# Evaluation of Health Science Websites

Due to revolution in information and communication technology, the Internet has now become important source of health information both for consumers and for providers of health information. Everything is now available on the click of a button. However, in order to make informed decisions regarding health, the available information should be reliable and accurate. On the Internet, due to freedom of information, anyone can create a website and offer expert advice regarding a host of topics. Research has shown that most contents on health information websites are not authored by medical professionals and not policed by any governing body or adhered to any ethical regulations. Studies have shown that the quality of most of the available health information on World Wide Web is not reliable. Therefore, there is a risk that health information available may be misleading or dangerous. Such information of dubious quality can do more harm than good. This necessitates the evaluation of health science websites based on some criteria.

The major criteria for evaluating health information websites are given below.

1. **Currency**

The field of health sciences is very dynamic and constantly changing in nature. For example, researchers continue to learn new things about various diseases and their treatments. The users should know whether the health-related information that they are reading is up-to-date. Many Web pages will post the date on which the page was last reviewed or updated. This will be usually found at the very bottom of the page. The following are the specific criteria related to the currency of health information website:

1. When the site was first created?
2. How frequently or often is the site/site content updated?
3. Does the site indicate when it was last updated?
4. Does the site indicate date until which the content/information is valid?
5. **Relevance**

The information provided on the website should be relevant for satisfying the information requirement of the user. The following questions should be asked for understanding the relevance:

1. Does the information relate to my topic or answer to the question?
2. Who is the intended audience of the site?
3. Is the information at an appropriate level (i.e. not too elementary or advanced for your needs)?
4. Is it appropriate to cite this source in my research paper?
5. **Authority**

The name of the individual or organization running the site should be clearly stated on the website along with a list of credentials. Normally, the information about the authorship will be provided on the home page under the heading ‘About Us’. The site should provide a way for users to contact the author and to make comments or ask questions.

The health-related websites published by the government agencies (gov.), nonprofit organizations (.org) and educational institutions (.edu & .ac) are more reliable than the websites of commercial organizations and individuals (.com). The sites with ‘.com’ web addresses are called commercial websites. Commercial sites may offer useful and accurate information. However, you may want to be more careful about believing the information you read on these sites. The information may not be fair and accurate if the company that pays for the site has something to gain from it. It's a good idea to double-check information you read on commercial websites.

In the same way, a website published by an individual (also named after ‘.com’) may offer support and advice about coping with certain medical / health conditions and their treatments. These sites can contain reliable and useful information. However, it's very important to double-check the information that we see on a website published by an individual also. While many of these sites contain good information, some may contain myths or rumors.

The following questions should be asked to understand the authority of website information:

1. Who is the author/publisher/source/sponsor?
2. What are the author's credentials or organizational affiliations?
3. Is the author qualified to write on the topic?
4. Is there contact information, such as a publisher or email address?
5. Does the URL reveal anything about the author or source? examples: .com .edu .gov .org .net
6. **Accuracy/ Completeness of Information / Coverage**

The information provided on the website must be complete in every respect. It should avoid “under-construction” pages as much as possible. Also, there should not be any factual inaccuracies, spelling mistakes, or grammatical errors and the information should be well organized.

The following questions should be asked to understand the accuracy of the website content.

1. Where does the information come from?
2. Is the information supported by evidence?
3. Has the information been reviewed or refereed?
4. Can we verify any of the information in another source or from personal knowledge?
5. Does the language or tone seem unbiased and free of emotion?
6. Are there spelling, grammar or typographical errors?
7. **Purpose**

The site must specify its purpose, mission and scope. It should say whether the information provided is for consumers or for health practitioners. In other words, it should state the reasons for its existence. Following are the important questions related to the purpose of a website.

1. Do the authors/sponsors make their intentions or purpose clear? Is it for to inform, teach, sell, entertain or persuade?
2. Is the information fact, opinion or propaganda?
3. Does the point of view appear objective and impartial?
4. Are there political, ideological, cultural, religious, institutional or personal biases?

**Other Criteria for Evaluation**

1. **Accessibility and Presentation**

The site must be prepared at a level that is useful to the intended audience. , i.e. it must be comprehensible. Also easy accessibility must be ensured by logically organizing the contents with site index or table of contents. The text, graphics, animation etc. must be user-friendly and the need of plug-ins must be avoided as much as possible. In the same way, acceptance of cookies for accessing the contents must be avoided and the contents must be freely made available to the users. If possible, the site must enable a local search engine.

