

Introduction to Personal Bibliometrics

H-INDEX AND RCR



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Medical Library and Archives

What is an H-Index?

Created in 2005 by physicist Jorge Hirsch, to measure the overall “impact and relevance” of an author’s research

For N papers, h of them have $\geq h$ citations

Hirsch’s H Index is 60 (per Web of Science)

Where Can You Calculate an H-Index?

Web of Science

- Tracks citations from only peer-reviewed journals
- Subscription through Harvard
- Reports fewer citations, compared with other sources

Google Scholar

- Tracks citations from all kinds of sources, not just peer-reviewed journals
- Free
- Reports more citations, compared with other sources

Scopus

- Neither Harvard nor BCH hold a subscription
- Can't speak to using it

Advantages of an H-Index

Cumulative – it illustrates increased impact over time, rewarding consistent quality of publications

Low-cited or recently published papers will not detract from the score

All authorships are equally weighted

Disadvantages of an H-Index

Cumulative – it will never decrease and cannot illustrate peaked or waning influence

Highly cited papers do not carry more weight

All authorships are equally weighted

Benchmarks vary across specialties

Possible H Index Benchmarks

Table 1
h-Index Values for Academic Physicians in 14 Medical Specialties

Specialty	No. of Faculty ^b	Database	h-Index ^a			Reference
			Assistant Professor	Associate Professor	Professor	
Anesthesiology	1,630	Scopus	(1)	(4)	(9)	Pagel and Hudetz ¹³
Dermatology	652	WoS	NR	9.4 (8)	23.7 (21)	Yuan et al ¹⁴
Emergency medicine	299	WoS	NR	NR	12.8 (11)	Babineau et al ¹⁵
		Google	NR	NR	16.2 (14)	
General surgery	219	WoS	2.9	7.3	23.1	Sharma et al ¹⁶
		Scopus	2.8	8.0	23.0	
Neurosurgery	1,120	Google	(5)	(10)	(19)	Spearman et al ¹⁷
Ophthalmology	1,460	Scopus	3.5	8.3	16.5	Lopez et al ¹⁸
Orthopedic surgery	2,061	Scopus	3.6	8.4	15.1	Bastian et al ¹⁹
		Google	4.4	10.5	21.0	
Otolaryngology	NR	Scopus	4.6	8.1	15.6	Svider et al ²⁰
Pathology ^c	299	WoS	(4)	(6)	(11)	Fraga ²¹
Plastic surgery	592	Scopus	4.6 (4)	9.1 (8)	15.3 (14)	Therattil et al ²²
Psychiatry	1,601	WoS	4.4 (2)	9.4 (7)	21.7 (20)	MacMaster et al ²³
Radiation oncology	826	Scopus	4.0 (2)	9.3 (8)	17.0 (16)	Choi et al ²⁴
Radiology	683	Scopus	2.3	6.2	12.5	Rad et al ²⁵
Urology	266	Scopus	8.0 (7)	13.8 (14)	22.0 (21)	Benway et al ²⁶

