

Evaluating Health Information

On the World Wide Web 

A Hands-On Guide for Older Adults and Caregivers

Developed By:



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Table of Contents

Introduction	<i>Page 2</i>
Guide Organization	<i>Page 4</i>
Part I: How Do You Find Reliable Health Web Sites?	<i>Page 5</i>
Part II: Evaluating the Content on Health Web Sites	<i>Page 7</i>
A. Accuracy	
B. Authorship	
C. Copyright	
D. Contact Information	
E. Site Support	
F. Disclaimers and Cautions	
G. Currency	
H. Intended Audience	
I. Completeness of Content	
J. Clarity of Content	
Part III: An Evaluation Checklist	<i>Page 13</i>
Part IV: Health Web Site Issues of Privacy and Fraud	<i>Page 15</i>
Part V: References and Contact Information	<i>Page 16</i>
Glossary	<i>Page 17</i>
SPRY Contact Information and Acknowledgements	<i>Page 19</i>

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About This Guide

This guide is to help you evaluate the health information you find on the World Wide Web. It is not designed to direct you to one site over another (although there are suggestions for reliable web sites later in the guide), but rather to give you the tools to assess the reliability of any health web site on your own.

There are a number of agencies and organizations that keep an eye on health web sites and their content. Most of these groups have published criteria for evaluating this content.

The SPRY Foundation has analyzed a number of these criteria, and has identified the items on which all the sources agree. (A list of the source

organizations, as well as their contact information, is at the back of this guide.) This guide also contains a checklist that you can use when you find a web site that you'd like to assess, as well as examples of acceptable and unacceptable practice.

Why This Guide is Necessary

The World Wide Web is becoming the source of health information for a growing number of older adults and their caregivers. With thousands of health-only web sites available, as well as thousands more sites with subsections on health topics, the choices are staggering. SPRY did a web search recently by keying the

term "health information" into three of the most widely used search engines. Here are our results:

<u>Site</u>	<u># of citations</u>
Excite (www.excite.com):	19,009,748
Alta Vista (www.altavista.com):	32,412,624
Google (www.google.com):	1,346,966,000

Any web user can become frustrated and confused when searching for specific health information, but these feelings can be even worse for people who may not have much web searching experience. You can see from our search results on "health information" above that there is huge variation in what you might find when you search.

Without experience, it can be difficult to structure a search to find exactly the information you want. And, even when you do an effective search, you may be confused about the nature of different health web sites. For example, there are health web sites created by government agencies

(.gov suffix), commercial entities (.com suffix), educational institutions (.edu suffix), and non-profit organizations (.org suffix).

With all this variety, how can you find accurate, timely, understandable information on a specific topic without spending hours online? Also, how can you feel confident about the quality of the information once you arrive at a promising site?

We hope that this guide will help you to overcome these problems as you search for health information on the web.



How the Guide is Organized

Part I: How Do You Find Reliable Health Web Sites?

The first part of the guide offers advice on how to find reliable web sites. The section also lists examples of web sites of various types that have a high probability of containing reliable health information.

Part II: Finding a Reliable Health Web Site

The second part of the guide is organized into sections explaining each of the evaluation criteria. The section for each criterion is subdivided into:

- Definition of key term or terms
- What to look for on a web site, with examples of acceptable and unacceptable practices
- Likely places to find certain kinds of information on a health web site

Part III: An Evaluation Checklist

The third part of the guide consists of a checklist to use when visiting a web site. You might find it useful to go back and forth between the checklist and Part II of the guide until you feel comfortable with using all the criteria.

Part IV: Health Web Site Issues of Privacy and Fraud

This section of the guide addresses some of the issues that consumers face when sharing personal information on health web sites.

Part V: References and Contact Information

This last section contains references and contact information for the groups generating the original list of web evaluation criteria we drew upon for this guide.

Part One

How Do You Find Reliable Health Web Sites?

Step 1: Start with government web sites

You can link to all of the government web sites through the portal site: www.firstgov.gov. Some of the sites with health information from the government include (note that these all have a ".gov" suffix):

a. National Institutes of Health (www.nih.gov)

The NIH web site has links to all of the Institutes under the NIH umbrella.

