

# ➤ Thomson Scientific Journal Selection Process

## *The Impact Factor in Context*

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## Impact Factor in Context: Origins and Use

- Overview of Journal Selection Process
  - Impact Factor
    - Origins
    - How is it derived
    - In context of subject categories
    - Publishing trends and practices affecting Impact Factor
- How to Improve your journal.

## Web of Science

- **SCIExpanded**
- **Social Sciences Citation Index**
- **Arts & Humanities Citation Index**
- *Index Chemicus*
- *Current Chemical Reactions*

## Thomson Journal Selection Process – Why be Selective?

Eugene Garfield PhD

- Small number of journals publish the bulk of significant scientific results.
  - 7,621 journals in SCIE and SSCI publish 814,967 articles that receive 20,834,641 citations
    - 300 journals (4%) publish 239,206 articles (30%)
    - 300 journals (4%) receive 10,681,596 citations ((51%)
    - 3,000 journals (40%) publish 648,906 articles (80%)
    - 3,000 journals receive (40%) 19,287,265 citations (92%)
- 2000 journals evaluated annually
  - 10% accepted
- Thomson editors: information professionals; librarians; experts in the literature of their subject area.

## ... Journal Selection

1. Basic Journal Publishing Standards
2. Editorial Content
3. International Diversity
4. Citation Analysis

## ... Journal Selection

### 1.) Publishing Standards

- **Timeliness** – must deliver issues on schedule
- **Editorial Conventions** – fully descriptive article titles, complete cited references, complete author addresses
- **English Language** Bibliographic Information
- **Peer Review**

**... Journal Selection**

## **2.) Editorial Content**

Do we need this journal in the database,  
or is the category already well covered?

## ... Journal Selection

### 3.) International Diversity

Are the authors, editors, and editorial advisory board members from around the world?

Does this journal reflect the global context in which scientific research takes place?

## Journal Selection

### 4.) Citation Analysis

#### Impact Factor:

*...the average number of times recent articles in a journal were cited in a particular year.*

## Top 20 Biomedical Journals by Number of Articles Published in 2006

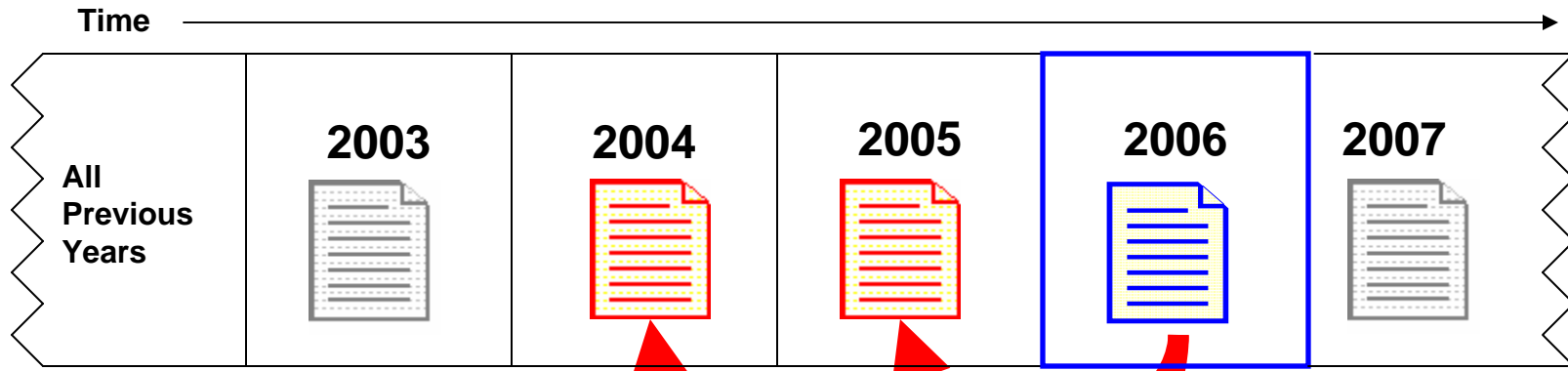
Abbreviated Journal Title <i>(linked to journal information)</i>	ISSN	Total Cites	Impact Factor	Immediacy Index	Articles
<a href="#">J BIOL CHEM</a>	0021-9258	410903	5.808	1.110	4336
<a href="#">P NATL ACAD SCI USA</a>	0027-8424	371057	9.643	1.758	3306
<a href="#">BIOCHEM BIOPH RES CO</a>	0006-291X	68677	2.855	0.462	2379
<a href="#">J IMMUNOL</a>	0022-1767	117464	6.293	0.886	1846
<a href="#">BIOCHEMISTRY-US</a>	0006-2960	94085	3.633	0.726	1605
<a href="#">CANCER RES</a>	0008-5472	112911	7.656	1.220	1493
<a href="#">J AGR FOOD CHEM</a>	0021-8561	37636	2.322	0.341	1459
<a href="#">J NEUROSCI</a>	0270-6474	103022	7.453	1.319	1415
<a href="#">BRAIN RES</a>	0006-8993	54874	2.341	0.241	1397
<a href="#">J CHROMATOGR A</a>	0021-9673	48736	3.554	0.500	1333
<a href="#">J VIROL</a>	0022-538X	79698	5.341	1.002	1271
<a href="#">BIOORG MED CHEM LETT</a>	0960-894X	16692	2.538	0.624	1264
<a href="#">BLOOD</a>	0006-4971	108180	10.370	2.195	1189
<a href="#">ENVIRON SCI TECHNOL</a>	0013-936X	44915	4.040	0.646	1082
<a href="#">NEUROSCI LETT</a>	0304-3940	26138	2.092	0.372	1069
<a href="#">FEBS LETT</a>	0014-5793	53127	3.372	0.589	1068
<a href="#">APPL ENVIRON MICROB</a>	0099-2240	55875	3.532	0.634	1065
<a href="#">TRANSPL P</a>	0041-1345	9649	0.962	0.062	1025
<a href="#">ZOOTAXA</a>	1175-5326	1039	0.612	0.165	1016
<a href="#">PEDIATRICS</a>	0031-4005	36158	5.012	0.784	996

