Should you trust that medical news?

A critical eye can help you separate hope from hype.

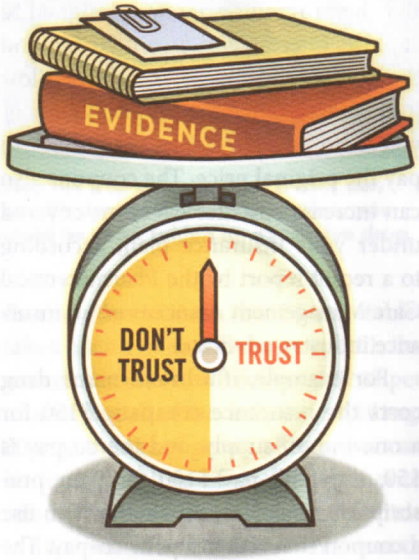
Health reporting often follows an all-too-familiar pattern: New drugs or therapies are introduced with glowing accounts, followed a few years later by headlines warning about their dangers. Some people react to that uncertainty by dismissing all health and medical news, while others overreact by adopting—or abandoning—strategies too soon.

Part of the confusion stems from the normal unfolding of scientific knowledge, which is constantly evolving as new evidence adds to the existing body of research. But fault also lies in the way that medical research is published and pushed through the media, creating a broken system that has tremendous potential to harm consumers, says Gary Schwitzer, publisher of HealthNews Review.org, a watchdog website that tracks the quality of health reports.

"The best health journalists are realizing what they don't know and are working hard to improve their own education and reporting," Schwitzer says. "But the daily drumbeat of dreck might wipe out those quality efforts." He notes that some 70 percent of the more than 1,700 articles his group has reviewed are inadequate or imbalanced, failing to discuss costs and quantify the harms and benefits.

Difficulty in interpreting medical research can extend to physicians as well. In a study published in March 2012, primary-care doctors reviewed hypothetical research on prostate-cancer screening tests. They were three times more likely to recommend a test supported by irrelevant evidence than one backed by relevant evidence. The authors concluded that most of the doctors didn't know which statistics provided reliable evidence of the tests' efficacy.

The following checklist will help you sift through the rubble of medical news you find online, on TV, and in print. It can help you evaluate health news and identify shortcomings in the reporting—as well as find examples of good journalism that you can trust.



CHECK THE BACKGROUND

Was the study published? If you don't see the name of a peer-reviewed medical journal and a publication date in an article, either pass or take the findings as preliminary. The journalist might be covering early research that is often presented at medical conferences. Such presentations aren't peer-reviewed, and the findings might change if or when they are published. An estimated 100,000 medical meetings a year are held worldwide, and research suggests that only half of the findings that garner media attention make it into a high-profile journal within three years.

Who paid for it? Health-care research is rife with potential conflicts of interest. Pharmaceutical firms have provided almost 60 percent of all biomedical research funding in the U.S., raising questions about the integrity of some drug studies. And a 2007 analysis of nutrition studies involving soft drinks, juice, or milk found that more than half had industry funding. More important, the studies' conclusions directly correlated with who funded them.

It's unreasonable to dismiss any study with industry funding. But it's vital to know about any potential conflicts of interest so that you can figure them into your overall evaluation of the findings. If the news article doesn't say who funded the study, you can look for it yourself in the free study abstracts that medical journals offer on their websites. Many include funding information.

What's the context? A single study seldom constitutes strong evidence of anything and is even more rarely considered a clinical game changer. Instead, new conclusions should be presented in the context of what is already out there. Does the finding support existing evidence? Suggest a new benefit that warrants investigation? Raise safety concerns that earlier studies didn't? Knowing where the new research fits in the body of existing data can help you decide what to make of it.

EXAMINE THE METHODOLOGY

Was it a controlled clinical trial or an observational study? The gold standard in medical research is the double-blind, randomized, controlled clinical trial, in which subjects are randomly assigned to a control (placebo) or experimental (active drug, substance, or therapy) group. Neither the subjects nor the researchers know who is in which group until the study ends. In general, the more people who are in a clinical trial—ideally hundreds or even thou-

sands—the more weight you can put on the findings. But in reality, the majority of clinical trials in the U.S. include 100 or fewer participants, according to a study published in May 2012 in the Journal of the American Medical Association. Only 4 percent had more than 1,000 participants. And roughly 65 percent of cancer studies don't randomize their participants, "raising fundamental questions about the ability to draw reliable inferences," the same study found.

