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## New PRISMA guidelines for systematic reviews

– Kate Krause

If you write systematic reviews, you should be using the new [PRISMA 2020 Statement](#). Despite the name, these new guidelines just came out in 2021. They include extensive changes to the previous 2009 version.

The main changes to each of these parts are outlined below:

### Flow diagram

There are now [four PRISMA flow diagram templates](#) to choose from instead of one. They all require more detail than the previous version’s diagram and contain additional columns and boxes. In all four new diagrams, you now need to record the number of:

- studies found in registers as well as databases,
- duplicate records removed (both manually and with software),
- studies found by searching websites and/or organizations,
- full-text articles you were not able to obtain,

- studies identified by searching the references in the studies you've chosen to include in your review, and
- studies included versus the number of articles about the studies.

The two flow diagrams for new reviews include one diagram for reviews of studies identified by databases and registers only and one diagram for reviews that also include studies found through other sources such as websites, organizations, and citation searching.

The two flow diagrams for updating an out-of-date review also include a diagram for reviews that search databases and registers only and a diagram for reviews that also use other sources. In addition, they have separate columns for tracking the numbers of studies in the original systematic review and in the update. You add the results together at the bottom of the columns.

### Checklist

The [PRISMA 2020 checklist](#) is an outline that lists everything you need to include in your manuscript. The previous version was useful only for systematic reviews about interventions, not for those about other research topics. PRISMA 2020 now is useful for a broader range of research questions, such as prevention, diagnostic accuracy, and economic analysis. There are still only 27 sections, but many now have up to six separate subsections. A few of the main changes:

- There is a format for writing a structured abstract.
- You must include the search strings for all databases.
- You must present assessments of certainty (or confidence) in the body of evidence for each outcome assessed.
- If you analyze groups or subgroups of studies, you must explain the criteria and processes used to group the studies. "Characteristics of Studies" and "Risk of Bias" tables are now required for each group, instead of all studies as a whole.
- There is a new section for administrative information (protocol registration, conflicts of interest, data availability, etc.).

There are many more changes. Take a look at the new checklist before you start your next systematic review so that you'll know what requirements you need to meet and how to conduct your project.

For more information on PRISMA 2020 and other systematic review topics:

- Visit the library's help guide: <https://mdanderson.libguides.com/systematicreviews>
- Watch the library's videos: <https://www.youtube.com/user/mdandersonlibrary/videos>
- Request an online consultation with a librarian: <https://mdanderson.libwizard.com/f/consult>

## Top tips for writing article titles

– Stephanie Deming

The title introduces readers to your article. A well-written title clearly conveys what the article is about and includes enough detail for readers to understand how the article differs from others in the same field. To make a good first impression with readers, follow these tips for writing the title.

### Titles of research articles, review articles, and case reports

- **Make the title specific by including key terms that describe your work** (1,2), e.g., [“Association of Medicaid expansion with mortality disparity by race and ethnicity among patients with de novo stage IV breast cancer.”](#) A specific title helps readers understand whether your article matches their area of interest. Additionally, readers may mistakenly believe that an article is a review article if its title is very general (1,2).
- **Consider mentioning the type of study in the title** (1,2). Several widely endorsed reporting guidelines, including the CONSORT Statement (3) for randomized controlled trials, PRISMA Statement (4) for systematic reviews and meta-analyses, and CARE guidelines (5) for case reports, state that the study type should be mentioned in the title, e.g., [“Characteristics of clinical trials evaluating biosimilars in the treatment of cancer: a systematic review and meta-analysis.”](#) For reports of other types of studies, mention the study type in the title if doing so would increase readers’ interest in the article, e.g., [“Pre-existing thyroid autoimmunity and risk of papillary thyroid cancer: a nested case-control study of US active-duty personnel.”](#)
- **If you choose to include a subtitle, use it to provide supplementary information, not information essential for understanding what the study was about** (1,2). For example, “Concurrent chemotherapy with radiotherapy in oropharyngeal cancer: pretreatment lymphocyte count predicts benefit” would be better written as [“Pretreatment lymphocyte count predicts benefit from concurrent chemotherapy with radiotherapy in oropharyngeal cancer.”](#) For research articles, subtitles are often used to state the study type, as shown in the preceding paragraph, or to provide the name of a study or of the group that conducted a study, e.g., [“Diabetes and mortality in men with locally advanced prostate cancer: RTOG 92-02.”](#)
- **Avoid phrasing the title as a question** (1). If you phrase the title as a question, readers may mistakenly believe that your article is an editorial or commentary. Also, a question is less informative than a direct description of what you found.
- **Follow the instructions of the journal that you plan to submit your article to** (2). Many journals limit titles to a certain number of words or characters. Some journals prohibit abbreviations in titles. A few journals prohibit “declarative titles,” (1) which are titles phrased as a complete sentence that presents the main findings, e.g., [“Increased co-expression of MEST and BRCA1 is associated with worse prognosis and immune infiltration in ovarian cancer.”](#) When declarative titles are prohibited, a phrase can be used instead, e.g., “Association of MEST and BRCA1 co-expression with prognosis and immune infiltration in ovarian cancer.”

