



Ten Things Your Doctor Won't Tell You About Medical Research

Joan Young



Ten Things Your Doctor Won't Tell You About Medical Research

Background

- Participate in several physician discussion groups
- Co-investigator of a clinical survey
- Participated in medical research projects leading to 3 journal articles
- Part of a team that developed medical practice guidelines
- Testified at an FDA drug hearing
- Wrote two journal articles based on my experiences
- Wrote a chapter for a medical textbook
- Became a member of the American Society of Hematology
- Associate editor of the International Journal of User-Driven Healthcare
- Reviewed research protocols for the National Institutes of Health
- Reviewed and wrote hundreds of medical research articles for the public
- Worked for several pharmaceutical companies



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Slides are available at:

<http://www.joanyoungwrites.com/presentations/>

Just the beginning...book next

Feedback welcome

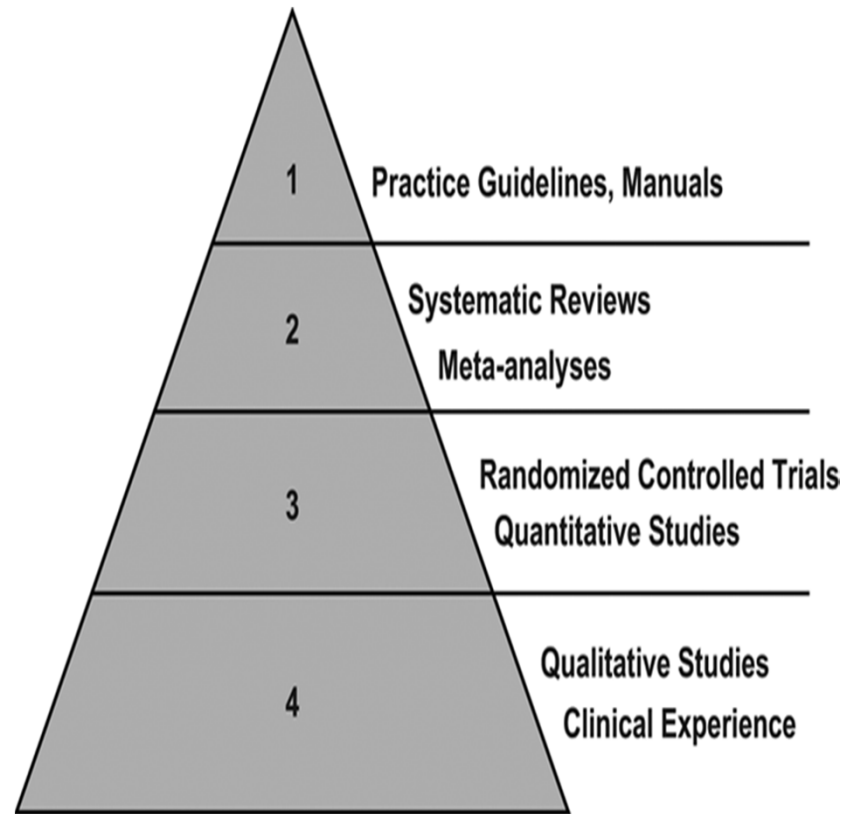


Ten Things Your Doctor Won't Tell You About Medical Research

1. Medical research is many things

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http://www.emeraldinsight.com/content_images/fig/2400370406003.png



Ten Things Your Doctor Won't Tell You About Medical Research

2. Published research can be incomplete or misleading



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Simulations show that for most study designs and settings, **it is more likely for a research claim to be false than true.** Moreover, for many current scientific fields, claimed research findings may often be simply accurate measures of the prevailing bias.

Ioannidis JP. "Why Most Published Research Findings Are False." *PLoS Medicine*. August 30, 2005.

<http://www.plosmedicine.org/article/info%3Adoi%2F10.1371%2Fjournal.pmed.0020124>



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The German governments' cost effectiveness agency found complete information for 87% of **adverse event outcomes** in documents of the industry but only 26% in the journal publications.

Wieseler B. et al. "Completeness of Reporting of Patient-Relevant Clinical Trial Outcomes: Comparison of Unpublished Clinical Study Reports with Publicly Available Data." *PLOS medicine*. October 08, 2013

<http://www.plosmedicine.org/article/info%3Adoi%2F10.1371%2Fjournal.pmed.1001526>



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A small number of **reanalyses** of RCTs [randomized control trials] have been published to date. Only a few were conducted by entirely independent authors. Thirty-five percent of published reanalyses led to changes in findings that implied conclusions different from those of the original article about the types and number of patients who should be treated.