1. **Navigation**

Navigation means the directions for using the site. It reflects the support provided to the user when moving in and around the site. Elements of navigation include: easiness of moving around, easiness in understanding site structure, and availability and validity of links. For instance, increasing the number of site links does not necessarily contribute to adding value to the site.

1. **Facility for Feedback**

The site must have a facility for taking feedback from the consumers, including registration of complaints and compliments.

1. **Safeguards**

The health information websites must display terms and conditions of use of the website, if any in order to avail the services offered through the website. Also it should indicate the users’ rights.

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# Evaluation of the Website of the American Speech-Language-Hearing Association

The American Speech–Language–Hearing Association (ASHA) is a professional association for speech–language pathologists, audiologists, and speech, language, and hearing scientists in the United States and across the world. ASHA currently represents nearly 2 lakhs audiologists; speech-language pathologists (SLPs); speech, language, and hearing scientists; audiology and speech-language pathology support personnel; and undergraduate, graduate, and doctoral students in communication sciences and disorders.

**ASHA Website**

The official website of the association is available at [www.asha.org](http://www.asha.org). The major highlights and features of the site are discussed below.

1. **Information for Audiologists/ Speech-Language Pathologists, Faculty and Students**

The home page of the sites provides separate resource pages for the audiologists, speech-language pathologists, faculty and students in the field of Communication Science and Disorders (CDS).

The resources for the audiologists and speech-language pathologists include practice management information, access tothe practice portal**,** publications**,** [Inter-professional education/practice](http://www.asha.org/Practice/Interprofessional-Education-Practice/)information**,** facility for connecting to the professional colleagues, and ASHA certification Information.

 The information for the faculty include academic program accreditation, CSD education survey, academic program resources, higher education news, curriculum resources, academic & clinical instruction, faculty resources.

The students are provided with information on careers in communication sciences and disorders (CSD) that can be pursued such as audiologist, speech-language pathologist, and speech, language, and hearing scientist.

Bottom of Form

1. **Information for the Public**

With the aim of ensuring that all people with speech, language, and hearing disorders receive services to help them communicate effectively, the site provides a section by name, ‘Information for the Public’. The section contains a lot of resources that help people to understand communication and communication disorders.

1. **Identify the Signs**

Speech, language, and hearing disorders are treatable and early detection is a major contributor to speedier recoveries, shortened treatment periods, and reduced costs for individuals and society. **Identify the Signs** Section on the site aims to educate the public about the warning signs of communication disorder, if necessary, seek professional help; and share information with family, friends, and social networks.

1. **ASHA Store**

The ASHA Store facilitates online purchase of a variety of products such as clinical resources, books, compact discs and webinar based CEU courses for audiologists and speech-language pathologists, and various consumer education products on communication disorders.

1. **Career**

The Career Section provides opportunities for the job seekers to search for job and employers to post job notifications. Also, the section gives career development information and information for the students on Communication Science and Disorders (CSD) profession.

1. **ASHA Wire**

[ASHA Wire](http://pubs.asha.org/) is the part of the website that provides access to the publications of ASHA which include the following:

**Peer-reviewed Scientific Journals**: ASHA publishes four peer-reviewed scientific journals namely, American Journal of Audiology, American Journal of Speech-Language Pathology, Journal of Speech, Language, and Hearing Research, Language, Speech, and Hearing Services in Schools

**ASHA Leader:** This is a monthly newsmagazine for and about audiologists, speech-language pathologists, and speech, language and hearing scientists.

**Perspective Series of Publications**: The ASHA features 19 Special Interest Groups (SIGs) professional communities focused on advancing research and professional practice in communication sciences and disorders. The research findings of these 19 Special Interest Groups were being published serially as 19 perspectives publications. From April, 2017 ASHA started publishing a new all-in-one *Perspectives of the ASHA Special Interest Groups* by combining all the 19 individual perspective publications.

**Clinical Research Education (CREd**) **Library**: The CREd Library is the newest addition to ASHA Wire which hosts a dynamic collection of resources on topics critical to the conduct and advancement of high-quality clinical practice research in the communication sciences and disorders (CSD) domain.

1. **ASHA's Practice Portal**

ASHA's Practice Portaloffers one-stop access to resources to guide evidence-based decision-making on clinical and professional issues. The goal of ASHA's Practice Portal is to assist audiologists and speech-language pathologists by providing the best available evidence and expertise in patient care, identifying resources vetted for relevance and credibility, and increasing practice efficiency.

