



Editorial

Record citations in 2011 contribute to maintenance of the impact factor of *BJN*

In late June 2012, the Institute for Scientific Information (ISI) released its annual statistics on citations of articles published in previous years in scientific journals. A number of different summary statistics are produced by the ISI, the most widely discussed being the impact factor. I have used previous editorials to keep readers informed of the most recent statistics for the *BJN* and to analyse them in relation to those of comparator journals and to temporal changes^(1–7). The *BJN* is listed in the Nutrition and Dietetics category of ISI Journal Citation Reports®. In 2011, there were seventy-two journals listed in this category, including review journals and journals in the areas of obesity (e.g. *International Journal of Obesity, Obesity*) and lipidology (e.g. *Progress in Lipid Research, Lipids*). The impact factor of a journal is calculated as the number of citations of papers published in the previous 2 years divided by the number of papers published in those 2 years. Thus, the impact factor for 2011 (issued in 2012) is based upon the number of citations during 2011 of papers published in a particular journal in 2009 and 2010 divided by the number of papers published in that journal in 2009 and 2010. Clearly, this favours very rapidly moving areas of research. Hence, journals such as *Nature*, *Cell* and *Science* have high impact factors (36.28, 32.40 and 31.20, respectively, for 2011). For the past 10 years, the two highest ranked journals in the Nutrition and Dietetics category have been *Progress in Lipid Research* and *Annual Reviews in Nutrition*, and with impact factors of 10.67 and 9.45, respectively, for 2011. Table 1 lists the impact factors for the *BJN* and nine comparator journals over the period 2001–11 inclusive. The comparator journals all publish a similar range of material as does the *BJN*, including molecular, cellular, whole body, human, clinical, public health and experimental animal nutrition and, in most cases, also farm animal nutrition. It is evident that the *American Journal of Clinical Nutrition* is firmly established as the highest ranked journal in this category that is not solely limited to publishing review articles. In 2011, the impact factor of the *BJN* remained almost the same as in 2010 (3.01 *v.* 3.07), representing 2823 citations in 2011 to the 937 articles published in 2009 and 2010. Maintaining an impact factor above 3 is important, keeping the *BJN* in the top 30% of journals in this growing category. Readers may be interested in the impact factors of our sister journals: 4.84, 2.77 and 2.17 for *Nutrition Research Reviews* (ranked 4/72), *Proceedings of the Nutrition Society* (ranked 23/72) and *Public Health Nutrition* (ranked 34/72), respectively.

Table 2 lists the articles published in the *BJN* during 2009 and 2010 that were most highly cited in 2011^(8–27). This table indicates the importance of review and supplement articles, in addition to research papers, to the impact factor of the journal. Although the articles published in 2009 continue to be cited (Table 2), they will not contribute to the impact factor for 2012, which will be based upon articles published in 2010 and 2011.

One argument against the importance of the impact factor in indicating the 'value' of a journal is that the time frame over which it is calculated is too short to really reflect the impact that the articles that a journal publishes will have. Thus, alternative measures of article citations are available. These include the total number of citations made to articles published in a journal, the 5-year impact factor and the cited half-life of articles. Table 3 lists the total number of citations made to articles published in the *BJN*, irrespective of their year of publication, during the years 2000–11. In 2011, articles published in the *BJN* were cited 15 036 times, placing the *BJN* fifth in the Nutrition and Dietetics category for total citations in 2011. The total number of citations of articles in the journal has increased year-on-year and increased by 7% from 2010 and by over 170% since 2000. The cited half-life of a journal (Table 3) is the median age of the articles published in that journal that are cited in the reporting year. Thus, publication of articles that remain important (or controversial) long after they are published will result in a long cited half-life. The cited half-life of the *BJN* for 2011 was 6.9 years, indicating that half of the citations to articles to the *BJN* in 2011 were to articles published in 2004 or before. Thus, it seems to me that the *BJN* is publishing articles that are seen as important in the short term, as judged by the reasonably high impact factor (within the journal category), but which remain important for many years, as judged by the cited half-life. For comparison, the cited half-lives for the *American Journal of Clinical Nutrition* and the *Journal of Nutrition* for 2010 were 8.2 and 8.9 years, respectively. The immediacy index is calculated as citations of articles published in the reporting year (e.g. 2011) by papers published in that same year. It is a measure of how immediately important (or controversial) published papers are. For 2011, the immediacy index of the *BJN* was 0.519 (245 citations in 2011 out of 472 articles published in 2011). In 2008, the 5-year impact factor was calculated for the first time; this is the number of citations in the year to articles published in the previous five years. For 2011, the 5-year impact factor of the *BJN* was 3.34

