



**The Mushroom Council Request for Proposals
Role of Mushrooms in Neurocognitive Health
Deadline to Respond – July 15, 2019**

The Mushroom Council (Council), authorized under the Mushroom Promotion, Research, and Consumer Information Act of 1990, conducts research to discover new and/or add validity to the health and nutrition benefits of eating mushrooms. Mushrooms are biologically distinct and nutritionally unique with important nutrients including vitamin D when exposed to ultraviolet light, and ergothioneine, an amino acid with antioxidant activity. Research focuses primarily on the unique composition and impact of *Agaricus bisporus* (white, crimini, portabella) mushrooms, and/or culinary specialty mushrooms including but not limited to oyster, lion's mane and maitake.

The Council invites **non-binding proposals** to investigate in a clinical trial the effects of the daily consumption of mushrooms on neurocognitive health, mental health/anxiety/depression as a primary outcome. Secondary outcomes related to neurocognitive health, general health and well-being (for example, changes in inflammatory markers and/or cardiovascular risk factors, blood pressure, blood lipids, blood glucose and insulin response) are to be included. The intervention is to include one or more of the following mushrooms:

- 84 g raw (*Nutrition Facts* serving) or ½ c cooked (serving of vegetables in the USDA food patterns) of white button mushrooms, the most popularly consumed mushroom
- 84 g raw or ½ cup cooked white button mushrooms providing 100% Daily Value for vitamin D, recognized as an under consumed nutrient by the 2015-2020 *Dietary Guidelines for Americans*
- ½ cup cooked oyster mushrooms having ergothioneine levels above the *Agaricus bisporus* variety
- Other specialty mushrooms will be considered based on the investigator's rationale for inclusion.

For information on the role of ergothioneine in conditions of aging related to cognitive impairment, see "Micronutrients and bioactive compounds in mushrooms: A recipe for healthy aging? Beelman, RB, Kalaras MD, and Richie Jr. JP. *Nutr. Today*. 2019;54(1). For information on the ergothioneine content of mushrooms see: "Identification and Quantification of Ergothioneine in Cultivated Mushrooms by Liquid Chromatography-Mass Spectroscopy", Dubost J et al. *International Journal of Medicinal Mushrooms*, Vol. 8, pp. 215–222 (2006). For previous research on mushrooms and beneficial effects on age-related deficits in cognitive and motor function, see: "Daily supplementation with mushroom (*Agaricus bisporus*) improves balance and working memory in aged rats." Thangthaeng N, Miller MG, Gomes SM and Shukitt-Hale B. *Nutrition Research*, 2015. Vol 35, Issue 12, pp 1079-1084. For additional information on research on mushrooms and health see:

<https://www.mushroomcouncil.com/nutrition-benefits/>

Proposal Submission Requirements and Timeline

The Proposal is not to exceed 5 pages in non-technical language that describes what the research proposes to do, approximate cost and must include the following:

- Brief/pertinent literature review limited to 1 page to establish current relevance of the study.



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- Specific objectives and methods to meet the research goal and estimated timeline. An acute/short term study must be completed within 2 years and published in a peer-reviewed journal by 2023 for consideration during deliberations of the 2025 Dietary Guidelines. Findings from the acute/short term study can inform the design of a longer-term intervention trial if described in the Proposal.
- Total budget by broad category such as personnel, supplies/materials. **It is the policy of the Council not to pay administrative overhead or management costs.** In general, acute/short-term clinical studies do not exceed \$250,000 without significant rationale for the study design provided by the principal investigator. Investigators may be invited to extend the short-term study into a longer-term intervention depending on initial findings.
- Quantity of the mushroom/mushrooms selected for the intervention/s; white button, white button with 100% DV vitamin D, oyster or other specialty variety (per justification by the investigator)
- Experience of the personnel/institution responsible for the research. A separate CV of the principal investigator not to exceed 2 pages may be submitted along with the 5-page proposal

Mushroom Council staff, consultants, selected members of the Council's Nutrition Research Advisory Panel and others with expertise in the specific research area will review and evaluate Proposals on clearly stated objectives and methods, cost-effectiveness, timeliness and impact potential. Successful applicants will be notified by September 20.

Return full proposals in a Word file via e-mail by noon Pacific Time Monday, July 15 to Mary Jo Feeney, MS, RD, FADA, FAND Nutrition Research Coordinator, Mushroom Council, mj@feeney.us.com.