1. **Continuing Education**

A section of the site provides information on various continuing education resources on communication science and disorders. It includes live events and self-study courses by ASHA.

1. **Research**

The Research section includes Evidence Maps, a searchable online tool designed to assist clinicians with making evidence-based decisions on communication disorders, tools and resources on Evidence-Based Practice and ASHA Survey Research and Reports.

# Events

The events section provides the details of various events and conferences taking place under the leadership of ASHA.

# Certification

The Certification Section provides information about ASHA Certification

1. **Other facilities on the site**

**Member login facility and Member Center**: There is an exclusive member area on the site for the members of ASHA access to which is restricted using Username and password.

**Search Facility**: The site is having a powerful search facility with basic and advanced search facilities covering the entire site content as well as its sections.

**EVALUATION OF SCHOLARLY JOURNALS**

Scholarly journals are considered as the most important channel for communicating scientific research. Assessing the scholarly worth of a particular journal or article can help in determining its merits and relevance pertaining to the academic research of a scientist.

When reviewing a journal for quality and legitimacy, the following should be considered:

1. **Peer review process**

All of a journal’s content, excluding the editorial content, shall be subjected to peer review. Peer review is defined as obtaining advice on individual manuscripts from reviewers expert in the field who are not part of the journal’s editorial staff. This process, as well as any policies related to the journal’s peer review procedures, shall be clearly described on the journal’s Web site.

1. **Editorial Boards**

Journals shall have editorial boards or other governing bodies whose members are recognized experts in the subject areas included within the journal’s scope. The full names and affiliations of the journal’s editors shall be provided on the journal’s Web site.

1. **Contact Information**

Along with the names and affiliations of the journal’s editors the contact information/ address of the editorial office of the journal also should be provided on the website. .

1. **Author Fees**

Any fees or charges that are required for manuscript processing and/or publishing materials in the journal shall be clearly stated in a place that is easy for potential authors to find prior to submitting their manuscripts for review or explained to authors before they begin preparing their manuscript for submission.

1. **Copyright**

Copyright and licensing information shall be clearly described on the journal’s Web site.

1. **Identification of and dealing with allegations of research misconduct**

The Publisher and Editors of the Journal shall take steps to identify and prevent misconduct in publication such as plagiarism, citation manipulation, data falsification/fabrication etc. In no case shall a journal or its editors encourage such misconduct, or knowingly allow such misconduct to take place. In the event that a journal’s publisher or editors become aware of any allegation of research misconduct relating to a published article in their journal appropriate disciplinary action must be taken against the author(s).

1. **Ownership and Management**

Information about the ownership and/or management of a journal shall be clearly indicated on the journal’s web site. Publishers shall not use organizational names that would mislead potential authors and editors about the nature of the journal’s owner.

1. **Name of journal**

 The Journal name shall be unique and not be one that is easily confused with another journal or that might mislead potential authors and readers about the Journal’s origin or association with other journals.

1. **Journal Policy**

 A journal shall have clear policies on various aspects such as peer reviewing, editing, handling misconduct etc. and these should be clearly displayed on the Journal Website.

1. **Access**

 The way(s) in which the journal and individual articles are available to readers and whether there are associated subscriptions or pay per view fees shall be stated.

1. **Revenue Sources**

 The revenue sources (eg, author fees, subscriptions, advertising, reprints, institutional/ organizational support) shall be clearly stated or otherwise evident on the journal’s Web site.

1. **Advertising**

Journals shall state their advertising policy, if relevant, including what types of ads will be considered, who makes decisions regarding accepting ads and whether they are linked to content or are displayed at random.

1. **Publishing schedule**

The periodicity at which a journal publishes shall be clearly indicated.

1. **Archiving**

The journal’s plan for electronic backup and preservation of access to the journal content in the event a journal is no longer published shall be clearly indicated.

**Open Access Journals**

Open access journals make articles freely available on the Internet, permitting any user to read, download, copy, distribute, print, search or link to the full text. Benefits of publishing in an open access venue may include:

* Increased visibility, usage, and impact of your research
* More efficient dissemination compared with traditional publishing models
* Retention of some or all of your copyrights
* Contribution to societal good by providing scholarly content to a global audience
* Rigor of traditional peer-review before publication
* Ongoing feedback through social media

There are thousands of peer-reviewed open access journals, with new titles emerging rapidly. While there are many high-quality, peer-reviewed open access publications, there are also journals/publishers that engage in unprofessional or unethical practices. The following indicators help to evaluate open access publications. Note that there is no single criterion that indicates whether or not a publication is reputable.

