

FOOD Insight™

IFIC Foundation
<http://ific.org>

September / October 2003

Highway to Health: Cruising For Accurate Information On The Web



In late 2000, *Food Insight* published a story entitled “Navigating for Health: Finding Accurate Information on the Internet”. After three years, has anything changed? Well, *Food Insight* took a look and here’s what we found...

What’s changed?

How Internet users find and evaluate nutrition and food safety information has not changed significantly in the last three years. The rate of Internet usage continues to increase worldwide and more and more people are turning to the Internet for nutrition and health related information. According to a survey compiled by Nua Internet Surveys (<http://www.nua.com/surveys/>),* a leading resource for Internet trends and statistics, as of September 2002, there were 605.6 million Internet users worldwide, up from 377.6 million in September 2000, with 182.6 million in North America alone, up from 148 million in September 2000.

With so many users, how are these millions of information seekers finding food and health information on the Internet, and more importantly how can the good information be separated from the bad, and, in some cases, dangerous, information?

How are people finding information?

Even though Internet users today are more knowledgeable and sophisticated, most search for information at the major Internet search engines and directories. There are many different Internet search engines and directories and everyone has a favorite. Each search engine and directory compiles its information in completely different ways. **Search engines** (e.g. Google) will “crawl” or “spider” the Web automatically for pages that match the search terms, which are then indexed or catalogued. Search engines base their findings on key words placed in Web pages. If changes are made, search engines will eventually find these changes, but the changes may affect how the Web pages are listed. Some search engines use link popularity as part of their ranking method, which means that the more external links there are to a site, the higher the page will appear in the search results. **Directories** (e.g. LookSmart) depend on people to maintain their listings. A Web site is submitted with its URL and a description of the site and editors evaluate the contents. The reviewed Web sites are then placed in subject categories or sub-categories in the directory. Changes to the Web pages will not affect their listing in directories, but a site with accurate and trustworthy content may have a better chance of getting reviewed than a less credible site. In addition, there are also **hybrid search engines**;

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directories that can also be searched using keywords; and meta search engines that scan many different directories and search engines in one search.

A new trend with both search engines and directories is the purchase of listings. Search engines and directories now offer Web site owners the opportunity to pay a fee in return for a listing in a better position in its search results listing and, in some cases, even a guaranteed top position. Should searchers be wary of purchased placements? Not necessarily, but as always, searchers should review each site with a critical eye.

According to a February 2003 survey by Nielsen//NetRatings (<http://www.nielsen-netratings.com>), one of the leading Internet and digital media audience information and analysis services, the top five Internet search engines in the United States are:

- Google
- Yahoo!
- MSN
- AOL
- Ask Jeeves

Background on these search engines

Google (www.google.com) — Google is one of the largest search engines on the Internet with more than 3 billion searchable pages. Ranking of results is based on page popularity measured in links from other pages.

Yahoo! ([Yahoo.com](http://www.yahoo.com)) — Yahoo! is the Web's oldest directory. In late 2002, Yahoo! began using Google's search engine to generate its main results, but Yahoo!'s search results pages still show categories that link to Web sites that have been reviewed and approved by an editor.

MSN: ([msn.com](http://www.msn.com)) — MSN is a hybrid search engine. MSN has a team of editors who monitor the most popular

searches being performed and determine sites believed to be the most relevant. MSN also uses search results from the human-powered LookSmart (www.looksmart.com) directory. For more obscure queries, it uses crawler-based results from Inktomi (www.inktomi.com).

AOL: (<http://search.aol.com/>) — AOL Search is a search engine that provides users with editorial listings from Google. It is possible that the same search on Google and AOL Search will come up with very similar matches. The AOL Search primarily is used by AOL subscribers.

Ask Jeeves: (www.ask.com) — Ask Jeeves is a hybrid search engine that allows the user to ask a question using "natural language" and then deliver Web pages that answer that question. If Ask Jeeves cannot find an answer within its own database, it will provide matching Web pages from other search engines.

The best way to search the Internet for nutrition and health information is to use the advanced search feature. In fact, some of the major search engines have health sub-sections. Some advance search engines are better than others but this is one way to navigate through mountains of potentially irrelevant information.

Now Where Do I Go?

