

# Determination of highly linked free e-journals for Medicine courses in Jondi Shapour Ahvaz University (Iran)

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## Abstract:

Now, there are many free electronic journals accessible for their readers on the Web. Many of the academic staff and students, especially in developing countries are using these journals to fulfill their academic needs. However, not all of these journals can be considered as academically qualified and credited. Libraries and information centers can select those free e-journals that are highly linked on the web area. The purpose of this article is determination of highly linked free e-journals for Medicine courses in Jondi Shapour Ahvaz University (Iran) by Webometrics method. In this research, Total-links, In-links and self-links of 18 Medicine courses in Jondi Shapour Ahvaz University, have been extracted from web environment. These courses include: Anatomy, Biochemistry, Dentistry, Dermatology, General medicine, Immunology, Nuclear medicine, Nursing, Nutrition, Ophthalmology, Pediatrics, Pharmacy, Physiology, Physiotherapy, Radiology, Surgery, Toxicology and Urology. The highly Linked free e-journals of these courses were identified using the Yahoo! directory in April 2006. As a result, the core free e-journals were identified for each course of study. Findings revealed that Surgery course with 7 core free e-journals had the greatest part free e-journals and Anatomy, General medicine, Nutrition, Physiotherapy, Nuclear medicine, Dermatology, Surgery and Urology courses with only one core free e-journal had the least part of free e-journals. This study also indicated that *Molecular Vision* journal that has belonged to Biochemistry course had maximum amount with 5740 In-Links and *Journal of the Anatomical Society of India* journal that has belonged to Anatomy course, had minimum amount with only 74 In-Links.

**Keywords:** Webometrics, Jondi Shapour Ahvaz University, Highly linked free e-journals.

## 1. Introduction

Now, there are many free electronic journals accessible for their readers on the Web. Many of the academic staff and students, especially in developing countries are using these journals to fulfill their academic needs. However, not all of these journals can be considered as academically qualified and credited. Libraries and information centers can select those free e-journals that are highly linked on the web area. The purpose of this article is determination of highly linked free e-journals for Medicine courses in Jondi Shapour Ahvaz University (Iran) by Webometrics method. In this research, Total links, In- links and self-links of 18 Medicine courses in Jondi Shapour Ahvaz University, have been extracted from web environment. Jondi Shapour Ahvaz University

These courses include: Anatomy, Biochemistry, Dentistry, Dermatology, General medicine, Immunology, Nuclear medicine, Nursing, Nutrition, Ophthalmology, Pediatrics, Pharmacy, Physiology, Physiotherapy, Radiology, Surgery, Toxicology and Urology.

## 2. Research aims

This research aims include:

1. Free e-journals websites of Medicine courses ranking in Jondi Shapour Ahvaz University on the basis of their In-links, Total links and Self-links.
2. Determination of highly linked free e-journals for Medicine courses in Jondi Shapour Ahvaz University.

## 3. Methodology

In this research, free e-journals URLs of Medicine courses in Jondi Shapour Ahvaz University were studied.

These journals were extracted from Directory of Open Access journals (DOAJ)<sup>1</sup> on the basis of free e-journals criteria selection. In order to determine the In-links, Total links and Self links of these websites Yahoo! search engine was used in February 2005. In this research, Webometric method was used to determine the highly linked free e-journals for Medicine courses in Jondi Shapour Ahvaz University. Average of In-links, to assign the highly linked free e-journals for each course was calculated. It means that free e-journals total In-links of each course were divided into total number of all free e-journals in that course. Using this computing highly linked free e-journals were gained.

In order to gain the Total links of free e-journals websites, this formula was used:

Link:<http://www.isna.ir> OR Link:<http://isna.ir>

In order to extract the Self links of these websites, this formula was used:

(link:<http://www.isna.ir> OR link:<http://isna.ir>) AND (host:<http://www.isna.ir> OR host:<http://isna.ir>)

In order to gain the In-links of free e-journals websites, this formula was used:

(link:<http://www.isna.ir> OR link:<http://isna.ir>) NOT (host:<http://www.isna.ir> OR host:<http://isna.ir>)

In the appendix, lists of free e-journals links of each course have been showed.

#### **4. Literature Review**

Asnafi (1) provided criteria selection of free e-journals via Internet. Some of these criteria were: full text, having abstract, archive and table of contents, peer review articles and so on.