**Positive Indicators**

* Scope of the journal is well-defined and clearly stated
* Journal’s primary audience is researchers/practitioners
* Editor, editorial board are recognized experts in the field
* Journal is affiliated with or sponsored by an established scholarly society or academic institution
* Articles are within the scope of the journal and meet the standards of the discipline
* Any fees or charges for publishing in the journal are easily found on the journal web site and clearly explained
* Articles have Digital Object Identifier
* Journal clearly indicates rights for use and re-use of content at article level
* Journal has an International Standard Serial Number ( ISSN)
* Publisher is a member of Open Access Scholarly Publishers Association
* Journal is registered in UlrichsWeb, Global Serials Directory
* Journal is listed in the Directory of Open Access Journals
* Journal is included in subject databases and/or indexes

**Negative Indicators**

* Journal web site is difficult to locate or identify
* Publisher “About” information is absent on the journal’s web site
* Publisher direct marketing (i.e., spamming) or other advertising is obtrusive
* Instructions to authors information is not available
* Information on peer review and copyright is absent or unclear on the journal web site
* Journal scope statement is absent or extremely vague
* No information is provided about the publisher, or the information provided does not clearly indicate a relationship to a mission to disseminate research content
* Repeat lead authors in same issue
* Publisher has a negative reputation

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**Predatory Journals**

Predatory journals are unscrupulous open access journals who publish articles with little or no real peer review and no true editorial board. They are often found to publish mediocre or even worthless papers by collecting huge publication charges from the authors. Jeffrey Beall, Associate Professor and Scholarly Initiatives Librarian, University of Colorado Denver, USA first coined the term “predatory journals” and maintained a listing of predatory journals which was later taken down. Cabell’s International launched a revised version of the list called Cabell’s Blacklist, which can be accessed for a fee at the company’s website.

In research environments, there is usually more value for quantity over quality. Hiring and promotion of academics is based largely on their number of publications. The publishers of the Predatory Journals are taking advantage of this. The number of predatory journals is increasing day-by-day and also getting more difficult to identify.

Predatory journals corrupt the literature and help many pseudo-researchers to prosper. Medical science has been particularly hit hard, with journals now devoted to unscientific medicine. Peer reviewing is at the heart of academic evaluation. Publishing without peer review, while pretending that peer review was done, gives poor and mediocre academics a chance for jobs and promotions which should go to better qualified researchers.

**Criteria for Identification of Predatory Journals and Publishers**

1. The editor and/or review board members do not have academic expertise in the journal’s field.
2. Provides insufficient information or hides information about author fees, offering to publish an author’s paper and later sending an unanticipated ‘surprise’ invoice.
3. No proper indexing.
4. The name of a journal is unrelated with the journal’s mission.
5. The name of a journal does not adequately reflect its origin (e.g. a journal with the word ‘Canadian’ or ‘Swiss’ in its name when neither the publisher, editor, nor any purported institutional affiliate relates whatsoever to Canada or Switzerland).
6. The publisher has poorly maintained websites, including dead links, prominent misspellings and grammatical errors on the website.
7. The publisher makes unauthorised use of licensed images on their website, taken from the open web, without permission or licensing from the copyright owners.
8. Re-publish papers already published in other venues/outlets without providing appropriate credits.
9. Use boastful language claiming to be a ‘leading publisher’ even though the publisher may only be a start-up or a novice organisation.
10. Provide minimal or no copyediting or proofreading of submissions.
11. Publish papers that are not academic at all, e.g. essays by lay people, polemical editorials, or pseudo-science.
12. Have a ‘contact us’ page that only includes a web form or an email address, and the publisher hides or does not reveal its location.
13. The publisher publishes journals that are excessively broad (e.g. Journal of Education) or combine two or more fields not normally treated together (e.g. International Journal of Business, Humanities and Technology) in order to attract more articles and gain more revenue from author fees.

The following criteria can be used while submit a paper to a journal to find out if it is a genuine one.

1. Can we easily identify and contact the publisher?
2. Is the journal clear about the type of peer review it uses?
3. Is it indexed in any known databases?
4. Is it clear what fees will be charged?
5. Can we recognise the editorial board?
6. Is the publisher a member of a recognised bodies such as COPE, DOAJ, OASPA?