So you've searched a number of the major search engines and directories and you still can't find the health-related information you want. Try looking directly on food and health-related Web sites. A good starting point is the Medical Library Association (<http://mlanet.org>) which has developed a roster of Web sites with consumer health information. Some of these sites, as well as additional Web site resources, include:

Tufts University Nutrition Navigator (navigator.tufts.edu) — Tufts University Nutrition Navigator is the

first on-line rating and review guide that solves the two major problems Web users have when seeking health and nutrition information: how to quickly find information best suited to their needs and whether to trust the information they find there. Sites are categorized by users and Tufts University nutritionists, who apply rating and evaluation criteria developed by the Tufts University Nutrition Navigator Advisory Board, a prestigious panel of leading U.S. and Canadian nutrition experts, who review all nutrition-related Web sites. Site reviews are updated quarterly to ensure that ratings take into account the ever-changing Internet and nutrition environments.

MEDLINE: (medlineplus.gov) — Established by the National Library of Medicine, MEDLINE is a consumer-oriented Web site that provides up-to-date, quality health information from the world's largest medical library. Through this Web site, users have access to consumer health information from the National Institutes of Health, view medical dictionaries, lists of hospitals and physicians, retrieve health information in Spanish and other languages, and locate clinical trials. Users will find an alphabetical list of "Health Topics" which provides descriptions of more than 600 specific diseases, conditions, and wellness issues. Each health topic provides links to authoritative topical information on a query as well as a link to a MEDLINE search that provides journal article citation. Users also will find resources such as consumer health libraries, a collection of organizations providing health information, consumer health information from other nations, and links to resources beyond MEDLINE covering special topics.

Healthfinder®: (healthfinder.gov) — Healthfinder®, is an award-winning Web site, developed by the U.S. Department of Health and Human

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Services and other Federal agencies. Since 1997, Healthfinder® has been recognized as a key resource for finding the best government and nonprofit health and human services information on the Internet. Healthfinder® is a free gateway linking to carefully reviewed information and Web sites from more than 1,700 health-related organizations. Healthfinder® directs users to selected on-line publications, clearinghouses, databases, Web sites, and support and self-help groups, as well as the government agencies and not-for-profit organizations that disseminate reliable information for the public. The Healthfinder® project is coordinated by the Office of Disease Prevention and Health Promotion (ODPHP), with the active participation of a Steering Committee composed of Federal agency representatives including consumer health information specialists, librarians, and others actively engaged in the provision or use of on-line consumer health information. Significant support for the project is provided by the National Health Information Center.

IFIC Foundation On-Line: (ific.org) — Ific.org is a general Web site for a variety of food safety and nutrition topics. The IFIC Foundation, a 501(c)(3) educational foundation, whose mission is to effectively communicate science-based information on health, nutrition, and food safety for the public good, has recently renovated its Web site. While providing the same high caliber, credible, science-based information on food safety, nutrition, and health, the redesigned Web site has a friendly look and feel, easier navigation, exten-

sive search functions, prominent issue sections, easily identifiable information in Spanish, and has been favorably reviewed by select groups at Tufts University and Florida International University. The majority of the IFIC Foundation's materials have been co-sponsored with other health-related organizations such as the March of Dimes (www.marchofdimes.com) and the American Academy of Family Physicians (<http://www.aafp.org>). In addition,



extensive resources are listed at the end of many publications and users have easy access to an on-line glossary of more than 300 food and health-related terms. Users quickly can sign up to receive new and updated information via e-mail including the *Food Insight* newsletter.

Mayo Clinic: (www.mayoclinic.com) — The mission of the Mayo Clinic's Web site is to empower people to manage their health. This Web-based service provides useful and up-to-date information and tools that reflect the expertise and standard of

excellence of the Mayo Clinic. A team of Web content producers, editors, multimedia and graphics producers, interactive developers, health educators, nurses, doctors, and scientists developed and maintain the site. Through this Web site, users have access to the experience and knowledge of the more than 2,000 physicians and scientists of Mayo Clinic. The site is owned by the Mayo Foundation for Medical Education and Research.

Whew! Now What?

