About us

The Medical Research Council (MRC) improves the health of people in the UK - and around the world - by supporting excellent science, and training the very best scientists.

We are a non-departmental public body funded through the government’s science and research budget.

Who are we?

We invest in research on behalf of the UK tax payer. Our research has resulted in life-changing discoveries for over a hundred years.

Scientists apply to the MRC for funding for their research and applications are reviewed by panels of independent experts.

The MRC’s mission, as set out in our Royal Charter, is to:

- Encourage and support research to improve human health
- Produce skilled researchers
- Advance and disseminate knowledge and technology to improve the quality of life and economic competitiveness of the UK
- Promote dialogue with the public about medical research

What research do we fund and where?

Our work ranges from laboratory research, for example on genes and molecules, right through to research with people, such as clinical trials and population studies.

Our science is split into six broad areas of research:

1. Infections and immunity
2. Molecular and cellular medicine
3. Neurosciences and mental health
4. Population and systems medicine
5. Global health
6. Translational research

Our research is carried out in universities, hospitals and a network of dedicated establishments across the UK and Africa.

Find out more at: www.mrc.ac.uk/about

MRC facts

- Between 2006 and 2016 MRC research led to the development of 1,300 products or interventions
- In 2014/15 the MRC spent £771.8m on research
- In 2015 the MRC supported 1,891 students
- In 2015 MRC funding supported 9,357 research staff
- To date 31 MRC-funded scientists have received the Nobel Prize
- 100,000 scientific papers originated from MRC research between 2006* and 2016
- MRC researchers collaborate with scientists in more than 100 countries
- MRC research is linked to the formation of 124 spin out companies bringing discoveries to the market

*Electronic records began in 2006
Sir Edward Mellanby discovers that rickets, a deforming and painful childhood bone disease, is caused by a lack of vitamin.

The first British cohort study begins, known as the MRC-funded National Survey of Health and Development, which has followed the lives of a group of people born in one particular week in 1946. The study has shed light on how growth, health and environment in early life affect the risk of disease in adulthood.

DNA fingerprinting is invented by Sir Alec Jeffreys at the University of Leicester. The technique is now used for medicine, forensic science and paternity testing.

An MRC-funded trial of an affordable mobile phone support programme to help smokers to quit, called Txt2stop, is shown to double quit rates. In 2012 the Department of Health launches the programme on the NHS, and by March 2013 over 44,000 smokers had signed up.

Scientists from the MRC Cancer Unit develop the first 3D model of a tumour to study how cancers can survive with low levels of oxygen. This will reveal details of how tumours work and help the development of new cancer treatments.

The 2015 MRC Millennium Medal was awarded to Professor Sir Brian Greenwood for his research achievements in Africa. Sir Brian reinvented field research in tropical medicine through his simple but high-quality methodology for clinical studies and field trials, and directed the MRC Unit in The Gambia for 15 years. The MRC Millennium Medal recognises MRC-funded scientists for outstanding research which has made a major contribution towards health, quality of life and wealth creation.

Scientists at the University of Manchester are working with digital health company UMotif to develop a smartphone app that can help monitor disease progression in patients with musculoskeletal disease, such as rheumatoid arthritis.

MRC-funded researchers have for the first time treated a patient with stem cell therapy for the eye condition ‘wet’ age-related macular degeneration. They hope the trial will bring them closer to safely restoring sight in people with severe sight loss caused by the condition.

Read about more about our scientists’ latest successes at www.mrc.ac.uk/successes

MRC scientists prove that flu is caused by a virus, rather than a bacterium, after studying ferrets in their laboratory which had caught the illness.

MRC scientists start in-depth clinical trials to test radiotherapy as a treatment for cancer. Today around four in ten cancer patients are treated with radiotherapy.

Did you know?
Children born since 1990 are up to three times more likely than older generations to be overweight or obese by age 10, according to an MRC-funded study.
Diagnosing disease with a ‘pill on a string’

MRC researchers have developed a simple and inexpensive test for diagnosing Barrett’s oesophagus, a condition which increases the risk of developing cancer of the oesophagus.

The Cytosponge Test, also called ‘a pill on a string’, has been designed by Professor Rebecca Fitzgerald and her team at the MRC Cancer Unit in Cambridge. It consists of a small encapsulated sponge that is attached to a string and swallowed with water. The sponge expands in the stomach into a mesh which is pulled back up the gullet, collecting cells from the lining of the oesophagus that can be analysed for any abnormalities.

In an MRC study of 500 people aged between 50 and 70, the test was found to be well-tolerated by 99 per cent of the group. Cancer Research UK has since funded a larger-scale multi-centre study that also found the test to be well-tolerated, safe and accurate. The Cytosponge Test is just a fraction of the cost of a traditional endoscopy, and can be used easily in GP surgeries.

“Our plan is to see whether we can roll out the Cytosponge test in GP surgeries across the UK,” says Rebecca. “I’d like to see it become part of an early diagnosis programme for Barrett’s oesophagus.”

Find out more about Rebecca’s work on the Cytosponge at: http://mrc.io/cytosponge

Fighting dementia: Giovanna’s story

In 2013, MRC scientists made a promising breakthrough towards finding new targets for drugs to slow down the onset of dementia.

Neurodegenerative diseases such as Alzheimer’s disease are incurable conditions that cause brain cells to die. They’re strongly linked with ageing and are a big problem for our society.

Professor Giovanna Mallucci’s team, from the MRC Toxicology Unit, discovered the first chemical compound that prevents neurodegeneration in the brains of mice with a brain disease called prion disease. It stopped the disease in its tracks, restoring normal behaviour and preventing memory loss.

