

DR. MICOZZI'S

***INSIDERS'* CURES**

# **The Secret to Spotting the Truth Behind the Headlines**

**Pseudoscience vs. REAL science**

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We are inundated today with medical myths, misinformation, and headline-grabbing claims promulgated by an increasingly untrustworthy media. Media that's become more about entertainment than journalism.

Just look at this year's White House Correspondents Dinner—the number of journalists disappeared among the celebrities (including our celebrity-in-chief), entertainers, and simple clowns in attendance at the royal court of the White House. This is a perfect example of how we have blurred the lines between responsible politics and policymaking, responsible journalism, and responsible medicine, research, and reporting.

Today's vehement focus on writing "grabbing" headlines has led to nothing more than lazy writers and researchers who don't do their homework. They may have mastered the art of "entertaining" people, but at the expense of true science and the truth. They do it by constantly turning the stories around...and misleading you in the end.

One week eating chocolate, or meat, is good; the next week it's bad. And one of the worst "politically correct" topics—smoking—just keeps getting even worse no matter what (see *The Day Science Went Up in Smoke* in your free *Library of Confidential Cures*).

In all this mess and misdirection...where does the truth lie buried?

### **Lost in a worthless mass of sloppy statistics**

In modern times, every truth is relative. And the conventional way to measure this "relativity" is by looking at the "strength" of statistical associations and the "power" of a statistical study.

When we look at the association between a behavior or risk factor and an illness, we must consider the following: Is there a real association, or is the association simply due to chance?

The conventional means of measuring this is by looking at something called the "P value" of a study—or the probability value. It's just a number to help understand the strength and power of the study. Unfortunately, the focus on these numbers ends up taking the place of actual biological plausibility, medical meaning, and often just plain common sense.

Researchers and reporters alike rely much too heavily on all these statistical associations—mistaking them with real cause and effect. Our reliance on statistics and

statisticians who know nothing about biology or medicine is frankly ridiculous.

Many things are correlated with other things. Does that mean that one "causes" the other? Does that mean there is any plausible mechanism by which it could? Statisticians often use a Grand Correlation Matrix on their data. But if you ask me, it's simply a fishing expedition for frequently spurious associations just to get out another publication. Publications that merely serve the professional interests of science bureaucrats and academic careerists.

The result is that a lot of confusing, meaningless "junk," without biological plausibility or medical meaning get published, filling up the journals and libraries, and now cyberspace. The NIH now keeps more librarians working at the National Library of Medicine (classifying and filing away all this burgeoning information) than Andrew Carnegie ever did (and of course all at our expense).

But what of all this information translates to actual knowledge, let alone wisdom about health and healing? A lot of modern medical researchers may or may not be saving human lives, but one thing is certain—they are killing a lot of trees.

Nobel Laureate Lord Earnest Rutherford once said, "If you need statistics to understand the result of your experiment, you should have done a better experiment."

And frankly, when you look back at history...we often had better science with a higher proportion of important findings (at a tiny fraction of the cost) before the government "take-over" of medical and scientific research. It seems that today, "anything goes," as long as it gets published.

So what do we need to help judge the meaning of all this data? How do we identify true cause and effect? How can true wisdom prevail?

Responsible research should all start with one underlying concept, idea, or model (a scientific paradigm) about how the human body works and "how things are meant to be."

For example, following are a few central ideas in natural medicine that can be used to design effective studies and to interpret data sensibly:

**1. All healing is self-healing.** Scientifically speaking, we know that every metabolic and physiologic system is designed to return the body to a normal state of

function (called homeostasis). The body instinctively strives to keep things constant and working internally. Consider fever, for example. The immune system will automatically induce a fever in order to slow down the spread of bacteria. This gives our immune system a chance to catch up—fighting infection naturally to get everything back in balance. When things get out of balance (a big concept in Chinese medicine and other ethnomedical traditions) various influences from the outside (therapies) can help the body move back into balance. These therapies can include nutrients, herbs, manual techniques, meditation, or just healing “energy.”

**2. The body continually replaces the old cells of our tissues with new cells.** Red blood cells are replaced over 120 days. It can take 2 to 3 months to replace other cells. Eventually, the body essentially rebuilds itself over 2 to 3 years. So the logical question of health science becomes: Can we replace older, less healthy cells with newer healthier ones? This is one reason natural approaches, like using nutrients and herbal remedies, often take months to achieve their maximum benefits.

