

## WHOSE MEME IS IT ANYWAY?

The [Alliance for Natural Health](#) (ANH) response to Mark Ridinger's editorial in *Clinical Pharmacology and Therapeutics* entitled "Nutraceuticals: Miracle or Meme?" (*Clinical Pharmacology & Therapeutics* (2007) 82, 352–356).  
doi:10.1038/sj.clpt.6100354  
[<http://www.nature.com/clpt/journal/v82/n4/full/6100354a.html>]

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Mark Ridinger, editor of the scientific journal *Clinical Pharmacology and Therapeutics*, a publication of the esteemed *Nature* group, has launched a stinging attack on the nutraceutical industry, which he refers to as the "nutraceutical-industrial [N-I] complex". He's effected the attack through the pages of the very journal of which he is editor – call it editorial license if you like. The good news is it likely means that our failure to stop taking our nutrients, herbs and other natural concoctions with which we have evolved over thousands of years is really starting to get on the goat of those who'd like us to submit to what they seem to profess is 'pharmaceutical heaven'.

To read Ridinger's full paper, click [here](#) [this paper will only remain online for a short period so you might want to drop the text into a word processor document and save it on your system for future reference].

In trying to understand more about Mark Ridinger the man, and his motives, we found ourselves surfing the internet to find out what we could about him. His publication record, according to PubMed, started in earnest just this year. He seems to have authored or co-authored five papers in total, of which four were published in 2007, these last four in the journal of which he is editor. His papers are opinions rather than pieces of original research and they show:

- a) Ridinger [supports personalised medicine](#), one of the apparent major survival strategies for a troubled pharmaceutical industry, that is being headed up by people like Dr Allen Roses, vice-president of genetics research at GlaxoSmithKline, who famously admitted in 2003 that 90% of drugs only work in 30-50% of people (see [http://www.gdspublishing.com/ic\\_pdf/eeuls/glaxo1.pdf](http://www.gdspublishing.com/ic_pdf/eeuls/glaxo1.pdf) for further information)
- b) Ridinger [supports drug therapy](#) to get unemployed people back to work and make for a more productive society, while at the same time delivering more "bang for the buck" (i.e. profits) for "common pharmacotherapy" (i.e. drug treatments).
- c) Ridinger [supports e-prescription systems](#) which are set to replace handwritten prescriptions, presumably because it makes it easier and quicker to prescribe drugs and with increasingly short patient-doctor contact time, getting those prescriptions out quickly is probably quite good for pharma business.
- d) Ridinger appears to [dislike the nutraceutical industry intensely](#) but, unfortunately for him, his apparent hatred for it has made him severely illogical and appears to have caused him to fail to grasp some simple but critically important scientific concepts.

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Mark Ridinger claims, in his papers, to have no conflict of interest. Although he may not be on the direct payroll of Big Pharma, he certainly is out there trying to give them a helping hand. And that's not very different to being on the direct payroll, as it's clear where his "interests" are, even if they're not financial. The phrase "unpaid pharma stooge" comes to mind. In the ANH office, we found ourselves scratching our heads over the identity of Mark Ridinger. There is someone of the [same name](#) who is a musician and singer/songwriter, who has put together a band called 'The Meme' (note the use of this term in Ridinger's attempted nutraceutical industry demolition job)...is it the same man? Or are the name and meme linkages coincidental...? Never mind for now, as Ridinger, the editor of *Clinical Pharmacology and Therapeutics*, certainly appears to like the pharma industry whilst intensely disliking the nutraceutical industry (sorry, the N-I complex).

### **JUICY TIT BITS FROM RIDINGER**

For those without the time to digest Ridinger's entire opinion piece, here are some gems that are so cock-eyed, that detailed reciprocation is not warranted. However, we had trouble being completely mute on his comments. Further on in our response to Ridinger's piece, you'll find counter opinions from three members of the ANH Expert Committee. But first, Rob Verkerk, ANH Executive & Scientific Director's comments to some of Ridinger's statements...

**Ridinger: "Nutraceuticals, widely becoming adopted as a catchall term to refer to vitamins, minerals, herbs, and various other supplements, continue to gain popularity among large segments of the population, despite little proof of any benefit of most of these compounds".**

*Verkerk: And you have proof for medicines, Mr Ridinger? That's not what Allen Roses said, nor is it what [BMJ Clinical Evidence](#) says, where only 15% of medical treatments are shown to be effective. As for chemotherapy against cancer: peer reviewed studies on efficacy range from around 3-7% effectiveness in 5-year survival terms.*

**Ridinger: "Furthermore, although routes of selling these products are varied and include retail outlets, a large quantity are sold by—and are indeed often the major revenue source of—companies referred to as multilevel marketing (MLM) firms. In these, "distributors" are signed up to ostensibly sell these products but in fact are more likely to spend their energy recruiting other "downline" distributors, as they get a cut of their product sales. All these issues raise a fascinating epistemological question: are nutraceuticals nature's "miracle" or a powerful cultural "meme," with potentially significant deleterious effects on public health, much to the contrary of their proponents' rhetoric?"**