Harter & Ford (3) studied 39 scholarly e-journals. Their research showed that there is not significant correlation among links to journals and Impact Factors in ISI.

Chu (2) studied the link structure of 12 ALA accredited LIS school websites. Based of co-links data, the structure underlying the 12 LIS schools was delineated. Links to the outside world by 12 schools doing not seem quite extensive both in terms of content and quality. She found that webometrics offers an evaluation measurement that is not available in bibliometrics when and institution is the unit of analysis.

Osareh (6) studied LIS schools websites by analyzing in-links and co-links to study the visibility and map the co-link structure of these websites. She did her research using All The Web search engine. The results of the study showed that there were 8 clusters (2 cross national and 6 international) in the studied LIS schools websites. The multidimensional scaling map showed 4 major collaboration clusters: 2 cross national and 2 international.

Smith (7) extracted 10 free e-journals related to LIS using Altavista search engine and found highly cited free e-journals in LIS field.

Kousha (4) extracted 15 free e-journals in LIS field via DOAJ. He did this analysis using Google search engine. His research showed that there is a weak correlation between average count of urls and average count of ISI citations for journals.

Nouruzi (5) using Altavista search engine studied Iranian universities websites In-links. His research showed that Iranian universities websites had few In-links.

Zeinolabedini, Maktabifard and Osareh (8) studied National Library Websites (NLW) using webometric methods. This study found that according to the in-link count of 38 national library websites, 3 were extremely popular and we can call them the most visible national library websites as they come below: 1. United States of America (<http://www.loc.gov>); 2. Australia (<http://www.nla.gov.au>); 3. United Kingdom (<http://www.bl.uk>). The results of the study also showed that, there were 5 clusters (2 cross continental and 3 international) in the studied national library websites. On the other hand, the multidimensional scaling map showed 4 major collaboration clusters: 2 cross national (both European) and 2 international (European, Asian, American, Australian). African national library websites were not seen in these clusters.

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<sup>1</sup> <http://www.doaj.org>

## 5. Research findings

Jondi Shapour Ahvaz University offers courses that are about medical Science. This University has 45 courses that are in Medicine field. In this research we could find free e-journals via DOAJ only for 18 courses. As it will come, highly linked free e-journals for Medicine courses in Jondi Shapour Ahvaz University were extracted:

Up to 352 links were assigned to calculate highly linked free e-journals of **Physiology**.

So, highly linked free e-journals of **Physiology** are:

1. The Physiologist: 395
2. Physiological Research: 814
3. Neurobiology of Lipids: 700
4. Advances in physiology education: 2760

Up to 742 links were assigned to calculate highly linked free e-journals of **Pediatrics**.

So, highly linked free e-journals of **Pediatrics** are:

1. Indian Journal of Pediatrics:858
2. Indian Pediatrics:3340

Up to 162 links were assigned to calculate highly linked free e-journals of **Surgery**.

So, highly linked free e-journals of **Surgery** are:

1. BMC Surgery:311
2. Indian Journal of Plastic Surgery:522
3. Indian Journal of Surgery:469
4. Interactive Cardiovascular and Thoracic Surgery:347
5. The Internet Journal of Neurosurgery:213
6. The Internet Journal of Surgery:182
7. The Internet Journal of Thoracic and Cardiovascular Surgery:227

Up to 195 links were assigned to calculate highly linked free e-journals of **Dentistry**.

So, highly linked free e-journals of **Dentistry** are:

1. Journal of Indian Prosthodontic Society: 304
2. BMC Oral Health: 327
3. Journal of Contemporary Dental Practice : 890

Up to 195 links were assigned to calculate highly linked free e-journals of **Anatomy**.

So, highly linked free e-journals of **Anatomy** are:

1. Journal of the Anatomical Society of India:43

Up to 527 links were assigned to calculate highly linked free e-journals of **Urology**.

So, highly linked free e-journal of **Urology** is:

1. Digital Urology Journal: 1850

Up to 88 links were assigned to calculate highly linked free e-journals of **General medicine**.

So, highly linked free e-journal of **General medicine** is:

1. European Journal of General Medicine: 88

Up to 712 links were assigned to calculate highly linked free e-journals of **Biochemistry**.