**3. Humans exist in Nature.** The human body is designed to survive and thrive living in Nature—and to use the resources available in Nature. So it’s no surprise that plants provide such a rich source of foods and medicines. A simple look at human anatomy, biology, and physiology offers many obvious clues to how we are designed to rely on nature. Our teeth, digestive system, and metabolism are all designed for an omnivorous diet, eating almost everything in Nature—as long as it is natural. Humans, through our biology and culture, eat at the “top of the food chain” in Nature. (For more insight on a “Natural” diet for humans, see *The “Top of the Food Chain” Cure for Obesity* in your free *Library of Confidential Cures*.)

In addition to the many benefits offered by the plant world, other natural constituents like healthy air, sun light, and water are essential to health. Prior to having the benefits of today’s modern drugs, during the late 19th and early 20th centuries, thousands of people left the cities every year to take a “nature cure” or “rest cure” in the mountains, at the ocean, or in the west (where the rest cure was called the “west cure”). The effects of healthy food, water, air and sun light, with restful sleep, alone cured over half by themselves.

Even antibiotics are originally cures from Nature as it was found that mold (like *Penicillium*) make penicillin, and “friendly” bacteria (like *Streptomyces*) make streptomycin, etc. And Nature is smarter because instead of killing the bacteria, antibiotics simply stop bacteria from multiplying, giving our healthy immune systems a chance to overcome the infection (which leads back to the underlying paradigm described in #1 above).

If we don’t work with a central paradigm like all healing is self-healing, that the cells of the body are replaced like clockwork, and that Nature helps us heal and stay healthy...statistical studies may lack critical illumination.

### **The “gold standard” of modern medical research—TARNISHED**

*Tarnished Gold: The Sickness of Evidence-Based Medicine* by Steve Hickey and Hilary Roberts is a remarkable book that, in the tradition of Thomas Kuhn’s ground-breaking *Structure of Scientific Revolutions*, provides important tools to help us understand how statistical data become useful information (or not) in improving our understanding of nature and human biology and in guiding medical practice.

By the 1990’s evidence-based medicine (EBM) was becoming the latest fashion in medical science. It was originally conceived as a post WWII cost-saving strategy for England’s socialist National Health Service (an early form of health care rationing).

The authors of *Tarnished Gold* show that, in fact, the new statistical fashion of “evidence-based” medicine (EBM) has simply become a cloak for establishing credibility and taking the “scientific high ground” by those very statisticians who lack a working understanding of what my faculty advisor, Nobel Laureate Baruch Blumberg, liked to call “biological plausibility.” And, in turn, by physicians intimidated by elaborate uses of statistics.

Further, the authors argue that EBM has become a superficial marketing slogan for presumed respectability of costly big pharma and “big science” projects, which increasingly crowd out other valid kinds of experimentation, observation, and research.

This problem is painfully familiar to anyone providing or using natural medicine, nutritional medicine, complementary or alternative medicine, integrative medicine, etc. The human biological paradigm, model, or theory underlying any scientific approach and medical practice may differ. But, it is important to establish

an underlying theory, paradigm, or idea in order to develop any sense of the plausibility for a statistical association to having an actual role in the causation of health or disease.

In fact, the authors expose the fascinating and troubling tale about the politicization and massive government intervention into the scientific process for “proving” that smoking is the cause of lung cancer (see *The Day Science went Up in Smoke* in your free *Library of Confidential Cures*). This unprecedented government intervention set a different, more legalistic standard for how scientific data are translated into information about human biology to help guide public health and medical practice. This process leaves behind a lot of valid information about genetic and other risk factors and the fact that many non-smokers still get lung cancer.

The smoking and lung cancer precedent also helped create a role for government and industry bureaucrats in using statistics to force social agendas onto public health and medical practice. The diversity among patients and circumstances (a critical component of holistic, complementary or alternative, and integrative medical practices) becomes lost and replaced by arbitrary standards that in fact represent nothing.

The modern pre-occupation with statistics and forcing every observation into an arbitrary placebo-controlled “gold standard” clinical trial—and now “evidence-based” medicine—have left physicians and scientists in the dark. Critical observations from the daily realities of clinical practice, as well as understanding basic biological science and how nature operates in the universe have been left by the wayside. Therefore, calling such approaches a “gold standard” in medical research is limiting and counter-productive and undermines true scientific innovation.