- **Get feedback as needed.** Sometimes writing the title of a research article is challenging, especially if the research was complex. If you have trouble, write several possible versions of the title and send them to your co-authors for feedback. Often a clear favorite will arise, or a co-author will propose a revision that becomes the clear favorite.

### **Titles of editorials and commentaries**

Whereas titles of research articles, review articles, and case reports should generally be straightforward, formal, and serious (1,2), titles of editorials and commentaries can be provocative (1) (e.g., "[Do we really understand the relationship between expression of ACE2 and coronavirus disease 2019 lung pathophysiology?](#)") or clever (e.g., "[Beyond PACIFIC: uncharted waters](#)"). Also, in titles of editorials and commentaries, essential information can appear in a subtitle (1), e.g., "[Seed or soil: tracing the immune subsets in metastatic tumors](#)." Finally, titles of editorials and commentaries can be phrased as questions (1,2), as shown in the first example above and here: "[Metformin and survival: is there benefit in a cohort limited to diabetic women with endometrial, breast, or ovarian cancer?](#)"

### **References**

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### **Key points from NIH seminar: "Including diverse populations in NIH-funded clinical research"**

– Joe Munch

The National Institutes of Health (NIH) require that women, members of racial and ethnic minority groups, and individuals of all ages be included in NIH-funded human subjects research

unless there is a compelling reason for their exclusion ([NOT-OD-02-001](#), [NOT-OD-18-014](#), [NOT-OD-18-116](#)). In a recent virtual seminar, “[Including Diverse Populations in NIH-Funded Clinical Research](#),” NIH Inclusion Policy Officer Dawn Corbett gives an overview of how applicants can address this requirement in their funding applications.

As Ms. Corbett explains, applicants for clinical research funding must include plans for the inclusion of these groups on the PHS Human Subjects Clinical Trials Information form. In addition, applicants must state their plans for data analyses by sex/gender, race, and ethnicity (for NIH-defined phase III clinical trials) and provide an Inclusion Enrollment Report covering the location(s) of participant enrollment as well as data on the sex/gender, race, and ethnicity of the planned or actual participants. Reviewers will determine whether the inclusion plans are acceptable. (The guidelines for the review of inclusion plans are available [here](#).) Even for highly scored applications likely to receive funding, any inclusion plans reviewers deem unacceptable must be corrected before funds can be disbursed.

According to Ms. Corbett, a good inclusion plan provides all the required information, is appropriate in the context of the scientific question, and can be executed successfully. To build an effective inclusion plan, applicants should consider selecting trial outcomes that reflect participant concerns, limiting the use of unnecessary inclusion/exclusion criteria, and minimizing participant and caregiver burden; they should also plan to regularly assess participant recruitment and retention and make modifications as needed. Other points to keep in mind include the demographics of the source population, staff expertise, and budget.

The full seminar is worth a watch for any researcher ready to apply for NIH funding for clinical research. In addition to discussing the points above in greater depth and detail, Ms. Corbett presents several case studies of inclusion plans, reviews the relevant inclusion-related requirements for progress reports of funded grants, and provides additional guidance on uploading participant-level data to the NIH.

The virtual seminar is available [here](#). Additional videos covering NIH grants are available on the [NIH Grants YouTube channel](#).

