



## TYPES OF RESEARCH

Fact Sheet 001



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### Basic research

Basic research seeks to understand the biology of disease and the mechanisms that cause disease. Basic research is conducted in laboratories and gives us fundamental information needed to later conduct research that can be translated into clinical practice.

Questions addressed by basic researchers might include:

- Which genes are most important in specific diseases?
- How do cancer-causing genes function in the cell to control cell growth, replication or death and to promote metastasis?
- How can the immune system be best armed and activated to protect against the development of disease?
- How do stem cells function and can this knowledge be exploited therapeutically?



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### Clinical research

Clinical research is research that directly involves particular patients and uses materials or information from humans, such as their behavior or samples of their tissue.

It includes clinical trials, but clinical research doesn't always test the effectiveness of a therapy, diagnostic test or device. Clinical research also includes observational studies to assess outcomes in a group of participants.

Questions addressed by clinical researchers might include:

- Is the addition of a new therapy plus standard treatment for pancreatic cancer better than standard treatment alone?
- In older adults, what are the effects of different lifestyles on cardiac health?



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### Translational research

Translational research takes knowledge obtained from basic research and turns it into diagnostic or therapeutic interventions that can be applied to the treatment or prevention of disease.

Translational researchers use both basic research and clinical research skills in their work to take their lab experiments through to clinical trials.

Questions addressed by translational researchers might include:

- Identifying potential therapeutic targets through assessment of human tissue.
- Identifying biomarkers of prognosis and response to therapy.
- Developing novel therapeutic, diagnostic, screening and chemopreventative strategies.
- Development of molecular imaging techniques.



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### Epidemiology

Epidemiologists investigate the occurrence, distribution, and control of disease in a population. They research populations to investigate potential links between areas such as diet, lifestyle, genetics, or other factors within populations, and diseases.

They might look at how many people have a specific disease and what factors (such as environment, job hazards, family patterns and personal habits) play a part in the development of specific diseases.

Questions asked by epidemiologists might include:

- What are the causes of a specific disease?
- Which persons are at greatest risk of specific diseases?

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## Behavioural research

Behavioural researchers investigate how behaviour relates to whether a person gets a disease and how they cope with illness. It aims to find out why people behave the way they do, why they sometimes behave in unhealthy ways and what motivates them to adopt more healthy behaviours.

Questions addressed by behavioural researchers might include:

- What motivates people to exercise and eat healthy food?
- How do people access health information?
- How do patients make decisions about treatment options?

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## Psychosocial research

Psychosocial research investigates the psychological and social impact that a disease has on a patient and their family. It also looks at how health professionals and other people can help to reduce this impact.

Psychosocial research is particularly important in diseases that cause a significant amount of distress and disruption at diagnosis and where patients experience ongoing difficulties that can severely affect their quality of life.

Questions addressed by psychosocial researchers might include:

- How do people react to being told they have a disease?
- Why do some patients decide not to finish their treatment?
- What value do patients place on accessing affordable therapeutics?

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## Health service research

Health service research investigates the quality of health care, how people get access to health care, how much care costs, and what happens to patients as a result of this care.

The main goals are to identify the most effective ways to organise, manage, finance and deliver high quality care; reduce the variation in medical practice and medical errors; and improve patient safety. Research is broad in its approach and considers interventions across the spectrum from health promotion and illness prevention through treatment to rehabilitation, recovery and care of the terminally ill.

Questions addressed by health service researchers might include:

- What is the cost of a specific treatment in a specific patient population?
- How is the quality of health care impacted when new policies are implemented?
- What is the impact on quality and quantity of life of different treatment options?

Each type of research plays an important part in informing how our health system works, and what diagnostic tools and treatment options are available to us. Dedicated researchers help to find the answers to the questions we have about disease and its impact on us as individuals and as a community. However, research can only happen because of the generosity of patients in the community who volunteer to participate in studies. Research starts and ends with patients, and that is why it is important for researchers to listen to the needs of their patient community and develop research projects to address the most urgent problems faced by patients.

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ext fact sheet in series: [Ethics and patient consent](#)