

TESTING TREATMENTS

Chapter 6, 6.1.1

6 Fair tests of treatments

The principles underlying fair tests of treatments may not be familiar to many readers, but they are not complicated. In fact, much of our everyday, intuitive grasp of the world depends on them. Yet they are not taught well in schools and are often needlessly wrapped up in complex language. As a result, many people shy away from the subject, believing that it is beyond their ability to comprehend. We hope this and the following two chapters will persuade you that you are actually already aware of the key principles, and so will readily understand why they are so important. Readers who would like to explore these issues in more detail will find additional material at www.testingtreatments.org and in *The James Lind Library* (www.jameslindlibrary.org).

WHY ARE FAIR TESTS OF TREATMENTS NEEDED?

Nature, the healer

Many health problems will tend to get worse without treatment, and some will get worse in spite of treatment. However, some get better by themselves – that is, they are ‘self-limiting’. As one researcher involved in testing a proposed treatment for the common cold put it: ‘if a cold is treated energetically it will get well in seven days, while if left to itself it will get well in a week.’¹ Put more cynically, ‘Nature cures, but the doctor takes the fee.’

And of course, treatment may actually make matters worse.

It is because people often recover from illness without any specific treatment that the ‘natural’ progress and outcome of illnesses without treatment must be taken into account when treatments are being tested. Think about a time when you have had a sore throat, a stomach cramp, or an unusual skin rash. These will often resolve on their own, without formal treatment. Yet, if you *had* received treatment (even an ineffective treatment), you might have assumed that the treatment caused the symptoms to disappear. In short, knowledge of the natural history of an illness, including the likelihood that it will get better on its own (spontaneous remission), can prevent use of un-needed treatments and false beliefs in unproven remedies.

When symptoms of an illness come and go, it is especially difficult to try to pin down the effects of treatments. Patients with arthritis, for example, are most likely to seek help when they are having a particularly bad flare-up – which, by its very nature, is unlikely to be sustained. Whether the treatment they then receive is mainstream or complementary, effective or ineffective, it is

MISTAKING THE CURE

. . . ‘it is alleged to be found true by proof, that by the taking of *Tobacco*, divers and very many do find themselves cured of divers diseases; as on the other part, no man ever received harm thereby. In this argument there is first a great mistaking, and next a monstrous absurdity: . . . when a sick man has his disease at the height, he hath at that instant taken *Tobacco*, and afterward his disease taking the natural course of declining and consequently the patient of recovering his health, O then the *Tobacco* forsooth, was the worker of that miracle.’

James Stuart, King of Great Britaine, France and Ireland. A counterblaste to tobacco. In: *The workes of the most high and mightie prince, James*. Published by James, Bishop of Winton, and Deane of his Majesties Chappel Royall. London: printed by Robert Barker and John Bill, printers to the Kings most excellent Majestie, 1616: pp 214-222.

likely that their pain will improve after receiving it, simply because the flare-up dies down. Understandably, however, practitioners and patients will tend to attribute such improvements to the treatment taken, even though it may have had nothing to do with the improvements.

The beneficial effects of optimism and wishful thinking

The psychological reasons for people attributing any improvement in their condition to the treatment they received are now better understood. We all have a tendency to assume that if one event follows another, the first may have been responsible for the second. And we are inclined to see patterns where none exist – a phenomenon that has been demonstrated many times in areas as diverse as coin tossing, stock market prices and basketball shots. We are all also prone to a problem known as confirmation bias: we see what we expect to see – ‘believing is seeing.’ Any support we find for our beliefs will boost our confidence that we are right. Conversely, we may not recognize or readily accept information that contradicts our views, and so tend to turn a blind eye to it – often unconsciously.

BELIEVING IS SEEING

The British doctor Richard Asher noted in one of his essays for doctors:

‘If you can believe fervently in your treatment, even though controlled tests show that it is quite useless, then your results are much better, your patients are much better, and your income is much better, too. I believe this accounts for the remarkable success of some of the less gifted, but more credulous members of our profession, and also for the violent dislike of statistics and controlled tests which fashionable and successful doctors are accustomed to display.’

Asher R. Talking sense (Lettsomian lecture, 16 Feb, 1959). *Transactions of the Medical Society of London*, vol LXXV, 1958-59. Reproduced in: Jones, FA, ed. *Richard Asher talking sense*. London: Pitman Medical, 1972.