Observational studies, in contrast, compare large populations of people and look for connections between habits or behaviors that they did independently and various health outcomes. Those studies can suggest a link—say, between eating blueberries and strong brain function, or laughing a lot and lower blood pressure—but can't prove a causal effect. What's more, "many of the findings from observational studies have turned out not to be true when tested in randomized trials," says Lisa Schwartz, M.D., a professor of medicine at the Dartmouth Institute for Health Policy and Clinical Practice.

Did it address "confounders"? That's the umbrella term for all of the other possible factors that could explain a study result. For example, research may find that the risk of lung cancer is higher in factory workers. But before the reporter or study's author pins the blame on the job, he or she must investigate the confounders, such as whether the workers were more likely to smoke cigarettes. Or in the blueberry example, it might turn out that people who eat a lot of blueberries share other healthful behaviors, such as exercising regularly, that account for their reduced risk of cognitive decline.

How long was the study? Studies done to gain approval for new drugs and devices can last for as little as a few weeks, and rarely more than a few months, which might not be long enough for potential risks to emerge.

Indeed, about 5 percent of newly approved medications end up pulled off the shelves by the Food and Drug Administration because of unexpected risks. An additional 10 percent get new, more stringent warnings added. As a general rule, the longer an investigation, the greater its worth.

GRADE THE JOURNALISM

Are harms mentioned as well as benefits? "More often than not, when we hear about new stuff, benefits are maximized and harms are minimized, and that is simply a bias and imbalance that we have to overcome," Schwitzer says. "If you are hearing a message that sounds too good to be true, it is, because there are always harms."

What do other sources say? Don't rely on a single news report. Check whether other stories give other details or perspectives that provide a fuller picture. Also look for responses from governmental agencies and reputable organizations, which can often help gauge how seriously to take the news.

Who's quoted? Sources who are quoted in news reports can have an inherent bias, whether it's the actual researcher, an interest group (say, the National Dairy Council or the National Cattlemen's Beef Association), or a representative from the company that makes the drug or device that was studied. The best articles should also include independent voices.

DETERMINE WHAT THE NEWS MEANS

Do the findings apply to you? Many drugs that show promise in the early test-tube stage or in animal research don't turn out to be safe or effective in humans. And in human trials, some treatments are tested only in men or women, others only in young, healthy, or sick people. So the less you resemble the subjects, the more reason to temper your enthusiasm. Check whether the study's subjects were the same age, sex, education level, income group, and ethnic background as you and had the same health concerns.

Do you have access to the care that the study participants did? Research on new medical treatments is often conducted by the best doctors in the best hospitals, skewing the results away from the average patient. Physicians at medical schools or large hospitals might have better equipment and training than your local doctor or medical center.

What does your doctor think? Talk with your health-care provider about new treatments or other findings you've read about before rushing to judgment. "We will always and should always rely on informed and shared decision-making between patient and practitioner," Schwitzer says. ■

Medical statistics: 4 concepts

Averages. A man has one of his feet on ice and the other in very hot water; statistically speaking, on average, he's pretty comfortable. So when possible, look for more-specific results.

Crude rates. This term is used when the results haven't been adjusted for confounding factors. Instead, look for "adjusted rates," which are a better indicator of what the study really found.

Statistically significant. This means that the finding is probably due to something other than chance. That's important, but it doesn't tell you about the size of a finding; for example, a difference of 1 percent between an intervention and placebo group might be statistically significant if the study was large, but it's not very substantial. Yet a smaller study's results might not be statistically significant but could still be important.

Relative vs. absolute risk. A study finds that people who took a drug were three times as likely to die of a heart attack as those who took a placebo. That means a relative risk of 3.0 compared with 1.0 (the relative risk for the placebo). But a look at the actual numbers shows that the study involved 2,000 subjects: 1,000 on the drug and 1,000 on the placebo. The drug group produced three heart attacks (0.3 percent) and the placebo group had one (0.1 percent). Therefore, in terms of absolute risk, the drug caused an excess of only two heart attacks per 1,000, or 0.2 percent—not nearly as impressive as "three times as likely."

ILLUSTRATIONS BY PETER AND MARIA HOEY