These include:

- Office of the Director (OD)
- National Cancer Institute (NCI)
- National Eye Institute (NEI)
- National Heart, Lung, and Blood Institute (NHLBI)
- National Human Genome Research Institute (NHGRI)
- National Institute on Aging (NIA)
- National Institute on Alcohol Abuse and Alcoholism (NIAAA)
- National Institute of Allergy and Infectious Diseases (NIAID)
- National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS)
- National Institute of Child Health and Human Development (NICHD)
- National Institute on Deafness and Other Communication Disorders (NIDCD)

- National Institute of Dental and Craniofacial Research (NIDCR)
- National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK)
- National Institute on Drug Abuse (NIDA)
- National Institute of Environmental Health Sciences (NIEHS)
- National Institute of General Medical Sciences (NIGMS)
- National Institute of Mental Health (NIMH)
- National Institute of Neurological Disorders and Stroke (NINDS)
- National Institute of Nursing Research (NINR)
- National Library of Medicine (NLM)
- National Institute of Biomedical Imaging and Bioengineering
- Warren Grant Magnuson Clinical Center (CC)
- Center for Information Technology (CIT)
- National Center for Complementary and Alternative Medicine (NCCAM)
- National Center for Research Resources (NCRR)
- National Center on Minority Health and Health Disparities (NCMHD)
- John E. Fogarty International Center (FIC)
- Center for Scientific Review (CSR)

b. Centers for Disease Control and Prevention (www.cdc.gov)

c. Department of Health and Human Services (www.dhhs.gov) The Department of Health and Human Services also sponsors a consumer health web site called Healthfinder. The URL for Healthfinder is www.healthfinder.gov.

d. Food and Drug Administration (www.fda.gov)

e. Administration on Aging (www.aoa.dhhs.gov)

f. Centers for Medicare and Medicaid Services (formerly Health Care Finance Administration) (www.hcfa.gov, which is their main web site, and www.medicare.gov with information on Medicare for beneficiaries)

Step 2: Look up organizations with a history of reliability in health information.

These will most likely have a ".org" suffix, indicating that they are nonprofit organizations. Some of these include:

- a. American Cancer Society (www.cancer.org)
- b. American Lung Association (www.lungusa.org)
- c. American Heart Association (www.americanheart.org)

- d. Alzheimer's Association (www.alz.org)
- e. Arthritis Foundation (www.arthritis.org)
- f. American Diabetes Association (www.diabetes.org)
- g. National Kidney Foundation (www.kidney.org)
- h. National Osteoporosis Foundation (www.nof.org)

It is important that you don't accept a ".org" suffix as an indicator of reliability. There are some ".org" web sites that are sponsored by commercial entities. When visiting a ".org" site, be sure to find out what organization supports the site.

Step 3: Try searching for links to reputable medical schools

These will probably have a ".edu" suffix, indicating that they are educational institutions. Examples of these are:

- a. Harvard Medical School (www.hcp.med.harvard.edu)
- b. University of North Carolina at Chapel Hill School of Medicine (www.med.unc.edu)
- c. Emory School of Medicine (www.emory.edu/WHSC/MED/index.html)
- d. Vanderbilt University Medical Center (www.mc.vanderbilt.edu)
- e. UCLA Medical Center (www.cure.med.ucla.edu)
- f. Mayo Clinic (www.mayo.edu)



Part Two

What to Look For in Evaluating the Content on a Health Web Site

A. ACCURACY

Definition: The information on the health web site is **accurate** if it is in agreement with currently accepted science and technology.

What to look for on the web site

- **Are the references supported by other reliable sources?**

You need to check the information on web sites carefully to make sure that it comes from a reputable source. For example, a site might describe a course of treatment for a disease and list a publication with an official-sounding (yet unfamiliar) title as the source of its information. To be safe, you would need to check the same information against a trusted source, such as a government health web site (www.nih.gov, www.cdc.gov, or www.dhhs.gov) or a standard medical reference book.

