



## Description

There is a relatively new journal article format called a Registered Report. Registered Reports are a form of [academic publishing](#) in which the proposed methods are subject to peer review. The medical research proposal is accepted by the journal. The researcher does the experiments and gets results. As long as the scientist hasn't changed the methods, the medical science paper will be published by the journal. This is one way of fixing medical science where publishing clinical trial data is often biased.

## Fixing Medical Science

In science, there is a definite bias to publish only positive results. This is a problem in many areas but especially in clinical trials. For example, a clinical trial may find that a drug has no effect and this is not exciting. Many academic publishing houses would not want to publish those results. This is a problem because other scientists and doctors need to know if a particular drug doesn't work.

The pressure to publish only positive results can [tempt scientists to change their data](#). This can result in HARKing, which means Hypothesizing After the Results are Known. In this situation, researchers make up a hypothesis based on data they already have. They may also get into p-hacking, which entitles doing many statistical tests until you find a significant association. Neither of these things allows you to truly find useful or reliable information.

The Registered Report solves this problem by switching the focus from exciting results to robust methods. As long as your proposal is accepted, *BMC Medicine* will publish your paper even if the results are negative.

## ***BMC Medicine* Introduces Registered Reports**

[According to BMC Medicine](#), the Registered Report will go through two phases of peer review. In phase one, the quality of the methods and the research question are assessed. If the methods are sound and the question is relevant, the journal will provisionally accept the final paper. The Registered Report format can be used for any type of study as long as it is likely to significantly advance medical science. Peer review in phase one gives authors a chance to fix issues with the study methods before the experiments begin.

Once the first phase of peer review has ended positively, the authors carry out their experiments and prepare the final manuscript. This version includes results and a discussion. The final version is again peer-reviewed. The reviewers check if the authors carried out the proposed experiments. They also ensure that any conclusions or implications are justified. Authors will generally be given 12-18 months to complete their experiments and submit the final paper. If more time is needed, you would need to speak to the journal.

The phase one document must have a detailed methods section. This is required to make it possible for another researcher to repeat the experiment by relying on that document alone. This should improve the reproducibility of experiments. The proposed analysis must also be fully described and all preprocessing steps must be included. Any corrections needed for multiple comparisons should also be described. A final paper can be rejected if the methods have changed. Additional data analysis can be reported but must be presented in a separate section from the pre-approved analyses.

If there is a need to change the methods, then the journal editors must be consulted. If the change is minor, it may be approved. However, if the change is major, the paper would have to be withdrawn. The scientists would have to submit the updated proposal as a new Registered Report for stage one peer review.

## The Potential of Registered Reports

Registered Reports have been used in the social sciences for some time. [BMC Medicine is the first medical journal](#) to adopt this format. These reports encourage transparency and also give authors early feedback on their planned experiments.

Registered Reports should help discourage [hidden outcome switching](#) in clinical trials. Every clinical trial has a set of measurable outcomes. These may be blood pressure readings after taking a drug. If you notice that the drug is having no effect on blood pressure but is lowering cholesterol, you could switch the outcome to make the clinical trial look successful. With a Registered Report, you can't change the outcome after your proposal has gone through phase one review.

The results of clinical trials are very important to medical science. These Registered Reports encourage transparency by having authors state, at the very beginning, what they are going to do and how. This is badly needed in medical research where [66% of clinical trials never report results](#). The level of detail required in the methods means that experiments should be reproducible. This should help with the reproducibility crisis in scientific research. After all, we need reliable, repeatable results to base treatments and technology on. Fixing medical science will take more than Registered Reports—but they are definitely a step in the right direction.

### Category

1. Publishing Research
2. Understanding Reviews

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