A Unifying Vision for Scientific Decision Making: The Academy of Nutrition and Dietetics' Scientific Integrity Principles

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ABSTRACT

In 2014, recognizing the need to have a single document to guide scientific decision making at the Academy of Nutrition and Dietetics (Academy), the Council on Research was charged with developing a scientific integrity policy for the organization. From the Council on Research, four members volunteered to lead this workgroup, which reviewed the literature and best practices for scientific integrity from well-respected organizations, including federal funders of research. It became clear that the scope of this document would be quite broad, given the many scientific activities the Academy is involved in, and that it would be unreasonable to set policy for each of these many situations. Therefore, the workgroup set about defining the scope of scientific activities to be covered and envisioned a set of guiding principles, to which policies from every organizational unit of the Academy could be compared to ensure they were in alignment. While many relevant policies exist already, such as the requirement of a signed conflict of interest disclosure for Food & Nutrition Conference & Expo speakers, the Evidence Analysis Library funding policy, and the Academy's sponsorship policy, the scientific integrity principals are unique in that they provide a unifying vision to which future policies can be compared and approved based on their alignment with the principles. The six principles outlined in this article were approved by the full Council on Research in January 2015 and approved by the Academy's Board of Directors in March 2015.

This article covers the scope of the principles, presents the principles and existing related resources, and outlines next steps for the Academy to review and revise current policies and create new ones in alignment with these principles.

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BACKGROUND AND SCOPE

SCIENTIFIC INTEGRITY ENSURES the high quality and objectivity of scientific activities conducted at or funded by the Academy of Nutrition and Dietetics (Academy) and its Foundation. Science is the foundation of the profession of dietetics and is at the center of the Academy's mission and vision.[1] To maintain the trust of the public and the profession in the science of nutrition and dietetics, care must be taken to ensure that scientific activities are funded, conducted, and disseminated in an ethical, credible, and transparent way.

Scientific activities include the conduct of research, both generating data de novo and aggregating existing data, as well as conducting quality-improvement projects and disseminating scientific information. These principles should* apply to the scientific activities conducted directly (intramural research) and funded (extramural research) by the Academy's many units, including dietetic practice groups and the Academy Foundation. Figure 1 provides examples of ongoing initiatives at the Academy that fall into these groupings of scientific activities. Academy members, registered dietitian nutritionists (RDNs), and nutrition and dietetics technicians, registered, might also wish to use these six principles when faced with issues of scientific integrity in their own workplace and practice.

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SCIENTIFIC INTEGRITY PRINCIPLES

The scientific integrity principles and the categories of activities (I=intramural research, E=extramural research, D=dissemination) they are most likely to relate to are presented as follows, with discussion of the literature reviewed, the Council's reasoning on the importance of each principle, and any resources for further understanding the principle or developing relevant policies.

I. Ethical Conduct of Research and Protection of Human Subjects (I, E)

Research conducted or funded by the Academy or its foundation should be held to the highest ethical standards.

Research is defined by the Code of Federal Regulations as "a systematic investigation, including research development, testing, and evaluation, designed to develop or contribute to generalizable knowledge."[2] While quality-improvement work is not considered to be generalizable beyond the facility or institution at which it occurred, setting it apart from research, there is often a fine line between research and quality improvement.

*Note that throughout the document "should" is used—there may already be policies in place to ensure the principles are applied; however, for consistency with those policies that require development, "should" is used throughout.

Conducting research (intramural research)

- Dietetics Practice Based Research Network (DPBRN) research projects
- Evidence Analysis Library (EAL) systematic reviews
- Aggregation of data within the Academy of Nutrition and Dietetics Health Informatics Infrastructure (ANDHII)
- Surveys by marketing, membership, committees, and dietetic practice groups (DPGs)
- Quality-improvement projects by the Nutrition Services Coverage unit
- Program evaluation by the Academy Foundation

Funding scientific activities (extramural research)

- Grants to graduate students, independent researchers, and Academy researchers by the Academy Foundation
- Grants to graduate students, independent researchers, and Academy researchers by DPGs
- Contracts by Academy teams to contract research organizations to conduct surveys and professional evaluations

Disseminating science (to the public and the profession)

- Media contacts by Academy spokespeople
- Academy Positions/Practice Papers
- Continuing professional education (CPE) opportunities approved by the Center for Professional Development including Food & Nutrition Conference & Expo (FNCE) and DPG meetings/conferences and newsletter articles
- Publication and presentation of research findings conducted or funded by the Academy
- Development of evidence-based nutrition practice guidelines by the EAL
- Development of nutrition education for the public, including eatright.org and Kids Eat Right.

Figure 1. Examples of scientific activities currently occurring at the Academy of Nutrition and Dietetics.

Therefore, quality-improvement activities initiated or funded by the Academy should adhere to the same standards as research. An entity independent of the investigator (often an Institutional Review Board) should determine whether human subjects' protections are required. Policies to support the ethical conduct of research are laid out by the Code of Federal Regulations.[2] Research misconduct (falsification, fabrication, plagiarism) must be avoided.[3] Protection of human subjects is paramount; like the federal agencies,[2] the Academy should require that research be reviewed and approved by an Institutional Review Board and/or ethics committee (international equivalent of Institutional Review Board) before initiating the work. Also in keeping with federal funders and conductors of research,[4] the Academy should require that investigators and grantees be trained in the protection of human subjects, using either Collaborative Institutional Training Initiative training[5] (if accessible through their home institution) or the Academy's research ethics for the RDN modules.[6]

II. Publication of Research (I, E)

Every effort should be made to publish research conducted or funded by the Academy, regardless of funding source or outcome. No funders or funding agreements may limit the ability to publish.

Negative findings add to the literature as much, or more than, positive findings. Publication in peer-reviewed journals is encouraged, but other outlets, such as dietetic practice groups' newsletters, can also be appropriate for smaller projects and those that are not accepted for major journals. Authorship guidelines for work conducted by the Academy have been established and are based on the International Committee of Medical Journal Editors guidelines.[7] Publication should clearly follow principle VI, disclosure of funding source and conflicts of interest, also covered by the International Committee of Medical Journal Editors.[7]

III. Funder's Influence on Research Question/Education Content (I, E)

The influence of the funder on the research question and methodology must be differentiated and disclosed. Policies must be developed to determine where on this continuum is acceptable, which may vary for the type of project proposed.

While industry funding of research and resulting reporting bias, particularly by pharmaceutical companies, was of major concern in the early 2000s,[8] recent meta-analyses have more mixed results,[9-11] suggesting that the influence of funding source on research outcome may have lessened over time.[12] An analysis of all articles reviewed in the Academy's Evidence Analysis Library suggests that funding source does not affect research outcomes in nutrition studies.[13] Some have suggested that one reason for early data showing differences in industry-funded studies is that industry is likely to "ask the right questions" and design methodologically sound studies that are more likely to obtain the outcomes they hope for.[10] There is a continuum in this relationship/influence. This continuum is outlined in Figure 2. The type of relationship should be established early on, formalized in a contract, and disclosed. It is generally appropriate that agreements be developed as grants; that is, the recipient receives funds or support to complete a project with little involvement from the funder.[14] However, in some cases, cooperative agreements—in which both the funder and the grantee remain involved—may be more appropriate.[14] Developing a standardized