Ebrahim E et al. "Reanalyses of Randomized Clinical Trial Data." *JAMA*.
September 2014, Vol 312, No. 10
<http://jama.jamanetwork.com/article.aspx?articleid=1902230>



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An analysis of nearly 600 registered clinical trials published online October 29 in *BMJ* has shown **that 29% remained unpublished** 5 years after completion, that no results were available in ClinicalTrials.gov for three fourths of those unpublished trials, and that industry-funded trials were nearly twice as likely to go unreported as studies that had not received industry funding.

Kelly JC. "Randomized Clinical Trials: 1 in 3 Not Reported.: *Medscape Medical News*. Oct 29, 2013 <http://www.medscape.com/viewarticle/813447>



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3. Complex solutions win over simple ones



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A dangerous distortion of priorities seems to be currently apparent in the dominant approaches to major public health problems, including cardiovascular disease, diabetes, obesity, cancer and some infectious diseases. Relevant examples suggest an apparently inappropriate tendency to prioritise technocratic, partial solutions rather than confronting their true behavioural and structural determinants. **Technically oriented preventive medicine often takes excessive precedence over simpler, more sensible approaches** to modify lifestyles, the environment and the social structure.

Carlos S et al. "The use of expensive technologies instead of simple, sound and effective lifestyle interventions: a perpetual delusion."

J Epidemiol Community Health June 25, 2014

<http://jech.bmj.com/content/early/2014/06/24/jech-2014-203884.full#aff-1>



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4. Published guidelines can be flawed



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Given the deficit in evidence to support key decisions in clinical practice guidelines...as well as concerns about insufficient numbers of volunteers for trials...the desire to provide high-quality evidence for medical decisions must include consideration of a comprehensive redesign of the clinical trial enterprise...Currently, **less than 15% of major guideline recommendations are evidence-based.**

Many Clinical Trials Unable to Supply High-Quality Evidence. *Medscape*. May 01, 2012. <http://www.medscape.com/viewarticle/763026>



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Among 357 recommendations in 17 guidelines issued between 2005 and 2011, 121 (34%) combined a strong recommendation with low-quality evidence...the authors **found 33 instances in which no compelling justification for a strong-recommendation/low-evidence guideline existed.**

In a second study, researchers reviewed 169 guidelines on prostate, lung, breast, and colorectal cancer published between 2005 and 2010...On average, guidelines fulfilled only 2.75 of the 8 standards.”

Brett AS. “Clinical Practice Guidelines Require Scrutiny for Quality.” *Journal Watch*. Sep 26 2013. <http://www.jwatch.org/na32275/2013/09/26/clinical-practice-guidelines-require-scrutiny-quality>



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4. Published guidelines can be flawed

Last summer British researchers provoked concern when they published a paper raising the possibility that by **following an established guideline UK doctors may have caused as many as 10,000 deaths** each year. Now they have gone a step further and published an estimate that the same guideline may have led to the deaths of as many as 800,000 people in Europe over the last five years.

The earlier paper demonstrated the potentially large and lethal consequences of the current European Society of Cardiology guideline recommending the liberal use of beta-blockers to protect the heart during surgery for people undergoing non-cardiac surgery.

Husten, L. "Medicine Or Mass Murder? Guideline Based on Discredited Research May Have Caused 800,000 Deaths In Europe Over The Last 5 Years." *Forbes* January 15, 2014 <http://www.forbes.com/sites/larryhusten/2014/01/15/medicine-or-mass-murder-guideline-based-on-discredited-research-may-have-caused-800000-deaths-in-europe-over-the-last-5-years/>



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5. Conflicts of interest abound



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*A Journal Sentinel/MedPage Today investigation found **that nine of the 19 experts on the IOM panel that produced that report [Relieving Pain in America] had connections to companies that manufacture narcotic painkillers at the time or in the 3 years prior to their work on the report.** Past *Journal Sentinel/MedPage Today* investigations found that the boom in narcotic painkillers has been fueled in part by an aggressive push from drug companies that funded nonprofit groups which advocated for greater use of opioids.*

Fauber J. "IOM and COI [conflict of interest]: Painful Disclosures?" *Medpage Today*. June 25, 2014. <http://www.medpagetoday.com/PainManagement/PainManagement/46482>



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5. Conflicts of Interest Abound

FDA Center for Drug Evaluation and Research advisory committee members who have financial ties solely to the firm sponsoring the drug under review are more likely to vote in ways favorable to the sponsor.

Committee members who serve on advisory boards for sponsoring firms show particularly strong pro-sponsor bias.

Contrary to conventional wisdom, committee members who have financial ties to many different firms do not, on average, show pro-industry bias in their voting behavior.