The above search engines, directories and health-related sites can guide users to accurate information but users need to incorporate certain principles to be sure they are getting sound information. Having found thousands of documents, it's difficult to know what information is reliable and what is not. In its March 9, 2002 issue, the *British Medical Journal* (bmj.com) published the results of a qualitative study addressing how consumers search for and appraise health information on the Internet. This survey was conducted by the

Department of Clinical Social Medicine at the University of Heidelberg, Germany and concluded that further studies are needed to design and evaluate educational and technological innovations for guiding consumers to high quality health information on the Web. Since there is currently no Internet governing body or authority that reviews the quality of health information Web sites, users are on their own. So as Web users review the Internet-based food safety and nutrition information, they should keep in mind the following:

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Highway to Health

1 Check the Source of the Information: The Web sites of professional organizations such as the American Dietetic Association or government agencies such as the U.S. Food and Drug Administration are more likely to have credible, reliable information than an unknown individual, group, or site focusing on a single-issue.

2 Check the Dates: Old news is not news. Unless Web sites continually are updated with the latest facts and findings, what you find may not be current. An indication of stale content is an error message stating that links followed do not work.

3 Be Reasonable: Users shouldn't believe everything they read. Maintain a healthy skepticism. Watch out for buzzwords like "poison," "toxic," and "conspiracy" or terms such as "miracle cure." Beware of the word "never." Science is rarely absolute. Think twice about advice to "never eat this" or "never do that."

4 Be Cautious of Anecdotes: One individual's personal story and

word-of-mouth reporting does not qualify as scientific evidence. Is the information you found based on reports published in leading medical journals? Are references provided? If there are no references, the information may be based on opinion and not fact.

5 Check it Out: Discuss Internet nutrition and health advice with a doctor, a registered dietitian, or another health professional to ensure it is accurate and appropriate.

6 Get a Second Opinion: Take a look at other Web sites to determine if there is consistency in the messages.

7 Contact the Site's Content Provider: There should be an easy way to contact the Web site to provide feedback, e.g. by e-mail, snail mail, phone, etc.

8 If it sounds too good to be true, it probably is. This is useful advice for evaluating the credibility of the information.

9 Keep Track of Where You are on the Internet: Following Internet

links can take you all around the world in minutes. You may start out at a reputable source but may end up at a less reliable one.

There are several independent groups that review health information Web sites, among them *Health on the Net Foundation* (www.hon.ch/), the first to introduce a code of conduct for medical and health Web sites (HONcode), which has since been adopted by more than 3,000 Web sites worldwide. Also, the American Accreditation HealthCare Commission (www.urac.org) is a neutral, third-party nonprofit accreditation organization. The goal of these organizations is to help Web users make informed choices. A mixed blessing of the Web is that anyone with a computer and access to the Internet can have a Web page and post whatever information he or she wants. Until there is a worldwide Internet governing body that reviews all health Web sites' content (and in light of the fact that there are hundreds of thousands of nutrition and health Web pages on the Internet, this does not seem to be in our immediate future), users are surfing solo. But we're not surfing blind — common sense and a second opinion can keep us afloat.

Introducing . . . The New IFIC.org



The IFIC Foundation has a new enhancement to our extensive collection of credible, science-based information on food safety, nutrition and health — the redesigned IFIC Foundation Web site — ific.org

- Completely different look and feel
- Easier navigation
- Extensive search functions
- Prominent issue sections
- Easily identifiable information in Spanish
- Extensive glossary of food-related terms
- Reviewed by select students at Tufts University and Florida International University classes for ease of use

Now users can easily access all the credible, science-based food safety, nutrition, and health information available on our Web site. Come visit us at ific.org, browse the site and let us know what you think. We'd love to have your feedback! Oh, and while you're there, complete the easy sign-up to receive new and updated information as well as *Food Insight*. See you on-line at ific.org.

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“Functional foods” are those that have health benefits beyond basic nutrition. The term phytochemical for example, refers to the health promoting compounds that come from plant sources. Food components with health benefits that are found in animal sources are increasingly referred to as “zoochemicals.” A familiar example is iron consumed in foods such as beef, pork, and chicken. Scientific support for the healthful benefits of many other less well-known zoochemicals continues to emerge and looks very promising.