The compound acted by blocking a process that switches off the production of new proteins, which is very damaging to brain cells in the context of ageing and disease. “It was extraordinary,” said Giovanna, describing the moment she realised it had worked. “It was absolutely clear that the animals were cured.”

This compound is not suitable for use in people, due to toxic effects, but the team is using different compounds to target the process in mice and are undoubtedly getting closer. “If we could prevent progression of the disease, that would already be an enormous step forward in preserving quality of life,” explains Giovanna.

Read more about Giovanna’s work in the MRC Annual Review 2013/14: www.mrc.ac.uk/annualreview13-14

Did you know?
Cooling newborn babies suffering from a lack of oxygen at birth significantly increases their chance of survival without brain damage.
Influencing guidelines: Pregnancy and alcohol

MRC PhD student Camilla Nykjaer from the University of Leeds has discovered that light drinking during pregnancy can increase the risk of a woman giving birth prematurely.

There is clear evidence that heavy drinking while pregnant is harmful, but it is not as well-known whether light drinking can also have negative consequences.

Camilla looked at data from the Caffeine and Reproductive Health (CARE) Study, which used questionnaires from more than 1,300 women to discover whether drinking alcohol before and during pregnancy can lead to premature births and low-birth weight babies. She found that even light drinking in the first trimester of pregnancy can increase the risk of a woman giving birth prematurely.

In response to this study, in February 2015 the Royal College of Obstetricians and Gynaecologists (RCOG) reviewed its guidance on alcohol consumption in pregnancy to recommend that women in these groups do not consume any alcohol at all. On 8 January 2016 the Department of Health updated its guidance for pregnant women to clarify that no level of alcohol is safe to drink during pregnancy.

Read more about Camilla’s research at: http://mrc.io/alcoholinpregnancy

Growing organs: Clare’s research

MRC scientists have grown a fully functional organ from scratch in a living animal, by transplanting cells that were originally created in a lab. The advance could in future help the development of ‘lab-grown’ replacement organs.

Professor Clare Blackburn and her team, from the MRC Centre for Regenerative Medicine at the University of Edinburgh, took cells from a mouse embryo and converted them into a completely unrelated type of cell – specialised thymus cells. When mixed with other thymus cell types and transplanted into mice, these cells formed a replacement organ very similar to a healthy adult thymus.

The thymus is a vital immune system organ producing T cells, which guard against disease. Patients with thymus disorders are vulnerable to infections.

The team hopes their lab-made cells could lead to a thymus transplant treatment for people with a weakened immune system, such as bone marrow transplant patients.

Read more about Clare’s research in the MRC Annual Review 2013/14 at: www.mrc.ac.uk/annualreview13-14

Watch a video about her discovery on our YouTube channel: https://youtu.be/wcc0eVoubEk

“...the ability to grow replacement organs from cells in the lab is one of the ‘holy grails’ in regenerative medicine. We’re concentrating now on trying to repeat the same work in humans, because if there’s going to be any benefit to patients then we need to show that what we can do in mice also works for human cells.” - Clare

Did you know?

MRC-funded researchers are testing whether dressings that “light up” in the presence of harmful bacteria can detect infections in patients with burn wounds.
Diagnosing liver disease:
Stefan’s story

Cardiologist Professor Stefan Neubauer has invented a test for chronic liver disease which could cut diagnosis time from weeks to a single day.

While studying heart changes in obese people, Stefan and his team realised that their MRI technique could tell them important things about the liver. “We were astonished to discover that our test accurately predicted the main factors that pathologists would look at in a liver biopsy sample,” said Stefan.

Fatty liver disease is a looming epidemic worldwide, mainly due to rising obesity rates. It’s known as a ‘silent killer’ because generally it doesn’t cause symptoms until tissue damage is severe.

Compared to current diagnosis using needle biopsy which is costly, painful and carries a risk of bleeding, Stefan’s LiverMultiScan test gives detailed information about the whole liver from a painless 10-minute scan.

Stefan set up a spin-out company, Perspectum Diagnostics, with colleagues in 2012. “These are exciting times because we expect the company to grow rapidly over the next year or two and to begin marketing this test worldwide. We now have 12 staff and funding from Innovate UK to develop the scan and show that it works in the ‘real world’,” said Stefan.

Read more about Stefan on our blog, MRC Insight:
http://mrc.io/profstefanneubauer

Skills and careers

Are you interested in research? A career in science can be exciting, challenging and fulfilling. Medical research can be especially rewarding as the knowledge gained with each new discovery could save lives or improve health.

We have created an online careers tool featuring people at different stages in their scientific careers to give you some ideas of what career options are available in science.

Find out more about their careers by exploring our Interactive Career Framework at: http://mrc.io/interactivecareerframework

Sara Wells
“Being a facility director or manager is the perfect job if you are interested in science but want a more structured role and don’t want to focus on just one area.”

Director of the Mary Lyon Centre, MRC Harwell

Dr Donald Davidson
“One of the things I love most about science is the opportunity to follow your nose. There are so many opportunities to develop your interests – you just have to grab them when they come up.”

MRC Senior Non-Clinical Fellow and Inflammation Biologist at the MRC Centre for Inflammation, University of Edinburgh
Get involved

Many of our research establishments hold open days and public events. Find a list of establishments and their locations at: www.mrc.ac.uk/about/institutes-units-centres

Come along to our annual MRC Festival of Medical Research in June to learn more about what we do: www.mrc.ac.uk/mrcfestival

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