

## Impact Factors of Journals in Sport and Exercise Science, 2000-2003

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A journal's impact factor, as defined and collated by the Institute for Scientific Information, is the recent annual rate of citation of its average article. Changes in the impact factor are a useful guide to changes in a journal's quality or focus. Exercise and sport-science journals maintaining their impact in the most recent citation reports include (alphabetically) *American Journal of Sports Medicine* (current impact factor, 2.1), *British Journal of Sports Medicine* (1.3), *Clinical Journal of Sport Medicine* (1.8), *European Journal of Applied Physiology* (1.5), *International Journal of Sport Nutrition and Exercise Metabolism* (0.9), *International Journal of Sport Psychology* (0.6), *International Journal of Sports Medicine* (1.4), *Journal of Applied Biomechanics* (0.6), *Journal of Applied Sport Psychology* (1.1), *Journal of Athletic Training* (1.2), *Journal of Biomechanics* (2.0), *Journal of Sports Sciences* (1.3), *Journal of Strength and Conditioning Research* (0.8), *Medicine and Science in Sports and Exercise* (2.6), and *Sports Medicine* (2.4). A noteworthy respectable newcomer to the reports is *Journal of Science and Medicine in Sport* (0.7). A rise of 0.3 by the *Journal of Applied Physiology* (3.0) is consistent with an increasing academic emphasis on mechanisms in this journal. Journals falling by 0.3 or more include *Journal of Sport and Exercise Psychology* (1.4) and *Research Quarterly for Exercise and Sport* (0.9). Amongst journals yet to enter the reports are *European Journal of Sport Science*, *Exercise and Sport Sciences Reviews*, *Journal of Exercise Physiology-online*, and of course, *Sportscience*.

KEYWORDS: academic, citation, publication, research.

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Each year the Institute for Scientific Information (ISI) publishes an update of its Journal Citation Reports, in which are summarized the ways authors of journal articles cite other articles. Interest centers most on the journal impact factor, which is the number of times the average article in a given journal has been cited lately. Specifically, the most recent impact factor for a given journal is the number of times authors of articles in all journals for the year 2003 have cited articles in issues of the given journal for 2001 and 2002, divided by the number of articles in the journal for those two years.

For journals specializing in a particular discipline, the impact factor is partly a measure of a journal's popularity and quality, but it is also partly if not largely a measure of the number of researchers active in the discipline. As sport scientists, I therefore believe we should resist the penchant of some academics and administrators to regard the impact factor as a measure of quality alone and to rate our research by the impact factor of the journals we publish in. We do your research to improve the quality of service we can deliver to athletes, patients and clients, not to impress administrators by scoring a hit in a popular journal. Publication serves the dual useful purposes of getting the job finished properly and of getting the findings where others can use them, but it is not an end in itself.

My [In-brief item](#) at this site last year has more information about the impact factor. Steve Olivier, one of the reviewers of this article, also suggested [this link](#) to a detailed critique of the impact factors. The other reviewer, Rob Robergs, suggested I point out that the impact factor may be inflated by articles that get cited frequently because they are bad, not because they are good.

Although I am critical of the abuse of impact factors, I know that the topic excites great if undeserved interest amongst researchers. I have therefore once again provided a summary of the factors for exercise and sport science (Table 1). You can access impact factors for other journals and other citation-related statistics at the [ISI site](#), but only if your institution has a subscription.

As in previous years, the list shows that the average recent article in journals focused on athletic performance research is cited about once a year. You and your administrators and funding agencies should therefore realize that any journal with a factor in the ~0.5-2.5 range is a perfectly reasonable outlet for such work. A few journals outside this range are also reasonable outlets, but for the others there is an increased risk that researchers and practitioners will not find, read, cite or otherwise use work published in them. I have also again provided the impact factors for the last few years, because a change in a journal's impact factor may be a useful measure of a change in quality or focus. Rob Robergs suggested that this assertion was inconsistent with my earlier criticism of the impact factor, but I think the impact factor is like skinfold thickness: not good as an absolute measure of body fat, but much better for tracking changes in body fat.

