



Object 30: Coulter Counter



What is it?

The Coulter Counter is a device used to count the constituents of a blood sample. It works by drawing the sample through an electrically charged tube with a tiny hole at one end. As it passes through the hole, each particle in the sample blocks the electrical field for a moment. The force and frequency of the distortions in the voltage can be matched to specific types and numbers of particles.

History

The Coulter Counter was developed in 1953 by American electrical engineer Wallace Coulter and has been used in diagnostic laboratories since 1956. Early models printed the results but modern ones display them on a digital monitor.

Pathology

The full blood count is one of the most commonly requested blood tests in haematology labs, and includes measurements of the number of red blood cells, platelets and white blood cells in a sample. Before the Coulter Counter such a test would take about an hour and required a scientist to count cells using a counting chamber. The Coulter Counter gives a result in less than a minute.

Find out more

Learn more about the Coulter Counter and Coulter principle on the [Beckman Coulter website](#).

Few labs will still have an original Coulter Counter but you can see many automated machines that use the Coulter principle in pathology laboratories around the country. Look at the [RCPath website](#) to see if there's an open day near you.