Request for Proposal – Nutrition Research

FY 2027

Objective

The National Watermelon Promotion Board (NWPB) is inviting investigators to submit proposals by **Monday**, **December 21, 2026**, for research related to investigating the potential human health benefits of watermelon consumption. The Board's overarching goal is to generate high-quality, publishable evidence that supports clear consumer messaging and helps increase demand for fresh watermelon in the United States.

The NWPB's specific areas of nutrition research interests are outlined below.

NWPB Nutrition Research Areas of Interest

The NWPB is interested in investigating the potential human health benefits of consuming watermelon, including the flesh, rind or juice (edible portions). For the 2027 research funding cycle, NWPB's primary nutrition research priority is **randomized human intervention research** on watermelon consumption and vascular health. A separate, smaller funding track supporting focused exploratory research on emerging topics is also of interest.

PRIMARY Research Priority: Vascular Health

The NWPB seeks additive research that advances understanding of how realistic amounts of watermelon affect vascular health, especially in people at increased risk of chronic disease. Eligible interventions may use watermelon flesh, edible rind, or juice, including juice blended with edible rind. Animal and in vitro studies are not eligible. Published human trials have used different watermelon forms, populations, durations, and vascular measures, with mixed findings; there is a need for larger, longer, well-powered studies and careful distinction between vascular function, blood pressure, and mechanistic biomarkers.

Priority Characteristics for 2027 Proposals

Multi-endpoint designs that align with the following characteristics and efficiently address both vascular and consumer-facing outcomes within a realistic budget are encouraged.

- **Population:** Proposals should give a clear rationale for the selected risk group and explain how it adds to existing human evidence. Groups not fully covered by ongoing trials are preferred and include, but are not limited to, African-American, Hispanic/Latino adults, and adults ≥65 years, or other higher-risk populations.

- **Practical watermelon servings:** Proposals should test amounts people could realistically consume: typically one or two, 2-cup servings of fresh watermelon

per day (2–4 cups total, can include edible rind), or 8–16 fluid ounces of watermelon juice per day (can be a blend with edible rind).

- **Blood pressure and vascular function:** Proposals should include a blood-pressure assessment and, where feasible, at least one direct measure of endothelial function or arterial stiffness. Applicants may select the methods that best fit their scientific question and budget. Examples include ambulatory or standardized office blood pressure, flow-mediated dilation (FMD), and pulse-wave velocity (PWV).
- **One primary endpoint:** Each proposal must identify one primary vascular endpoint and one primary timepoint, and provide a power calculation for that endpoint. The other required or proposed vascular measure should be identified as a key secondary outcome unless it is separately powered. Secondary outcomes should have a clear physiological or consumer-relevant rationale.
- **Duration and design:** Randomized controlled trials are preferred. Parallel and crossover designs are eligible; crossover proposals must justify the washout period and address period and carryover effects. Intervention periods of 8–16 weeks are preferred, with longer or shorter durations considered when scientifically justified and in consideration of the budget. A 12-week intervention is encouraged when feasible to test effects beyond the short durations used in earlier studies.
- **Consumer relevance:** Applicants should state whether watermelon is being added to the usual diet or replacing another food, since these are different research questions. Include a practical plan to assess adherence and, where relevant, acceptability, tolerability, and dietary substitution. Describe how the results could inform accurate consumer education without making claims beyond the evidence.

Example Research Topics of Interest

The examples below are illustrative, not exhaustive. Proposals do not need to include every measure; applicants should select outcomes that fit a clear hypothesis and the proposed budget.

<u>Vascular and functional outcomes</u>

- Blood pressure, including 24-hour ambulatory or standardized office measurements
- Endothelial function, such as flow-mediated dilation (FMD)
- Arterial stiffness, such as pulse-wave velocity (PWV)
- Blood flow or vascular reactivity measured using a validated method

<u>Optional mechanistic or translational measures</u>

- Nitric-oxide pathway: plasma citrulline and arginine, ADMA, arginine-to-ADMA ratio, or blood and urine nitrate/nitrite

- Endothelial activation and inflammation: soluble VCAM-1, CRP, IL-6, TNF, or MCP-1. These biomarkers do not replace a direct vascular-function measure.
- Oxidative stress and antioxidant status: oxidized LDL, glutathione, SOD, or catalase
- Lipids and atherogenic risk: ApoB, lipoprotein(a), LDL or HDL particle measures, or HDL function
- Gut–vascular links: TMAO, short-chain fatty acids, endotoxemia markers, microbiome, or metabolomics measures

Funding Details

The NWPB will award **up to $125,000** per project for studies focused on the primary vascular research priority. Applicants may leverage institutional resources, existing infrastructure, co-funding, or in-kind support, but must show that the proposed design and sample size are feasible within the requested NWPB funds.