Table 1. Impact factor of the *British Journal of Nutrition* and comparator journals over the period 2001–11*

	Impact factor										
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
<i>American Journal of Clinical Nutrition</i>	5.02 (2/50)†	5.60 (3/50)	5.69 (3/53)	5.43 (3/53)	5.85 (3/53)	6.56 (3/55)	6.60 (3/56)	6.74 (3/59)	6.31 (3/66)	6.61 (3/70)	6.69 (3/72)
<i>Journal of Nutrition</i>	3.25 (5/50)	3.62 (4/50)	3.32 (5/53)	3.25 (7/53)	3.69 (7/53)	4.01 (5/55)	3.77 (7/56)	3.65 (8/59)	4.09 (8/66)	4.29 (8/70)	3.92 (10/72)
<i>Clinical Nutrition</i>	2.46 (9/50)	1.55 (22/50)	1.19 (32/53)	2.02 (18/53)	2.29 (15/53)	2.47 (15/55)	2.88 (14/56)	3.20 (12/59)	3.27 (14/66)	3.41 (15/70)	3.73 (13/72)
<i>British Journal of Nutrition</i>	1.43 (23/50)	2.27 (10/50)	2.32 (11/53)	1.96 (19/53)	2.06 (20/53)	2.23 (20/55)	2.10 (21/56)	2.28 (23/59)	2.60 (23/66)	2.73 (21/70)	3.03 (18/72)
<i>European Journal of Clinical Nutrition</i>	1.99 (16/50)	2.49 (7/50)	2.62 (9/53)	2.71 (10/53)	2.97 (9/53)	2.71 (12/55)	2.34 (17/56)	2.76 (15/59)	3.45 (11/66)	3.07 (19/70)	3.01 (19/72)
<i>European Journal of Nutrition</i>	1.77 (20/50)	1.94 (18/50)	1.86 (19/53)	2.13 (16/53)	2.16 (18/53)	2.12 (22/55)	2.33 (18/56)	2.69 (18/59)	3.07 (17/66)	2.56 (24/70)	2.75 (24/72)
<i>Journal of the American College of Nutrition</i>	2.13 (13/50)	1.64 (21/50)	1.68 (22/53)	2.09 (17/53)	2.26 (16/53)	2.36 (18/55)	2.09 (23/56)	1.89 (29/59)	2.87 (18/66)	3.34 (16/70)	2.46 (30/72)
<i>Annals of Nutrition and Metabolism</i>	1.53 (22/50)	2.17 (11/50)	2.98 (7/53)	2.80 (9/53)	2.21 (17/53)	2.45 (16/55)	2.28 (19/56)	2.16 (25/59)	2.36 (26/66)	1.95 (40/70)	2.29 (32/72)
<i>Nutrition Research</i>	1.01 (31/50)	1.08 (28/50)	1.81 (20/53)	1.07 (35/53)	1.56 (29/53)	1.62 (30/55)	1.83 (28/56)	1.24 (40/59)	1.97 (32/66)	2.17 (35/70)	2.26 (33/72)

* Data are from the ISI Journal Citation Reports®.

† Ranking among journals in the Nutrition and Dietetics subject category.

(6517 citations in 2010 to 1950 articles published in 2006–10 inclusive), placing it eighteenth in the Nutrition and Dietetics category. For comparison, 5-year impact factors for the *American Journal of Clinical Nutrition* and the *Journal of Nutrition* for 2011 were 7.37 and 4.36, respectively. The final statistic shown in Table 3 is the Eigenfactor™ score. This is a complex calculation, which, like the impact factor, is a ratio of the number of citations to the total number of articles published. However, unlike the impact factor, the Eigenfactor™ score counts citations to journals in both the sciences and social sciences, eliminates self-citations (i.e. every reference from one article in a journal to another article from the same journal is discounted) and weights each reference according to a measure of the amount of time researchers spend reading the journal (<http://www.eigenfactor.org/methods.htm>). For 2011, the Eigenfactor™ score of the *BJN* was 0.03405, placing it sixth in the Nutrition and Dietetics category.