So, highly linked free e-journals of **Biochemistry** are:

1. Acta biochimica polonica: 3400
2. Medical Science Monitor: 936
3. Molecular Vision: 5740

Up to 124 links were assigned to calculate highly linked free e-journals of **Toxicology**.

So, highly linked free e-journals of **Toxicology** are:

1. JIMR On-Line: 327

2. Journal of Applied Sciences and Environmental Management: 213

Up to 483 links were assigned to calculate highly linked free e-journals of **Radiology**.

So, highly linked free e-journals of **Radiology** are:

1. Indian Journal of Radiology and Imaging: 1940

2. The Internet Journal of Nuclear Medicine: 753

Up to 659 links were assigned to calculate highly linked free e-journals of **Nursing**.

So, highly linked free e-journals of **Nursing** are:

1. Online Journal of Issues in Nursing: 2420

2. World Wide Wounds: 1140

Up to 725 links were assigned to calculate highly linked free e-journals of **Pharmacy**.

So, highly linked free e-journals of **Pharmacy** are:

1. AAPS PharmSci: 797

2. AAPS PharmSciTech: 1010

3. Journal of Pharmacy and Pharmaceutical Sciences: 805

4. U.S. Pharmacist: 1460

Up to 219 links were assigned to calculate highly linked free e-journals of **Immunology**.

So, highly linked free e-journals of **Immunology** are:

1. BMC Immunology: 336

2. Cancer Immunity: 1570

3. Physiological Research: 797

Up to 358 links were assigned to calculate highly linked free e-journals of **Nuclear medicine**.

So, highly linked free e-journal of **Nuclear medicine** is:

1. BMC Nuclear Medicine: 780

Up to 298 links were assigned to calculate highly linked free e-journals of **Ophthalmology**.

So, highly linked free e-journals of **Ophthalmology** are:

1. Indian Journal of Ophthalmology: 365

2. Journal of Vision: 436

Up to 717 links were assigned to calculate highly linked free e-journals of **Nutrition**.

So, highly linked free e-journal of **Nutrition** is:

1. Nutrition Journal: 5660

Because Physiotherapy course had one free e-journal, it could be introduced as only free e-journal of Physiotherapy course.

So, highly linked free e-journal of **Physiotherapy** is:

1. New Zealand Journal of Physiotherapy: 99

Up to 353 links were assigned to calculate highly linked free e-journals of **Dermatology**.

So, highly linked free e-journal of **Dermatology** is:

1. Indian Journal of Dermatology, Venereology and Leprology : 1430

## 6. Conclusion

Webometrics is related to fields such as bibliometrics, Scientometrics and Infometrics and can be useful for studying the web links structure. But as Osareh (2003) mentioned, Because the search engines which are used for data gathering in this methodology, need to be improved Webometrics method needs to be conducted with caution. Research Findings revealed that Biochemistry, Immunology and Surgery courses with 20 core free e-journals had the greatest part of free e-journals and Anatomy and General medicine courses with only 2 free e-journals had the least part of free e-journals. This study also indicated that

*Molecular Vision* journal that has belonged to Biochemistry course had maximum amount with 5740 In-Links and *Journal of the Anatomical Society of India* journal that has belonged to Anatomy course, had minimum amount with only 74 In-Links. It is credited that free e-journals have significant role in researches and scholarly publishing. So, libraries and information centers must consider them as important and vital information resources.

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**Appendix: Lists of free e-journals links for Medical courses in Jondi Shapour Ahvaz University**

Physiology free e-journals links			
In-link	Self-link	Title	Row
146	0	Acoustics Research Letters Online (ARLO)	1

319	1	Acta Protozoologica	2
2760	9	Advances in physiology education	3
321	0	BMC Physiology	4
78	0	Indian Journal of Aerospace Medicine	5
25	0	International Journal of Zoological Research	6
211	3	Iranian Biomedical Journal	7
84	0	Journal of Exercise Physiology - Online	8
62	0	Journal of Physiological Anthropology and Applied Human Science	9
20	0	Journal of PHYSIOLOGICAL ANTHROPOLOGY and Applied Human Science	10
1814	0	Journal of Physiology and Pharmacology	11
58	0	Journal of Smooth Muscle Research	12
58	0	Middle East Fertility Society Journal	13
700	1	Neurobiology of Lipids	14
168	1	Nutrition & Metabolism	15
814	0	Physiological Research	16
96	0	Proteome Science	17
204	0	Reproductive Biology and Endocrinology	18
395	0	The Physiologist	19

