

Journal Impact Factors in Sport and Exercise Science, 1999–2000

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The impact factor of a journal is the number of times its average recent article was cited annually in recent publications. It is a measure of the importance of a journal that researchers should consider when submitting material for publication. I present here an analysis of impact factors of journals in exercise and sport science for the years 1999 and 2000. The uncertainty in the impact factor for journals like *Medicine and Science in Sports and Exercise* (MSSE, current impact factor of 2.6) is probably less than ± 0.2 (95% likely limits). Journals with an impact factor in the range 1.0 to 4.9 in 1999 showed little overall increase in 2000 (mean, 0.1), but wide variation existed between journals (standard deviation of change, 0.5). MSSE's rise of 0.5 since 1999 is therefore well above the average change.

KEYWORDS: citation, ISI, MSSE, publication

At the end of each year the Institute for Scientific Information (ISI) publishes its [Journal Citation Reports](#) for science and social science journals (ISI, 2001). The most interesting feature of the reports is the journal impact factor, a measure of the importance of each journal. The impact factor for a journal is roughly the number of times per year the average paper in the journal was cited in any recent journal. More precisely, the impact factor for the year 2000 (the current impact factor) is the number of times articles in the journal for the years 1998 and 1999 were cited in ISI-recognized journals published in 2000, divided by the number of articles in the journal in 1998 and 1999. At the ISI website there is a page of detail about this statistic and others for each journal. You can link to these pages only if your institution has a subscription to the Web version of the journal citation reports. Your library may also/instead have a hard copy of the reports.

A researcher building a career in a traditional academic setting should take impact factors into account when submitting material for publication, because publishing in high-impact journals will enhance the researcher's chances of appointment and promotion. A researcher in a more applied setting may have to find other ways to get recognition for productivity, because the often-used case-study qualitative reports and materials that benefit students, clients, and communities usually do not qualify for publication in ISI-recognized journals.

[Table 1](#) summarizes the impact factors for journals of interest to researchers in exercise and sport science. The table includes impact factors for 1999, culled from [an article about the impact factor](#) published at this site last year (Hopkins, 2000). Some academics are interested in rank-ordering journals by impact factor, so I have provided the table as an Excel spreadsheet containing columns for various sub-disciplines of exercise and sport science. [Download](#) the spreadsheet and sort it by sub-discipline and/or impact factor to make comparison of journals easier. Be aware that discipline-specific original-research journals such as MSSE will never score as highly as the generic high-flyers like

Science and *Nature* or the review journals that overlap with more well-funded disciplines like genetics, molecular biology, medicine, and neuroscience.

Some academics also keep an eye on changes in the impact factor of their favorite journals. In doing so, they should take into account the magnitude of the typical error of measurement of the impact factor, and the mean and typical variation of the change in impact factor of all related journals. In what follows, I demonstrate how to assess the change in impact factor between 1999 and 2000 for MSSE, one of our key journals.

The impact factor refers to a number of citations divided by a number of articles, so the error in the impact factor will depend on these numbers (which are known) and on the correlation between them (which is unknown). The correlation will always be positive and will always reduce the error, so I obtained a conservative estimate of the error by assuming a correlation of zero. The error for MSSE's current impact factor of 2.6 turns out to be less than ± 0.1 , and the 95% likely limits of the true impact factor are therefore less than ± 0.2 . I conclude that the improvement from MSSE's value of 2.1 last year is clear cut.

The question then arises as to the magnitude of the change. By analyzing the impact factors for 1999 and 2000 in Table 1 with the [reliability spreadsheet](#) at this site, I determined that journals with impact factors between 1.0 and 4.9 in 1998 showed an increase of 0.1 ± 0.5 (mean \pm standard deviation). MSSE's increase of 0.5 therefore compares well with other journals on the rise, but it is not exceptional: of the 93 journals with impact factors in the 1.0–4.9 range, 14 had a larger increase than MSSE and 78 had a smaller increase or a decrease.

Table 1: Impact factors (citations per article per year) of journals in exercise and sport science, including key multidisciplinary journals, for the years 1999 and 2000. 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. [Download](#) an enhanced version of this table as an Excel spreadsheet.