- **Is the information free of errors in grammar and spelling?**

This may not seem as important as the content itself, but errors in language can have surprisingly detrimental results. Imagine the consequences of a web site visitor thinking about taking an over-the-counter medication misspelled on a web site. Another reason to check a web site for grammatical and spelling errors is that such errors can indicate that the developers of the web site are not keeping a close eye on the quality of the site. This could mean that other aspects of the site are questionable as well.

- **Is it clear who is responsible for the accuracy of the content on the web site?**

A reputable site will clearly indicate who is behind the site and who is responsible for the accuracy of the content. Check the *About Us* section

on the web site, as well as any disclaimers that may be posted. Some sites have a separate section just on how they generate the content and have it reviewed.

- **Are there statements on the site that you would consider broad and sweeping?**

Be cautious about a site that makes frequent use of the terms "all," "none," "everyone," "every time," etc. For example, an inaccurate statement would be something like: "All cancers can be cured by chemotherapy." Look for more measured statements such as: "Some cancers can be put into remission when chemotherapy is used as part of the treatment."

B. AUTHORSHIP

Definition: Authorship refers to the individual or team who wrote the content on the web site.

What to look for on the web site

- **Can you readily identify who wrote the content on the web site?**

You should be able to locate the authors of the content on a health web site without conducting an extensive

search. For example, the main content on government health web sites is generated by the parent agency (National Institutes of Health, Centers for Disease Control and Prevention, Department of Health and Human Services).

You need to be cautious about content from non-governmental web sites that might be listed as links on government web sites. Check the *About Us* section on web sites for information about the authors. Sites may also have a separate section on the authors and their qualifications.

- **Do you have evidence of the qualifications of the authors of content on the health web site?**

You should be able to find a description of the professional qualifications of the content authors on a health web site. This might be in the form of a brief biography with a hot link to more extensive information about the author. Look on the web site to see if they include complete contact information (usually in *Contact Us*). You can use this information to verify the credentials of the site's authors. It is also important to find out if the author has some commercial interest in the site. The site should describe any such interest in its

disclaimer, or in another portion of the site. Check *About Us*.

C. COPYRIGHT

Definition: Copyright refers to the legal ownership of the content by the web site sponsors.

What to look for on the web site

- **Is there a copyright statement on the web page?**

You should be able to find a link to the web site sponsors' copyright statement on the Home page (although this is not a rule, by any means). Read the copyright statement to determine what content on the web site is copyrighted. Be sure that the statement gives the name of the holder of the copyright.

D. CONTACT INFORMATION

Definition: The contact information should include the following:

- Name of a "real" person who can answer questions and deal with issues (not just "Webmaster")
- Address of the organization sponsoring the web site

- Telephone and fax numbers for the organization
- Emails for those members of the organization who deal with both content and technology issues

What to look for on the web site

- **Does the site have a section entitled: *Contact Us* (or equivalent)?**

When you click on a *Contact Us* link, you should be able to find all the information listed in the Definition section above. You can use this information to verify the credentials of the site's authors and review team.

E. SITE SUPPORT

Definition: Site Support refers to the agencies or individuals who are funding the site's development and maintenance.

What to look for on the web site

- **Does the site clearly indicate what its funding sources are?**

When you examine the Home page of a site, you should be able to find the funding sources for the site by clicking on the *About Us* (or equivalent) link.

Some sites put their supporters on the Home page, often under the title of the site. Look for links with names like: *Our Sponsors* for more information about who is supporting the site. Identifying site support is important, since it helps you to judge whether or not the site developers have a bias in the health information they are giving you.

- **Can you readily tell the difference between content on the site that is advertising and content that is not?**

A number of commercial health sites are now flagging their advertising banners with a tag line such as "sponsor." This helps you to differentiate between information on the site that is generated by a commercial entity and information that may not be.

F. DISCLAIMERS AND CAUTIONS

Definition: Disclaimers and cautions are statements that let the web site visitor know what responsibility the web site sponsors will take for the content on their site.

What to look for on the web site

- **Can you easily find a link to the site's disclaimer or caution statements on the Home page?**

The results of disseminating false, inaccurate, or out-of-date health information can have a high cost to any web site sponsor. Therefore, it is common practice for such sites to have a disclaimer statement either on the Home page of the site, or linked from the Home page. It is very important that any visitor to the site read the disclaimer before giving any credence to the information and/or services offered on the web site.