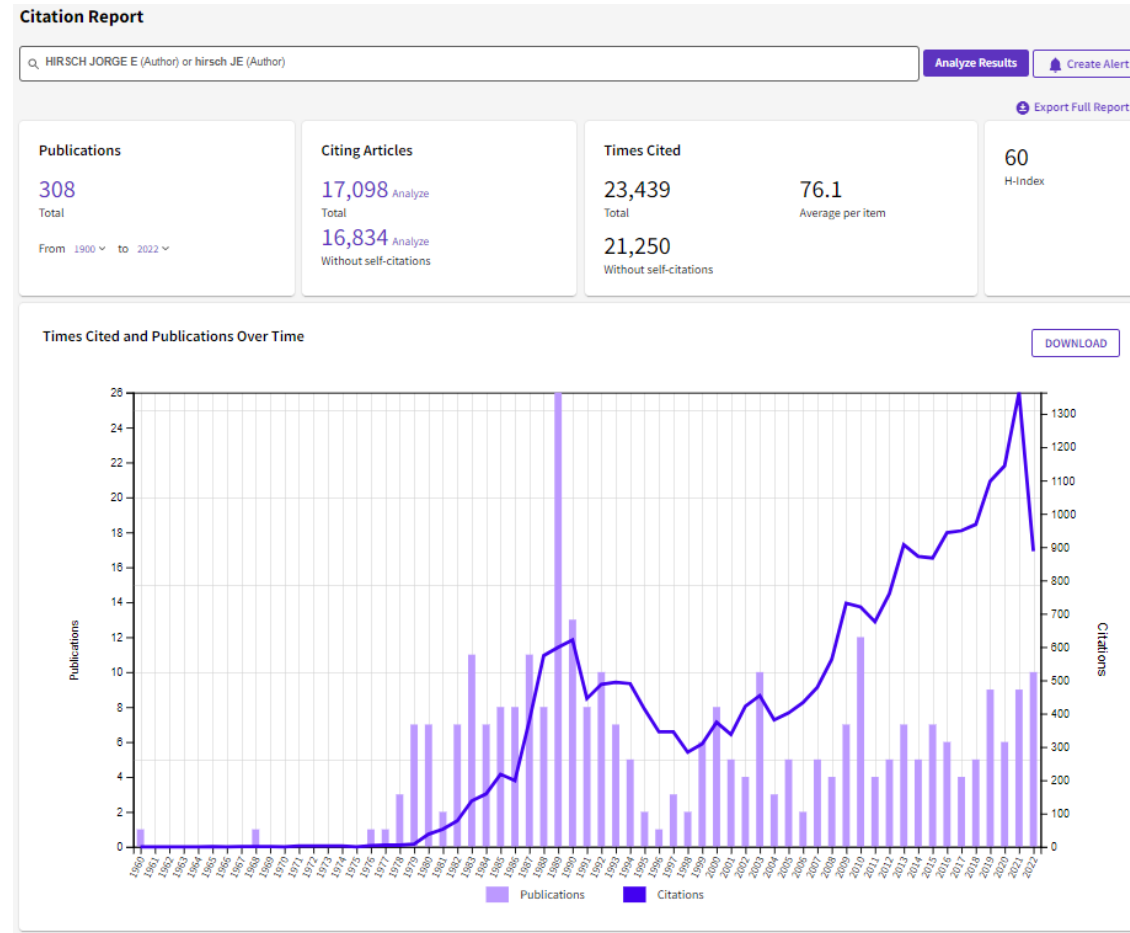
Google, Google Scholar; NR, not reported; WoS, Web of Science.

^ah-Index values are expressed as mean (median).

^bTotal number of faculty members for whom the h-index was calculated in each study.

^cDermatopathology.

Calculating an H-Index in Web of Science



What is a Relative Citation Ratio?

Developed in 2015 by the NIH

Citations per year of a given paper, relative to the median citations per year of NIH-funded papers in that field

- A paper with the same citations as the median citations in the field has an RCR of 1

The RCR of *An index to quantify an individual's scientific research output* is 50.72

Hirsch's Weighted RCR is 170.56

- Weighted RCR = sum of all individual RCRs

Advantages of RCR

Automatically contextualizes a paper in its field or specialty

Shows impact of specific papers

Gives basic author-level statistics based on a group of papers

Can show early impact of recently published papers

Disadvantages of RCR

iCite doesn't display indexing information for specialties – can't be sure what it's being compared to

The baseline group of papers is not objective or comprehensive

Calculating a RCR with iCite

Influence

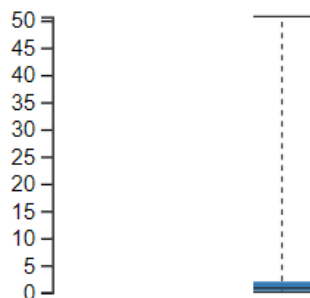
Translation

Citations

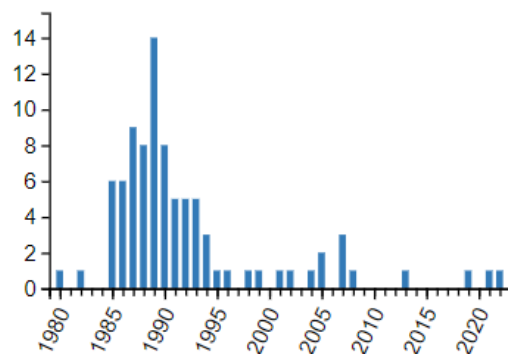
Roll over table headers for definitions; visit the [Global RCR Stats](#) page for percentile tables

Total Pubs	Pubs Per Year	Cites Per Year					Relative Citation Ratio (RCR)				Weighted RCR
		MAX	MEAN	SEM	MED		MAX	MEAN	SEM	MED	
88	2.05	113.06	2.24	1.30	0.33		50.72	1.98	0.62	0.63	170.56

RCR Distribution



Pubs by Year



Weighted RCR by Year