*Verkerk: Mr Ridinger, you appear to think MLM is confined to the nutraceutical industry. A large number of the biggest companies in the world, ranging from music recording companies, airline companies (that you appear to feel will soon collapse) to pharmacy and cosmetic suppliers have launched MLM businesses to help garner sales which benefit from word of mouth communication. There's no point trying to single out nutraceutical companies over a business model that, dare I agree with you, appears to perhaps be a meme in itself.*

**Ridinger: Then there is the important but often overlooked issue of nutraceutical–drug interactions.**

*Verkerk: Yes, Mr Ridinger, who was here first...?*

**Ridinger: Another, perhaps more useful, way to define a meme is to use an analogy: memes are to culture as genes are to people. Clearly there is a meme—wholeheartedly propagated by the N-I complex for financial gain, or perhaps ignorance in some cases—that goes something like this: "If it's natural, it has to be good for you."**

*Verkerk: Is this a case of 'pot calling the kettle black'? And why have most of the drug companies done their intervention studies in the so-called natural health field using cheap, easily produced, synthetic, isolated vitamin forms, rather than on the natural complexes that occur in nature? There is extensive evidence from observational and epidemiological studies which shows that these sorts of natural nutrient complexes are profoundly good for us.*

## **A DIFFERENT PERSPECTIVE**

Let's consider another piece of opinion, this time from Tammy Bray from the Department of Nutrition, Ohio State University (*Experimental Biology & Medicine* 1999, 222 (3): 195).

Dr Bray opens her opinion piece of 1999 by saying:

"The recent growth in knowledge of free radicals and reactive oxygen species (ROS) in biology is producing a medical revolution that promises a new age of health. In fact, the discovery of the role of free radicals in chronic degenerative disease is as important as the discovery of the role of microorganisms in infectious disease. Reactive oxygen species have been implicated in the etiology of a host of degenerative diseases including cardiovascular disease, diabetes, cancer, Alzheimer's disease, and other neurodegenerative disorders and in aging."

Interesting isn't it, particularly when pharmaceutical drugs have made such poor inroads against these degenerative diseases – yet these are the very diseases against which nutritional approaches are gaining increasing popularity.

Ridinger has perhaps forgotten about our attachment to nature. Our genes seem to know what they are doing, irrespective of pharma-funded anti-natural health PR campaigns, unscrupulous advertising and trumped-up claims of efficacy that Big Pharma would have us believe. It seems, Mr Ridinger, that the meme you speak about might be triggered more by our genes than by misguided brains.

## COMMENTS FROM ANH EXPERTS

Finally, we'll finish with a comment from each of three members of the ANH Expert Committee. Here goes.

### **Comment from Dr Damien Downing, ANH Medical Director, President of the British Society for Ecological Medicine, Editor of the *Journal of Environmental and Nutritional Medicine***

Ridinger asserts that antioxidants "fail to show benefit and may be harmful"; he bases this on just five - count them for yourself in his Table 1 - meta-analyses or systematic reviews. All of these are well-known to students of what seems increasingly to be a concerted campaign to discredit nutritional therapies in particular, and natural health in general. All the five studies have been roundly criticised for their misuse of statistical methods, and all appear to have been designed to produce a specific result. Without going into the full details of the many misuses of science here, one obvious, and repeated, example goes like this:

- identify a very small negative trend - e.g. "high-dose vitamin E actually increased a person's risk of dying by 4%" by pooling large numbers of dissimilar papers
- get the effect to **statistical** significance - i.e. the 95% confidence interval doesn't include 1 (no change) - by manipulating the selection process and other tricks
- then tout that as being a "significant effect" in real-life terms, which at an increase in risk from 11.6% to 12.1% it simply isn't.

It is clear to many who have read these papers closely that they are plain bad science. They can only have passed peer-review if the reviewers only saw what they expected to see - but the role of journal editors, and some authors, in hyping up such results is very suspect, given the huge amounts of media interest all these papers attracted. Of course we can now see that all along the purpose was to enable this paper to appear, to start with its table of 5 dodgy meta-analyses, and to go on to construct a fable of nutrition as "a powerful cultural meme" with harmful effects. The real meme here is the wool that the pharmaceutical industry would like to pull over our eyes to make us forget about disasters such as Vioxx killing an estimated 60,000 people.

But the fact, quoted with outrage by Ridinger, that 70% of American households buy vitamin supplements, shows that the public is not fooled - which is why the bought and paid-for academic servants of the industry (shockingly revealed last year to include the late Sir Richard Doll), and the politicians also in their overcrowded pocket, now seek to enact and implement laws to prevent us taking back responsibility for our own health.