This year there are several noteworthy impact factors. The *Journal of Science and Medicine in Sport* has at last entered the list and with a respectable 0.7. The *Journal of Applied Physiology* has reached 3.0 for the first time, perhaps reflecting movement away from applied science towards academic research focused primarily on mechanisms. *Medicine and Science in Sports and Exercise* is holding steady on 2.6 at the top of our applied journals. Its higher factor may derive in part from its review articles. The most popular exclusively review journal specific to our discipline is *Sports Medicine*, which has been inching upwards over the last few years and is now on 2.4. Most other journals have held steady within  $\pm 0.2$  of last year's factor, but two have shown substantial falls of 0.3 or more: *Journal of Sport and Exercise Psychology* and *Research Quarterly for Exercise and Sport*.

*Exercise and Sports Sciences Reviews* is still not on the list, because it changed from book to journal format in 2000, ISI did not accept the journal for evaluation until 2002, and ISI needs three years to calculate a new impact factor. *European Journal of Sport Science*, *International Journal of Performance Analysis in Sport*, *Journal of Exercise Physiology-online*, and *Journal of Sports Science and Medicine* are exclusively on-line journals that have yet to make it to the list. The new editor of EJSS (Asker Jeukendrup) assures me that he is taking a tough line with submitted material, that the journal is not a dumping ground for manuscripts rejected elsewhere, and that it will inevitably get an impact factor. Whether *Sportscience*, another on-line-only journal, will ever make it to the list is unclear. Its impact as a resource for research students and researchers may well be greater than that of mechanism-focused journals. The editor has now instituted page numbers rather than the more rational URL and word count, because some journal editors automatically exclude citations to websites from the reference list of a submitted article (see this issue's [editorial](#)).

See the Abstract for a summary of the impact factors of the main journals, and see Table 1 for the complete alphabetical list of journals and factors since 2000. Some specialist journals on the fringe of our discipline and some popular generic journals like *Nature* (impact factor 30) and *Science* (30) are included by special request of readers in previous

years. *Physiological Reviews* (37) has beaten these journals and *New England Journal of Medicine* (35) into first place for the first time.

Rob Robergs, who is the editor of [Journal of Exercise Physiology-online](#), offered the following comments for inclusion in this article...

It is also important to realize what the conditions of submission to and acceptance by ISI are. A submission is reviewed by “experts” of the academic area, which has the potential to foster considerable bias in journal selection. Also, the ISI system favors traditional publishers. A new system is being developed for assessing the impact of electronic journals. This new dimension to the science citation and electronic database search arena may make the ISI system redundant for journals such as JEPonline, SportsScience and EJSS. By definition, free-access electronic journals have a far greater circulation than printed journals, and their readership is not represented by any ISI citation statistic.

Wouldn't a more valid method of impact-factor calculation be based on the number of times a journal article is read? After all, as you state early in your article, it is not whether the article is cited, but whether it is read that best reflects the main objective of publication: that peers get to read the article. Our electronic journals have far greater potential to achieve this aim than traditional journals. Some measure of the hits a journal and its articles get should provide a valid measure of readership-based impact.

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**Table 1:** Impact factors (citations per article per year) of journals in exercise and sport science, including key multidisciplinary journals, for the years 2000 through 2003. Journals without an impact factor are not in ISI's science or social sciences databases, either because the journal is too new or the factor is too low. A question mark indicates absence of an impact factor for a journal previously in the database. [Download](#) an enhanced version of this table as an Excel spreadsheet that can be sorted by subsdiscipline.

