



Risk in Perspective

Health Insight: A Consumer's Guide to Taking Charge of Health Information



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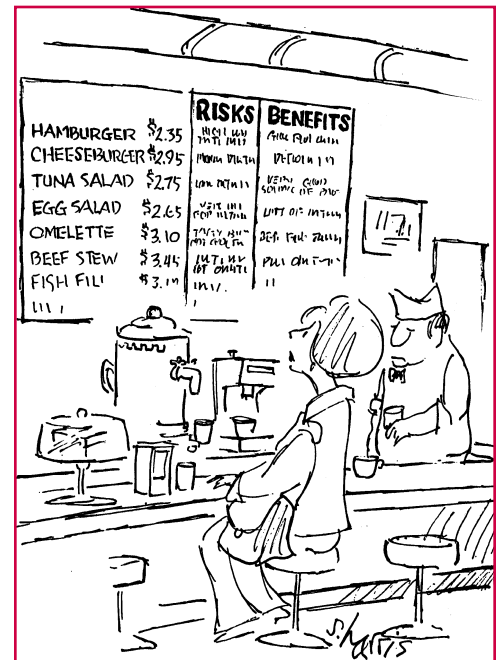
Changes in technology and science that affect health are reported every day by the media and discussed everywhere. Many sources of information recognize their important roles in shaping people's perceptions, attitudes, and behaviors about health, but most people are on their own as they evaluate health information, put it into context, and make choices about risk. The concept of risk is important because it implies that there is some chance that something bad might happen. The uncertainty can be frustrating and frightening, but it also means that your attitude and choices can play a major role in your future health.

Some guidelines exist to ensure the quality of the transmission of health information to consumers (see related readings). However, comparable guidelines do not exist that provide a set of questions for the consumers of the information to ask. To fill this important void, the Harvard Center for Risk Analysis began working on Health Insight with funding from the Chlorine Chemistry Council. Health Insight emphasizes the importance of

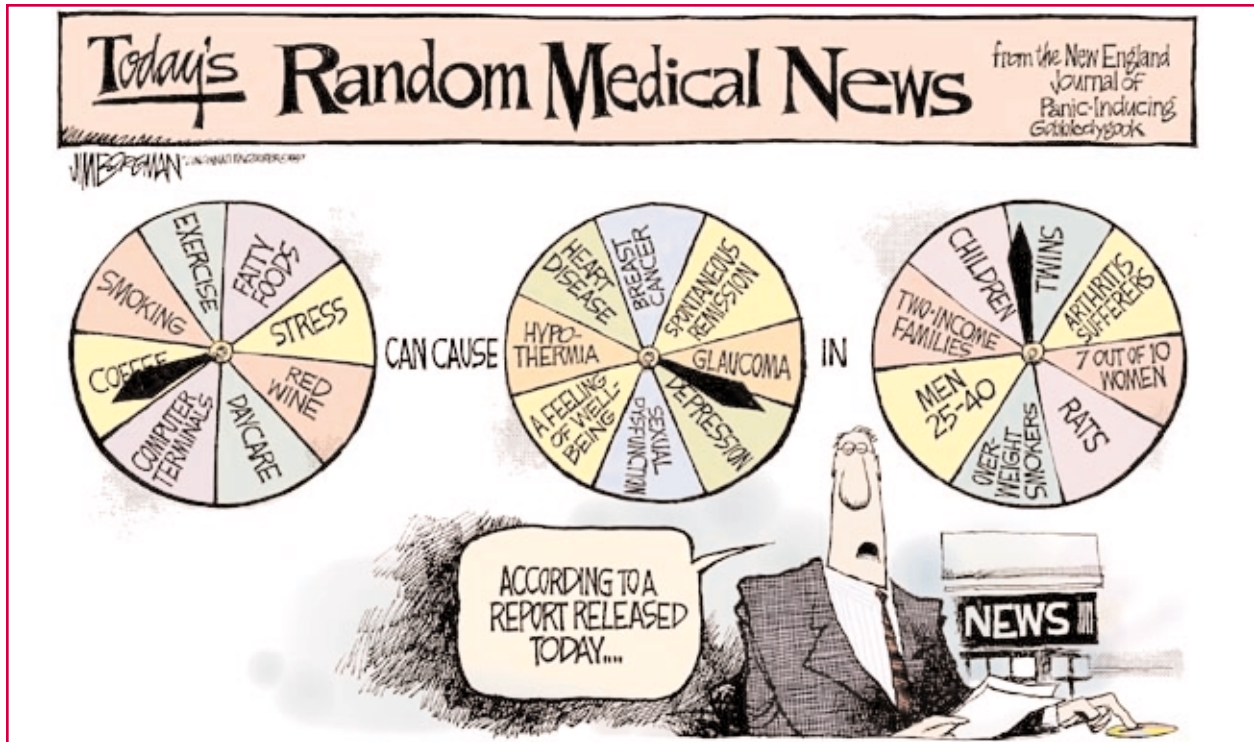
helping consumers ASK QUESTIONS about the health information that they receive. It aspires to stimulate demand on the part of consumers for high quality information, and to reduce consumer tolerance of junk science, quackery, and fraud.

