MedicalXpress

Debunk the junk: 10 red flags to help you sort specious nutrition advice from the good stuff

August 14 2014, by Julie Flaherty

Honest-to-goodness nutrition news is actually pretty rare.

"Nutrition is not a science of breakthroughs," explains Professor Jeanne Goldberg, G59, N86, founder and director of the Friedman School's Nutrition Communication Program, which trains professionals to explain research findings in ways that the public can understand. Nutrition research often moves the needle only a little bit at a time. "It's evolution, not revolution," she says.

Only in the last couple of decades has the media had the appetite to report on every nutrition study that comes out. Before that, studies would be read by other scientists, assimilated into the collective research consciousness, and the most useful information would eventually make it to the newspapers. Today, many more studies, deserving or not, get their day in the sun, which is one reason consumers complain that nutrition researchers are always flip-flopping on their advice.

In fact, "some 90 percent of the general recommendations that people need to eat a healthy diet are known and probably understood by them," says Rachel Cheatham, N05, N08, an adjunct assistant professor who teaches a course on consumer marketing for the Friedman School's new online certificate program, Nutrition Science for Communications Professionals. Yet there are only so many times that people can hear they should eat more vegetables and fruits and get exercise. "The basic

message is boring," says Goldberg.

So for consumers who are hungry for nutrition news, the Food and Nutrition Science Alliance, a partnership of several professional scientific associations, including the Academy of Nutrition and Dietetics, the American College of Nutrition and the American Society for Nutrition, published a list of "10 Red Flags of Junk Science" to help consumers evaluate nutrition recommendations—be they from a news article, a diet book or a product label—with a critical eye.

1: Recommendations that Promise a Quick Fix

This is often the case with supplements that guarantee you'll lose weight fast. We would like to believe that eating novel foods such as mangosteen and acai berries will speed us along our quest for svelteness, even if the claims don't have the science to back them up. Effectiveness studies on new supplements tend to be small and sponsored by the manufacturers.

The current supplement setting the Internet abuzz, African mango extract, claims to be a surefire route to dropping pounds, says Assistant Professor Diane McKay, G89, N97, N00, director of the graduate online certificate program at the Friedman School. But if the claims were true, she asks, "Do you really think the ads would appear on late-night infomercials, tabloid newspapers and the side panel of your browsing screen?"

McKay, who teaches the foundations of nutrition course for the communications certificate, says the quick fix often goes hand in hand with a "persecution claim." A little conspiracy theory does a lot to answer a consumer's question about why they haven't heard about a product's health benefits before, or why it isn't front-page news: the government/establishment/pharmaceutical industry doesn't want you to

know about it.

Such products will also throw in some false medical jargon for good measure. McKay is particularly amused by raspberry ketones, a weight-loss supplement promoted on the Dr. Oz Show. You may have heard of ketones in relation to weight loss, as they are created when your body breaks down fat for energy. That doesn't mean they are good for you. "A ketone is a byproduct of metabolism that you don't want at a high level in your body," McKay says. Besides, no raspberry ketone studies have been done on humans, only animals. So don't be won over by official-sounding science terminology.

2: Dire Warnings of Danger from a Single Product or Regimen

The target may change from year to year, but the attack is always similar: Fat makes you fat, carbohydrates are toxic, sugar is white death. Cheatham says it can be a good thing if a headline or a new diet book triggers people to review how much sugar, processed carbs or saturated fat they tend to eat. "But often what happens is panic, divisiveness and this all-or-nothing approach that swings from paleo to vegan," she says.

While it's true that consuming too many added sugars is unhealthy, abstaining from all sugars—natural or added—can erase whole categories of nutritious foods from your diet. "I hate it when fruit gets prosecuted," says McKay, pointing out that in addition to the sugar in a pear, you get fiber, micronutrients and phytochemicals.

She is dismayed when she sees people shunning carrots, chock-full of beta-carotene and fiber, because of their glycemic index. "Worrying about the sugar and ignoring all the good things in a carrot is almost a crime," she says. She sees the same problem with eschewing whole

grains along with processed carbs: the former provide us with fiber, B vitamins, some iron, some magnesium, "so if you eliminate that entire group, you are also eliminating those nutrients," she says.

3: Claims that Sound too Good to Be True

This one goes hand in hand with the "quick fix." Whether the recommendation is to eat more chocolate (flavonoid-rich!) or enjoy a bun-less burger with cheese and bacon (low-carb!), "the public likes it when the advice is consistent with what they want to do," says Goldberg. Scrutinize the science behind the recommendation to see if it is really a reason to indulge, or just wishful thinking.

4: Simplistic Conclusions Drawn from a Complex Study

"People think at the end of a study you have the truth; it's black or white," says McKay. But what we often end up with are nuanced shades of gray.

Adela Hruby, N10, MPH10, N13, a research fellow at the Harvard School of Public Health who teaches the course on interpreting nutrition evidence for the communications certificate program, says that many studies simply can't be boiled down to a headline.