1999	2000	Journal
		ACSM's Health and Fitness Journal
1.4	1.7	Acta Physiologica Scandinavica
0.6	1.3	Acta Psychologica
1.3	1.3	Adapted Physical Activity Quarterly
2.0	2.4	American Heart Journal
2.4	2.8	American Journal of Cardiology
4.0	5.0	American Journal of Clinical Nutrition
4.0	3.9	American Journal of Epidemiology
1.6	1.0	American Journal of Health Promotion
0.8	0.7	American Journal of Human Biology
2.1	2.7	American Journal of Hypertension
0.9	0.9	American Journal of Physical Medicine and Rehabilitation
3.0	3.2	American Journal of Physiology—Endocrinol Metab
2.7	3.2	American Journal of Physiology—Heart Circul Physiol
2.5	2.8	American Journal of Physiology—Reg Integr Comp Physiol
3.0	3.3	American Journal of Public Health
5.5	5.4	American Journal of Respiratory and Critical Care Medicine
2.3	2.1	American Journal of Sports Medicine
6.0	6.9	American Psychologist
1.1	0.7	Annals of Nutrition and Metabolism
1.0	1.4	Annals of the New York Academy of Sciences
5.5	7.1	Annual Review of Nutrition
20	19	Annual Review of Physiology

0.4	0.6	Applied Ergonomics
0.8	0.6	Applied Psychological Measurement
1.0	0.5	Applied Psychology-International Review
1.1	1.4	Archives of Physical Medicine and Rehabilitation
0.5	0.8	Archives of Physiology and Biochemistry
1.6	1.4	Arthritis Care and Research
1.3	1.2	Arthroscopy
0.5	0.7	Aviation Space and Environmental Medicine
2.9	3.4	Atherosclerosis
0.9	0.8	Behavior Research Methods Instruments and Computers
11	14	Behavioral and Brain Sciences
2.7	2.8	Behavioral Neuroscience
3.2	2.7	Biochemical and Biophysical Research Communications
	6.3	Biochimica Biophysica Acta–Bioenergetics
2.6	1.8	Biochimica Biophysica Acta–General Subjects
1.2	1.1	Biological Cybernetics
2.3	2.5	Brain Research
6.7	9.2	Brain Research Reviews
0.9	0.7	British Journal of Sports Medicine
3.4	5.3	BMJ–British Medical Journal
1.3	1.1	Canadian Journal of Applied Physiology
1.5	1.2	Canadian Journal of Physiology and Pharmacology
3.1	3.7	Cardiovascular Research
2.4	2.4	Chest
9.9	11	Circulation
8.3	9.1	Circulation Research
1.4	1.3	Clinical Biochemistry
0.8	1.1	Clinical Biomechanics
		Clinical Exercise Physiology
1.1	1.3	Clinical Journal of Sport Medicine
1.1	1.4	Clinical Nutrition
1.3	1.2	Clinical Orthopaedics and Related Research
0.7	1.0	Clinical Physiology
2.3	2.0	Clinical Science
2.0	1.6	Clinics in Chest Medicine
0.9	1.1	Clinics in Sports Medicine
0.9	0.9	Comparative Biochemistry and Physiology A–Mol Integr Physiol
9.0	7.7	Diabetes
5.1	5.0	Diabetes Care
1.1	1.5	Diabetes and Metabolism
0.7	1.0	Diabetes Nutrition and Metabolism
2.4	2.2	Diabetes–Metabolism Research and Reviews
2.2	2.7	Diabetic Medicine
5.2	5.7	Diabetologia
0.6	0.6	Educational and Psychological Measurement
1.4	1.5	Electromyography and Motor Control
0.7	0.7	Ergonomics
1.0	1.4	European Journal of Applied Physiology
1.7	2.2	European Journal of Clinical Nutrition
	2.0	European Journal of Physical Medicine and Rehabilitation
		European Physical Education Review
2.3	2.6	European Respiratory Journal
		European Sports History Review
2.9	3.2	Exercise and Immunology Reviews
	2.7	Exercise and Sport Sciences Reviews
2.2	2.1	Experimental Brain Research
1.2	1.1	Experimental Physiology
	0.9	Gait and Posture
2.1	2.5	Haematologica

