
Editorial Commentary

THE MEDIA AND PROBIOTICS: PROVOCATION OR DIALOGUE?

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In an article published in *Science* in 2008, researchers concluded that “interactions between scientists and journalists are more frequent and smooth than previously thought” (Peters et al. 2008). Was that smooth like a ‘smoothie’ laced with ‘probiotic’ bacteria, or smooth as in not invariably rough? With over 300 so-called ‘probiotic’ product launches in North America alone in 2008, and stories appearing in newspapers, magazines, television, radio and the web, the word is certainly getting out about probiotics, with more than Andy Warhol’s 15 minutes of fame. But are consumers any the wiser?

In order to try and understand the issues facing media and scientists as they relate to probiotics, a workshop was held by the International Scientific Association for Probiotics and Prebiotics (ISAPP) in London, Canada in 2008, attended by various representatives of the media. What became very apparent is that the past five years has seen a major restructuring of traditional mainstream reporting, with a significant loss of expertise and a requirement that reporters cover topics far outside their own expertise and training. Journalists at web news sites like Nutra-Ingredients and at major print conglomerates like Sun Media newspapers now need to report on three stories per day ranging from pesticides to the size of an alligator’s penis!

The emphasis is on reporting rather than deciphering and critiquing the news. Thus, when an institution like the University of Utrecht produced a press release stating that a study with so-called ‘probiotic’ Ecologic 451 killed patients with pancreatitis, this was picked up rapidly around the globe. The Telegraph in England and other media took the news literally, and showed

bottles of completely different (and clinically tested) probiotic products on their headlines, giving the impression that lay people were in danger of dying if they consumed probiotics sold in their supermarket (<http://www.telegraph.co.uk/news/uknews/1576550/Friendly-bacteria-products-linked-to-24-deaths.html>). Such fear-mongering severely dented the sales of many companies, especially Yakult in the Netherlands, even though their products are not used in pancreatitis patients and have no track record of killing people, and despite the publication of a response to the paper (Reid et al. 2008).

Lessons need to be learned from this, including how and why press releases are written by academic institutions, and what expertise is made available to interpret the information quickly and effectively to daily news media. In the competitive environment of the print media, sensational stories still sell, but as scientists we need to educate reporters so that they emphasize exciting science in their 20 second sound bytes or quarter page daily sections. Likewise, when stories appear that castigate our field, especially when they appear to be unsubstantiated, we need to robustly and actively respond by putting the criticism into context and exposing the flaws of the story, as was the case with two Nutra-ingredients stories in 2009 (<http://www.nutraingredients.com/Industry/Probiotics-slamming-professor-slammed>; <http://www.nutraingredients.com/Research/Leading-probiotics-researcher-slams-vaginosis-study>). There is no satisfaction gained from doing this, and it must be appreciated that even the people who are being quoted may not meaningfully wish to damage the probiotic field, so the rebuttal should try and re-balance the message coming from the media reports, and less-so chastise the author unless he/she is blatantly wrong. Such responses need not only cover news stories, but also reports published by authorities and scientific journals. Cases in point are responses to papers suggesting that probiotic bacteria can be dead (Sanders et al. 2007), that probiotics should be banned (Reid et al. 2006), that probiotics can cause obesity (Delzenne and Reid, 2009), or

that just because a few products do not meet criteria set by the European Food Safety Authority does not mean that all probiotics somehow fail to meet appropriate standards of production and efficacy (http://www.isapp.net/docs/ISAPP_responds_to_EFSA_oct09.pdf).

Reporters who work freelance, or for lay magazines like *Prevention*, or trade magazines face different challenges. Their livelihood depends upon their ability to synthesize news into formats that appeal to a wide range of readers, and appease the needs of the editorial staff who compress or expand the story at will. Such reporters need scientists to explain the story in language that can be understood by people with a grade 8 (age 12-13) education. Thus, IL-10, gene knock-outs, metabolomics and regression analysis don't cut it. In these instances, the story is the reporters' not the scientists', and it is incumbent upon the scientists who agree to be interviewed, to consider who the eventual reader might be. Another point of note, don't expect to change the article before it's published. The media is not about education, it's about reporting. As one attendee stated, "I'm amazed at how much intelligent people don't know", and another commented, "one hallmark of intellect is to simplify".

