Nutritional Regurgitations—Spiraling, Rhyming, Repeating

“History repeats itself,” so the old saying goes. According to Ecclesiastes 1:9, “What has been will be again, what has been done will be done again; there is nothing new under the sun.” American literary icon Mark Twain only mildly disagreed, stating “History does not repeat itself, but it does rhyme.” As I see it, history repeats, rhymes, and spirals.

Certainly it spirals with respect to nutritional science—we revisit the same issues over and over again, but we do so from deepened foundations of knowledge and the new perspectives they bring.

Those Were the Days

When working on my master’s thesis long, long ago in a galaxy far, far away (the 1970s), crude dietary fiber had been reclassified as either “acid detergent” or “neutral detergent” fiber. Crude, neutral, or acid, it was also assumed (a dangerous word) that all dietary fibers bound minerals similarly, inhibiting their absorption through the GI tract. In fact, one of my advisors forced me to repeat my project because I had noted a very significant difference in mineral absorption between potato flour, of which ≈25% of the fiber is soluble fiber, and corn flour, of which virtually all of the dietary fiber is insoluble. Oh, if I had only managed to properly connect the dots!

Today, we understand why I obtained those results, but “dietary fiber” continues to unveil new and tantalizing secrets: witness the research being done at KU Leuven with arabinoxylans or resistant starch and maltodextrin technology to dietary needs. All this progress notwithstanding, dietary fiber’s role in human nutrition still remains the subject of much debate.

Another example is phytic acid, which in the 1970s was considered a big dietary negative because it chelated minerals and, the progress that has been made in understanding and applying resistant starch and maltodextrin technology to dietary needs. This was perhaps my first inklings that nutritional science was in trouble.

Part of the problem is the inherent complexity of nutritional science. Another problem is the personal and very visceral appeal of food to our sense of self. For consumers, nutrition and food represents an eternal spring of hope regarding health, longevity, and well-being, and this hope is closely intertwined with culture, religious practices, social interactions, and one of life’s great pleasures—eating and drinking in good company. It is a knife that cuts both ways, however: every perceived setback or misfortune can similarly be ascribed to nutritional malfeasance, be it false nutritional gurus, dastardly food additives, or mystical quasiscientific dietary incantations. If good nutrition can offer so much, then surely poor nutrition can be blamed for acne, lack of friends, laziness, disease, misaligned planets, and paradise lost. This is why nutritionists find themselves alter-

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nately hailed as liberators of life and bringers of doom, depending on the vicissitudes of the modern media, activists, diet gurus, consumers, and, yes sadly, all too many credentialed nutritionists and physicians.

Perhaps the most important and prescient portent ever promulgated in prose was Alvin Toffler’s 1970 book, Future Shock (1), wherein he predicted that the exponential growth rate of scientific change and information dissemination would overwhelm, unbalance, and deracinate consumers’ grip on reality through information overload. Are we there, yet? As nutritional science continues to slosh and swirl from the rarified atmosphere of academia down to the smudged pages of the bottom-feeding tabloid media, consumers continue to be overwhelmed with contradictory and inconclusive information. If any field should have learned to be cautious in proclaiming certainties in the gray area between scientific dogma and anathema, it is the field of nutrition. Thirty-five years later, the same questions still defy closure and so we repeatedly revisit them in the media and with consumers, each time with a different spin.

The highly informed (although often misinformed) public demands certainty from the sciences of nutrition, health, and physiology. I propose that in these sciences uncertainty is OK. How often has it happened that our hallowed halls of nutritional academia have served to pass landmark judgments on nutritional issues only to have them upended by new revelations thereafter? How often has it happened that nutritional academia stood by helplessly as charlatans and demagogues bearing advanced degrees stole the public forum to hawk their latest bestselling books and interview gigs?

An ad appeared here in the print version of the journal

I recognize that professional organizations such as AACC International and others have tried their best to shed light on nutritional issues and controversies, but to borrow from another Mark Twain quote, “A lie can travel halfway around the world while the truth is putting on its shoes.” I would change that to “many times around the world” given the capabilities of modern electronic and social media. In sum, science is being outpaced—while there is much we could do, we aren’t doing it.

We issue press releases and generate the occasional interview, and we talk very convincingly among ourselves at scientific and technical meetings. The “others,” however, saturate the electronic and social media, overwhelming consumers with simple, shallow, and contradictory messages that play to their biases and fears. How do we cut through that fog without further contributing to growing public cynicism?

Hubris begets nemesis. The hubris of too many in the sciences is causing the public to lose faith in science and scientists—a trend that should greatly worry all of us. For one, we need science if we are to keep pushing against the frontiers of knowledge to our shared human benefit. On a more mercenary note, it is largely through public acquiescence that research funding becomes available, at least in democracies. Nondemocratic societies tend to have other priorities. We don’t want public goodwill and research funds to dry up, do we?

An Important Role to Play

Here is my proposal: our professional and industry associations need to invest far more in establishing a credible presence in new electronic and social media, not to push any particular dogma or latest research results but to communicate the inherent uncertainties that lie at the foundations of science—all science. We need to start the public conversation and recapture the narratives that put nutritional (and food) science knowledge in proper perspective as a process rather than a destination. We need to revive the joy of caution and love of skepticism that form the foundation of scientific inquiry. As I said before, uncertainty can be a good thing to embrace. However, we also need to help consumers understand that although scientific “certainty” is a chimera there is still much that scientific (nutritional) inquiry can contribute to enrich and better our lives.

Admittedly, I used to make fun of the standard presentation-ending mantra, you know the one, “we need more research money to….” (For consultants, by the way, the money mantra is “it depends!” But, you knew that). I have changed my mind. I am now convinced that embracing uncertainty with a love for inquiry into unanswered questions is a good thing that just may cut through the informational fog of future shock. It is not a bad thing to highlight scientific uncertainty at the expense of false certainty. I have faith that many, if not most, of the nutritional issues that we address today will still reverberate in the public consciousness 30 years from now: we will know more, but we will also know less. It is important that the field of nutrition be viewed with high esteem and trust despite its inherent uncertainties. Acknowledging the inherent uncertainties of scientific inquiry may do quite a bit to restore our credibility with those consumers upon whose faith in science we ultimately rely.

We have the modern tools of electronic and social media available to do this. Do we have the humility and will?

Reference