## Top 20 Biomedical Journals by Total Citations Rec'd 2006

Abbreviated Journal Title <i>(linked to journal information)</i>	ISSN	Total Cites	Impact Factor	Immediacy Index	Articles
<a href="#">J BIOL CHEM</a>	0021-9258	410903	5.808	1.110	4336
<a href="#">NATURE</a>	0028-0836	390690	26.681	6.789	962
<a href="#">P NATL ACAD SCI USA</a>	0027-8424	371057	9.643	1.758	3306
<a href="#">SCIENCE</a>	0036-8075	361389	30.028	5.555	885
<a href="#">NEW ENGL J MED</a>	0028-4793	177505	51.296	12.743	303
<a href="#">LANCET</a>	0140-6736	133932	25.800	7.419	301
<a href="#">CELL</a>	0092-8674	132528	29.194	6.403	352
<a href="#">CIRCULATION</a>	0009-7322	126019	10.940	2.674	682
<a href="#">J IMMUNOL</a>	0022-1767	117464	6.293	0.886	1846
<a href="#">CANCER RES</a>	0008-5472	112911	7.656	1.220	1493
<a href="#">BLOOD</a>	0006-4971	108180	10.370	2.195	1189
<a href="#">J NEUROSCI</a>	0270-6474	103022	7.453	1.319	1415
<a href="#">JAMA-J AM MED ASSOC</a>	0098-7484	100317	23.175	7.781	270
<a href="#">BIOCHEMISTRY-US</a>	0006-2960	94085	3.633	0.726	1605
<a href="#">J CLIN INVEST</a>	0021-9738	80963	15.754	3.911	303
<a href="#">J VIROL</a>	0022-538X	79698	5.341	1.002	1271
<a href="#">NUCLEIC ACIDS RES</a>	0305-1048	74972	6.317	1.744	943
<a href="#">EMBO J</a>	0261-4189	74535	10.086	1.644	547
<a href="#">J CLIN ONCOL</a>	0732-183X	71827	13.598	3.485	734
<a href="#">MOL CELL BIOL</a>	0270-7306	69227	6.773	1.332	804