#### Pediatrics free e-journals links

In-link	Self-link	Title	Row
322	0	BMC Pediatrics	1
87	0	Clinical Pediatric Endocrinology	2
858	3	Indian Journal of Pediatrics	3
3340	12	Indian Pediatrics	4
119	1	Journal of FAS International	5
54	0	Journal of Indian Association of Pediatric Surgeons	6
169	2	The Internet Journal of Pediatrics and Neonatology	7
68	0	The Italian Journal of Pediatrics	8
177	0	The Turkish Journal of Pediatrics	9

#### Surgery free e-journals links

In-link	Self-link	Title	Row
311	2	BMC Surgery	1
522	4	Indian Journal of Plastic Surgery	2
469	0	Indian Journal of Surgery	3
81	0	Indian Journal of Thoracic and Cardiovascular Surgery	4

347	0	Interactive Cardiovascular and Thoracic Surgery	5
39	0	Journal of Cardiothoracic Surgery	6
22	0	Journal of Experimental and Clinical Assisted Reproduction (JECAR)	7
54	0	Journal of Indian Association of Pediatric Surgeons	8
231	1	The Internet Journal of Neurosurgery	9
157	0	Journal of Orthopaedic Surgery	10
60	0	Middle East Fertility Society Journal	11
96	0	Nigerian Journal of Surgical Research	12
81	0	The Internet Journal of Neurosurgery	13
132	0	The Internet Journal of Orthopedic Surgery	14
129	0	The Internet Journal of Otorhinolaryngology	15
76	0	The Internet Journal of Perfusionists	16
78	0	The Internet Journal of Plastic Surgery	17
65	0	The Internet Journal of Spine Surgery	18
182	0	The Internet Journal of Surgery	19
227	0	The Internet Journal of Thoracic and Cardiovascular Surgery	20

#### Dentistry free e-journals links

In-link	Self-link	Title	Row
82	0	Angle Orthodontist	1
327	0	BMC Oral Health	2
98	0	Brazilian Dental Journal	3
93	0	Brazilian Journal of Oral Sciences	4
890	1	Journal of Contemporary Dental Practice	5
304	2	Journal of Indian Prosthodontic Society	6
23	0	Journal of Oral Science	7
45	0	Journal of the Indian Society of Pedodontics and Preventive Dentistry	8
25	0	Pediatric Dental Journal	9
64	0	The New York State Dental Journal	10

#### Anatomy free e-journals links

In-link	Self-link	Title	Row
23	0	International Journal of Zoological Research	1
43	0	Journal of the Anatomical Society of India	2

#### Urology free e-journals links

In-link	Self-link	Title	Row
321	0	BMC Urology	1
1850	7	Digital Urology Journal	2
129	0	Indian Journal of Urology	3
232	1	Journal of Minimal Access Surgery	4
103	1	The Internet Journal of Urology	5

#### General med free e-journals links

In-link	Self-link	Title	Row
92	0	European Journal of General Medicine	1
45	0	Medscape General Medicine	2

#### Physiotherapy free e-journals links

In-link	Self-link	Title	Row
99	0	New Zealand Journal of Physiotherapy	1

#### Nutrition free e-journals links

In-link	Self-link	Title	Row
247	0	Acta Ichthyologica et Piscatoria	1
204	2	International Journal of Behavioral Nutrition and Physical Activity	2
147	1	Journal of Health, Population and Nutrition	3
148	0	Journal of the International Society of Sports Nutrition	4
169	1	Nutrition & Metabolism	5
212	0	Nutrition Bytes	6
5660	8	Nutrition Journal	7
85	0	Nutrition Noteworthy	8
265	1	Pakistan Journal of Nutrition	9
35	1	World Journal of Agricultural Sciences	10

#### Ophthalmology free e-journals links

In-link	Self-link	Title	Row
295	1	BMC Ophthalmology	1
295	0	Digital Journal of Ophthalmology	2
365	3	Indian Journal of Ophthalmology	3
436	0	Journal of Vision	4
99	0	The Internet Journal of Ophthalmology and Visual Science	5

### Nuclear medicine free e-journals links

In-link	Self-link	Title	Row
222	0	Annals of Nuclear Medicine	1
780	5	BMC Nuclear Medicine	2
71	0	The Internet Journal of Nuclear Medicine	3