While journalism schools play an important role in training reporters, the World Wide Web has made it possible for anyone to now be regarded as a 'journalist'. Web pages are littered with non-experts reporting and commenting on news. From curing yeast infections and cancer, describing the best ever acidophilus known to humankind, to reporting miraculous effects or side effects 'caused' by 'probiotics', the web has it all. Journalism in its broadest sense is part of democracy – you can choose to embrace it or ignore it. Ideally, scientists should try to influence the process by applying the highest standards of their work to their interactions with the media. This can simply be using the definition of probiotics "Live microorganisms which when administered in adequate amounts confer a health benefit on the host" and either putting it into lay language or referring the reporter to places that do (http://www.isapp.net/docs/Consumer_Guidelines-probiotic.pdf). Or, it can be emphasizing the need for consumers to differentiate products called 'probiotic' from those that actually meet the criteria and have been shown to benefit humans. Or, it can be explaining what is known and not known about how probiotics function.

Another category of writer is one who differs from daily and magazine writers in that they are able to dig much deeper into the issues in preparing major stories for high profile journals such as *Nature Medicine* (Wenner, 2009) and trade-oriented reviews such as the Frost and Sullivan Report (<http://www.frost.com/prod/servlet/report-brochure.pag?id=B956-01-00-00-00>). Scientists often prefer calls from this type of reporter, as there is time to explore what the scientist has done, how they did it and what it all means. Still, a fact sheet prepared ahead of the interview will help the scientist to retain focus on the main points of his/her research.

Many challenges remain with respect to probiotics and communication. The use of the term 'probiotic' has not been adequately legislated by government authorities around the world despite the clear guidelines prepared by the Food and Agriculture Organization of the United Nations and the World Health Organization (2002). Thus, the majority of products on the

market have not undergone appropriate testing in humans to confirm what benefits they accrue. This is not a judgment on quality or efficacy, but rather the use of the term 'probiotic'. Better that products be called by another name (contain lactic acid bacteria) than confuse consumers into thinking each one is supported by appropriate clinical documentation. Thus, at present, it is safe to say that many consumers in developed countries have heard the word probiotic, but few understand what it means, or that different products can have different effects. For example, Activia can be beneficial for regularity not for treating yeast infections, and 'probiotic' chocolate hasn't been shown to do anything in terms of a proven health outcome.

The situation in the developing world is very different. Probiotics are rarely available even though they may be needed the most to counter malnutrition and diarrheal diseases. In addition, healthcare professionals and lay people are likely unaware of the term 'probiotic' and the importance of the microbiota in health (Anukam et al. 2006). Having stated that, many developing countries have a long history of producing fermented foods with various formulations (Anukam and Reid, 2009). These appear to provide health benefits and their contents are essentially probiotic, but without a detailed description of their composition and studies proving they confer benefits better than a control or placebo, they do not fit the criteria for being a probiotic. Some people may find this ridiculous, given that many of these foods have been around for very many years, but in order to establish a standard whereby there is an expectation that a given probiotic can truly confer a health benefit, it would be foolhardy to carte blanche call any fermented food probiotic. Some are made with strains that do not bypass the stomach and bile ducts, some have strains not shown to have health-conferring properties, and some differ between batches or are ingested in too small an amount to provide tangible benefits.

The onus is on scientists and industries to help provide education and products to developing countries, so that reliably produced, clinically documented probiotics can be available to the very poorest people on our planet. This may mean reaching people in malnourished and HIV plagued communities through on-the-ground non-profit initiatives (www.westernheadseast.ca) or creation of social business models that empower the lower tier of society (<http://muhammadyunus.org/Social-Business/>). If we achieve some semblance of success, we truly will have bridged the gap between bench-top and clinical the science, the way that benefits are communicated and the lives that are touched by its effects.

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