### **Comment from Dr Jan Knight, leading antioxidant researcher, Knight Scientific Ltd, UK**

Ridinger claims "Perhaps the biggest drive by the N-I complex has been to push the use of anti-free radical supplements". He goes on to argue that there is no hard science to support use of these supplements, justifying his position with meta-analyses based on studies of largely isolated or limited combinations of

synthetic nutrients, which differ greatly from the complex nutrient forms found in nature (and by extension, in natural supplements). For example, some of the best known and potent antioxidant supplements are based on botanical complexes derived from sources as varied as grape seeds, pine bark, wolfberries, mangosteen, green tea and even good old black tea. Yet none of these studies relied on by Ridinger and others of his ilk refer to a single study on the antioxidant effects of these natural compounds which appear to exert their antioxidant effects through a synergy between their many bioactive components.

Perhaps Ridinger needs to educate himself further over the scientific interest in antioxidants, which, it must be recognised, taken in the wrong forms, combinations or dosages, can give rise to pro-oxidant effects. A PubMed search using the term "antioxidant" reveals 249,779 discrete published research papers, a good many devoted to diverse natural products and synergies. The majority of this research is devoted to natural substances and not the synthetic vitamins about which Ridinger speaks, which, incidentally, are manufactured almost exclusively by the pharmaceutical industry. In fact, there are well over 150 recognised diseases in which free radicals are implicated in the aetiology, therefore it seems illogical to assume that we all possess antioxidant mechanisms or ingest sufficient antioxidants to keep us disease-free. The undeniable interest by the pharmaceutical industry in novel therapies based on antioxidants as a means of counteracting these diseases, an interest that is driving a large part of the surge in antioxidant research, seems to have passed Ridinger by.

It is difficult to reconcile Ridinger's scurrilous comments about glucosamine against the results of a Cochrane review on the role of glucosamine in countering pain and joint mobility in osteoarthritis patients. Cochrane, it should be remembered, represents for many the 'gold standard' of evidence-based medicine. The authors of the 2005 review concluded "those studies evaluating the Rotta preparation show that glucosamine was superior to placebo in the treatment of pain and functional impairment resulting from symptomatic OA [osteoarthritis]." The authors concluded "Glucosamine was as safe as placebo" which is more than can be said for Vioxx, which we can only presume Ridinger would prefer we take.

**Comment from Dr Steve Hickey, Senior Lecturer (decision sciences),  
Staffordshire University, UK**

The summary of this paper includes the claim that there is: "little proof of any benefit of most of these compounds".

However, the scientific method does not allow for "proof". Students are taught early in their career that science cannot "prove" anything; the method of science is hypothesis, experiment and refutation, as described by the philosopher of science Karl Popper.

Claims for the requirement of scientific proof, by Ridinger and others, indicate a lack of scientific understanding. More importantly, calls for such scientific "proof" generally indicates scientific censorship and the wish to prevent a more complete understanding.

The Cochrane Database review on vitamin C and the common cold described as the "definitive authority" is currently being challenged for lack of scientific merit.

Ridinger suggests that the effects of vitamin C can be described as a placebo effect. However the Cochrane Database review of the placebo effect, i.e. the "definitive authority", shows that the placebo effect is largely a myth, admittedly a myth commonly endorsed by the medical establishment. The placebo effect cannot be used to explain the definitive, large and objective clinical results reported for vitamin C by anyone who understands the background science.

### References

For the scientific method the standard classic reference is:

Karl Popper (1943) *The Logic of Scientific Discovery*, Routledge Classics; (2002 edition).

#### **Cochrane Review of the placebo:**

Hróbjartsson A, Gøtzsche PC. Placebo interventions for all clinical conditions. *Cochrane Database of Systematic Reviews* 2004, Issue 2. Art. No.: CD003974. DOI: 10.1002/14651858.CD003974.pub2.

#### **Additional, placebo is a myth papers:**

Bailar J.C. (2001) The powerful placebo and the Wizard of Oz, *N Engl J Med*, 344(21), 1630-1632.

Hróbjartsson A. (2002) What are the main methodological problems in the estimation of placebo effects? *Journal of Clinical Epidemiology*, 55(5), 430-435.

Hróbjartsson A, Gøtzsche PC. (2004) Is the placebo powerless? Update of a systematic review with 52 new randomized trials comparing placebo with no treatment, *J Intern Med*, 256(2), 91-100.

**Declaration of interests:** speaking on behalf of all of us at the ANH, we declare that we care a lot about the future of healthcare. Some of us work as clinicians, others as scientists, researchers, health practitioners or lawyers. All of us try to be as objective as we can, and we are passionate about the development of a sustainable healthcare system that works with, rather than against, nature. Most of us make a living by working, one way or another, with nature or its products. None of us are particularly wealthy but we get by.

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