

A look back at the history of medical research

Written by [Emma Neil](#).

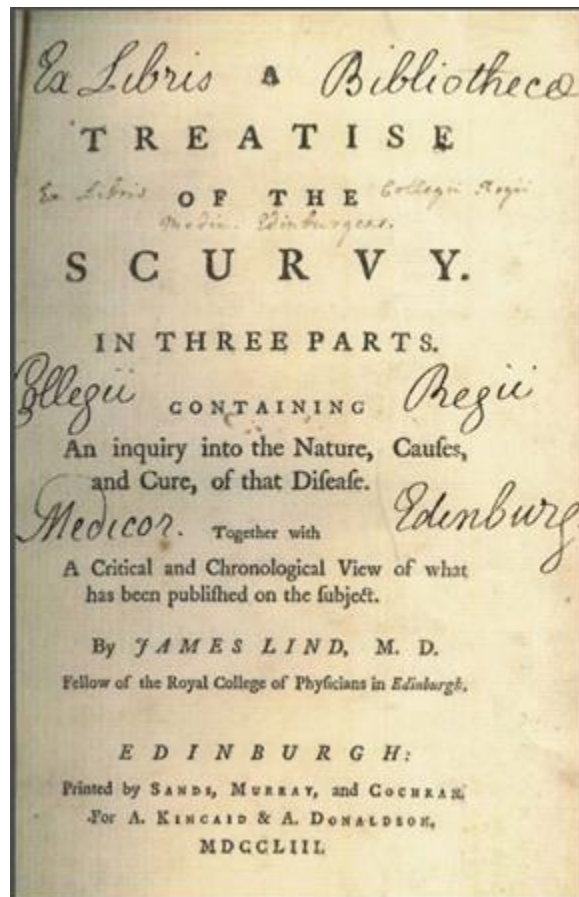
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In this month's blog Emma, our Research Delivery Officer, looks back at the history of medical research from the 18th century onwards. You can contact our team if you need help with the delivery of general practice research across West Yorkshire.

2018 marks the [70th anniversary of the National Health Service](#) and I thought it would be a good opportunity to reflect on the history of clinical trials. Research was taking place long before the commencement of the NHS and I don't plan to cover any of this in detail, but I'll begin from the 18th century, a period which is recorded as a time when British clinicians began designing experiments to test treatments (Chalmers, 2014).



On board HMS Salisbury on 20th May 1747 [James Lind](#), a naval surgeon from Edinburgh, began a clinical trial to find an effective treatment for scurvy, a disease which was common among sailors. Lind compared six treatments (vinegar, orange and lemons, cider, salt water, garlic and sulphuric acid) as a cure for scurvy on twelve sailors with similar conditions. In 1753 Lind published *A Treatise of the Scurvy*, in this he described what had already been published on the subject (a modern day equivalent to the systematic review) and details of his clinical trial which noted citrus fruits as a cure for scurvy. Whilst his theory was not implemented into practice straight away (it would be a further 40 years until lemon juice would be ordered to be supplied to sailors), what is important to note from Lind's research is that he showed the importance of comparing different treatments on subjects with similar conditions. However, what Lind's study lacked to explain was how he decided which sailors would receive which of the six treatments.



The James Lind Library (<http://www.jameslindlibrary.org/lind-j-1753/>)
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Fast forward to the beginning of the 20th century and the introduction of the National Insurance Act. This Act established schemes for health and unemployment insurance based on contributions from employees, employers and the State. A penny of this from each insured person was intended to contribute to the expenses of sanatoriums and could also be given for the purposes of research. It was through these funds that the Medical Research Committee and Advisory Council was established in 1913 (later renamed [Medical Research Council \(MRC\)](#) in 1919).



It would be in 1946 that the MRC's Tuberculosis Unit would undertake a Randomised Clinical Trial (RCT) investigating *Streptomycin Treatment of Pulmonary Tuberculosis*. This would become the first published RCT in medicine when it appeared in the British Medical Journal in 1948. This research was chaired by Geoffrey Marshall and the statistician for the study was Austin Bradford Hill. The trial focused on patients with acute bilateral pulmonary tuberculosis,

and patients were allocated either to a control group (treatment with bed rest alone) or a treatment group (treatment with streptomycin and bed rest) by random sampling numbers initiated by Hill.

During the 20th century Randomised Clinical Trials became a 'Gold Standard' for creating new medical knowledge. It was also during this period that Archibald Cochrane, a British physician, established the idea of evidence-based medicine. During Cochrane's medical career and through his own experience of undertaking RCTs he was concerned with the lack of reliable scientific evidence for interventions and treatments in the health sector. He would later express these concerns in his book published in 1972 *Effectiveness and Efficiency: Random Reflections on Health Services*. A turning point would occur in the 1970s where Stavrou et al (2013) highlights that controlled trials in relation to perinatal medicine were being identified by the MRC in Cardiff and subsequently Iain Chalmers performed a systematic review of these trials. These works were later published in a book by Chalmers et al (1989) titled *Effective Care in Pregnancy and Childbirth*. The foreword of this book was written by Cochrane and in this he is supportive of the work noting that:

"... every medical specialty should compile a list of all the randomised controlled trials within its field to be available for those who wish to know which of the treatments used were effective[...] the systematic review of the randomised controlled trials of obstetric practice that is presented in this book is a new achievement[...] I hope that it will be widely copied by other medical specialities."



Cochrane died in 1988 before the establishment of the first Cochrane Centre in Oxford which opened in 1992 and the Cochrane Collaboration in 1993. Today, the [Cochrane Library](#) is an invaluable resource formed of a series of databases which contains different types of high-quality, independent evidence to inform healthcare decision-making.

Clinical trials have come a long way since James Lind's trial in 1747 which we celebrate each year through the International Clinical Trials Day. In West Yorkshire a number of general practices have taken part in Randomised Clinical Trials over the years and one of the latest RCTs general practices have taken part in was the [Helicobacter Eradication Aspirin Trial](#). This study from the University of Nottingham is investigating whether *Helicobacter pylori* eradication would reduce the incidence of hospitalisation for ulcer bleeding in aspirin users. The study has now closed to recruitment and is currently in follow-up but it has already been noted as the [UK's largest interventional academic drug trial](#).

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