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Editorial: Guide for authors at *Neurobiology of Aging*

The new Guide for Authors is available here: https://www.sciencedirect.com/journal/neurobiology-of-aging/publish/guide-for-authors

This Guide provides an excellent overview of the style and format for manuscripts submitted to the journal, consistent with other Elsevier journals. There are, in addition, some features of the articles appearing in *Neurobiology of Aging* that are specific to this journal. In this editorial, I would like to highlight these specific features and clarify some questions that authors have raised regarding the manuscript submission guidelines.

1. Aims and scope

The journal has a wide scope of topics, ranging from genetic and cellular studies of animal models, to cognitive functioning in healthy aging and Alzheimer's disease. In addition to the topics listed in the Guide, we publish articles using neuroimaging techniques, including structural and functional magnetic resonance imaging (MRI), positron emission tomography (PET), and electroencephalography (EEG). We encourage authors to send us their best neuroimaging research that is relevant to understanding both healthy aging and age-related neuropathology. Priority will be given to hypothesis-driven studies designed to address specific theoretical issues.

Biomarker reports using neuroimaging are welcome, but as with other biomarkers, the authors should consider the novelty of the biomarker and its relationship to disease mechanisms, the potential of the biomarker to reveal insight into those mechanisms, the clinical potential of the marker for differential diagnosis, and the reliability of the supporting data based on the sample size and statistical validation.

For studies of Alzheimer's disease and mild cognitive impairment, we ask that imaging or biomarker evidence either be used for patient diagnosis or used as an outcome variable. We recognize that publicly available data sets do not always follow this approach in classifying groups of Alzheimer's patients. However, the data sets do often include biomarker data. Given that the current standards for patient diagnosis emphasize biomarker evidence, and the focus of the journal on neurobiological mechanism, either classification of patients from imaging \biomarker evidence, or including biomarker outcome variable(s), is required.

Studies of other neurological disorders, such as Parkinson's disease, amyotrophic lateral sclerosis, and cerebrovascular disease, are less clearly within the scope of the journal and usually will be a better fit for either our companion journal, Aging Brain, or for a neurological journal.

For all topics, lower priority will be given to exploratory studies that are reporting correlations or observed differences, without a sufficient theoretical context. Studies that are primarily epidemiological in nature are not within the scope of the journal.

For animal studies: Reports of research with animal models should state specifically, in the title of the manuscript, the species of the animals that were used in the research.

Mendelian randomization: While we appreciate that Mendelian randomization can provide interesting causal insights, we are receiving a large number of submissions in this area with limited numbers of available and willing reviewers to evaluate those studies. We can therefore only consider manuscripts where there is a sufficiently substantive or novel insight into the neurobiological mechanisms of aging or aging-related diseases.

Alternative medicine: Studies of issues and variables related to alternative medicine, without substantive analyses of neurobiological mechanism, will generally be a better fit for another journal.

For all manuscripts, higher priority will be given to those that include age as a variable in the analyses. This is often accomplished by including one or more age groups for comparison, though age may also be implemented as a continuous variable. Hypotheses regarding age-related effects, based on current theories in the relevant literature, should be tested statistically. Studies that are limited to a single group of older individuals or animals will be generally not be considered, though exceptions are noted, for example, in the case of longitudinal studies, or when an outcome variable (e.g., white matter hyperintensities) is not typically present in younger individuals.

2. Article structure

The Guide for Authors recommends that the abstract be concise, within a limit of 250 words. Section headings are not needed for the Abstract.

Note that each highlight should be limited to 85 characters, including spaces.

The Guide refers to a *Theory and Calculation* section, but this is not a section that is typically required for this journal.

Please use an author-date format for references in the text and reference list, rather than a numbered format. Citation-management software will have a template available for this journal. It is helpful to include the digital object identifier (DOI) for each journal article in the reference list. In the reference list, include all authors for each entry.

When creating tables, format them as regular text and not images. Do not include vertical lines, banners, or shading within table cells. In a note at the bottom of the table, spell out any abbreviations in the table so that it can be understood independently of the text.