- **Does the disclaimer let the web site visitor know that the information on the site doesn't take the place of the doctor/patient relationship?**

Read the disclaimer carefully. While the information on the web site may be accurate and current, the advice that it offers may not be right for your condition or situation. Your physician should make the decisions about monitoring and managing your physical condition.

G. CURRENCY

Definition: Currency refers to how up-to-date the information is on the web site.

What to look for on the web site

- **Can you find the date on which the content was developed for the web site?**

Health information can change on a daily basis as scientists make new discoveries, and results come back from clinical trials. Be careful when checking the content on a web site for currency. Look for a date on the actual article or piece of information. Most sites post when the site itself was updated on their home page. This doesn't mean that all parts of the site were updated as well.

H. INTENDED AUDIENCE

Definition: The intended audience (or audiences) is the specific group of people for whom the site was designed.

What to look for on the web site

- **Can you tell from the Home page if this site is for you?**

A number of sites post the audience for the site right under the main banner.

For example, you might see a statement such as: "A site for healthcare practitioners," "A site for the research community." Some sites have multiple portals of entry to address the needs of their different audiences. Look for links labeled "Consumer" for information for the general public.

I. COMPLETENESS OF CONTENT

Definition: The content includes enough information so that the site visitor can make informed decisions.

What to look for on the web site

- **When reading the content on the site, do you feel that you are getting the whole story?**

When evaluating the completeness of the content on a health web site, look for the following:

- More than one example (For instance, is there more than one side effect listed for a medication? More than one symptom for a disease?)
- Opposing views (Do you get the impression that the content is balanced, or biased?)

J. CLARITY OF CONTENT

Definition: The clarity of the content refers to the ease with which the web site visitor can understand the information.

What to look for on the web site

- **Can you understand most of the information for the consumer on the web site without having to resort to a medical dictionary?**

If content on a health web site is written "for the consumer," then the consumer should be able to understand it without too much outside help. Avoid web sites with content that uses too much jargon or too many uncommon acronyms. An example of clear content would be something like this:

The spleen is an organ located in the upper left portion of the abdomen, behind the stomach. It filters blood, removes bacteria, makes blood, and stores blood.

Contrast the clarity of the above selection with this one:

HS is due to a deficiency of a protein called ankyrin. Ankyrins are cell membrane proteins (thought to interconnect integral proteins with the spectrin-based membrane skeleton). The ankyrin of red blood cells (erythrocytic ankyrin) is called ankyrin-R or ankyrin-1. It is represented by the symbol ANK1.



Part Three

An Evaluation Checklist

- | | |
|---|--|
| 1. Can you tell who created the content ? | Yes <input type="radio"/> No <input type="radio"/> |
| 2. Are you given enough information to judge if the author is reliable ? | Yes <input type="radio"/> No <input type="radio"/> |
| 3. Can you tell if the content is current ? | Yes <input type="radio"/> No <input type="radio"/> |
| 4. Can you tell if the content is accurate ? | Yes <input type="radio"/> No <input type="radio"/> |
| 5. Do you have confidence that your privacy is protected ? | Yes <input type="radio"/> No <input type="radio"/> |
| 6. Is the content copyrighted ? | Yes <input type="radio"/> No <input type="radio"/> |
| 7. Does the site provide complete contact information ? | Yes <input type="radio"/> No <input type="radio"/> |
| 8. Is it clear who is funding the site ? | Yes <input type="radio"/> No <input type="radio"/> |
| 9. Is there a clear disclaimer posted ? | Yes <input type="radio"/> No <input type="radio"/> |
| 10. Does the site provide references for its content? | Yes <input type="radio"/> No <input type="radio"/> |
| 11. Is it clear who is the intended audience ? | Yes <input type="radio"/> No <input type="radio"/> |

You may want to tape this checklist
on your computer for reference.