2000	2001	2002	2003	
	0.3	0.3	0.5	ACSM's Health and Fitness Journal
1.7	1.7	2.0	1.7	Acta Physiologica Scandinavica
1.3	1.3	1.5	1.7	Acta Psychologica
1.3	1.0	1.2	1.0	Adapted Physical Activity Quarterly
2.4	2.9	2.8	3.3	American Heart Journal
2.8	2.6	2.3	3.1	American Journal of Cardiology
5.0	5.0	5.6	5.7	American Journal of Clinical Nutrition
3.9	3.9	4.2	4.5	American Journal of Epidemiology
1.0	0.9	1.1	1.6	American Journal of Health Promotion
0.7	1.0	0.8	1.3	American Journal of Human Biology
2.7	2.8	2.6	3.1	American Journal of Hypertension
				American Journal of Medicine and Sports
0.9	1.0	0.9	0.9	American Journal of Physical Medicine and Rehabilitation
3.2	3.3	3.6	3.8	American Journal of Physiology: Endocrinology and Metabolism
3.2	3.2	3.4	3.7	American Journal of Physiology: Heart and Circulatory Physiology
2.8	2.4	3.2	3.6	American Journal of Physiology: Reg Integ Comp Physiol
3.3	3.0	3.3	3.4	American Journal of Public Health
5.4	6.0	6.6	8.9	American Journal of Respiratory and Critical Care Medicine

2.1	2.1	2.3	2.1	American Journal of Sports Medicine
6.9	6.3	6.1	5.5	American Psychologist
	0.9	0.9	0.9	Annals of Human Biology
0.7	1.0	1.1	1.8	Annals of Nutrition and Metabolism
1.4	1.6	1.7	1.9	Annals of the New York Academy of Sciences
7.1	7.8	7.9	9.3	Annual Review of Nutrition
19	13	16	19	Annual Review of Physiology
0.6	0.7	0.8	0.7	Applied Ergonomics
0.6	0.7	0.6	0.9	Applied Psychological Measurement
0.5	0.8	0.9	0.8	Applied Psychology-International Review
1.4	1.4	1.3	1.4	Archives of Physical Medicine and Rehabilitation
0.8	?	?	?	Archives of Physiology and Biochemistry
1.4	1.1	1.8	7.2	Arthritis and Rheumatism/Arthritis Care and Research
			5.0	Arthritis Research and Therapy
1.2	1.3	1.8	1.6	Arthroscopy
3.4	3.5	3.3	3.6	Atherosclerosis
		8.3	4.5	Atherosclerosis Supplements
	0.09	0.1	0.2	Athletic Therapy Today
	0.2	0.4	0.9	Australian Journal of Physiotherapy
0.7	0.7	0.7	0.9	Aviation Space and Environmental Medicine
0.8	0.9	0.9	0.7	Behavior Research Methods, Instruments, and Computers
14	17	8.7	11	Behavioral and Brain Sciences
2.8	2.9	2.8	2.9	Behavioral Neuroscience
	2.5	2.8	2.8	Behavioural Brain Research
2.7	2.9	2.9	2.8	Biochemical and Biophysical Research Communications
6.3	5.4	4.7	4.4	Biochimica Biophysica Acta-Bioenergetics
1.8	2.4	1.8	2.6	Biochimica Biophysica Acta-General Subjects
1.1	1.5	1.5	1.9	Biological Cybernetics
	0.3	0.2	0.1	Biology of Sport
2.5	2.5	2.4	2.5	Brain Research
9.2	7.7	6.2	6.5	Brain Research Reviews
0.7	1.0	1.2	1.3	British Journal of Sports Medicine
5.3	6.6	7.6	7.2	British Medical Journal (BMJ)
1.1	1.4	1.2	1.2	Canadian Journal of Applied Physiology
1.2	1.3	1.3	1.4	Canadian Journal of Physiology and Pharmacology
3.7	4.6	4.7	5.2	Cardiovascular Research
2.4	2.5	3.0	3.3	Chest
11	11	10	11	Circulation
9.1	9.2	9.7	10	Circulation Research
1.3	1.5	1.7	1.8	Clinical Biochemistry
1.1	1.3	1.0	1.2	Clinical Biomechanics
1.3	1.0	1.7	1.8	Clinical Journal of Sport Medicine
1.4	2.5	1.6	1.2	Clinical Nutrition
1.2	1.2	1.2	1.4	Clinical Orthopaedics and Related Research
1.0	1.1	0.8	1.4	Clinical Physiology
2.0	2.3	1.9	2.1	Clinical Science
1.6	1.9	2.0	1.3	Clinics in Chest Medicine
1.1	1.4	1.5	1.1	Clinics in Sports Medicine
0.9	1.0	1.0	1.6	Comparative Biochemistry and Physiology A-Mol Integr Physiol

