Preprints in medicine - safeguarding the need for speed
Preprint (n):
a research manuscript yet to be certified by peer review and accepted for publication by a journal

Preprint server (n):
an online platform dedicated to the distribution of preprints
The case for preprints

- **Speed up science**: faster dissemination within the research community
- Allow pre-publication peer review and feedback, making ‘better’ articles
- Give authors precedence
- Surface data that may not survive peer review
- Freely available

"By removing the lag time to publication, after 10 years, there could be a five-fold acceleration in scientific discovery.” *Dr Steve Quake, CZI Biohub*

https://www.ibiology.org/biomedical-workforce/preprints/
Risk of surfacing incorrect data or assumptions that could be harmful to health...
Editorials

Electronic preprints: what should the *BMJ* do?

*BMJ* 1998; 316 doi: https://doi.org/10.1136/bmj.316.7134.794 (Published 14 April 1998)

Cite this as: *BMJ* 1998;316:794

Clear labelling might be the answer

Tony Delamothe, Deputy editor
Warning

Articles posted on this site have not yet been accepted for publication by a peer reviewed journal. They are presented here mainly for the benefit of fellow researchers. Casual readers should not act on their findings, and journalists should be wary of reporting them.
Screening considerations - before posting

Publication ethics

- Pseudoscience
- Promotional
- Plagiarism
- Defamation
- Patient identity

Clinical concerns - ‘do no harm’

- Dual-use research
- Vaccine safety
- Infectious disease transmission
- Toxicity/carcinogenicity
Risk mitigation

Is it nonsense?
Is it non-science?
Is it a paper?
Is it research?
Is it a health threat?
Is there a benefit to sharing now vs. after peer review?

1. Author undertakings
2. Automated check
3. CSHL Check
4. medRxiv Affiliate check
5. Escalation 1 - experienced Clinician-editor (pro tem)
6. Escalation 2 - medRxiv leadership
7. Posting and public discussion
Harmful to health?

What do clusters of similar HIV genetic sequences tell us about HIV risks in Africa?

“…most sex partners are in or close to home, genetic diversity showed little or no geographic structure in the three studies that looked at the issue. Evidence from these studies does not support the common view that sex accounts for most HIV infections in Africa. Studies did not do what they…”

Rejected from bioRxiv.
New Results

Report of Partial findings from the National Toxicology Program Carcinogenesis Studies of Cell Phone Radiofrequency Radiation in Hsd: Sprague Dawley® SD rats (Whole Body Exposure)

Michael Wyde, Mark Cesta, Chad Blystone, Susan Elmore, Paul Foster, Michelle Hooth, Grace Kissling, David Malarkey, Robert Sills, Matthew Stout, Nigel Walker, Kristine Witt, Mary Wolfe, John Bucher

doi: https://doi.org/10.1101/055699

This article is a preprint and has not been peer-reviewed [what does this mean?].
Preprints are preliminary reports of work that have not been peer reviewed. They should not be used to guide clinical practice, health-related behavior or health policy. They should not be reported in the media as established information.
Increasing the Mobility of EEG Data Collection Using a Latte Panda Computer

Linda Sussman, Kevin-John Black

doi: https://doi.org/10.1101/01000448

This article is a preprint and has not been peer-reviewed [what does this mean?]. It reports new medical research that has yet to be evaluated and so should not be used to guide clinical practice.
What is an unrefereed preprint?

Before formal publication in a scholarly journal, scientific and medical articles are traditionally “peer reviewed.” In this process, the journal’s editors take advice from various experts—called “referees”—who have assessed the paper and may identify weaknesses in its assumptions, methods, and conclusions. Typically a journal will only publish an article once the editors are satisfied that the authors have addressed referees’ concerns and that the data presented support the conclusions drawn in the paper.

Because this process can be lengthy, authors use the medRxiv service to make other scientists to see, discuss, and comment on the findings immediately. Readers should therefore be aware that articles on medRxiv have not been finalized by authors, might contain errors, and report information that has not yet been accepted or endorsed in any way by the scientific or medical community.

We also urge journalists and other individuals who report on medical research to the general public to consider this when discussing work that appears on medRxiv preprints and emphasize it has yet to be evaluated by the medical community and the information presented may be erroneous.
What happens once a preprint is live

- Prominent warnings
- Comments (moderated)
- Authors may submit a revised version
- Manuscripts receive a DOI, and are citable
- Bidirectional linking between preprints and later published versions
- Linked to retracted articles
- Very rare take-downs (and no guarantee of expunging the record)
Preprint research


https://www.nature.com/articles/d41586-019-00199-6 and
https://elifesciences.org/articles/45133
Thank you!

New preprint server for medical research
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