



Introduction to the validity and reliability of diagnostic tests: a CPD module

Course overview

This one-day course provides an overview of the important design and statistical analysis issues involved in setting up and evaluating studies for determining validity and reliability. Delegates will learn about these methods both in the context of laboratory or clinical diagnostic tests, and also psychological and psychiatric diagnostic scales.

Who should attend? Is it right for me?

This course is aimed at researchers working in a medical field. It is suitable for those who have no previous experience of data analysis, as well as those seeking to refresh their skills.

What is the course schedule?

This course runs online. The lecture videos will be available online and can be watched at any time (from two weeks before to two weeks after the course is scheduled to take place). A suggested timetable is given in the table below, which highlights the live sessions provided for participants to ask questions. Practical materials can be worked through at the participants' own pace, but demonstrators are available to answer questions and assist with practical tasks.

What will delegates learn?

By the end of this course delegates will:

- Understand the important issues related to the design of studies for testing a new diagnostic test or scale against a known 'gold standard'
- Know how to estimate and interpret measures of sensitivity, specificity and predictive values.
- Understand the appropriate methods to use when measuring binary and continuous scales and measures

What does the course cover?

- Measurement of agreement/accuracy
- Estimating sample size in the design of studies
- ROC curve analysis
- Bland and Altman technique



Timetable (Note: times subject to change, TBC before the course)

Time	Session
9.45-10.45	Session 1, 2 & 3: Terminology, accuracy of a diagnostic test, & diagnostic thresholds (recorded video followed by live Q&A)
10:45-11:30	Activity 1: group work
11:30-11:45	Break
11:45-12:15	Session 4: Design issues for accuracy studies (recorded video followed by live Q&A)
12:15-12:45	Activity 2: group work
12:45-13:15	Break
13:15-14:00	Session 5 & 6: Reliability of a diagnostic test, & measures of agreement on a continuous scale (recorded video followed by live Q&A)
14:00-14:30	Activity 3: Measures of agreement on a continuous scale
14:30-14:45	Break
14:45 - 15:30	Session 7 & 8: Measures of agreement on a categorical scale & Design issues for reliability studies (recorded video followed by live Q&A)
15:30 – 16:00	Activity 4: Measures of agreement on a categorical scale

To find out more

Contact Dr Sarah Donegan at sarah.donegan@liverpool.ac.uk in the Department of Health Data Science. Alternatively, visit the department's website at <https://www.liverpool.ac.uk/population-health/about/healthdatascience/coursesandworkshops/>.