			0.2	Deutsche Zeitschrift fur Sportmedizin
7.7	7.7	8.3	8.3	Diabetes
1.5	1.5	1.2	1.1	Diabetes and Metabolism
5.0	5.4	5.5	7.5	Diabetes Care
1.0	0.7	0.8	0.6	Diabetes Nutrition and Metabolism
2.2	1.9	2.5	1.1	Diabetes--Metabolism Research and Reviews
2.7	2.7	2.2	2.2	Diabetic Medicine
5.7	6.3	5.1	5.7	Diabetologia
0.6	0.8	1.7	0.8	Educational and Psychological Measurement
1.5	?	?	?	Electromyography and Motor Control
0.7	0.6	0.8	0.9	Ergonomics
1.4	1.3	1.4	1.5	European Journal of Applied Physiology
2.2	1.8	1.9	1.9	European Journal of Clinical Nutrition
2.0	?	?	?	European Journal of Physical Medicine and Rehabilitation
				European Journal of Sport Science
				European Physical Education Review
2.6	3.0	2.9	3.0	European Respiratory Journal
				European Sports History Review
2.7	?	?	?	Exercise and Sport Sciences Reviews
3.2	2.8	1.3	4.7	Exercise Immunology Review
2.1	2.3	2.3	2.3	Experimental Brain Research
1.1	1.4	1.7	1.2	Experimental Physiology
0.9	1.8	1.8	1.6	Gait and Posture
2.5	3.2	3.2	3.5	Haematologica
			1.8	High Altitude Medicine and Biology
1.7	1.9	1.6	3.5	Hormone and Metabolic Research
1.3	1.1	1.2	1.6	Hormone Research
0.8	1.0	1.0	1.4	Human Movement Science
5.3	5.4	5.0	5.6	Hypertension
1.5	1.5	1.7	1.4	IEEE Transactions on Biomedical Engineering
1.9	1.9	2.4	3.3	International Journal of Epidemiology
				International Journal of History of Sport
2.9	2.2	2.4	2.8	International Journal of Obesity
				International Journal of Performance Analysis in Sport
1.2	1.2	0.9	0.9	International Journal of Sport Nutrition and Exercise Metabolism
0.8	0.4	0.8	0.6	International Journal of Sport Psychology
1.4	1.3	1.3	1.4	International Journal of Sports Medicine
				International Review for the Sociology of Sport
				International Sports Journal
	0.2	0.4	0.3	Isokinetics and Exercise Science
15	18	17	21	JAMA--Journal of the American Medical Association
	0.2	0.1	0.1	Japanese Journal of Physical Fitness and Sport
1.4	1.1	1.1	0.9	Japanese Journal of Physiology
1.1	?	0.7	0.8	Journal of Aging and Physical Activity
				Journal of Applied Behavioral Science
0.8	0.3	0.5	0.6	Journal of Applied Biomechanics
2.3	2.6	2.7	3.0	Journal of Applied Physiology
1.1	1.0	1.0	1.1	Journal of Applied Sport Psychology
0.6	0.4	1.0	1.2	Journal of Athletic Training

