

Molecular biomarker

A biological marker, or biomarker, is something that can be measured, which points to the presence of a disease, a physiological change, response to a treatment, or a psychological condition.

A molecular biomarker is a molecule that can be used in this way; for example, glucose levels are used as a biomarker in managing diabetes. Non-molecular biomarkers include medical images (for example, MRI brain images can provide information about the progression of multiple sclerosis).

Biomarkers are used in many scientific fields. They are used in different ways at different stages of medicines development, including in some cases as a surrogate endpoint to indicate and measure the effect of medicines in trials. For example, haemoglobin levels have been used in Phase III trials to support development of therapies for Type 1 Gaucher disease. This is a rare disease that affects multiple organ systems and shortens life expectancy, but it can take years to show any clinical changes. Therefore clinical changes are not a good way to evaluate the impact of new treatments for this disease, and biomarkers that show earlier changes required.