

Viewpoint: The problem with personalized medicine is that ‘statistics are being misinterpreted’

Personalized medicine aims to match individuals with the therapy that is best suited to them and their condition. Advocates proclaim the potential of this approach to improve treatment outcomes by pointing to statistics about how most drugs — for conditions ranging from arthritis to heartburn — do not work for most people. That might or might not be true, but the statistics are being misinterpreted. There is no reason to think that a drug that shows itself to be marginally effective in a general population is simply in want of an appropriate subpopulation in which it will perform spectacularly.

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Consider an actual clinical trial in which 71 patients were treated with two doses. Twenty ‘responded’ to both doses, 29 to neither dose and 14 to the higher dose, but not the lower one. That is as expected. More surprising is that eight ‘responded’ to the lower dose and not the higher one, which is at odds with how drugs are known to work. The most likely explanation is that the ‘response’ is not a permanent characteristic of a person receiving the treatment; rather, it varies from occasion to occasion.

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Realizing that the scope for personalized medicine might be smaller than we have assumed over the past 20 years will help us to concentrate our resources more carefully.

Read full, original post: [Statistical pitfalls of personalized medicine](#)