## Top 20 Biomedical Journals by 2006 Impact Factor

Abbreviated Journal Title <i>(linked to journal information)</i>	ISSN	Total Cites	Impact Factor	Immediacy Index	Articles
<a href="#">CA-CANCER J CLIN</a>	0007-9235	5266	63.342	16.526	19
<a href="#">NEW ENGL J MED</a>	0028-4793	177505	51.296	12.743	303
<a href="#">ANNU REV IMMUNOL</a>	0732-0582	15482	47.237	9.500	24
<a href="#">ANNU REV BIOCHEM</a>	0066-4154	16761	36.525	4.433	30
<a href="#">NAT REV CANCER</a>	1474-175X	13189	31.583	4.675	80
<a href="#">PHYSIOL REV</a>	0031-9333	16209	31.441	4.906	32
<a href="#">NAT REV MOL CELL BIO</a>	1471-0072	14132	31.354	3.894	85
<a href="#">SCIENCE</a>	0036-8075	361389	30.028	5.555	885
<a href="#">CELL</a>	0092-8674	132528	29.194	6.403	352
<a href="#">NAT REV IMMUNOL</a>	1474-1733	11098	28.697	4.628	78
<a href="#">NAT MED</a>	1078-8956	43664	28.588	5.261	153
<a href="#">ANNU REV NEUROSCI</a>	0147-006X	9139	28.533	3.050	20
<a href="#">NAT IMMUNOL</a>	1529-2908	20761	27.596	5.856	132
<a href="#">NATURE</a>	0028-0836	390690	26.681	6.789	962
<a href="#">ANNU REV CELL DEV BI</a>	1081-0706	7499	26.576	1.000	27
<a href="#">LANCET</a>	0140-6736	133932	25.800	7.419	301
<a href="#">BRIEF BIOINFORM</a>	1467-5463	1428	24.370	0.207	29
<a href="#">NAT GENET</a>	1061-4036	54053	24.176	7.144	202
<a href="#">CANCER CELL</a>	1535-6108	9093	24.077	4.013	78
<a href="#">ENDOCR REV</a>	0163-769X	11205	23.901	2.067	30



**2006 Impact Factor**

→ Citations

 Source paper – published in 2006

 Cited reference – to items published in 2005 or 2004

$$\text{Impact Factor} = \frac{\text{Cites in 2006 to 2005 or 2004 papers}}{\text{Papers published in 2005 or 2004}}$$

The average number of citations in 2006 to scholarly material that was published in the prior two years

## Emerging Infectious Diseases

**2006 Impact factor: 5.094**

## Journal Citation Reports (JCR) -- 2006 Science Edition

### Impact Factor Calculation

Journal: **Emerging Infectious Diseases**

Impact Factor: **5.094**

Cites in 2006 to articles published in :

2005 = **1645**

2004 = **1982**

05 + 04 = **3627**

Number of articles published in:

2005 = **338**

2004 = **374**

05 + 04 = **712**

Calculation:

Cites to recent articles **3627** = **5.094**

Number of recent articles **712**

## Subject Category Summary List: 2006 Journal Citation Reports

Category <i>(linked to category information)</i>	Total Cites	Median Impact Factor	Aggregate Impact Factor	Aggregate Immediacy Index	Aggregate Cited Half-Life	# Journals	Articles
<a href="#">GENETICS &amp; HEREDITY</a>	630562	2.552	4.388	0.867	5.8	131	14605
<a href="#">BIOTECHNOLOGY &amp; APPLIED MICROBIOLOGY</a>	429170	1.938	2.899	0.446	5.5	140	17784
<a href="#">CRYSTALLOGRAPHY</a>	113809	1.467	1.196	0.369	8.3	23	9087

- Genetics & Heredity
- Biotech & Appl Microbiol

Many citations, Many articles.

- Crystallography:

