

What doctors don't know about the drugs they prescribe

[listening comprehension questions]

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Link: http://www.ted.com/talks/ben_goldacre_what_doctors_don_t_know_about_the_drugs_they_prescribe?quote=1877

Check these words before listening:

Key vocabulary

1. Nostradamus - famous person who published prophecies (google him)
2. Precognition
3. Flukes / freaks
4. Bias
5. Replication
6. Journal Nature
7. To be sent down a blind alley (phrase)
8. Lorcainide (a drug)
9. A abnormal heart rhythm
10. Mea culpa (an apology)
11. A placebo (referred in talk as a dummy placebo)
12. Arrhythmias (connected to heart attacks)
13. Unflattering data
14. Prevalent
15. Reboxetine (a drug)
16. Antidepressant
17. To be misled
18. A systematic flaw
19. To cherry-pick (phrase meaning selective)
20. The FDA - Food and Drug Administration
21. Medical trials / clinical trials
22. A two-headed coin
23. Fraud
24. Tamiflu (a drug)
25. To stockpile a drug
26. PLOS Medicine (medical journal)
27. ICMJE - International Committee of Medical Journal Editors

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What doctors don't know about the drugs they prescribe

TED TALK: Ben Goldacre [Jun 2012. 13:29]

Explain what you understand

1. Why does he start with a reference to Nostradamus?
2. What did Daryl Bem discover? What happened when other scientists replicated this? What does this suggest?
3. Describe the report on cancer research, the outcome and the recommendation?
4. What is significant about the research into Lorainide?
5. What is a 'meaculpa'? And 'publication bias'?
6. Is the academic publishing environment different now?
7. Why does the speaker feel misled about a drug 'reboxetine' that he prescribed for depression?
8. What is the classic model of publication bias? And what is meant by a systematic flaw?

9. What are the statistics of publication bias?

10. Why does the speaker refer to the core of evidence-based medicine as cancer?

11. What is relevant about Tamiflu?

12. What is the final point about 'fake fixes'?

13. The summary

Critical thinking

Is it really this bad? Surely, there are thousands of medicines we use that are safe? Is funding, sponsors business and grants affecting the academia? Do you think scientists will ever publish negative results or the incentives changed? What would be these incentives? Should researchers be held more responsible for not warning the public of dangers? Is a mea culpa sufficient? Do you agree that medical research is a core of cancer? Isn't it worrying that independent researchers could not get the results to the trials of tamiflu? Is corruption and greed the root of the problem? Why aren't companies registering or keeping to the ruling? Surely, now that these regulations are in place it will take time to implement? Many researchers are governed by grants and funding and need to provide positive results - who will invest in failure? What do you think?

What doctors don't tell you about the medicines ANSWERS

1. Why does he start with a reference to Nostradamus?

To illustrate the fact that people cannot see into the future, that precognition is a fluke and people only hear about flukes and freaks. We don't hear about all the times when people got things wrong.

2. What did Daryl Bem discover? What happened when other scientists replicated this? What does this suggest?

Conducted research and found evidence of precognitive powers in undergraduate students, this was published in a peer reviewed academic journal.

a group of scientists replicated the findings and proved that this was untrue and submitted their work to the same journal. The journal refused stating they don't want negative results. This suggests evidence of 'biased sample'

3. Describe the report on cancer research, the outcome and the recommendation?

March 2012, researchers reported in the journal Nature they had tried to replicate 53 basic science studies looking at the potential treatment targets - only 6 were replicable. The outcome is that lots of experiments are done the occasions when it works are published - this is unreliable. The recommendation is to make it easier to publish negative results in science and to change the incentives so that scientists are encouraged to post more negative results.

4. What is significant about the research into Lorcinide?

1980 researchers did a study into the drug Lorcinide (anti-arrhythmic drug suppresses abnormal heart rhythms) after a heart attack people suffer from this and this drug would increase chance of survival. 100 patients, 50 got L. and 10 died, 50 placebo 1 died. Drug seen as a failure and commercial development stopped - no research/ trials published. Because this research was never published - 5-10 years later similar drugs were brought to the market - over 100,000 people died in the US before safety concerns were raised. Outcome this could have been prevented if the research had been published.

5. What is a 'mea culpa'? and 'publication bias'?

Mea culpa is Latin for 'my mistake' or 'my fault' - in this case from the researchers of Lorcinide in the 1980s. Publication Bias is a technical term for unflattering data, which gets lost or unpublished. These missing results may have provided 'an early warning of trouble ahead'.

6. Is the academic publishing environment different now?

Yes, academic journals like 'Trials' an open access journal - publishes trials regardless of positive or negative results. BUT negative results go missing.

7. Why does the speaker feel misled about a drug 'reboxetine' that he prescribed for depression?

Read around all the reports 1 study stated better than the placebo, 3 reports that it was just as good as other anti-depressants (A.D). MISLED 7 trials against a placebo 1 positive / 6 negative - only the positive was published. 3 trials showed it was just as good as other A.D but 9 showed it was worse these were not published.

8. What is the classic model of publication bias? And what is meant by a systematic flaw?

50:50 (38+ 36-) split of positive and negative results / peer reviewed academic literature = 37+ were published only 3- published. This bias system of publishing = systematic flaw.

9. What are the statistics of publication bias?

Over 100 studies on publication bias/ affects every field of medicine / half of trials go missing / 2 x more chance positive results are published.

10. Why does the speaker refer to the core of evidence based medicine as cancer?

It is similar to cancer, a destructive force. We all blindly tolerate it, it is research misconduct. Holding back 50% of the results from research is research fraud. The important point here is that responsibility is diffused between a whole network of academics, industry sponsors, journal editors.

11. What is relevant about Tamiflu?

Tamiflu is being stockpiled in case of a pandemic of influenza. Cochrane systematic reviewers tried to collect data - they found trials unpublished, results unavailable, not allowed access to the clinical study reports more information go to PLOS Medicine.

12. What is the final point about 'fake fixes'?

Official bodies pretend this has been fixed. 1.register every trial, post protocol, check at end - companies didn't register. 2. International Committee of Medical Journal Editors said they wouldn't publish any trials unless registered - didn't happen and a study showed that over 50% of all trials published were not registered. 3. FDA Amendment act all trials must be published in 1 year. only 1:5 have kept to the ruling.

13. The summary

Cannot know the true effects of medicine that we prescribe if we don't have access to the information. Not difficult to fix - force all trials to be published old and new. Tell everyone you know that this is a problem and that it has not been fixed.