



Getting to the source: Where can I get more information?

Sometimes an article in your local newspaper just isn't enough. Maybe you've opened your morning paper to a report on herbal treatments for cold symptoms. With your stuffy nose and scratchy throat, the idea sounds appealing—but you need more information about side effects, drug interactions, and the supporting evidence. Or perhaps you've heard about policy changes that would encourage people to buy cars that can run on ethanol instead of

regular gasoline, but before you jump on the bandwagon you want to know the scientific basis for this switch. A popular science article or an article in your local paper may not give you enough information to make a judgment and may even selectively discuss evidence, ignoring some lines entirely—but with a little extra research, you can do better than your local paper. Where should you go to learn more about the science underlying these issues? For topics of current research, the books available at your library may be out of date and many details are likely squirreled away in journal articles that could be difficult to access and interpret. In this situation, the internet is a great resource, but not all internet sites are created equal and not all of them offer unbiased explanations of the science at stake.

Here are a few considerations for finding additional sources of scientific information online:

- Find sources with scientific expertise.** Try to find websites produced by a research institute, a governmental body, a respected educational institution, or a major scientific association (e.g., the American Psychological Association). These sorts of organizations are all key parts of the scientific community and have an interest in accurately explaining scientific issues. For example, the Centers for Disease Control, the American Association for the Advancement of Science, the U.S. Geological Survey, the U.S. Fish and Wildlife Service, or *Nature* magazine are all trustworthy choices. On the other hand, Badger Creek Elementary and Tipsfrom-todd.com probably don't have access to up-to-date scientific information and may not feel any responsibility to provide fair and accurate information.

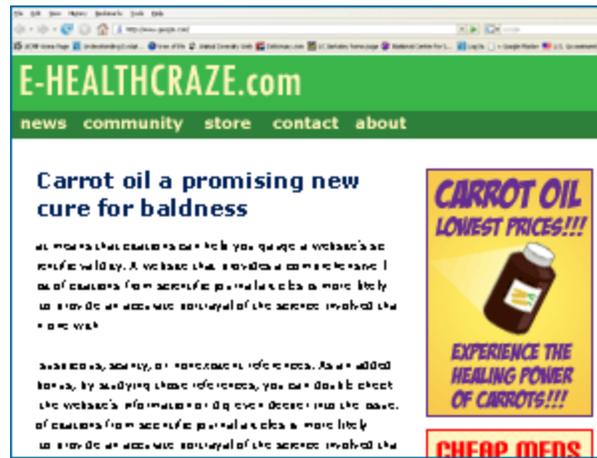


Your Science Toolkit: Evaluating Scientific Messages

- Where does the information come from?
- Are the views of the scientific community accurately portrayed?
- Is the scientific community's confidence in the ideas accurately portrayed?
- Is a controversy misrepresented or blown out of proportion?
- Where can I get more information?**
- How strong is the evidence?



- **Avoid ulterior motives.** Try to avoid websites from groups that might stand to gain by biasing the information presented, like some lobbying or advocacy groups. It's particularly important (and easy) to avoid websites that are trying to sell something. For example, Buy-herbal.com is unlikely to give unbiased evidence of the effectiveness of the herb Echinacea. Instead you might try the National Institutes of Health website, since that organization has no stake in the issue other than helping people stay informed and healthy.



Can you spot the conflict of interest?

- **Keep it current.** Science is ongoing and is continually updating and expanding our knowledge of the universe. Scientists publish many hundreds of papers each year on areas of active scientific research. For example, in 2006 alone, more than 15,000 scientific articles on the topic of breast cancer were published. Because of the rapid pace at which our scientific knowledge advances, websites can easily become out-of-date if not actively maintained. So a website last updated in 2002 is unlikely to give you a useful understanding of the costs and benefits of using ethanol as fuel. Instead, look for a more current website.
- **Check for citations.** As described in *Scientific culture*, scientific publications generally give credit to related research by providing a list of citations—and that means that citations can help you gauge a website's scientific validity. A website that provides a comprehensive list of citations from scientific journal articles is more likely to provide an accurate portrayal of the science involved than one with suspicious, scanty, or nonexistent references. As an added bonus, by studying those references, you can double-check the website's information or dig even deeper into the issue.

A sample page from www.cdc.gov:

The screenshot shows the CDC website page for 'Protect Yourself from Mold'. The page is part of the 'Emergency Preparedness & Response' section. It includes a navigation menu on the left, a main content area with several articles, and a footer with contact information and logos for USA.gov and the Department of Health and Human Services.

Callout boxes highlight the following features:

- Trustworthy source:** Points to the CDC logo and header.
- Motive: to protect your health:** Points to the article title 'Protect Yourself from Mold'.
- Recently updated:** Points to the 'Other Mold Resources' list.
- Citations provided:** Points to the 'Content Source' information at the bottom of the page.

Key text from the page includes:

Protect Yourself from Mold

After natural disasters such as hurricanes, tornadoes, and floods, excess moisture and standing water contribute to the growth of mold in homes and other buildings. When returning to a home that has mold, you should be aware that mold may be present and may be a health risk for you.

People at Greatest Risk from Mold

People with asthma, allergies, or other breathing conditions may be more sensitive to mold. People with immune suppression (such as people with HIV infection, cancer patients taking chemotherapy, and people who have received an organ transplant) are more susceptible to mold infections.

Possible Health Effects of Mold Exposure

People who are sensitive to mold may experience stuffy nose, irritated eyes, wheezing, or skin irritation. People allergic to mold may have difficulty in breathing, chest tightness, or shortness of breath. People with weakened immune systems may store mold spores in their noses. Mold in buildings and structures following disaster may develop in the packaging of the mask, so you should change the mask if you go back into the building for a short time and do not clean the mold, you do not need to wear an N95 mask.

Other Mold Resources

- [Clean Up Safely After a Natural Disaster](#)
- [Reentering Your Flooded Home](#)
- [Mold - General Resources](#)
- [NIOSH Interim Recommendations for the Cleaning and Remediation of Buildings: A Guide for Building Owners and Managers](#)
- [Population-Specific Recommendations for Protection From Exposure to Mold in Buildings Flooded After Hurricanes Katrina and Rita](#)

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Content Source: Coordinating Center for Environmental Health and Injury Prevention (CCEHIP)
[National Center for Environmental Health \(NCEH\)](#)
[Division of Environmental Hazards and Health Effects \(DEHHE\)](#)
[Air Pollution and Respiratory Health Branch \(APRHB\)](#)

As an example of how one might get more information on a science-related issue, let's return to our sample article on global warming, which briefly describes scientist Lonnie Thompson's ice core studies. Where could one find more details on ice cores and how they can inform global warming research? First, you might check out an interview with the scientist from *National Geographic*. This 2004 article is written for the general public (and includes no citations) but is from a trustworthy source and offers the direct perspective of a scientist involved with the work. And if that's not enough, you might turn to NASA's in-depth tutorial on paleoclimatology, which meets all of our guidelines: it's from a trustworthy source without ulterior motives (NASA), was posted relatively recently (2005), and includes citations from the scientific literature.