Another relatively new statistic is the Article Influence™ score, which calculates the relative importance of the journal on a per-article basis. It is the journal's Eigenfactor™ score

divided by the fraction of articles within the category published by that journal. That fraction is normalised so that the mean Article Influence™ score within the category is 1.00. A score greater than 1.00 indicates that each article in the journal has above-average influence, while a score less than 1.00 indicates that each article in the journal has below-average influence. For 2011, the Article Influence™ score of the *BJN* was 0.950, placing it seventeenth in the Nutrition and Dietetics category. For comparison, Article Influence™ scores for the *American Journal of Clinical Nutrition* and the *Journal of Nutrition* for 2011 were 2.378 and 1.263, respectively.

My overall view based upon these statistics is that the *BJN* is doing well, but could do better. As I indicated previously, the *BJN* is receiving more submissions and is publishing more articles than ever before⁽²⁸⁾. This suggests that the journal is in good health and is viewed favourably by researchers within the discipline. My aim is to act to further improve the impact factor, the 5-year impact factor and the Article Influence™ score in order that the prestige and attractiveness

Table 2. Articles published in the *British Journal of Nutrition* in 2009 and 2010 that were most highly cited in 2011*

	Type of article	Citations in 2011	Total citations to date
Roberfroid <i>et al.</i> ⁽⁶⁾	Supplement	42	61
von Hurst <i>et al.</i> ⁽⁹⁾	Research paper	38	62
Ramirez-Farias <i>et al.</i> ⁽¹⁰⁾	Research paper	25	58
Epstein <i>et al.</i> ⁽¹¹⁾	Review	24	36
Rzehak <i>et al.</i> ⁽¹²⁾	Research paper	19	52
Ramsden <i>et al.</i> ⁽¹³⁾	Review	19	29
Rush <i>et al.</i> ⁽¹⁴⁾	Research paper	18	44
Stewart <i>et al.</i> ⁽¹⁵⁾	Research paper	18	29
Egert <i>et al.</i> ⁽¹⁶⁾	Research paper	17	40
Fernandez-Ballarath <i>et al.</i> ⁽¹⁷⁾	Research paper	16	28
Moore <i>et al.</i> ⁽¹⁸⁾	Review	15	23
de Artinano & Castro ⁽¹⁹⁾	Review	15	21
Laitinen <i>et al.</i> ⁽²⁰⁾	Research paper	14	26
Castetbon <i>et al.</i> ⁽²¹⁾	Research paper	14	26
Fleissner <i>et al.</i> ⁽²²⁾	Research paper	14	26
Lomax & Calder ⁽²³⁾	Review	14	24
Poslusna <i>et al.</i> ⁽²⁴⁾	Supplement	13	28
Santa-Cruz <i>et al.</i> ⁽²⁵⁾	Research paper	13	23
Timmermans <i>et al.</i> ⁽²⁶⁾	Research paper	12	27
Turchini & Francis ⁽²⁷⁾	Research paper	12	19

* Data were obtained from the ISI Web of Science® on 9 July 2012.

Table 3. Citation statistics for the *British Journal of Nutrition* 2000–11

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Impact factor	2.415	1.989	2.491	2.616	2.710	2.967	2.708	2.339	2.764	3.45	3.07	3.01
Total citations	5515	5360	6205	7144	7204	7893	8665	9843	11 287	12 904	14 057	15 036
Cited half-life (years)	> 10.0	8.9	8.0	7.7	7.0	6.3	6.8	7.1	7.1	7.0	6.9	6.9
5-year impact factor								3.13	3.23	3.57	3.30	3.34
Immediacy index	0.307	0.283	0.402	0.500	0.515	0.289	0.300	0.337	0.602	0.530	0.507	0.519
Eigenfactor™ score								0.02486	0.02741	0.03080	0.03024	0.03405

of the *BJN* are maintained in the face of mounting competition from other journals, and that its perceived quality is enhanced. An improvement in (perceived) quality of the *BJN* will assure its place among the top journals in the field.

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