

which was being recommended by the Royal College of Physicians of London – to patients who were less ill to begin with and in the early stages of the disease, and another treatment – say, citrus fruits, which were being recommended by some sailors – to patients who were already approaching death. This would have made sulphuric acid appear to be better, even though it was actually worse. Biases such as these can arise unless care is taken to ensure that like is being compared with like in all relevant respects.

### Treatments with dramatic effects

Sometimes patients experience responses to treatments which differ so dramatically from their own past experiences, and from the natural history of their illness, that confident conclusions about treatment effects can be drawn without carefully done tests (see Chapter 5, p50-53).<sup>3</sup> For a patient with a collapsed lung (pneumothorax), inserting a needle into the chest and letting out the trapped air causes such immediate relief that the benefits of this treatment are clear. Other examples of dramatic effects include morphine on pain, insulin in diabetic coma, and artificial hip joints on pain from arthritis. Adverse effects of treatment can be dramatic as well. Sometimes drugs provoke severe, even lethal, allergic reactions; other dramatic effects include the rare limb deformities caused by thalidomide (see Chapter 1, p4-5).

However, such dramatic effects of treatments, whether beneficial or harmful, are rare. Most treatment effects are more modest, but still worth knowing about. For example, carefully done tests are needed to identify which dosage schedules for morphine are effective and safe; or whether genetically engineered insulin has any advantages over animal insulins; or whether a newly marketed artificial hip that is 20 times more expensive than the least expensive variety is worth the extra cost in terms that patients can appreciate. In these common circumstances we all need to avoid unfair (biased) comparisons, and the mistaken conclusions that can result from them.