Fewer citations, Fewer articles

- Arts & Humanities

*Slow citation growth*

- Life Sciences

*Rapid citation growth*

## Journal Selection Process

### ...4.) Citation Analysis

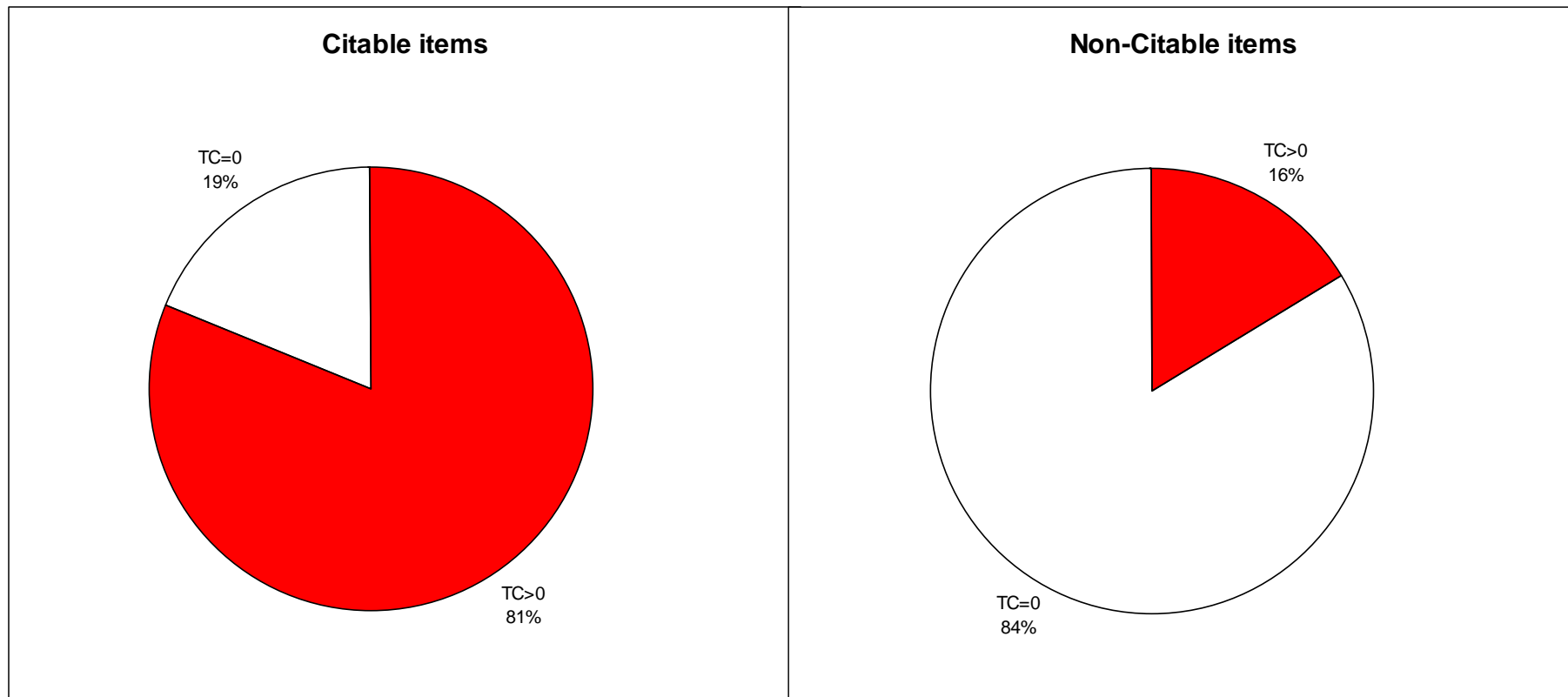
For new journals :

- citation history of contributing authors and Editorial Advisory Board members
- Has their prior work been cited?