EMERGING Research Priorities

The NWPB also welcomes focused exploratory human intervention studies on emerging topics, including but not limited to:

- Cognitive health and function
- Mood
- Gut health and immunity
- Skin health, wrinkles, and hydration

Emerging-topic proposals must identify one clear primary outcome and use an appropriate design for the stated exploratory question. A primary vascular endpoint is not required for this funding track. Vascular outcomes may be included when scientifically justified, but should not displace the main outcome of the proposed emerging-topic study. Only human studies will be accepted; uncontrolled intervention studies, animal studies, and in vitro studies will not be considered.

The NWPB will award up to **$50,000 per project** for emerging-topic studies. These awards are intended for simple, focused exploratory projects—not broad multi-endpoint studies or definitive efficacy trials. Applicants should explain what the study can establish within its sample size and budget.

Study Design and Analysis Requirements

All proposals must:

- Use a human intervention design with a control or comparator. Randomized controlled trials are preferred. Uncontrolled intervention studies are not eligible.
- Clearly describe the watermelon product, dose, delivery, comparator, intervention duration, and adherence-monitoring plan.

- Define inclusion and exclusion criteria, recruitment methods, retention plans, and relevant participant-safety procedures.
- Identify the primary endpoint, primary timepoint, statistical model, and sample-size assumptions. State the number to be randomized and the number expected to complete the primary assessment, accounting for attrition.
- Describe how missing data and multiple secondary comparisons will be handled. Do not present underpowered secondary analyses as confirmatory findings.
- Prespecify how medication use, usual diet, physical activity, and other factors that could affect the outcomes will be handled. Participants should not be asked to stop prescribed treatment; proposals enrolling people with clinical risk factors should describe appropriate safety oversight.

Proposal Requirements

Proposals must be submitted electronically as a Word document and received no later than **5:00 p.m. ET on Monday, December 21, 2026**. The proposal should not exceed five pages. Budget details, references, CVs, and necessary attachments do not count toward the five-page limit. The abstract should not exceed 500 words; study objectives should not exceed 500 words.

Include the following:

1. **Project title**
2. **Project duration**, with proposed start and end dates and key milestones
3. **Investigators:** Identify the principal investigator responsible for the research and expenditure of funds, all collaborators, affiliations, and complete contact information
4. **Abstract** (maximum 500 words)
5. **Study objectives** (maximum 500 words)
6. **Justification:** Summarize relevant published work, investigator expertise, and how the proposed study advances the evidence base
7. **Approach and methods:** Describe the design, intervention, comparator, population, primary and secondary outcomes, sample-size and power calculation, adherence plan, statistical methods, human-subjects protections, and trial-registration plan
8. **Anticipated limitations** and steps to address them
9. **Study timeline** with key events and estimated dates
10. **Proposed dissemination:** Identify likely conferences and/or publications and approximate timing. Publication of results, including null findings, is expected.

11. **Detailed budget:** List direct costs and include a separate line item for purchasing watermelon. Explain any institutional resources, co-funding, or in-kind support used to make the design feasible.
12. **CVs** for all investigators

Budget policy

The award caps are strict. Under NWPB bylaws, research grants to universities and government agencies may not be used to cover administrative or indirect costs. All grant funds must be used for the approved research objectives and agreed-upon direct research costs, such as research labor, laboratory or clinical-core services, equipment use, participant-related costs, and watermelon purchases. List and justify each cost in advance; any equipment or other substantial expense must be agreed upon before award approval.

Review Considerations

Proposals will be reviewed for:

- Scientific rigor and clarity of the primary endpoint and power calculation
- Additive value relative to published evidence and the NWPB research portfolio
- Relevance of the population and intervention to realistic watermelon consumption
- Feasibility of recruitment, adherence, methods, timeline, and budget under the applicable strict cap
- Quality of the analysis, human-subjects protections, and dissemination plan

Funding decisions will be communicated by **March 15, 2027**.

Proposal submissions and questions should be directed to (both):

- Mark Arney, Executive Director: marney@watermelon.org
- Rebekah Dossett, Director of Operations & Industry Affairs: rdossett@watermelon.org

About National Watermelon Promotion Board

The National Watermelon Promotion Board (NWPB), based in Winter Springs, Florida, was established in 1989 as an agricultural promotion group to promote watermelon in the United States and in various markets abroad. Funded through a self-mandated industry assessment paid by nearly 700 watermelon producers, handlers and importers, NWPB mission is to increase consumer demand for watermelon through promotion, research and education programs.

A 2-cup serving of nutrient-dense watermelon is an excellent source of Vitamin C (25% DV), a source of Vitamin B6 (8% DV), and a delicious way to stay hydrated (92% water), with only 80 calories per 2-cup serving. Watermelon consumption per capita in the

United States was roughly 15.4 pounds in 2025. Watermelon consumption in the United States was nearly 5.3 billion pounds in 2025. Additionally, the United States exported 363 million pounds of watermelon. For additional information, visit www.watermelon.org.

NWPB Nutrition Research Program

The NWPB believes in the power of nutrition research to educate consumers. The research committee, comprised of members of the watermelon industry, directs and prioritizes the research projects to be conducted on behalf of the NWPB. The NWPB has conducted nutrition research for over 20 years and has contributed millions of dollars towards funding studies.