When including tables in Supplementary Material, review the pdf file created in the portal to determine that the table is legible. For example,

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if the table was created in landscape orientation, make sure that this orientation for the table is preserved when creating the pdf.

When creating figures, make sure that they are legible and can be understood independently of the text. Attend to font size. If using different panels within a figure, label them A, B, C, etc. Make sure that each axis is labeled with an appropriate metric. The label *Age* on a numerical scale is not sufficient unless there is accompanying designation of months, years, or the actual metric for age. In the figure legend, spell out any abbreviations and explain any variable names if needed.

For review articles, because we receive many such submissions, we must give priority to those that have specific, quantifiable search criteria for identifying relevant articles from the literature, as described, for example in the Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) guidelines: http://www.prisma-statement.org/.

The Guide for Authors refers to a *Verification* statement. This is simply a statement that the corresponding author verifies the statements in the *Submission Declaration* to be true. The following is an example of a Verification statement:

The Corresponding Author declares that this work has not been published previously except in the form of abstracts, that it is not under consideration for publication elsewhere, and that its publication has been approved by all authors and tacitly or explicitly by the responsible authorities where the work was carried out, and that, if accepted, it will not be published elsewhere in the same form, in English or in any other language, including electronically without the written consent of the copyright-holder.

3. Use of inclusive language

Authors should avoid using terms that have biased or negative connotations, such as *elderly* or *aged*. Such terms represent the subjective evaluation of the speaker rather than an objective classification or state of the individual. Instead, please refer to *older adults* or *older individuals*. The term *older* conveys more objectively the differences among individuals in chronological age. This issue is less relevant for animal studies, but even in this area it is better to focus on descriptors that have an objective rather than subjective basis.

Similarly, authors should avoid terms such as *non-demented older adults* or *unimpaired older adults*. These types of phrases, while grammatical, can imply that we would expect older adults to be demented or impaired. Instead, please use phrases such as *older adults without cognitive impairment,* or even just *healthy older adults.*

For human studies, the term *participants* is preferred to *subjects*.

4. Interpreting age-related effects

The majority of studies in the journal are cross-sectional, with age represented as the differences among individuals of different ages, though longitudinal analyses are also included. In each case, the analyses are usually conducted within the general linear model, such that age-related effects are reflected in statistical main effects and interaction terms. Authors should recognize that correlation is not causation. Because significant statistical effects among individuals, or across time, are observed, this does not mean that age is causing the observed effect, or that any of the other variables have a causal relation to each other. Some statistical methods, such as structural equation modeling, path analyses, and mediation analysis, do provide the opportunity to interpret the causal relations among variables. If there is an intervention with appropriate controls, that can also provide the basis for inferring a causal influence. But the conventional correlational and analysis of variance techniques, within the general linear model, allow for the interpretation of the correlations or associations among variables rather than causal influences. Thus, when describing observed results from correlational analyses, authors should refer to age-related differences, or associations, differences, or relations among variables (i.e., moderating effects), not the causal effects of variables on each other. It is appropriate to refer to statistical effects as such, and when discussing the theoretical mechanisms potentially responsible for observed statistical effects, in the Introduction and Discussion, it is appropriate to refer the causal effects of variables. But when reporting the observed results from correlational analyses, the findings should be described as correlations or associations among the variables.

Similarly, when discussing the statistical effects associated with age, in cross-sectional studies, authors should refer to age-related *differences* and avoid the term *changes*. It is appropriate to refer to *change* in a longitudinal study, which provides the opportunity to measure actual change within individuals over time.

David J. Madden[a,b,1,*]
[a] *Department of Psychiatry and Behavioral Sciences, Duke University Medical Center, Durham, NC, USA*
[b] *Brain Imaging and Analysis Center, Duke University Medical Center, Durham, NC, USA*

[*] Correspondence to: Brain Imaging and Analysis Center, Duke University Medical Center, Box 3918, Durham, NC 27710, USA
E-mail address: david.madden@duke.edu.

[1] Editor-in-Chief