The remainder of this issue of **RISK IN PERSPECTIVE** provides the content of the Consumer's Guide developed by the author with input from a steering committee (see back).

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Health in the Headlines

“Scars” May Be Cancer Predictor
Two Drinks a Day Keep Stroke Away
Weighing the Risk of a Diabetes Cure
Persistent Heartburn Is a Cancer Warning Sign
The Side Airbag Controversy
Children Not Getting Lead Tests, Study Says
Study: High Fiber Diets Don’t Cut Colon Cancer
No Link Found Between Fat, Breast Cancer
Despite Warnings, Toxic Shock Still a Killer
Home Radon Risk Not So High, Study Hints

(Source *USA Today* in early 1999)

The best advice you might get when it comes to making sense of health information is ASK QUESTIONS! The Health Insight Project developed these 10 questions to help consumers take charge of health information and educate themselves about risk and opportunities to reduce risks.

10 Questions to Help You Make Sense of Health Information

1. What is the message?

Get past the presentation and to the facts.
Consider that:

- Sources personalize information to make it more interesting, but not everyone relates to the same things.
- Your perception of information can depend on whether it is presented as positive (half-full) or negative (half-empty). Flipping the statements and looking for alternative ways to state them might change your perception. For example, if you hear about a small number of people being affected, remember that this means a large number are not affected, and vice versa.
- When the facts seem confusing, keep in mind that you might have been given false or incomplete information or you may have misunderstood the information given.



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2. Is the source reliable?

Information comes from many sources, good and bad. Think about the information's quality. Consider that:

- All sources have a motivation for providing information. Try to identify the source and its funding so that you can consider any possible biases. The fact that a source or its source of money may benefit from the information does not necessarily mean that the information is false.
- Health information can be based on untested claims, anecdotes, case reports, surveys, and scientific studies. Scientific studies, which take samples and apply the results to the whole population, often provide the best clues about health. Nonetheless, many studies are needed to be confident about an answer. The following are some factors that might help you judge information:

Less reliable (less certain)	More reliable (more certain)
One or a few observations	Many observations
Anecdote or case report	Scientific study
Unpublished	Published and peer-reviewed
Not repeated	Reproduced results
Nonhuman subjects	Human subjects
Results not related to hypothesis	Results about tested hypothesis
No limitations mentioned	Limitations discussed
Not compared to previous results	Relationship to previous studies discussed

It is important to read between the lines. Look for the assumptions that make the observations relevant to other members of the population. For example, do you have to assume that the same effects occur in humans as in rats? in women as in men? in children as in adults? These types of assumptions raise questions about how well the conclusions from the sample apply to the larger population. They do not necessarily mean that the conclusions are wrong or that more studies are needed.

3. How strong is the evidence overall?

Understand how this information fits in with other evidence. Some sources are generally encouraged to provide unbiased coverage, while others may be intentionally biased. Consider how many sides of the story you hear and whether your source tells you about all of the possibilities.

Remember that extensive coverage of a story can be misleading if it does not reflect the amount of evidence that supports the claim. In particular, the results of early studies can turn out to be right or wrong after time. Americans have mistakenly rejected results that later proved true, and accepted results that later proved false.

4. Does this information matter?

Determine whether the information changes your thinking and leads you to respond. Just because information appears in the media does not mean that it affects you or someone you care about. Some newsworthy risks (like accidents and homicide) may be overreported in the news media, while other, less newsworthy risks (like heart disease and stroke) may be underreported. The result is that you might be led to worry about small risks that appear to be big and to ignore big risks that appear to be small.

5. What do the numbers mean?

Remember that understanding the importance of a risk requires that you understand the numbers. Information about health risks gives the chances of an outcome occurring. To avoid confusion, put the numbers into a format that you can understand. Remember that 1 in 100 can also be written as 1%, 10 in 1,000, ten thousand out of a million, 0.01, 1×10^{-2} , or one penny out of a dollar.

Researchers report their findings as expected values within a range. The breadth of the range

shows how confident they are about the results. When only one number is reported, it is probably pulled out of a range and it does not inform you about the researcher's confidence in the result. In such cases, it is important to understand whether the number reflects the worst case, the best case, or something in the middle.

Remember that risks change with time, and that some people have higher or lower risk numbers than other people. Think about any habits or behaviors you have that put you at a higher or lower risk for a particular outcome.

6. How does this risk compare to others?

Put the risk into context. One important risk comparison is that of the chances of the same outcome, like the numbers of U.S. deaths per year per 10 million people:

- 200,000 from heart disease (people over 64)
- 6,000 from lung cancer
- 3,000 from accidents
- 1,000 from homicides
- 400 from accidental poisoning
- 20 from train accidents
- 2 from lightning

Since numbers about risk can be presented in many forms (like the chances of dying from a cause over a lifetime, during a year, or during an event), make sure you compare similar forms. Consider that reporting different parts of a range for different risks (best case for one vs. worst case for another) can be very misleading. Finally, in making comparisons, other factors may be important to you.