Carroll AE. "Doctors' Magical Thinking About Conflicts of Interest." *New York Times*. September 8, 2014. <http://www.nytimes.com/2014/09/09/upshot/doctors-magical-thinking-about-conflicts-of-interest.html>



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6. Alternative and complementary
medicine are targeted



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The Report [White House Commission on Complementary and Alternative Medicine Policy] fails to point out that "CAM" "health promotion" and "prevention practices" also include preventing disease by "balancing qi", "eliminating parasites and toxins," "cleansing the liver" and/or by "cleansing the blood" via a multitude of supplements and questionable practices. Our uncritical acceptance of "CAM" wellness and health promotion can be interpreted as an endorsement of these claims. **It is absolutely unclear what role, if any, "CAM" practices play in preventing disease and to what extent patients are burdened with useless treatments and products in their pursuit of "wellness".**

Fins, J & Low Dog T, (2002) White House Commission on Complementary and Alternative Medicine Policy Final Report. *Appendix G. Letter from Joseph Fins, M.D. and Tieraona Low Dog, M.D.* <http://www.whccamp.hhs.gov/sfc.html>



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6. Alternative and complementary medicine are targeted

The sole purpose of the activities of Barrett [Stephen Barrett of Quackwatch]& Baratz are to discredit and cause damage and harm to health care practitioners, businesses that make alternative health therapies or products available, and advocates of non-allopathic therapies and health freedom.

Transcript from Canadian Lawsuit

<http://www.quackpotwatch.org/quackpots/quackpots/barrett.htm>

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7. Dissenting comments are not published
or removed



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In their new article published in the European Heart Journal, Graham Cole and Darrel Francis continue to explore the extent and implications of the damage caused by the Don Poldermans research misconduct case. **[Update: the EHJ article has been removed from the EHJ website.** For more on this see the bottom of the story.] The earlier paper demonstrated the potentially large and lethal consequences of the current European Society of Cardiology guideline recommending the liberal use of beta-blockers to protect the heart during surgery for people undergoing non cardiac surgery.

Husten, L. "Medicine Or Mass Murder? Guideline Based on Discredited Research May Have Caused 800,000 Deaths In Europe Over The Last 5 Years." *Forbes* January 15, 2014 <http://www.forbes.com/sites/larryhusten/2014/01/15/medicine-or-mass-murder-guideline-based-on-discredited-research-may-have-caused-800000-deaths-in-europe-over-the-last-5-years/>



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8. Publishing pressure may foster
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...emphasizing that research is considered especially important if it is published in one of a few historically influential journals — Cell, Nature, Science— could be a laudable attempt to get scientists to think ambitiously about their research goals. But it can **also result in excessive pressure to publish big claims, leading to problems of irreproducibility, for example.**

“The maze of impact metrics.” *Nature*. Oct 21 2013 http://www.nature.com/news/the-maze-of-impact-metrics-1.13952?WT.ec_id=NATURE-20131017



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8. Publishing pressure may foster misleading results

Exacerbating this situation are the policies and attitudes of funding agencies, academic centres and scientific publishers. Funding agencies often uncritically encourage the overvaluation of research published in high-profile journals. **Some academic centres also provide incentives for publications in such journals, including promotion and tenure, and in extreme circumstances, cash rewards⁶.** Policy: NIH plans to enhance reproducibility

Collins FS, Tabak, LA. "Policy: NIH plans to enhance reproducibility. *Nature*. January 27 2014

<http://www.nature.com/news/policy-nih-plans-to-enhance-reproducibility-1.14586>



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8. Publishing pressure may foster misleading results

“Scientists reviewed each issue of The New England Journal of Medicine from 2001 through 2010 and found 363 studies examining an established clinical practice. In 146 of them, the currently used drug or procedure was found to be either no better, or even worse, than the one previously **used...More than 40 percent of established practices studied were found to be ineffective or harmful, 38 percent beneficial, and the remaining 22 percent unknown.**”

Bakalar N. “Medical Procedures May Be Useless, or Worse.” New York Times. 2013 jul 26 <http://well.blogs.nytimes.com/2013/07/26/medical-procedures-may-be-useless-or-worse/>

Vinay Prasad, MD et al. “A Decade of Reversal: An Analysis of 146 Contradicted Medical Practices.” Mayo Clin Proc. 2013 August;88(8):790-798.

<http://download.journals.elsevierhealth.com/pdfs/journals/0025-196/PIIS0025619613004059.pdf>



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9. Disease creation is lucrative



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In particular, the drug and medical devices industries increasingly set the research agenda. They define what counts as disease (for example, female sexual arousal disorder, treatable with sildenafil and male baldness, treatable with finasteride and predisease “risk states” (such as low bone density, treatable with alendronate). They also decide which tests and treatments will be compared in empirical studies and choose (often surrogate) outcome measures for establishing “efficacy.”