She points to an Australian study published last year involving one of the primary polyphenols in coffee: chlorogenic acid, or CGA. Mice that were fed a high-fat diet and a high amount of CGA—what the researchers considered the equivalent of five cups of coffee per day for a human—developed more visceral fat than other mice. Even though the mice drank not a drop of coffee, the headlines of news stories about the study included "Drinking 5 cups of coffee will lead to obesity" and

"Wrong amount of coffee could kill you."

"Coffee isn't just its CGA—there's a lot more to a food than a single polyphenol," Hruby says. "And we can't extrapolate from mice models so directly to humans. That's been shown time and again."

Perhaps more important, the stories didn't take into account all the previous research on coffee, which has been observed to be protective against a wide range of conditions.

5: Recommendations Based on a Single Study

In March, a study published in the *Annals of Internal Medicine* failed to find a strong link between saturated fat intake and heart disease. Within two weeks, Mark Bittman, a columnist for the New York Times, was ready to declare that "Butter is Back."

"People thought, 'Yeah! Saturated fat is no longer the enemy. We can go back to eating butter and chicken skin and all the things we miss,'" says Cheatham.

The British Heart Foundation, which helped fund the study, said that while it "wouldn't shy away" from the results, it wouldn't immediately change national dietary guidelines, which currently suggest a diet low in saturated fat.

"We need more research in this area, and also need to examine the findings alongside the full body of evidence rather than other individual papers," Jeremy Pearson, the foundation's associate medical director, wrote.

The point, says McKay, is that with any nutrition study, you have to look at how it fits in with everything else that has been found to date, and

there is a lot of evidence showing that saturated fat raises cholesterol, a risk factor for heart attack and stroke.

"If all of a sudden you saw a study that said oatmeal is bad for you, when up to that point all you've heard is good things, be a skeptic," she says. That doesn't mean ignore studies that go against the prevailing wisdom. "Sometimes things don't fit in how we expect them to, so we have to adjust our thinking," McKay says. "You need heretics to move things forward."

6: Statements Refuted by Reputable Scientific Organizations

Where can you turn to check whether the supplement you are holding has scientific evidence behind it? Government agencies such as the Centers for Disease Control and Prevention, the Food and Drug Administration, the Department of Agriculture and the National Institutes of Health all maintain websites with a wealth of science-based nutrition information. You can also see what the Academy of Nutrition and Dietetics, the American Heart Association and the American Institute for Cancer Research have to say.

"These are solid, reputable organizations with professionals who take painstaking care to look at the evidence and promote the evidence responsibly," McKay says. "They certainly do a good job of trying to distinguish fact from fiction and telling consumers the whole story."

7: Lists of "Good" and "Bad" Foods

"Foods aren't independently good or bad, as in you should always eat or you should never eat," says Goldberg. A little ice cream can be OK, if you otherwise practice restraint, and every vegetable you consume

doesn't have to be at the top of the ORAC (oxygen radical absorbance capacity) scale for measuring antioxidants. But figuring out balance and moderation can be hard on consumers who are simultaneously barraged by fast-food commercials and obesity statistics.

"At some point, people just want some definitive direction on what to eat, and they would like it—unfortunately—to be very easy and fairly mindless," Cheatham says. That's why a Huffington Post list of "7 Foods You Should Avoid at All Costs" or a diet with a fast set of rules, such as the paleo diet or a raw foods diet, is appealing.

Are there foods we should eat less often? Of course. But although the Center for Science in the Public Interest once famously described fettuccine alfredo as "a heart attack on a plate," Goldberg says it is fine to indulge occasionally. "One dinner is not going to do you in."

8: Recommendations Made to Help Sell a Product

If the health article you are reading conveniently ends with a sales pitch for a supplement, or if all the studies referenced at the end of a diet book are by the person who wrote the book, your quackery alarm should go off.

That said, with the recent cuts in government funding for nutrition research, you will find more and more studies—often, good-quality studies—funded by groups that clearly have a stake in the outcome: a calcium study funded by the dairy industry, for example.

"It doesn't mean that that study should be dismissed," says Cheatham, "but there may be other research that either had null findings or contrary findings that didn't get published." Putting research into context, which is a large part of what the Nutrition Communication Program and the online certificate program teach, is probably the single most important

variable in health communications, says Cheatham.

9: Recommendations Based on Studies Not Peer Reviewed

A nutrition study isn't worth its salt if it hasn't been published in a peer-reviewed journal. That means that a group of outside reviewers have deemed the research well-conducted, the results credible and the findings significant. Hruby recommends a short guide to the peer-review process put together by a charitable trust named Sense about Science. The booklet is called, appropriately, "I Don't Know What to Believe."

10: Recommendations from Studies that Ignore Differences Among Individuals or Groups

One size doesn't fit all when it comes to nutrition science. "If it was a study that was done in healthy young males, what makes you think the results are going to apply to post-menopausal females or kids?" McKay asks.

Hruby is reminded of a recent review that found no evidence that multivitamins prevent cardiovascular disease. She points out that the analysis included only adults without known nutrition deficiencies. "So if the blanket message is don't take multivitamins/multiminerals, frankly, I think that's the wrong message. We know that certain groups are at higher risk for nutrient deficiency than others and that supplements can help make up for this shortfall."

Provided by Tufts University

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