ASAPbio

Guiding principles and resources for journalists and science writers to aid the responsible media reporting of research posted as preprints.

Part of the Preprints in the Public Eye Project supported by the Open Society Foundations

---

Content

Definitions

Preprint: A form of scholarly communication that has been made publicly available by its authors. Most preprints are deposited on preprint servers and are generally permanently available. They are accompanied by metadata such as a list of authors and date of posting. Many preprint servers allow preprints to be versioned and some offer more advanced functions, like commenting, community endorsement, and direct submission of preprints to scholarly journals.

Preprint server: A digital archive for preprints. Most preprint servers screen preprints for adherence to straightforward criteria before they are posted. While meeting these criteria is not an indication of scientific validity, posting a preprint on a preprint server can facilitate its scrutiny by the scientific community. The level of such scrutiny for a given preprint can vary from none at all to extensive impartial evaluation by a number of experts in the field; it can vary between preprints on the same server.

Peer review: The formal invited assessment of the scientific validity of a piece of research by independent experts in the field.

Community review: Public feedback on a preprint.

Published: In this document, ‘published’ refers to a version of work that is made publicly available in a journal after it has undergone peer review.

Introduction

Any document that looks like a scientific article can be disseminated publicly and could be used to inform other research, policies, reporting, or public behavior. Although there are benefits to this sharing of research, such as encouraging pre-publication peer discussion of the research, there are also real-world dangers if apparently scientific content is accepted without peer review or community review.

Importantly, the scientific appraisal of original research and its public availability are often uncoupled. It is in the interest of public trust to be transparent about when an article is known to have been assessed by experts and when this is not known.

Here, we present tips and resources for journalists and science writers on the responsible reporting of research posted as preprints. This document is one of a set developed via the collective efforts of preprint servers, researchers, institutions, scientific journals, journalists, and science writers to encourage responsible science reporting and mutually complementary best practice across these fields.

Although the focus of these principles is on research posted as preprints, it is important to remember that peer review does not guarantee validity of the research and these principles are equally applicable to research published in peer reviewed journals.

Resources for journalists and science writers to aid responsible reporting of research posted as preprints.

The US National Institute of Health proposes these tips for communicators (shown in the pink box below) on making effective use of preprints. Here, we present some additional tips and links to resources for journalists and science writers on the transparent reporting of scholarly research.

While these tips refer to preprints, it is important to be aware that peer review is not a guarantee of scientific validity and the tips and guidance can apply equally to articles published in academic journals.

Tips for communicators

In addition to the NIH document, Making Effective Use of Preprints; Tips for Communicators (see pink box below) consider these points:

1. Consider including a full explanation of the terms 'preprint' and 'peer review' so that the reader understands the level of expert scrutiny the research has undergone and that the findings may be subject to change.
2. Preprints are available from a number of preprint servers (see ASAPbio preprint server directory) and indexing services beyond PubMed Central (PMC) and PubMed, such as Google Scholar, EuropePMC etc. When covering research reported in a preprint, include a reference to the preprint server or online platform where the paper is hosted and a link to the preprint itself.
3. Do not refer to a preprint as 'published'.
4. Consider the use of labelling to describe the study design as described by the UK Academy of Medical Sciences.
5. Include information on the limitations, generalizability and relevance or applicability of the work. Start by asking the authors and expand by consulting others with independent expertise in the field.

NIH's Making Effective Use of Preprints - Tips for Communicators

When citing preprints, be clear about it. Preprint records in PMC and PubMed are flagged with large banners that clearly identify them as preprints. These reported results have not undergone the scrutiny of peer review, and the methods reported have not been thoroughly critiqued. Remind your audience of this to avoid potential misunderstandings or misleading statements.

Approach preprint findings with a skeptical eye. Treat them at least as carefully as you would other sources of health and scientific information, including peer reviewed papers, presentation information, or official correspondence. Follow up and ask for expert opinions and interpretations to clarify and explain.

Continue to check if the preprint has been revised or published. Preprints may be updated in response to comments received or further examination by the authors. (Note: Preprint records will be clearly linked to later

versions of the paper in PMC and PubMed when available. The preprint record will not be removed from the archive when a later version is available.)

Don't be tempted by the allure of a single study. Avoid reporting publications in isolation. Make sure you look at other available knowledge and information. Each study is part of a larger base of knowledge, so be wary of any preprints that deviate from previous findings. Admittedly, this can be harder to discern with a new disease, like COVID-19, but even this disease has well-studied predecessors such as Severe Acute Respiratory Syndrome (SARS), Middle East Respiratory Syndrome (MERS), and other coronaviruses. PMC has tens of thousands of freely available full-text articles on coronaviruses.

Remember that preprints only relay preliminary information. This is even more significant when reporting on research that describes treatments. As health communicators, it's important to maintain public trust in research. Minimize reporting that might encourage clinicians or patients to make health decisions based on an individual preprint.

Potential resources to help journalists and science writers evaluate research.

These resources provide expert evaluation of research posted as preprints.

PREreview - A web platform for hosting preprint reviews and sharing them openly with everyone.

CrowdTangle - CrowdTangle is used by investigative journalists globally to discover stories and report on the spread of public content across social platforms.

Outbreak Science Rapid PREreview -This is a platform designed to facilitate rapid, open review of preprints related to outbreaks.

Sciety - A growing network where the latest biomedical and life science preprints are transparently evaluated and curated by communities of experts in one convenient place.

Preprint Review - Currently, this initiative from eLife allows submitting authors to opt in to have their manuscript reviewed on bioRxiv while considered for publication in the journal.

Review Commons - A platform that coordinates peer review of manuscripts before they are posted as preprints or submitted to a journal.

preLights – A service run by the biological community where a team of scientists regularly review, highlight and comment on preprints they feel are of interest to the biological community.

Early Evidence Base/EMBO An experimental platform that combines artificial intelligence with human curation and expert peer-review to highlight results posted in preprints.