	0.08	0.1	0.1	Journal of Back and Musculoskeletal Rehabilitation
7.3	7.3	6.7	6.5	Journal of Biological Chemistry
0.9	1.5	1.4	1.6	Journal of Biomechanical Engineering
1.5	1.9	1.9	2.0	Journal of Biomechanics
				Journal of Bodywork and Movement Therapies
				Journal of Cardiopulmonary Rehabilitation
5.4	5.2	5.2	5.9	Journal of Clinical Endocrinology and Metabolism
2.1	2.0	2.2	2.2	Journal of Clinical Epidemiology
12	12	14	14	Journal of Clinical Investigation
0.7	0.9	0.8	0.7	Journal of Clinical Psychology
				Journal of Comparative Physical Education and Sport
1.1	1.1	1.4	1.4	Journal of Electromyography and Kinesiology
1.8	2.1	2.1	2.3	Journal of Epidemiology and Community Health
				Journal of Exercise Physiology Online
		2.4	2.3	Journal of Experimental Biology
6.1	5.5	5.2	5.1	Journal of General Physiology
0.2	0.1	0.3	0.2	Journal of Human Movement Studies
				Journal of Human Performance in Extreme Environments
3.6	4.2	3.5	3.6	Journal of Hypertension
1.3	0.3	0.5	0.6	Journal of Leisure Research
1.1	1.3	1.5	1.6	Journal of Motor Behaviour
3.9	3.5	3.7	3.9	Journal of Neurophysiology
8.5	8.2	8.0	8.3	Journal of Neuroscience
2.9	3.2	3.6	3.3	Journal of Nutrition
1.3	1.5	1.8	1.5	Journal of Occupational and Environmental Medicine
1.4	1.0	0.7	1.0	Journal of Orthopaedic and Sports Physical Therapy
2.2	2.2	1.8	2.2	Journal of Orthopaedic Research
	1.0	0.9	0.9	Journal of Orthopaedic Trauma
1.2	0.7	0.09	0.7	Journal of Philosophy of Sport
				Journal of Physical Education, Recreation, and Dance
1.0	0.6	0.7	0.6	Journal of Physiology and Biochemistry
4.5	4.5	4.7	4.4	Journal of Physiology-London
		1.1	1.3	Journal of Physiology-Paris
		1.0	1.1	Journal of Rehabilitation Medicine
		0.9	0.7	Journal of Rehabilitation Research and Development
			0.7	Journal of Science and Medicine in Sport
	1.0	1.0	0.9	Journal of Shoulder and Elbow Surgery
0.9	1.0	1.3	1.0	Journal of Social and Clinical Psychology
1.5	1.6	1.7	1.4	Journal of Sport and Exercise Psychology
				Journal of Sport and Social Issues
				Journal of Sport Behavior
0.1	0.2	0.1	0.1	Journal of Sport History
0.3	0.4	0.4	0.3	Journal of Sport Management
0.4	0.5	0.5	0.3	Journal of Sport Rehabilitation
0.1	0.04		0.3	Journal of Sports Chiropractic and Rehabilitation
0.4	0.5	0.6	0.5	Journal of Sports Medicine and Physical Fitness
				Journal of Sports Science and Medicine
1.3	0.9	1.1	1.3	Journal of Sports Sciences
0.2	0.07	0.1	?	Journal of Sports Traumatology

