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Editorial: Publication bias in laboratory animal research by non-publication of “negative” results

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An interesting publication for the readership of The All Results Journal appeared recently, focused on publication bias in laboratory animal research. The article highlights the preference to publish results that show effects of treatment over publication of lack of effects of treatment.¹ The authors do not have hard evidence for the preference to publish effects rather than the lack of effects but show indirect evidence for this phenomenon by interviewing all known laboratory animal researchers in The Netherlands in an internet-based survey. In the survey, a total of 454 researchers responded, which is 14-24% of the estimated number of laboratory animal researchers in The Netherlands.

Researchers in for-profit organizations estimated that approximately 10% of all animal research is published, whereas researchers in non-for-profit organizations estimated that 80% was published. A major reason for non-publication was considered to be the lack of statistical significance between experimental animal groups. It is evident that such preference for publication of significantly-different or positive results creates publication bias. This bias, by non-publication of experiments that show lack of significant effects in treatment groups of laboratory animals, is unethical since it deprives researchers of the accurate data they need to estimate the potential of novel therapies in clinical trials, but also because the included animals are wasted as they do not contribute to accumulating knowledge. In addition, research that overstates effects may lead to further unnecessary animal experiments testing poorly founded hypotheses.²

The authors recommend a number of measures to be taken to prevent non-publication of negative results, such as control by the Institutional Animal Care and Use Committees or the submission of manuscripts for publication without any results as suggested previously.³ Besides, The All Results Journals, The Journal of Negative Results in Biomedicine as well as specific sections for negative results publications in the Journal of Cerebral Blood Flow and Metabolism,

Neurobiology of Aging and Gynaecological Oncology were explicitly mentioned to minimize this type of publication bias.

As section editor of The All Results Journals:BiOL, I am pleased with publications like Ter Riet et al.,¹ of which I am a co-author, so I must warn the readership that I am not strictly objective. Nevertheless, I am allowed to point at the publication as a stimulus to publish laboratory animal research studies that did not produce any statistically significant differences between treatment groups when the studies are properly designed. The All Results Journals are an excellent medium for the publication of these studies besides reducing publication bias.

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