### Immunology free e-journals links

In-link	Self-link	Title	Row
87	0	American Journal of Biochemistry and Biotechnology	1
51	0	American Journal of Immunology	2
81	0	Biotechnology	3
336	0	BMC Immunology	4
1570	19	Cancer Immunity	5
37	1	Immunity & Ageing	6
102	18	Immunome Research	7
63	0	Indian Journal of Allergy Asthma and Immunology	8
59	0	International Journal of Cancer Research	9
197	3	Iranian Biomedical Journal	10
76	0	Journal of Biological Sciences	11
77	0	Journal of Immune Based Therapies and Vaccines	12
102	0	Journal of Investigational Allergology and Clinical Immunology	13
178	0	JOURNAL OF Molecular AND Genetic Medicine	14
119	0	Journal of Neuroinflammation	15
122	0	Medical Immunology	16
85	1	Microbiology and Immunology	17
60	0	Pakistan Journal of Biological Sciences	18
797	0	Physiological Research	19
190	1	The Internet Journal of Asthma, Allergy and Immunology	20

<b>In-link</b>	<b>Self-link</b>	<b>Ttile</b>	<b>Row</b>
318	0	BMC Dermatology	1
7	0	Dermatology Online Journal	2
219	3	Indian Journal of Dermatology	3
1460	3	Indian Journal of Dermatology, Venereology and Leprology	4
98	0	The Internet Journal of Dermatology	5
47	0	The Internet Journal of Third World Medicine	6

### **Nursing free e-journals links**

<b>In-link</b>	<b>Self-link</b>	<b>Title</b>	<b>Row</b>
342	1	BMC Nursing	1
2420	33	Online Journal of Issues in Nursing	2
290	1	Online Journal of Nursing Informatics	3
556	1	Online Journal of Rural Nursing and Health Care	4
283	1	The Internet Journal of Advanced Nursing Practice	5
109	0	The Internet Journal of Pain, Symptom Control and Palliative Care	6
131	0	Topics in Advanced Practice Nursing	7
1140	37	World Wide Wounds	8

### **Dermatology free e-journals links**

### Toxicology free e-journals links

In-link	Self-link	Title	Row
327	2	JIMR On-Line	1
231	0	Journal of Applied Sciences and Environmental Management	2
54	2	Journal of Occupational Medicine and Toxicology	3
0	0	Particle and Fibre Toxicology	4
81	0	The Internet Journal of Toxicology	5
53	0	The Journal of Toxicological Sciences	7

### Biochemistry free e-journals links

In-link	Self-link	Title	Row
3400	0	Acta biochimica polonica	1
83	0	American Journal of Biochemistry and Biotechnology	2
103	0	Biokemistri	3
168	0	Bioscience Biotechnology and Biochemistry	4
431	0	BMC Biochemistry	5
		BMC Biology	6
391	0	BMC Chemical Biology	7
125	0	Chem-Bio Informatics Journal	8
669	1	European Cells and Materials (ECM)	9
117	0	Experimental and molecular medicine EMM	10
71	0	Indian Journal of Clinical Biochemistry	11
236	1	International Journal of Biological Sciences	12
214	2	Iranian Biomedical Journal	13

131	1	JBC Papers in Press	14
110	1	JLR Papers In Press	15
936	1	Medical Science Monitor	16
5740	63	Molecular Vision	17
697	1	Neurobiology of Lipids	18
74	0	Nuclear Receptor	19
171	1	Nutrition & Metabolism	20

### Pharmacy free e-journals links

In-link	Self-link	Title	Row
244	7	The AAPS Journal	1
797	10	AAPS PharmSci	2
1010	1	AAPS PharmSciTech	3
700	1	American Journal of Pharmaceutical Education	4
56	0	DARU	5
805	2	Journal of Pharmacy and Pharmaceutical Sciences	6
460	11	U.S. Pharmacist	7

In-link	Self-link	Title	Row
104	1	Biomedical Imaging and Intervention Journal	1
315	0	BMC Medical Imaging	2
199	1	Cardiovascular Ultrasound	3
1940	0	Indian Journal of Radiology and Imaging	4
2	3	Indian Journal of Thoracic and Cardiovascular Surgery	5
753	0	The Internet Journal of Nuclear Medicine	6
70	0	The Internet Journal of Nuclear Medicine	7