

Book

Fat and heart disease: challenging the dogma

Many readers will be incensed by this book. If you think saturated fats and cholesterol are bad for you, you'll be incensed. If you think the fat story is exaggerated, you'll be incensed. If you trust in the objectivity of science to inform health policy, you'll be incensed. Stories of shocking scientific corruption and culpability by government agencies are all to be found in Nina Teicholz's bestseller *The Big Fat Surprise*. This is a disquieting book about scientific incompetence, evangelical ambition, and ruthless silencing of dissent that has shaped our lives for decades.

It is important that people trust scientists. Despite the increasing number of retracted papers, society still puts scientists near the top of professions that are trusted. In the UK's 2016 Ipsos MORI Veracity Index, scientists were trusted by 80% of the British public. Unfortunately, this might be changed by Teicholz's exposé that claims the public were misled into thinking that high levels of dietary saturated fats are the cause of heart disease.

Poor science was at the start of the problem, claims Teicholz. *The Big Fat Surprise* tells us that the diet-heart hypothesis was formulated and promoted by Ancel Keys. He embarked on an epidemiological study, the Seven Countries Study, that aimed to identify a correlation between dietary saturated fats and heart disease. The first published results of this study seemed to support the relation between fat intake and heart disease, but Teicholz tells us of bias in selecting countries and in selecting data (excluding much data from one country). Such limitations would make this study difficult to publish in a respectable journal today. Furthermore, the follow-up time was short, and when longer term data were collected these did not support the hypothesis—but often these results were not published.

Part of the scientific process is rigorous peer review and debate. Many voices were raised against the interpretation of the Seven Countries Study. Dissent, however, was barely tolerated and Teicholz describes how the discussions degenerated into personal attacks. Teicholz explains how this came about in the second half of the 20th century.

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After his heart attacks, US President Dwight Eisenhower offered government support for further scientific investigation into dietary fats and heart disease. Proponents of the link between dietary fat and heart disease were therefore in the ascendancy and obtained positions as government advisers, as editorial board members, and on grant-giving bodies. From these powerful positions they largely silenced critics by making it difficult to publish papers that disagreed with their views. Furthermore, as Teicholz documents, researchers who applied for grants for research that might challenge the key opinion leaders in the fat debate had their grant applications rejected. Teicholz reports that one grant applicant was told "Your opposition to Keys is going to cost you your grant." In science today it is still a criticism of peer review that reviewers are not likely to look objectively at results that disagree with their own work. When research grants and publications are dependent on the goodwill of reviewers, science that challenges dogma can be stifled.

Teicholz goes on to report that agencies with the job of protecting

health were also complicit in providing advice based on the weak science of a few key opinion leaders. Promises of massive funding, together with a lack of rigorous evaluation of the strength of the evidence, seem to have resulted in entrenched positions on dietary fat intake. On the basis of epidemiological data, but ignoring the evidence from direct scientific interventions with dietary saturated fats, the mantra of low-fat diets became established. Parallels can be found in other dietary recommendations today where foods are promoted, or condemned, on the basis of absent or poor scientific evidence.

The Big Fat Surprise is a gripping narrative, but readers might be incredulous at some of Teicholz's claims and want to check the references. When many of those papers are read again from a more critical perspective, the angst and anger will rise. Teicholz reminds us to critically question research and, more importantly, challenge unjustified extrapolation; remember that associations do not provide evidence of causality; and to be alert for misrepresentation and non-reporting of inconvenient results.

Researchers, clinicians, and health policy advisers should read this provocative book that reminds us about the importance of good science and the need to challenge dogma—especially when (with the best of intentions) agencies might use scientific data to advocate societal changes. *The Big Fat Surprise* also shows that the quest for scientific truth should not be subsumed to personal ambition. Furthermore, in providing a challenge to the demonisation of saturated fats, this book should encourage us to challenge other so-called facts.

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