

Open access: a practical guide to publishing and accessing free research

Open access research has a higher readership and gets more citations, maximising impact. Here's how you can make your research freely available, and find free-to-read research papers.

Because science is a cumulative endeavour, shaped by and building upon the work that went before it, research that is freely available has a much greater impact. Open-access publishing also helps researchers: articles that are open access receive [considerably more citations](#) than those that are paywalled.

This guide offers an overview of the open access landscape in Europe and provides tips for alternative protein researchers looking to make their publications freely available via open access platforms.

The open access publishing landscape and European leadership

In 2018, the [Plan S open access coalition](#) was launched by several major research funders, including the European Union and national funding bodies from – among others – Austria, Finland, France, Ireland, Italy, Luxembourg, the Netherlands, Norway, Poland, Slovenia, Sweden and the UK. This plan mandated that, from 2021, all peer-reviewed research funded by the bodies in the coalition would be immediately made freely available – either via gold open access from the journal, or green open access via a repository.

Thanks to European leadership in open access policy, 39% of all papers published in the region are now open access, [significantly higher](#) than the global average of 30%. This figure is much higher ([over 83%](#)) for research funded directly by the EU.

However, these figures show there is still a long way to go, with significantly less than half of all research published freely available to other researchers and those (including the general public) without access to expensive journal subscriptions.

How to publish research open access

In practice, there are two main ways of publishing open access research: green open access, which is free and involves archiving the accepted manuscript in a repository (usually run by the research funder or researcher institution), and Gold open access, which is provided by the journal if the researchers can pay an Article Processing Charge (APC). These APCs are very expensive, [usually averaging around €2,000](#) per article but sometimes costing considerably more than this.

Below is a more detailed exploration of each of these options and how researchers can use them.

Green open access

Green open access is the [most common type](#) of open access used for European research papers. It involves the author uploading the accepted manuscript of the article (the version that includes all corrections from peer review but has not yet

been copyedited and typeset by the journal editorial team) to a repository.

If your funder or university has an institutional repository, this is usually the best place to upload your research paper. Some funders require that the research they fund is uploaded to particular repositories, so it's worth checking this if you aren't sure where to upload. The [OpenDOAR](#) directory is a good place to look for available open access repositories that you can use.

[Zenodo](#) is an open access repository built by CERN, and is the official repository for all EU-funded research. This repository is not exclusively for EU-funded research, however: anyone can upload research outputs to Zenodo for free. Zenodo can also be used to share other research outputs like datasets and code.

If your institution does not have its own repository, there are subject-specific repositories that can be used instead. However, depending on the policy of the journal you publish in, if your funder does not require immediate open access you may be required to wait for an embargo period before uploading your manuscript.

The different policies and guidelines of funders, universities and journals can be quite overwhelming, but tools such as the [Open Policy Finder](#) are available to help find this information more easily, and your funder or institution website (or the website of the journal you want to publish in) should have more information.

Preprints

Preprinting is another popular way of making research open access that originated in maths and physics but has recently expanded to other research areas. Preprinted articles are uploaded to a repository when they are submitted to a journal. [ArXiv](#) is one of the most popular preprint server families – with biology and health-specific servers [BioRxiv](#) and [MedRxiv](#) likely the most relevant for alternative protein research. This can also give researchers the opportunity to share their paper

more broadly with other researchers for informal review and input, and to help speed up access to relevant breakthroughs for others in the field. Once the article is accepted in a journal, the preprint can be updated with successive drafts up to the accepted manuscript, which can then serve as a green open access copy linked to the final published article.

It is important to remember, however, that preprinted articles are not yet peer-reviewed when first uploaded, and promotion of articles beyond the research community should only be done following acceptance in a peer-reviewed journal.

Metadata tools

As the free-to-read manuscript is not always the same version as that on the journal website, if you publish via green open access it is important to make sure the metadata (eg title, authors and date of publication) of your paper is correct to maximise findability. Tools like [Crossref](#) can be used to curate the metadata of your research outputs and make sure all versions and associated information (such as published datasets) are linked together. They do this by assigning Digital Object Identifiers (DOIs) to research outputs. These DOIs can be used to link a preprint with the final peer reviewed version of a manuscript, and to connect the green open access version and shared datasets in repositories with the final version on the journal website.