Personal Web Site List

Part Four

Health Web Site Issues of Privacy and Fraud

While the intention of this guide is not to address issues of privacy and fraud on health web sites, these are both extremely important areas. Look on the Home page of health web sites for a link to their privacy statement. If the site is collecting personal information from you, you need to know how that information will be used.

The incidence of fraud on commercial web sites (not just health web sites) is widespread. As a general rule, do not give out your social security number to any web site. If you are buying a product on-line, you must have assurances that the web site is using a secure server before you give out credit card information. Even then, you may be at risk.

If in doubt, call the site's sponsors using the *Contact Us* information. Check to see if the web site is a member of the TRUSTe group that monitors web site privacy statements. If so, the TRUSTe icon should be somewhere on the Home page. You may also want to check to see if the site is listed with BBBOnline, the Internet version of the Better Business Bureau. We have included the contact information for both TRUSTe and BBBOnline in the Reference section of this guide.



Part Five

References and Contact Information

- **Alexander, Jan & Tate, Marsha Ann.** (1999). Evaluating web resources. Mahwah, NJ: Lawrence Erlbaum Associates.
- **BBBOnline** (Better Business Bureau). URL: <http://bbbonline.com>. Extensive privacy notice guidelines.
- **British Healthcare Internet Association.** URL: www.bhia.org. Criteria for evaluating the content on health web sites.
- **Health on the Net Foundation.** URL: www.hon.ch. Criteria for evaluating the content on health web sites. List of health web sites that abide by the HONcode.
- **Hi-Ethics (Health Internet Ethics).** URL: www.hiethics.org. Criteria for evaluating the content on health web sites.
- **Internet Healthcare Coalition.** URL: www.ihealthcoalition.org. Criteria for evaluating the content on health web sites.
- **QuackWatch.** URL: www.quackwatch.org. Organization that watches for health web sites making false claims and engaging in questionable practices.
- **TRUSTe (Building a Web You Can Believe In).** URL: www.truste.org. Guidelines for privacy statements, as well as oversight for member web sites.

Glossary

Glossary of Terms

Address An address is the location of a computer or computer resource on the Internet. You can find the address in the Address Box (Explorer) or the Location Box (Netscape).

Bookmarks (Netscape) A bookmarks or favorites option on the browser toolbar allows you to make a quick link to a site you want to remember or visit often.

Browser A browser is a system (such as Netscape or Explorer) that gives you the guidance and tools to explore the Internet.

FAQs Frequently Asked Questions are documents or text on a web site answering questions many visitors to the site have asked.

Favorites (Explorer) A favorites or bookmarks option on the browser toolbar allows you to make a quick link to a site you want to remember or visit often.

Find Button Find is a button in the Netscape and Explorer tool bars that you can use to find a word in a large document.

"GO"(Netscape and Explorer Menu Option) "GO" is a Netscape and Explorer menu option that keeps a list of the web sites you visit during your computer session.

History History tells you where you have been on the WWW in one session from the most recent site backwards.

Home Button Home is a button on the Netscape or Explorer tool bar that will return you to your browser's home page.

Home Page The Home page is the main starting page for a web site. It usually has basic information about the sponsors and purpose of the site. A Home page usually has both text and graphics.

Hyperlink A hyperlink is a "clickable" connection between one part of a document and another.

Hypertext Hypertext is "clickable" text in a web site that moves you immediately from one part of a document to another. Most hypertext is underlined and a different color from the rest of the text.

Icon An icon is a clickable picture used as a shortcut on web sites and computer programs. Typical icons include those for printing (printer) and home page (house).

Internet The Internet is the interconnection of computer networks in all parts of the world.

Menu A menu is a list of choices for computer options and procedures. Examples of menu items include File, Edit, Search, View, and many others.

Modem A modem is a device that lets you access the Internet through a telephone line to a computer.

Mouse A mouse is a palm-sized device usually designed to roll on a table that lets you point to features on a monitor screen, then choose a

feature by clicking one of two buttons on the mouse.

Search (keyword) On a web site, a keyword search allows you to key a term into a text box and click on an "Enter", "Submit" or "Go" button. The search program then matches your text to that in the web site, and moves you to that matching text.

Search (Directory - Menu) A directory or menu on a web site allows you to search the site by clicking on items listed in that directory or menu.

