

Refining the h- index

Braun and colleagues recently examined the utility of the h-index (the number h of papers, each of which is cited at least h times¹) for assessing the impact of journals, and drew attention to some differences between the 'top 21' journals ranked according to the h-index and the journal impact factor.² Their 4-year window, however, is inadequate.

Data from the Web of Science suggest that the h-index for journals increases more-or-less linearly with time until it plateaus at about the twice the cited half-life, so it may be possible to base comparisons on a standard window (e.g., 3 years to be comparable with the journal impact factor), standardized by multiplying by the cited half-life divided by the width of the window (e.g., 3 years). Such an adjustment to the top 21 journals in Braun's table would promote the *Journal of the American Chemical Society* several places (from rank 20 to rank 6, if no external candidates are considered) and demote *Nature Medicine* (because of its youth, it has a short cited half-life).

The use of a standard interval, without regard for the publication frequency of the journal or the nature of the discipline, introduces bias into both the journal impact factor and the h-index when applied to journals.

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References

1. J.E. Hirsch, An index to quantify an individual's scientific output, *Proceedings of the National Academy of Sciences (USA)* 102, 46, 16569-16572 (2006).
2. T. Braun, W. Glänzel & A. Schubert, A Hirsch-type index for journals. *The Scientist*, 19, 22, 8 (2005).