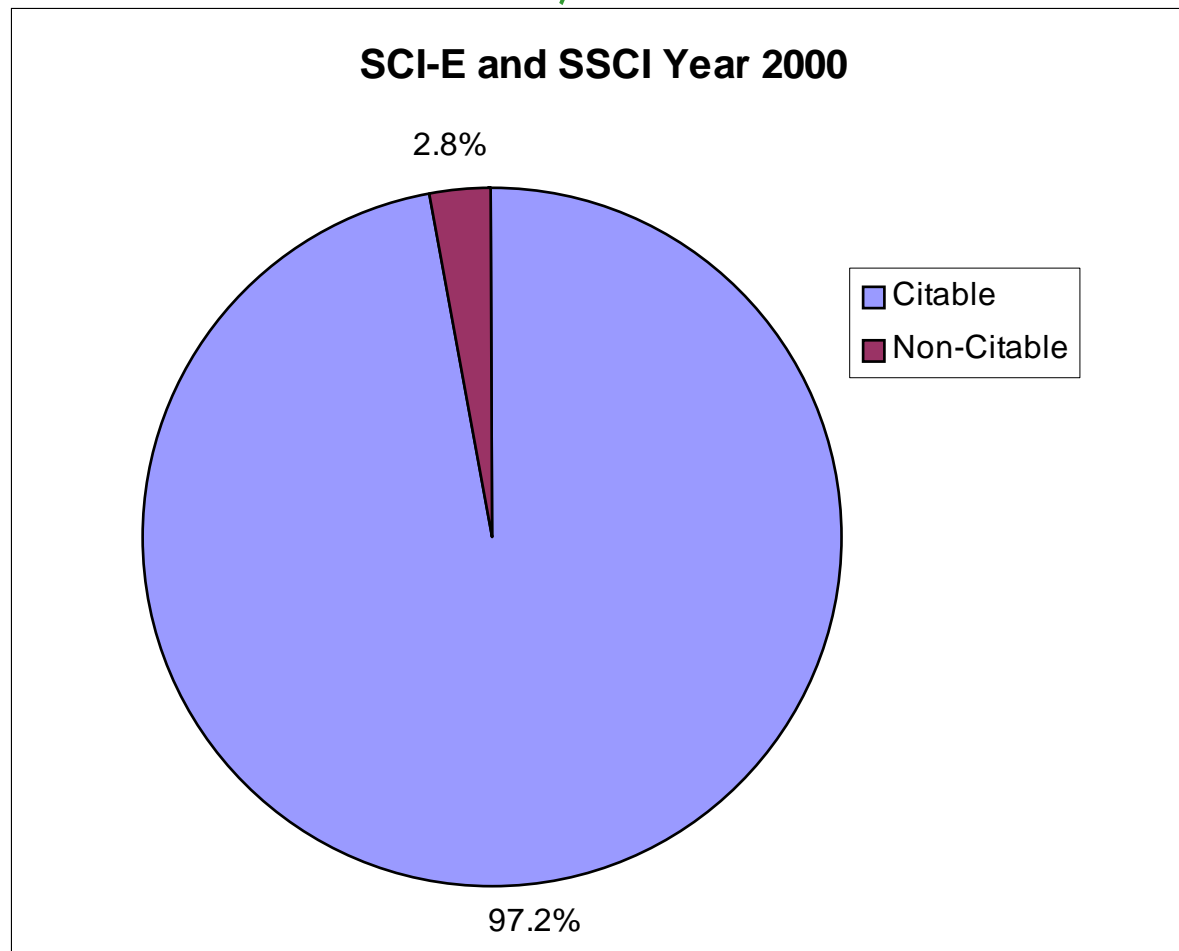
## Some characteristics of **Citable Items**:

- Descriptive title
- One or more named authors with address
- An abstract
- Length
- Data tables or figures
- Cited references

## All Items in 2000 (SCI-E and SSCI): what gets cited in 2000-2005



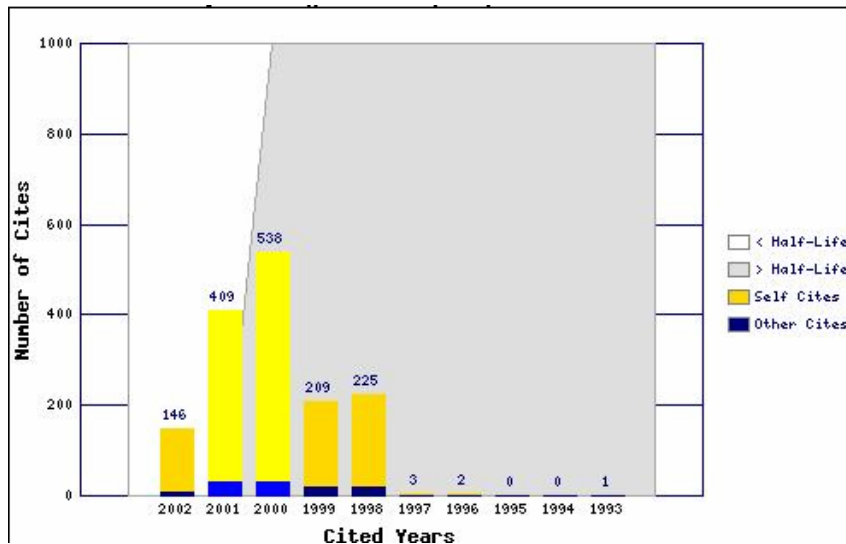
## How much do non-citable items contribute to Impact Factor? PY=2000; citations in 2002



Self Citations:

- **80% of all journals listed in the JCR Science Edition have self-citation rates of less than 20%.**
- **Excessive self-citation weakens the integrity of the journal's Impact Factor.**

