

## What are clinical trials?

Clinical trials are research studies involving patients, comparing a new or a different type of treatment currently available (if there is one). Some clinical trials also look at possible ways to prevent illnesses, for example by testing new vaccines. No matter how promising a new drug or treatment may appear during tests in a laboratory, it must go through clinical trials before its benefits and risks can really be known.

It is now widely agreed that a properly run clinical trial is the best way to assess whether a treatment is, or is not safe and effective.

## Why do we need clinical trials?

Clinical trials are the most reliable way of testing a new treatment or of seeing whether one treatment works better than another. A new treatment is not always better, and can sometimes be worse than existing treatments. Trials are therefore really important when we need to know whether one treatment is safer and more effective than another.

We need clinical trials to improve treatment and care for patients now and in the future.

Many of the treatments now commonly used in the NHS have been tested through clinical trials. For example, in cancer care, trials have been used to try out new treatments; radiotherapy, chemotherapy, surgery and complementary therapies. Trials have also been used to find out the best ways of using these treatments. This has meant that many people with cancer, HIV/AIDS and many other illnesses live longer and have better quality of life.

## Who can participate in a clinical trial?

All clinical trials have guidelines about who can participate. Using inclusion/exclusion criteria is an important principle of medical research that helps to produce reliable results. The factors that allow someone to participate in a clinical trial are called "inclusion criteria" and those that disallow someone from participating are called "exclusion criteria". These criteria are based on such factors as age, gender, the type and stage of a disease, previous treatment history, and other medical conditions. Before joining a clinical trial, a participant must qualify for the study. Some research studies seek participants with illnesses or conditions to be studied in the clinical trial, while others need healthy participants. It is important to note that inclusion and exclusion criteria are not used to reject people personally. Instead, the criteria are used to identify appropriate participants and keep them safe. The criteria help ensure that researchers will be able to answer the questions they plan to study.

## Different types of clinical trials

**Treatment trials** test experimental treatments, new combinations of drugs, or new approaches to surgery.

**Prevention trials** look for better ways to prevent disease in people who have never had the disease or prevent a disease from returning.

**Diagnostic trials** are conducted to find better tests or procedures for diagnosing a particular disease or condition.

**Screening trials** test the best way to detect certain diseases or health conditions.

**Quality of life trials** (or supportive care trials) explore ways to improve comfort and the quality of life for individuals with a chronic illness.

## Phases of clinical trials

New treatments usually have to go through a series of trials to test whether they are safe and effective. Trials of new drugs go through a number of phases:

**Phase I** trials are the earliest tests of a new treatment and they aim to find out the safe dose to give. This will include looking at side effects of a treatment, for example does it make people sick, raise their blood pressure etc. Phase I trials usually involve a small number of people who may be healthy volunteers.

**Phase II** trials test the new treatment in a larger group of people who usually have the disease for which the treatment is to be used, to see whether the treatment is effective, at least in the short term. Phase II trials also look into the best dose to give, possible side effects and how to manage them.

Treatments only move into a phase III clinical trial if phases I and II have been successful.

**Phase III** trials test a new treatment against the best available current treatment (the standard treatment). Phase III trials are much larger than phases I and II trials. If the phase III trial shows that the new treatment gives better results, it may become the standard treatment. Many phase III trials also include a 'quality of life' study to find out more about how treatment or illness affects a patient.

Phase III trials often need to involve large numbers of people because researchers usually need to be able to measure quite small differences between treatments. The smaller the expected advantage of one treatment over another, the more people will be needed to take part in a trial.

**Phase IV** trials are for treatments that are already licensed. They aim to find out more about side effects, long term risks and benefits.

## What is a randomised trial?

Many clinical trials are randomised trials. Randomised trials aim to make a fair comparison between a new treatment and the current treatment on offer, or between two (or more) existing treatments, to see which one works best. They compare groups of people who are similar except for the treatment they receive.

If you take part in a randomised trial, you will have an equal chance of receiving any of the treatments being compared. Neither you nor your doctor will know which treatment you will receive. This is known as randomisation. Randomisation is usually done by a computer. Randomisation is the best way of ensuring that people in the different groups in the trial are broadly similar.