## **Unusual terms used in scientific writing and publishing: NISO**

– *Bryan Tutt*

The National Information Standards Organization ([NISO](#)) is a nonprofit group whose purpose is to develop and maintain technical standards and recommended practices for information management. NISO standards include those for bibliographic and library catalog data, metadata for digital images, and technical specifications for audiobooks and audio substitutes to make print material accessible to people with print disabilities.

A NISO standard that is widely used in biomedical publishing is the Journal Article Tag Suite ([JATS](#)). JATS provides the XML format that publishers and archives such as PubMed Central use to exchange journal metadata and/or content.

Founded in 1939, NISO became known by its current name in 1984, a year after its incorporation as a not-for-profit education association. NISO's list of member organizations spans the public, private, and nonprofit sectors and includes publishing companies, libraries, professional associations, and software companies. NISO also provides various educational materials, which—like its standards and recommended practices—are available free of charge on NISO's website.

## Editing services

The scientific editors in the Research Medical Library help MD Anderson faculty and trainees get published and get funded. We provide a wide range of editorial, educational, and publishing services, free of charge, to the MD Anderson community, including

- editing grant proposals and research articles;
- providing one-on-one consultations with authors at any stage of the writing process;
- teaching workshops and giving lectures on writing research articles and grant proposals;
- teaching scientific English for non-native speakers; and
- providing writing advice and support, including [online writing advice](#).

For more information about our editing services and how to use them, please visit [Our Editing Services](#), or contact us at [RML-Editing@mdanderson.org](mailto:RML-Editing@mdanderson.org).

## Upcoming events for authors

*Please see the [Research Medical Library website](#) for more information about educational courses, a schedule of upcoming events, and recordings of past classes.*

**Writing and Publishing Scientific Articles (WAPSA).** The Writing and Publishing Scientific Articles course is online! Designed primarily for postdoctoral fellows, clinical trainees, and novice authors, this series of six modules offers practical advice on writing the sections of a biomedical research manuscript. This series is presented by experienced scientific editors in MD Anderson's Research Medical Library.

The dates for the next class are as follows:

**Tuesday, July 12, 2022:** Preliminary Steps  
**Thursday, July 14, 2022:** Introduction  
**Tuesday, July 19, 2022:** Methods & Results  
**Thursday, July 21, 2022:** Discussion  
**Tuesday, July 26, 2022:** Abstract & Title  
**Thursday, July 28, 2022:** Cohesion & Clarity

**[REGISTER HERE](#)**

*Registration is required through the Research Medical Library. Details: John McCool ([jhmccool@mdanderson.org](mailto:jhmccool@mdanderson.org)).*

**New self-paced courses for writing manuscripts and K99/R00 proposals.** Two scientific writing workshops developed by our expert scientific editors are now available as **self-paced** courses in Study@MDAnderson for MD Anderson faculty, staff, and students.

- **Writing and Publishing Scientific Articles (WAPSA)** guides participants through each step of writing a biomedical research manuscript. [Enroll in the self-paced course](#) with your MD Anderson address. Upon completion, learners will receive a certificate of completion.
- **The K99/R00 grant proposal workshop** provides practical advice on writing the Candidate Section, Specific Aims, and Research Strategy of an NIH K99/R00 application. Modules include:
  - Candidate's Background
  - Career Goals and Objectives
  - Plan for Career Development/Training Activities
  - Specific Aims Section
  - Research Strategy: Significance and Innovation Sections
  - Research Strategy: Approach Section[Enroll in the self-paced K99/R00 course](#) with your MD Anderson address. Upon completion, learners will receive a certificate of completion.

**Introduction to Systematic Reviews.** Thinking about writing a systematic review? This introductory 30-minute class gives a quick overview and briefly describes the steps in the process.

**August 4, 2022**

Join the class here:

<https://mdacc.zoom.us/join/9tJ6tZlpcurqjotE9Jxd6JIEcJ1xWLzbRJf5qpU>

**Online Courses in Scientific English for Non-Native Speakers of English.** The Research Medical Library offers two online courses for non-native speakers of English on the Study@MDAnderson platform. Both courses are **self-study** and **self-paced**, but students have access to an instructor for support and questions. For more information and to register, please click [here](#).

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