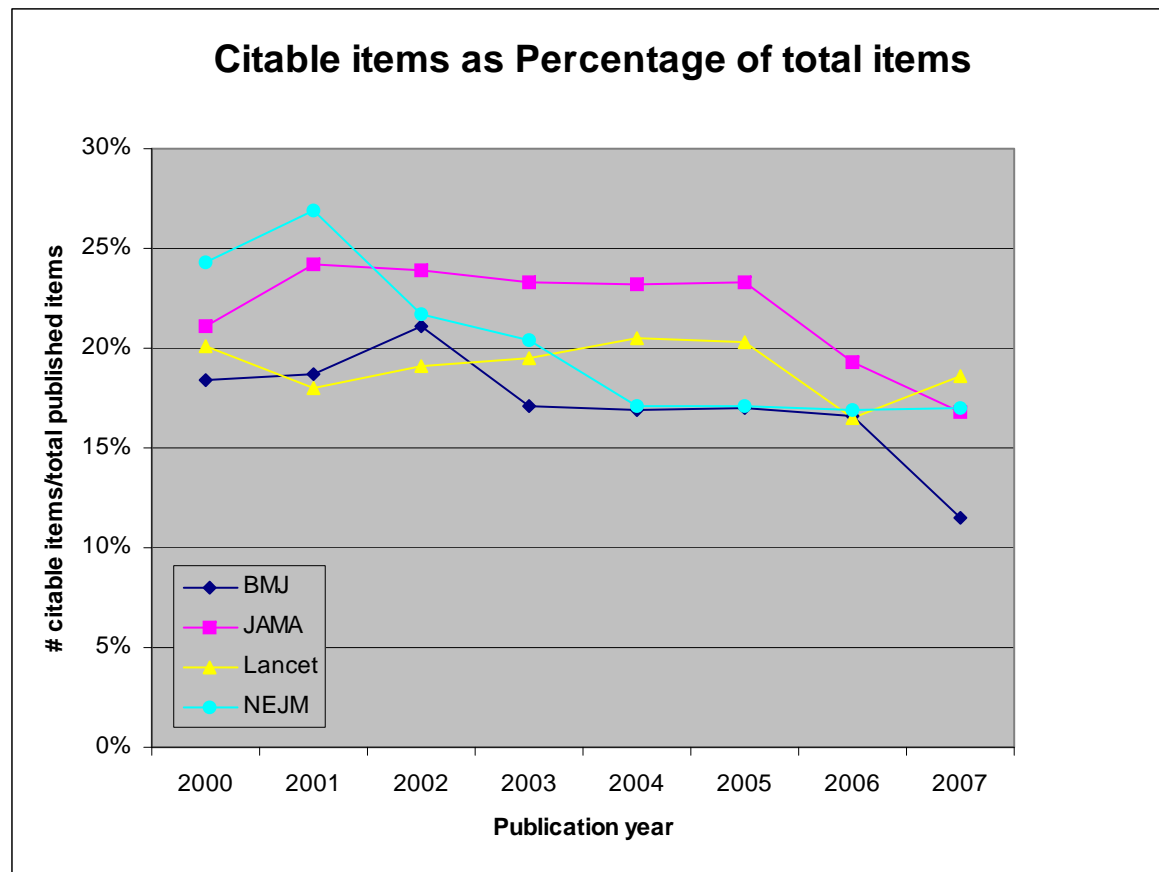
## Self Citations: World Journal of Gastroenterology 2002 JCR