Gold open access

Gold open access is another option, offered by academic journals themselves, which makes the final, journal-typeset manuscript freely available to anyone viewing the article online. This is a very convenient option and maximises findability, but also comes with a hefty pricetag – usually several thousand euros – and so is not always an option for researchers with limited funding available.

Gold open access publishing is offered by several journals, some of which are ‘hybrid’, meaning they offer a gold open access option but also publish articles behind a paywall if authors choose not to pay the fee. Several of the most prestigious science journals, including Science and Nature, follow this model. Other journals are exclusively open access, meaning that all articles published in them are freely available to the public, and publication in said journals is always associated with article processing charges. Notable examples of such journals are Public Library of Science (PLOS) journals.

Predatory publishing and submitting your work to credible open access publications

Due to the highly lucrative nature of gold open access publishing, so-called ‘[predatory publishers](#)’ have sprung up to take advantage of researchers wanting to publish their work open access. These journals still charge article processing charges but typically have low editorial standards and poor (or non-existent) peer review processes. The definition of a ‘predatory’ journal is not robustly defined, and there are [broader concerns](#) that extend beyond just these fraudulent journals, which have led some research funders to [update their evaluation metrics](#) for research impact. It is therefore generally good practice to research a target journal's reputation before submitting.

Even if your research is of high quality, inadvertently publishing in a journal with credibility issues can undermine people's perceptions of your research, and it may appear beside low-quality and even spoof articles.

Guidelines such as [Think Check Submit](#) can be helpful to guide journal selection, and if it is possible to publish in a traditional journal and use a green open access platform to make your research available, this can help circumvent the issue.

How to find free-to-read versions of articles

If you are looking to read articles for free but do not have institutional access, there are a number of tools you can use to find freely available versions:

- **Use open access tools.** Free tools like [Unpaywall](#) and [Open Access Button](#) are web extensions linked to a database of green open access articles, connected using metadata to final publications. This tool can alert you to freely available versions and provide a link. Services like this make it especially important to ensure the metadata on your research outputs is appropriately linked using DOIs.
- **Ask the authors.** If a free version is not available via green open access, you can usually contact the corresponding author listed on the article to request a copy of the manuscript. Some journals provide authors with a unique link that allows them to share free access to the final version of the journal article with their peers.
- **Ask the journal.** Several journals have initiatives to help improve access to papers, and offer free access to manuscripts to members of the public or relevant professionals who request them under certain circumstances. This is more often the case for medical and health-related research, to [help patients access research](#) relevant to their own medical conditions without having to pay. There are also initiatives by certain journals to provide access to research in countries with more limited research funding. Information on these initiatives is usually available on the journal website if offered.

All of the above methods are legal and in compliance with the copyright requirements of scientific journals. It is therefore strongly

recommended to use these approaches and avoid looking for illegal pirated versions.

Why open access is important for alternative proteins

Increasing the proportion of alternative protein research that is published open access is particularly pressing, as much of the field's research is funded and conducted privately, and there is insufficient public funding available for the [most impactful R&D](#). Better access to available research would help accelerate progress and foster better collaboration between researchers in the field. It would also help ensure there is a diverse and competitive market for alternative proteins, by making research findings available to all companies, from early-stage startups to established players.

Key takeaways:

- Open access research helps both researchers and the field more broadly.
- Green options allow free open access, while gold options charge a fee.
- Check the reputation of your journal before submitting.
- Even if they are paywalled on the journal website, there are several free, legal ways to access published research articles.

About the Good Food Institute Europe

The Good Food Institute Europe is a nonprofit and think tank helping to build a more sustainable, secure and just food system by diversifying protein production.

We work with scientists, businesses and policymakers to advance options like plant-based and cultivated meat – ensuring they are delicious, affordable and accessible across Europe.

GFI Europe is powered by philanthropy. If you want to support our work, you can [join our family of donors](#) today to help us make Europe's food system better for people, the planet and animals.

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