Randomisation is also the best way of ensuring that the results of trials are not biased.

### What is a placebo?

A placebo is an inactive pill, liquid or powder that has no treatment value. In clinical trials, experimental treatments are often compared with placebos to assess the experimental treatment's effectiveness. In some studies, the participants in the control group will receive a placebo instead of an active drug or experimental treatment.

### What is a control or control group?

A control is the standard by which experimental observations are evaluated. In many clinical trials, one group of patients will be given an experimental drug or treatment, while the control group is given either a standard treatment for the illness or a placebo.

### Giving informed consent

Informed consent is the process of learning the key facts about a clinical trial before deciding whether or not to participate. It is also a continuing process throughout the study to provide information for participants. To help someone decide whether or not to participate, the doctors and nurses involved in the trial explain the details of the study, these should be:

- (a) the aim of the trial and why it is taking place
- (b) The treatments that are being compared
- (c) The number of times you will be asked to attend a clinic
- (d) Possible benefits and risks involved

If the participant's native language is not English, translation assistance can be provided. A participant should also receive a patient information sheet explaining all these things. The participant then decides whether or not to sign the document. **Informed consent is not a contract and the participant may withdraw from the trial at any time.**

## Ensuring privacy

If an individual agrees to take part in a trial, the people who will be told the individual is part of a trial are:

- With the individual's permission: their GP, as he or she is responsible for the individual's health care on a day to day basis.
- The individual's doctor and the team looking after them. The fact that the individual is taking part in a trial will be written in their medical notes.

Researchers cannot tell anyone that an individual is taking part in a trial unless the participant gives their permission.

In a clinical trial all the medical notes will be confidential, as with any other medical records.

A participant's name will not be used in any reports about the trial.

## What are the benefits and risks of participating in a clinical trial?

### Benefits

Clinical trials that are well-designed and well executed are the best approach for eligible participants to:

- (a) Play an active role in their own health care
- (b) Gain access to new research treatments before they are widely available
- (c) Obtain expert medical care at leading health care facilities during the trial
- (d) Help others by contributing to medical research

### Risks

There are risks to clinical trials:

- (a) There may be unpleasant, serious or even life- threatening side effects to experimental treatment
- (b) The experimental treatment may not be effective for the participant
- (c) The protocol may require more of their time and attention than would a non-protocol treatment, including trips to the study site, more treatments, hospital stays or complex dosage requirements.

## What happens during a clinical trial?

The clinical trial process depends on the kind of trial being conducted. The clinical trial team includes doctors and nurses as well as other health care professionals. They check the health of the participant at the beginning of the trial, give specific instructions for participating in the trial, monitor the participant carefully during the trial, and stay in touch after the trial is completed.

Some clinical trials involve more tests and doctor visits than the participant would normally have for an illness or condition. For all types of trials, the participant works with a research team. Clinical trial participation is most successful when the protocol is carefully followed and there is frequent contact with the research staff.

### **How is the participant's safety protected?**

The ethical and legal codes that govern medical practice also apply to clinical trials. In addition most clinical research is federally regulated with built-in safeguards to protect the participants. The trial follows a carefully controlled protocol, a study plan which details what researchers will do in the study. As a clinical trial progresses, researchers report the results of the trial at scientific meetings, to medical journals, and to various government agencies. Individual participants' names will remain secret and will not be mentioned in these reports.

### **Who sponsors clinical trials?**

Clinical trials are sponsored or funded by a variety of organisations or individuals such as physicians, medical institutions, foundations, voluntary groups and pharmaceutical companies.

### **What happens at the end of a clinical trial?**

At the end of a trial, all of the results are gathered together and analysed. Researchers have a responsibility to publicise the results of their trial. They might do this at a conference, in a medical journal or in the press. Some researchers try to give the results directly to the people who took part in the trial. Some researchers work with charities and self-help groups to ensure that the results of trials reach patients who might find them of interest.

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**Royal Free Hospital, May 2011**

**Reference:**

MRC Clinical Trial Unit; About Trials. <http://www.ctu.mrc.ac.uk/TrialExtra.asp>