Search Box or Window A search box or window on a web site is a place where you can type in the keywords for which you are searching.

Search Filter A search filter is a term or set of terms you can key in to narrow your search on a

web site. For example, you could limit your search by geographic area or date.

URL Uniform Resource Locator. A URL is the address for a web site.

Word Processor A word processor is a software program that allows you to create documents. It lets you format, edit, check spelling and print text.

WWW World Wide Web. Hypertext (clickable) links that make navigation and use of the information on the Internet possible.

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About the SPRY Foundation

SPRY (Setting Priorities for Retirement Years) Foundation is a 501(c)(3) nonprofit research foundation with a mission to promote Successful Aging in the domains of financial security, physical health and wellness, mental health and social environment, and intellectual pursuits. SPRY is the research and education arm of the National Committee to Preserve Social Security and Medicare, and works independently by establishing partnerships with organizations to develop and test modules, curricula, training programs, and guides that empower older adults in the four domains. For more information on SPRY's current projects and publications, call (202) 216-0401 or visit www.spry.org.



About the National Committee to Preserve Social Security and Medicare

The National Committee to Preserve Social Security and Medicare is a grassroots advocacy and education association, with millions of members and supporters, dedicated to protecting these entitlements earned by all Americans. The National Committee is a nonprofit, nonpartisan, tax-exempt organization independent of Congress or any government agency. For more information on the National Committee, call (202) 216-0420 or (800) 966-1935, or visit their website at www.ncpssm.org.



Disclaimer

The guide does not offer medical advice and nothing contained in the guide is intended to be professional advice for medical diagnosis or treatment.

The Foundation has developed the guide in order to provide resources for older adults and their caregivers who use the World Wide Web (the Web) to find information on health and medicine related topics. The guide includes examples of Web sites from the federal government, nonprofit organizations, and educational institutions. The Foundation's reference to these sites is not an

endorsement of the sites and implies no association with these sites or their operators. Further, the Foundation is not responsible for the content of these sites, and does not make any representation that they will continue to be maintained as they are on the date of the publication of the guide, or that they will be updated to include advances in medical knowledge.

The Foundation assumes no responsibility for how users use the information provided in the guide, or on any Web site that is referenced by the guide. The use of third-party Web sites is at the user's own risk and subject to the terms and conditions of use for such sites. The Foundation cannot assure that the information that is available on or through these Web sites is exhaustive or complete on every subject or that it will necessarily include all of the most recent information available on a particular topic, or that the site or information contained on the site will be suitable for a particular individual or for a particular purpose.

Individuals should always seek the advice of a health care provider prior to starting any new treatment, and to obtain information that is specific to their condition. Likewise, individuals should never delay, ignore or fail to seek medical advice based on information obtained through any Web site.

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Acknowledgements

The SPRY Foundation would like
to thank the following individu-
als who reviewed this guide for
publication:

Susan Arnot

Thomas Dudley

John Glaser

Lee Goldberg

Fran Johnson

David Krear

Sabrina Montgomery

Ki-Eun Oh

Libby Overly

Jeff Palfreyman

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Distribution

This guide is published by the
SPRY Foundation in cooperation
with Caresource Healthcare
Communications, Inc.
426 Yale Ave. N
Seattle, WA 98109

**To order or reorder, please
call 1-800-448-5213 or visit
www.caresource.com.**

About This Guide

This guide is the result of the
SPRY Foundation Conference:
Older Adults, Health Information
and the World Wide Web, held at
the Natcher Center at the Na-
tional Institutes of Health on
February 26 - 28, 2001. The SPRY
Foundation would like to thank
the institutions that supported
both the conference and the
development of this guide:

U.S. Government Agencies

- Administration on Aging
- Centers for Disease Control
and Prevention
- Department of Veterans Affairs
- FirstGov for Seniors
- Centers for Medicare and
Medicaid Services
- Health Resources and Services
Administration, Office for the
Advancement of Telehealth
- National Institutes of Health
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Alternative Medicine
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Gerontology
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- Merck Institute of Aging and
Health (Merck Company
Foundation)
- Pfizer, Inc.

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