

TESTING TREATMENTS

Chapter 1, 1.1

1 New – but is it better?

WHY FAIR TESTS OF TREATMENTS ARE NECESSARY

Without fair – unbiased – evaluations, useless or even harmful treatments may be prescribed because they are thought to be helpful or, conversely, helpful treatments may be dismissed as useless. And fair tests should be applied to all treatments, no matter what their origin or whether they are viewed as conventional or complementary/alternative. Untested theories about treatment effects, however convincing they may sound, are just not enough. Some theories have predicted that treatments would work, but fair tests have revealed otherwise; other theories have confidently predicted that treatments would not work when, in fact, tests showed that they did.

Although there is a natural tendency to think ‘new’ means ‘improved’ – just like those advertisements for washing machine detergents – when new treatments are assessed in fair tests, they are just as likely to be found worse as they are to be found better than existing treatments. There is an equally natural tendency to think that because something has been around for a long time, it must be safe and it must be effective. But healthcare is littered with the use of treatments that are based on habit or firmly held beliefs rather than evidence: treatments that often do not do any good and sometimes do substantial harm.

There is nothing new about the need for fair tests: in the 18th century James Lind used a fair test to compare six of the remedies

ANECDOTES ARE ANECDOTES

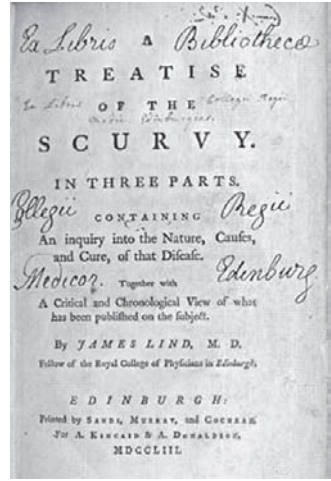
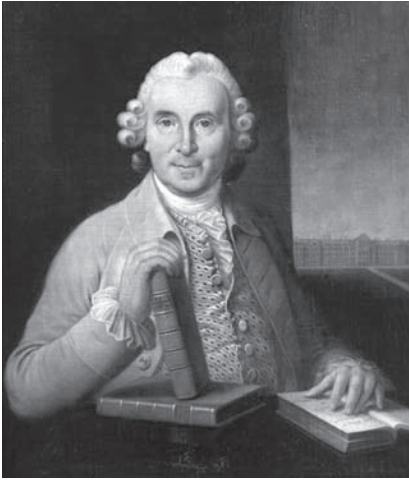
‘Our brains seem to be hard-wired for anecdotes, and we learn most easily through compelling stories; but I am aghast that so many people, including quite a number of my friends, cannot see the pitfalls in this approach. Science knows that anecdotes and personal experiences can be fatally misleading. It requires results that are testable and repeatable. Medicine, on the other hand, can only take science so far. There is too much human variability to be sure about anything very much when it comes to individual patients, so yes there is often a great deal of room for hunch. But let us be clear about the boundaries, for if we stray over them the essence of science is quickly betrayed: corners get cut and facts and opinions intermingle until we find it hard to distinguish one from the other.’

Ross N. Foreword. In: Ernst E, ed. *Healing, hype, or harm? A critical analysis of complementary or alternative medicine*. Exeter: Societas, 2008:vi-vii.

then being used to treat scurvy, a disease that was killing vast numbers of sailors during long voyages. He showed that oranges and lemons, which we now know contain vitamin C, were a very effective cure.

In 1747, while serving as a ship’s surgeon aboard HMS *Salisbury*, James Lind assembled 12 of his patients at similar stages of the illness, accommodated them in the same part of the ship, and ensured that they had the same basic diet. This was crucial – it created a ‘level playing field’ (see Chapter 6 and box in Chapter 3, p26). Lind then allocated two sailors to receive one of the six treatments that were then in use for scurvy – cider, sulphuric acid, vinegar, seawater, nutmeg, or two oranges and a lemon. The fruit won hands down. The Admiralty later ordered that lemon juice be supplied to all ships, with the result that the deadly disease had disappeared from the Royal Navy by the end of the 18th century.

Of the treatments Lind compared, the Royal College of Physicians favoured sulphuric acid while the Admiralty favoured



James Lind (1716-1794), Scottish naval surgeon, pictured with the books he wrote, and the title page of the most famous of these, in which he recorded a controlled trial done in 1747 showing that oranges and lemons were a more effective treatment for scurvy than five other treatments then in use (see www.jameslindlibrary.org).

vinegar – Lind’s fair test showed that both authorities were wrong. Surprisingly, influential authorities are quite frequently wrong. Relying too much on opinion, habit, or precedent rather than on the results of fair tests continues to cause serious problems in healthcare (see below, and Chapter 2).

Today, uncertainties about the effects of treatments are often highlighted when doctors and other clinicians differ about the best approach for a particular condition (see Chapter 5). In addressing these uncertainties, patients and the public, as well as doctors, have an important part to play. It is in the overwhelming interest of patients, as well as professionals, that research on treatments should be rigorous. Just as health professionals must be assured that their treatment recommendations are based on sound evidence, so patients need to demand that this happens. Only by creating this critical partnership can the public have confidence in all that modern medicine has to offer (see Chapters 11, 12, and 13).