ 25 kg/m ²	8 weeks	Depression, anxiety, and sleep disorders assessed by Zung's Self-Rating Depression and Anxiety Scales, Symptom Checklist-90 (SCL-90), and Pittsburgh Sleep Quality Index (PSQI); Binge eating assessed by the Binge Eating Scale (BES); Serum levels of pro-BDNF and BDNF	that H. erinaceus, in combination with a low-calorie diet, significantly decreased anxiety score (>35%), depression score (25%) and sleep disorders; increased serum pro-BDNF levels (25%) without affecting BDNF levels