Greenhalgh T et al. “Evidence based medicine: a movement in crisis?” *British Medical Journal*, June 13, 2014.

<http://www.bmj.com/content/348/bmj.g3725>



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9. Disease creation is lucrative

A new government-funded mental health training program for British Columbia family physicians and school staff promotes screening for mental disorders in all children and youth. **Critics say the program omits key scientific evidence, seems more like drug promotion than medical education, and downplays serious potential harms.** Nevertheless, programs like it are rolling out across Canada and the US.

Wipond B., "The Proactive Search for Mental Illnesses in Children." *Mad in America*. July 7, 2014. <http://www.madinamerica.com/2014/07/proactive-pursuit/>



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10. Over-diagnosis and overtreatment are rampant



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While there is ongoing debate about how to best describe the problem, narrowly defined, overdiagnosis occurs when increasingly sensitive tests identify abnormalities that are indolent, non-progressive, or regressive and that, if left untreated, will not cause symptoms or shorten an individual's life. **Such overdiagnosis leads to overtreatment when these “pseudo-diseases” are conventionally managed and treated as if they were real abnormalities;** because these findings have a benign prognosis, treatment can only do harm.

Moynihan R. et al. “Using Evidence to Combat Overdiagnosis and Overtreatment: Evaluating Treatments, Tests, and Disease Definitions in the Time of Too Much.” *PLOS medicine*. July 01, 2014

<http://www.plosmedicine.org/article/info:doi/10.1371/journal.pmed.1001655>



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When statins are used in low-risk patients without heart disease (primary prevention) there is no mortality benefit. That's right. Your chances of dying are the same on or off the drug, regardless of how much the statin lowers the cholesterol level.

Mandrola J. "Growing Doubt on Statin Drugs: The Problem of Drug-Lifestyle Interaction." July 2, 2014. *Medscape*. <http://www.medscape.com/viewarticle/827675>

The new American College of Cardiology (ACC) and American Heart Association (AHA) guidelines for the treatment of cholesterol would increase the number of individuals eligible for statin therapy by nearly 13 million people, an increase that is largely driven by older patients and treating individuals without cardiovascular disease, according to a new analysis¹

O'Riordan M. "New Guidelines Extend Statins to 13M More Americans." *Heartwire*. March 19, 2014 . <http://www.medscape.com/viewarticle/822210>



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A Few of the Crusaders

Dr. John Ioannidis

Freedman D. "Lies, Damned Lies, and Medical Science." Atlantic Magazine. Nov. 2010.

<http://www.theatlantic.com/magazine/archive/2010/11/lies-damned-lies-and-medical-science/8269/>

Bob Goldacre (UK)

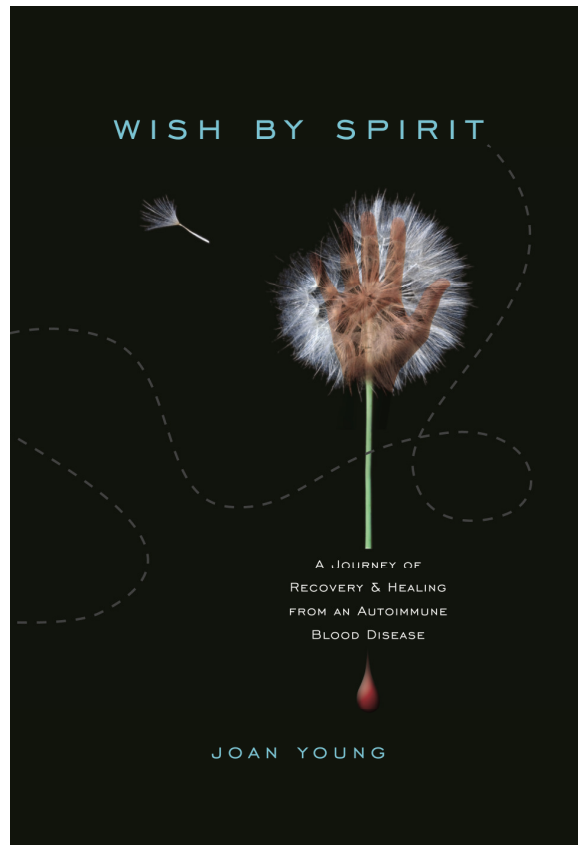
Book: Bad Pharma: How Drug Companies Mislead Doctors and Harm Patients www.badscience.net

http://www.ted.com/talks/ben_goldacre_battling_bad_science.html

Mohammad Zakaria Pezeshki, M.D. (Iran)

<http://earthcitizenshealth.blogspot.com/>

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Book - *Wish by Spirit : A journey of recovery and healing from an autoimmune blood disease*

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Facebook - [JoanYoungWrites](https://www.facebook.com/JoanYoungWrites)