0.5	0.6	0.8	0.8	Journal of Strength and Conditioning Research
				Journal of Swimming Research
0.4	0.4	0.5	0.3	Journal of Teaching in Physical Education
7.0	6.4	6.3	7.6	Journal of the American College of Cardiology
1.5	1.5	2.2	3.0	Journal of the American College of Nutrition
1.1	1.8	1.5	1.6	Journal of the American Dietetic Association
1.5	1.9	3.5	4.4	Journals of Gerontology A-Biol Sci Med Sci
1.1	1.6	1.8	2.1	Journals of Gerontology B-Psychol Sci Soc Sci
	0.2	0.3	0.6	Knee
	1.3	1.1	1.1	Knee Surgery, Sports Traumatology and Arthroscopy
10	13	15	18	Lancet
1.0	0.5	0.5	0.7	Leisure Sciences
1.7	2.1	2.0	2.2	Lipids
				Measurement in Physical Education and Exercise Science
0.2	0.09	0.06	0.04	Medicina dello Sport
2.6	2.4	2.6	2.6	Medicine and Science in Sports and Exercise
				Medicine and Sport Science
2.0	1.9	2.0	2.0	Metabolism-Clinical and Experimental
	1.3	1.1	0.9	Motor Control
1.9	2.3	2.5	2.3	Muscle and Nerve
26	28	30	31	Nature
28	28	29	31	Nature Medicine
30	29	32	35	New England Journal of Medicine
1.5	1.4	2.3	2.3	Nutrition
1.0	1.1	1.7	2.1	Nutrition Metabolism and Cardiovascular Diseases
4.7	3.4	3.0	3.4	Obesity Research
	0.5	0.4	0.5	Operative Techniques in Sports Medicine
0.9	0.8	1.0	0.8	Pediatric Exercise Science
				Pediatric Physical Therapy
0.3	0.3	0.3	0.3	Perceptual and Motor Skills
2.2	1.6	1.7	2.1	Pflugers Archive-European Journal of Physiology
				Physical Educator
1.2	1.1	1.7	1.6	Physical Therapy
				Physical Therapy in Sport
				Physical Therapy Reviews
0.3	0.4	0.5	0.3	Physician and Sportsmedicine
	0.5	0.4	0.5	Physikalische Medizin Rehabilitationsmedizin Kurortmedizin
0.9	1.0	1.2	1.2	Physiological Measurement
28	30	27	37	Physiological Reviews
1.6	1.6	1.6	1.9	Preventive Medicine
11	11	11	10	Proceedings of the National Academy of Sciences
5.3	4.5	8.0	10	Progress in Lipid Research
				Psychology of Sport and Exercise
1.5	0.9	0.8	1.1	Public Health Reports
	0.6	0.8	0.5	Quest
				Research in Sports Medicine (was Sports Med Train Rehab)
1.0	1.2	1.6	0.9	Research Quarterly for Exercise and Sport
1.6	2.2	2.4	2.2	Respiratory Physiology and Neurobiology
1.1	1.4	0.9	1.0	Scandinavian Journal of Clinical and Laboratory Investigation

0.7	0.9	1.1	0.9	Scandinavian Journal of Medicine and Science in Sports
	1.1	1.3	?	Scandinavian Journal of Rehabilitation Medicine
24	23	27	30	Science
0.1	0.02	0.2	0.1	Science and Sports
0.3	0.7	0.5	0.6	Sociology of Sport Journal
				Sport History Review
0.6	0.7	0.7	0.7	Sport Psychologist
	1.0	0.6	0.7	Sport, Education, and Society
				Sports Biomechanics
0.2	?	?	?	Sports Exercise and Injury
1.8	2.2	2.3	2.4	Sports Medicine
0.3	0.2	0.4	0.3	Sports Medicine and Arthroscopy Review
	0.05	0.03	0.08	Sports Medicine Standards and Malpractice Reporter
	0.3	0.3	0.2	Sportverletzung-Sportschaden
				Strength and Conditioning
0.2	0.3	0.3	0.3	Strength and Conditioning Journal
3.9	4.1	4.1	4.2	Thorax
13	5.8	14	14	Trends in Biochemical Science
3.9	5.8	8.0	7.9	Trends in Endocrinology and Metabolism
17	17	14	13	Trends in Neuroscience
	0.3	0.4	0.3	Wilderness & Environmental Medicine
				Women in Sport & Physical Activity Journal