Zoochemicals — like most zoos — cover a lot of ground; it would require hours to see everything. Here’s a quick tour of a few promising examples:

CLA — Conjugated Linoleic Acid

“CLA” stands for “conjugated linoleic acid” — a fatty acid identified in the 1970s by Dr. Michael Pariza, researcher and director of the Food Research Institute at the University of Wisconsin, Madison. Pariza had been investigating the potential for carcinogenic effects in ground beef when he instead discovered a compound that could block the growth of tissues that support cancer. The active compound was identified as CLA — a form of linoleic acid with a differing arrangement of bonds within the molecule — hence the term “conjugated.”

Preliminary research suggests that CLA may not only suppress cancer cell development, but may also help reduce risk of heart disease, boost the immune system, build lean muscles, and diminish body fat in animals. CLA is a naturally occurring substance in

the guts of ruminant or cud-chewing animals like cows, and is present in particular meat and dairy products. Additional emerging research suggests that livestock eating feed supplement-

and cone cells. It is thought that the greater the protective layer containing these compounds, the less damage will occur to the retina. While many food sources of lutein and zeaxanthin are plant based, egg yolk contains a significant amount of these zoochemicals.

ZOOCHEMICALS — A Multitude of Beneficial Nutrients

Omega-3 Fatty Acids — DHA and EPA

The fat in fish contains a class of polyunsaturated fatty acids called omega-3s. These

fatty acids differ from the most common polyunsaturated fatty acids found in vegetable oils, called omega-6s, and have different effects on the body.

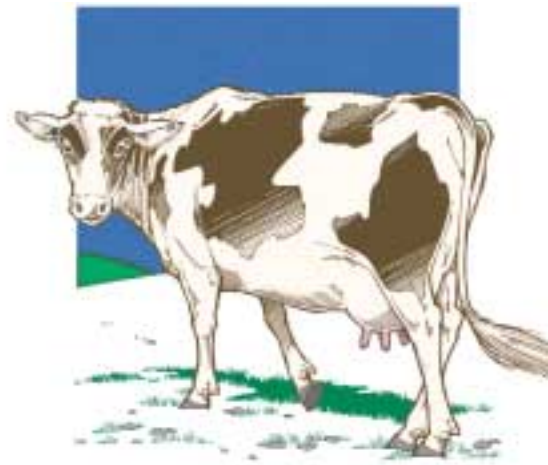
Long chain omega-3s — eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) — are found in abundance in cold-water fish such as salmon, trout, mackerel, and tuna.

ed with CLA may produce more lean tissue; dairy cattle ingesting CLA enriched diets seem to have greater milk productivity.

Lutein and Zeaxanthin

Lutein and zeaxanthin are both phytochemicals and zoochemicals. Whether originating from plant or animal sources, of the more than 600 carotenoids found in nature, only lutein and zeaxanthin are specifically located in the macula and lens of the human eye. These yellow carotenoids appear to shield the eye from harmful blue light (blue being the complementary color to yellow) and may protect against age-related macular degeneration, the leading cause of blindness in people over sixty-five. Lutein and zeaxanthin are usually mentioned together because of their similar chemical structures, however they differ in the placement of one key double bond, which gives each distinct properties.

Blue light, just above the UV spectrum, is the highest energy and potentially most damaging wavelength of light that reaches the retina. The way in which the retina is organized, light must first pass through the highest concentrations of lutein and zeaxanthin before reaching the sensitive rod



Fish do not make these fats but obtain them from the plankton they eat; the colder the water, the more omega-3s the plankton contains. Likewise, humans can also consume omega-3s — alpha-linolenic acid (ALA) — from plant sources such as

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ZOOCHEMICALS — A Multitude of Beneficial Nutrients

flax and walnuts. However, the human body must convert ALA to EPA and DHA in order to have a similar health impact.

Cardiovascular benefits derived from the consumption of the marine omega-3 fatty acids were first noticed during epidemiological studies in the Greenland Inuits, an Eskimo population that consumed large amounts of traditional marine mammals and fish, and had little mortality from coronary artery disease. Since then, there has been a major expansion of our knowledge on omega-3 fatty acids and their beneficial role in health.

