

IS THERE SOMETHING WRONG WITH MEDICAL SCIENCE? DR RANDY SCHEKMAN, A 2013 NOBEL PRIZE-WINNER FOR PHYSIOLOGY, RECENTLY CRITICISED THE WAY SCIENTIFIC JOURNALS ARE RUN AND ANNOUNCED THAT HIS LABORATORY AT THE UNIVERSITY OF CALIFORNIA, BERKELEY, WILL BOYCOTT WHAT HE DESCRIBES AS “LUXURY JOURNALS” – MEANING THOSE REGARDED AS THE MOST PRESTIGIOUS, SUCH AS *CELL*, *NATURE* AND *SCIENCE*.

HAS NUTRITIONAL SCIENCE BEEN MISINTERPRETED?

AN INTRODUCTION

Dr Schekman claims such journals artificially restrict the number of accepted papers, which is more conducive to selling subscriptions than publishing the best research. He also argues that science is being distorted by the tyranny of the “impact factor” – researchers who publish in high impact journals can expect promotion, pay rises and professional accolades. Those who do not can expect obscurity or even the sack, a sort of Darwinian system known as “publish or perish”.

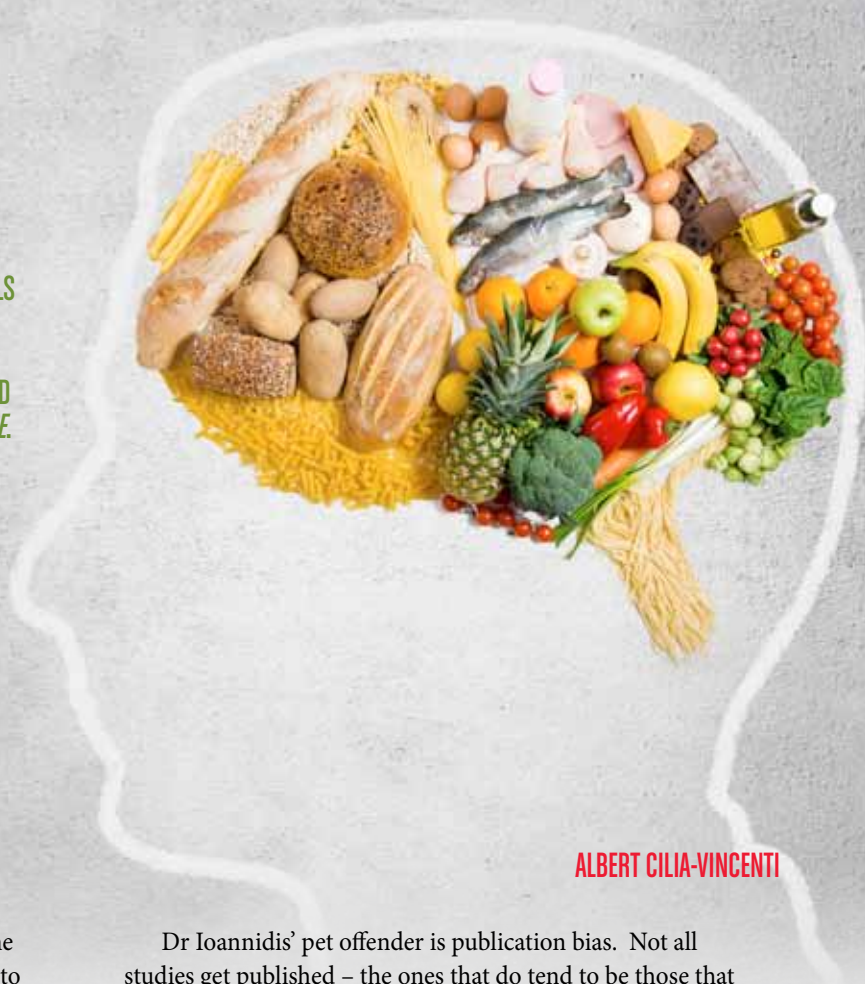
Many worry that the pressure to publish flashy research in glitzy journals encourages hype, and rewards being first over being thorough. Most scientists would be reluctant to speak up, fearing damaging their careers by rocking the boat, but one of the perks of being a Nobel laureate is that you no longer have to worry about such things.

In 2005, John Ioannidis, an epidemiologist who was then at Ioannina University in Greece, claimed that most published research findings are false, and exposed the ways (most notably the over-interpretation of statistical significance in studies with small sample sizes) how scientific findings can end up becoming irreproducible, that is, wrong.

Dr Ioannidis has moved to America and is launching (together with Steven Goodman) the Meta-Research Innovation Centre (known as METRICS) at Stanford. They plan to create a “journal watch” to monitor scientific publishers’ work – their mission statement is: “identifying and minimising persistent threats to medical research quality”.

Irreproducibility is one such threat. METRICS will make recommendations about how future work might be improved – for the study of reproducibility should, like any branch of science, be based on evidence of what works and what does not.

METRICS will also look into wasted effort. It has been claimed that around 85% of the world’s medical research spending is squandered on studies that are flawed in design, redundant, never published or poorly reported.



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Dr Ioannidis’ pet offender is publication bias. Not all studies get published – the ones that do tend to be those that have significant results, leaving a skewed impression of the evidence.

How does all this medical research quality debate affect nutritional science which, as we increasingly realise, has important consequences for our understanding of epigenetics? There are now claims that decades-long nutritional medicine beliefs may be incorrect, having been based on poorly conducted clinical studies.

Some of the topics to be addressed in future articles, in an attempt to elucidate the claims that we’re on the brink of a 21st century medical revolution, will include:

- Has the epidemic of diabetes type 2, metabolic syndrome and obesity been caused by a combination of adulterated vegetable oils and the high carbohydrate/low fat diet advice?
- Can diabetes type 2 be reversed by nutritional modifications alone?
- Are omega-6 fatty acids healthier than omega-3? Are omega-6 fatty acids the anti-inflammatory ones, rather than omega-3?
- Has marine-derived omega-3 fatty acids any cardiovascular benefits, and does an excess intake of these lead to long-term harmful effects?
- Are saturated dietary fat and blood LDL-cholesterol related to atherosclerosis and its complications?
- Can omega-6 fatty acids improve arterial wall compliance and reverse atherosclerotic plaque?
- Do omega-6 fatty acids increase oxygen-binding capacity of cell and mitochondrial membranes? Is chronic reactive cellular hypoxia an important risk factor for cancer initiation and promotion, and do omega-6 fatty acids decrease this risk? ❌