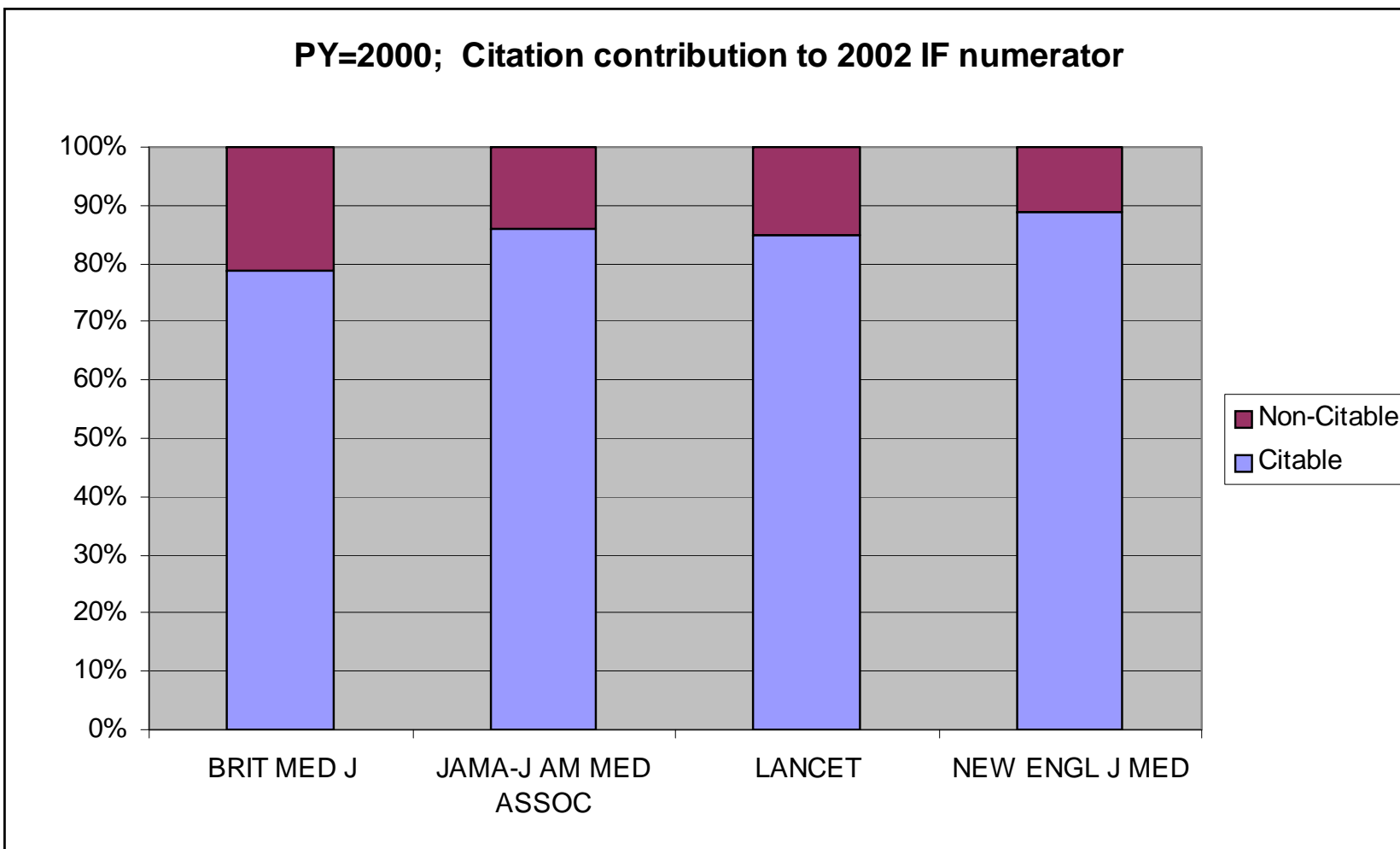


- 2002 Impact Factor:
- 94% Self Citations
- 947 cites / 374 articles = 2.532 IF
- Rank by IF: 13 of 45 in Gastroenterology & Hepatology category
- Adjusted for Self Citations:
- 58 cites / 374 articles = 0.155
- Rank by IF: 44 of 45

Journal dropped from Web of Science and JCR. Reinstated in 2006.

General Medicine Journals: Publishing trends possibly affecting Impact Factor





- Properly used Impact Factor can tell us something about a journal as a whole namely the extent to which its recently published papers were cited in a given year.
- It tells us nothing concrete about any specific paper or specific author. Most articles in most fields are not highly cited. Less than 25% of all articles receive 5 or more citations and many articles are never cited.

## How Can I Improve My Journal?

1. Active recruitment of high-impact articles by courting researchers
2. Offering authors better services
3. Boosting the journal's media profile
4. More careful article selection

-M. Chew, E. V. Villanueva, and M. B. Van Der Weyden, *Journal of the Royal Society of Medicine* **100** (3), 142 (2007).

Thomson can help.

“Not everything that can be counted counts,  
and not everything that counts can be counted”.  
- Albert Einstein

***Thank you.***

***Visit the Thomson Scientific Web site at***

***<http://www.scientific.thomson.com/>***

***Contact me at***

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