The authors present several issues that hamper and limit the value of data and information gained from EBM, specifically, and modern medical research in general:

- 1.) All the information that is lost about individual patients in conducting statistical studies
- 2.) The huge bias in what research gets funded and the kinds of questions asked (and not asked)
- 3.) The reductionist, hierarchical approach to what constitutes evidence

- 4.) Withholding results due to corporate ownership of data
- 5.) Publication bias where only certain kinds of data get published due to decisions by researchers, authors, editors, and reviewers
- 6.) Medicalization of human biology whereby new “diseases” are continually being discovered, many of which are just natural parts of life
- 7.) Disreputable statistical analyses, including deliberate cheating, fraud, and misrepresentation in up to half of the scientific literature due to academic careerist and funding pressures

The authors conclude that EBM is in fact the sort of “junk science” that misleads politicians, government bureaucrats, journalists, and the public. EBM harms patients and suppresses true medical innovation and progress. They argue for patient-based rather than “evidence-based” medicine. This should be particularly evident to those familiar with natural medicine where the theories, methods, funding, and authority are all stacked against it.

Fortunately, the average patient and physician may not be concerned with all these considerations but only with what works. That is, “good medicine.” To which might be added, as taught by my then-medical school professor, and future US Surgeon General C. Everett Koop, “The least medicine that works is the best medicine.” And, per Lord Rutherford, the fewer statistics needed to reach a conclusion, the better. Or perhaps it was best said as Mark Twain oft quoted, “There are three kinds of lies: lies, damned lies and statistics.”

#### **Hidden in the details: Insider tactics for extracting the truth in mainstream media**

Unfortunately, the statistical mess has gotten so bad that we can barely train our doctors to cut through all the statistical gibberish found in today’s medical research. So they can understand what is truly relevant to health, medicine, and medical practice. Ten years ago, the President of the American Medical Association told me that their membership data revealed that only 9% of the doctors get information that influences their medical practice from the published research studies. So who is using all this medical research “information” and who is benefitting?

As above, part of the problem is that most of this information is unintelligible even by doctors for any use-

ful medical purpose. The other 91% of doctors have to rely on information from the drug companies, from other doctors, etc. This state of affairs is one reason why the “Standard of Practice” I always encounter as an expert medical witness in court is that the published research is not considered most relevant, and statistical studies mean almost nothing. What counts in court is what the doctor down the street is doing in that community!

So while I would love to be able to say it’s easy to spot the studies you can’t afford not to ignore—that’s much easier said than done. I have struggled for years to teach doctors and medical students to be skeptical of the “standard” approaches...to beware of the academic-industrial-government complex...and to recognize and remain open to true innovations. This is what I continue to aspire to do with my own ongoing research and learning...and writings.

So, to some extent, you’ll just have to rely on my experience, and what you’ll find in the pages of *Insiders’ Cures* each month and your *Daily Dispatch* emails.

But in the meantime, there are a few things you should always watch out for when it comes to reading the popular headlines:

1. Who is paying for the study? If it’s not disclosed in the article, beware.
2. Is it just an epidemiological-statistical study? Or are some real doctors and clinical observations involved? Epidemiological studies are designed to examine associations within a population. They can never prove causation in an individual.
3. Is there a lot of “crunching of numbers” involved in presenting the data? Or can the results be stated in

simple terms? Remember Lord Rutherford’s quote above.

4. Is the reporter of the study a qualified science journalist? There are still a few at the better papers and news channels.

5. Are the “experts” being quoted actually qualified? This is often a real problem when it comes to reporting on alternative, complementary, and natural-medicine topics. Beware of regular physicians who have just “discovered” truths about natural healing that would have been known to anthropologists and biologists for decades.

And of course, at the end of the day, you can always just stick with me. In addition to my medical training, I completed requirements for a Master of Science in Epidemiology and Biostatistics, as well as a Ph.D. in Biomedical Anthropology at a prestigious “ivy league” university.

I also have 30 years experience as a Forensic Pathologist and former Medical Examiner. And have reviewed medical and scientific evidence on thousands of cases for presentation in hundreds of legal proceedings around the U.S. (Fortunately, for us citizens, the standards for evaluating medical evidence are usually more inclusive, objective, and fair in court than what is perpetrated by the Mandarins of Medicine at the NIH and other medical/scientific “insider clubs.”)

My *Insiders’ Cures* and *Daily Dispatch* will keep you informed and help you make sense of the relentless deluge of health “information” that is “ripped from the headlines...”

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