Several recent prospective observational studies have concluded that consumption of one fish serving per week decreased the risk of fatal coronary heart disease by approximately 40% relative to a no fish diet. The beneficial effect of omega-3 fatty acids may be related to their ability to prevent atherosclerosis through several mechanisms, including their lowering effect on serum triglyceride levels and blood pressure, their anti-inflammatory or anti-thrombotic effect, or their ability to prevent cardiac arrhythmias.

Currently, the U.S. Food and Drug Administration (FDA) allows a qualified health claim for omega-3 fatty acids and reduced risk of coronary heart disease for dietary supplements and has indicated that they will prioritize evaluations of qualified health claims for foods. Since omega-3 fatty acids inhibit blood clotting, supplements should not be used by those who have blood clotting disorders or by individuals taking anticoagulant medications. Eating two or three fish meals a week is a reasonable strategy supported by the American Heart Association (AHA).

Responding to Readers' Information Requests...

For More Information

Following publication of “Food Sensitivities, Allergies, and Intolerances: Separating Fact from Fiction” in the July/August issue of Food Insight, we received several readers’ requests for additional information about celiac disease. We are pleased to provide the following resources on the subject:

American Celiac Society — amerceliacsoc@onebox.com

Celiac Disease Foundation — <http://www.celiac.org>

Celiac Sprue Association/USA — <http://csaceliacs.org>

Gluten Intolerance Group — <http://www.gluten.net>

Raising Our Celiac Children — <http://www.celiackids.com>

ZOOCHEMICALS — At A Glance

Zoochemical	Animal-Derived Food Sources	Potential Health Benefits	Type of Scientific Evidence
Conjugated Linoleic Acid (CLA)	Beef Dairy Products (whole or part-fat, not skim) Lamb	May reduce risk of breast tumors	Animal studies
Lutein	Egg Yolk	May reduce risk of cataracts and age-related macular degeneration	Epidemiological studies
Omega-3 Fatty Acids	Fish and eggs with omega-3 fatty acids	May reduce risk for coronary heart disease	Epidemiological studies (fish); Clinical trials Animal studies
Zeaxanthin	Egg Yolk	May reduce risk of cataracts and age-related macular degeneration	Epidemiological studies

Adapted from:
Functional Foods Position Paper,
Journal of the American Dietetic Association.
1999; 99: 1278.

New IFIC Foundation Publications

Below are the newest releases from the IFIC Foundation. Single copies of most publications are available free-of-charge. For a comprehensive listing of publications or for bulk prices, please request the IFIC Foundation Publications List below.

Publications List (MI-4010)

A complete list of publications and *Food Insight* reprints available from the IFIC Foundation.

Food Guide Pyramid: Basic Maintenance for Your Body (EB-2065)

A brochure demonstrating how the USDA Food Guide Pyramid and Dietary Guidelines for Americans can be supported by nutrition messages and tips to help individuals achieve a healthful lifestyle. It covers principles of managing food choices and portions in "real life." Co-developed with the U.S. Department of Agriculture and the Food Marketing Institute."

Weight Loss: Finding A Weight Loss Program that Works for You (EB-2090)

This helpful, easy-to-use brochure provides information and check lists for evaluating weight loss programs and services and helps consumers ask the right questions to choose a safe and effective weight loss method.

Children's Nutrition and Physical Activity Teaching Set (MI-4200)

A teaching set designed to help kids ages 9-15 understand the importance of combining nutrition and physical activity. The set features a 22" x 34" two-sided color poster highlighting the Physical Activity Pyramid alongside the Food Guide Pyramid. Set includes the "Ten Tips to Healthy Eating and Physical Activity for You" brochure, reproducible slick, and poster. Please send _____ copies at \$3.50 and \$1.50 shipping handling. Enclosed is a check for \$_____.

Caffeine and Women's Health (EB-2040)

Revised and updated brochure providing current scientific facts about caffeine and women's health, including such topics as pregnancy and osteoporosis. This referenced document was developed in partnership with the Association of Women's Health, Obstetric and Neonatal Nurses.

IFIC Review: Understanding Food Allergy (IR-3070)

This referenced white paper offers the latest scientific information on food allergy. It provides an overview on how to distinguish a food allergy from other sensitivities to food.

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Current Topics in Food Safety & Nutrition



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