For example, consider the extent to which you

- Think the risk is new
- Choose the risk
- Can control, manage, or prevent harm
- Gain things you want by accepting the risk
- Fear the risk
- Feel anxious from lack of knowledge



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These factors might mislead you sometimes. For example, an unfamiliar chemical like dihydrogen oxygen might sound threatening, even though it is simply another name for water.

Remember that science can not answer the question "Is it safe?" for anyone. You must decide what is an acceptable risk and make health decisions based on your personal judgment.

7. What actions can be taken to reduce risk?

Identify the ways that you can improve your health. Be creative. Think about actions that can reduce your risk. For risks that are new to you, take the time to think about them before forming an opinion. Keep in mind that just because someone you know picks one action does not mean that the same action will be right for you.

8. What are the trade-offs?

Make sure you can live with the trade-offs associated with different actions. Every decision involves trade-offs. When talking about medications, trade-offs are often called side effects, like when the medicine you take to get rid of your headache upsets your stomach. Ignoring potential trade-offs when considering an action to reduce or eliminate a risk might ultimately put you (or someone else) at greater risk.

Taking action can also lead to trade-offs of other important resources, particularly time and money. Some people object to the idea that they might be asked to trade between health and money or other factors. Most people make these choices automatically, however, by driving slower at the cost of a few extra minutes or spending money to buy a bicycle helmet for their child or a smoke detector. Remember that resources spent to reduce one type of risk are not available for other activities.

FURTHER READING

Fineberg, HV and S Rowe, 1998. "Commentary. Improving Public Understanding: Guidelines for Communicating Emerging Science on Nutrition, Food Safety, and Health., Journal of the National Cancer Institute, 90(3):194-199.

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9. What else do I need to know?

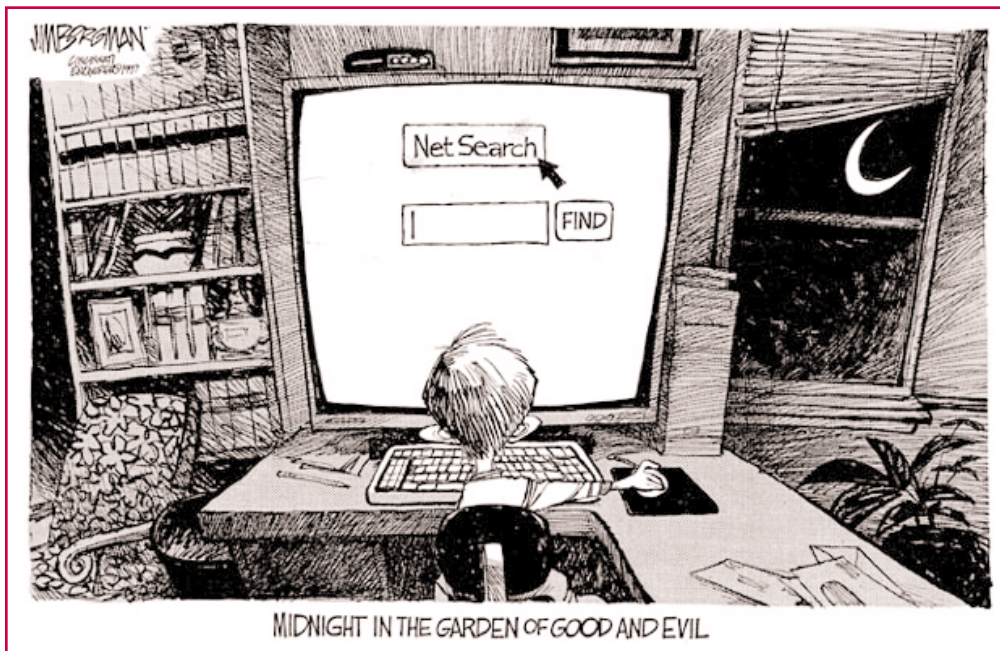
Focus on identifying the information that would help you make a better decision. Remember that scientific information is always somewhat uncertain even if it is not reported that way. Think about what information is missing and how you would use more information if you had it. Keep in mind that if you rely on the headlines as a basis for managing your health, you are likely to overlook the well-established (and consequently not newsworthy) strategies for improving your health.

10. Where can I get more information?

Find the information that you want. Try:

- Your health care provider
- Libraries

- Manufacturers and the manuals or labels that come with their products
- Your original source
- Your local Department of Health
- Government agencies like the Department of Health and Human Services, the Consumer Product Safety Commission, the Environmental Protection Agency, or the Occupational Safety and Health Administration
- The Internet
(See www.consumer.gov for the U.S. Consumer Gateway and www.health-insight.harvard.edu for the Health Insight Project web site.)



MIDNIGHT IN THE GARDEN OF GOOD AND EVIL

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