		High Altitude Medicine and Biology
1.5	1.7	Hormone and Metabolic Research
1.7	1.3	Hormone Research
0.7	0.8	Human Movement Science
4.9	5.3	Hypertension
1.6	1.5	IEEE Transactions on Biomedical Engineering
2.0	1.9	International Journal of Epidemiology
		International Journal of History of Sport
3.2	2.9	International Journal of Obesity
1.5	1.2	International Journal of Sport Nutrition and Exercise Metabolism
0.5	0.8	International Journal of Sport Psychology
1.0	1.4	International Journal of Sports Medicine
		International Review for the Sociology of Sport
		International Sports Journal
11	15	JAMA—Journal of the American Medical Association
1.2	1.4	Japanese Journal of Physiology
0.9	1.1	Journal of Aging and Physical Activity
7.4	7.0	Journal of American College of Cardiology
1.6	1.5	Journal of American College of Nutrition
1.9	1.1	Journal of American Dietetic Association
		Journal of Applied Behavioral Science
0.9	0.8	Journal of Applied Biomechanics
2.1	2.3	Journal of Applied Physiology
0.9	1.1	Journal of Applied Sport Psychology
0.4	0.6	Journal of Athletic Training
7.7	7.3	Journal of Biological Chemistry
0.8	0.9	Journal of Biomechanical Engineering
1.5	1.5	Journal of Biomechanics
		Journal of Bodywork and Movement Therapies
		Journal of Cardiopulmonary Rehabilitation
0.8	5.4	Journal of Clinical Endocrinology and Metabolism
2.1	2.1	Journal of Clinical Epidemiology
11	12	Journal of Clinical Investigation
0.5	0.7	Journal of Clinical Psychology
		Journal of Comparative Physical Education and Sport
0.7	1.1	Journal of Electromyography and Kinesiology
1.7	1.8	Journal of Epidemiology and Community Health
		Journal of Exercise Physiology
6.4	6.1	Journal of General Physiology
1.2	1.5	Journal of Gerontology A—Biol Sci Med Sci
1.5	1.1	Journal of Gerontology B—Psychol Sci Soc Sci
0.2	0.2	Journal of Human Movement Studies
		Journal of Human Performance in Extreme Environments
3.0	3.6	Journal of Hypertension
0.5	1.3	Journal of Leisure Research
1.1	1.1	Journal of Motor Behaviour
3.9	3.9	Journal of Neurophysiology
9.0	8.5	Journal of Neuroscience
2.2	2.9	Journal of Nutrition
1.5	1.3	Journal of Occupational and Environmental Medicine
1.0	2.2	Journal of Orthopaedic Research
2.0	1.4	Journal of Orthopaedic and Sports Physical Therapy
1.0	1.2	Journal of Philosophy of Sport
		Journal of Physical Education Recreation and Dance
4.6	4.5	Journal of Physiology—London
0.4	1.0	Journal of Physiology and Biochemistry
		Journal of Science and Medicine in Sport
0.4	0.9	Journal of Social and Clinical Psychology
1.5	1.5	Journal of Sport and Exercise Psychology

		Journal of Sport Behavior
0.2	0.1	Journal of Sport History
0.1	0.3	Journal of Sport Management
0.8	0.4	Journal of Sport Rehabilitation
		Journal of Sport and Social Issues
0.1	0.1	Journal of Sports Chiropractic and Rehabilitation
0.5	0.4	Journal of Sports Medicine and Physical Fitness
1.1	1.3	Journal of Sports Sciences
0.02	0.2	Journal of Sports Traumatology
0.6	0.5	Journal of Strength and Conditioning Research
		Journal of Swimming Research
0.7	0.4	Journal of Teaching in Physical Education
		Knee Surgery Sports Traumatology and Arthroscopy
10	10	Lancet
1.0	1.0	Leisure Sciences
2.0	1.7	Lipids
		Measurement in Physical Education and Exercise Science
0.1	0.2	Medicina dello Sport
2.1	2.6	Medicine and Science in Sports and Exercise
		Medicine and Sport Science
1.9	2.0	Metabolism-Clinical and Experimental
		Motor Control
1.9	1.9	Muscle and Nerve
29	26	Nature
27	28	Nature Medicine
29	30	New England Journal of Medicine
1.7	1.5	Nutrition
0.6	1.0	Nutrition Metabolism and Cardiovascular Diseases
3.4	0.9	Obesity Research
0.7	0.9	Pediatric Exercise Science
		Pediatric Physical Therapy
0.3	0.3	Perceptual and Motor Skills
2.4	2.2	Pflugers Archive–European Journal of Physiology
		Physical Educator
1.2	1.2	Physical Therapy
		Physical Therapy in Sport
		Physical Therapy Reviews
0.3	0.3	Physician and Sportsmedicine
0.9	0.9	Physiological Measurement
24	28	Physiological Reviews
1.6	1.6	Preventive Medicine
10	11	PNAS–Proceedings of the National Academy of Sciences
7.4	5.3	Progress in Lipid Research
		Psychology of Sport and Exercise
1.2	1.5	Public Health Reports
1.1	1.0	Research Quarterly for Exercise and Sport
1.0	1.6	Respiration and Respiration Physiology
1.3	1.1	Scandinavian Journal of Clinical and Laboratory Investigation
0.7	0.7	Scandinavian Journal of Medicine and Science in Sports
25	24	Science
0.2	0.1	Science and Sports
0.5	0.3	Sociology of Sport Journal
		Sport History Review
1.0	0.6	Sport Psychologist
		Sport, Education, and Society
0.2	0.2	Sports Exercise and Injury
1.5	1.8	Sports Medicine
0.4	0.3	Sports Medicine and Arthroscopy Review
		Sports Medicine Training and Rehabilitation

		Strength and Conditioning
0.01	0.2	Strength and Conditioning Journal
3.4	3.9	Thorax
16	13	Trends in Biochemical Science
3.1	3.9	Trends in Endocrinology and Metabolism
20	17	Trends in Neuroscience
		Women in Sport & Physical Activity Journal

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