



Health and wellbeing

At the University of York, we conduct research that spans the full range of science from fundamental to applied, covering topics that affect human health and wellbeing.

Fundamental scientists explore molecular and cellular mechanisms that underpin the development, diagnosis and treatment of diseases. Advanced imaging facilities are used to enable understanding of biological processes. Underpinning science is translated into experimental and clinical medicine in exploratory and pragmatic randomised trials. Applied researchers use approaches from statistics, epidemiology, evidence synthesis, economics, social sciences and medical humanities to understand and improve population health.

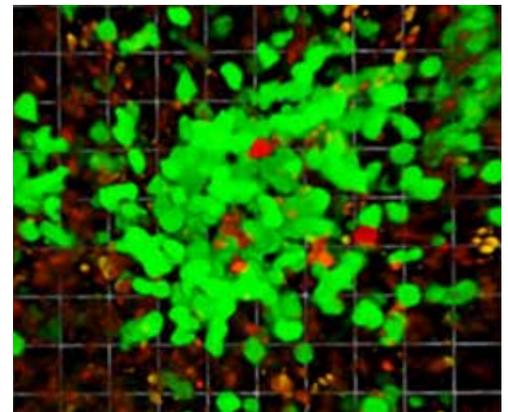
Our research is not restricted by single-disease categories or by traditional disciplinary boundaries. We address real-world problems, including multiple morbidities, chronic disease and the complex causes of health conditions. To do this, we draw on a wide range of academic skills and disciplines, working together to discover, refine and apply new treatments and interventions to improve health and wellbeing.

Our research excellence

The UK Research Excellence Framework 2014 confirmed the international excellence of our research impact, environment and performance.

- York research was rated in the top ten in overall performance for all health-related units of assessment in which we participated.
- Our Department of Biology was rated first in the UK for research impact.
- Our research environment for applied health services research was rated first in the UK.

York's Centre for Health Economics and Social Policy Research Unit were both awarded Queen's Anniversary Prizes in recognition of research excellence, and for influencing UK policy and shaping how society thinks about health, health care and supporting vulnerable people.



Case study

Tackling a neglected tropical disease

The Centre for Immunology and Infection integrates the study of basic and clinical immunology, microbiology and parasitology to develop a greater understanding of the processes underlying infection and the development of disease, to develop new approaches to prevention and treatment. This includes research into leishmaniasis, a neglected tropical disease which affects up to 1.6 million people a year across 98 countries. Professor Paul Kaye and an international team led from York have developed a therapeutic vaccine for leishmaniasis which is currently undergoing phase 2 clinical trials in Sudan.

Maroof A., et al. (2012). Therapeutic vaccination with recombinant adenovirus reduces splenic parasite burden in experimental visceral leishmaniasis. *Journal of Infectious Diseases*, 205(5), 853-863



Case study Exploring collaborative care for older people

Professor Simon Gilbody of the Mental Health and Addictions Research Group, in collaboration with the York Trials Unit and funded by the National Institute for Health Research, conducted the first large-scale UK study into the integrated primary care of older people with depression. A system of 'collaborative care' was developed, including a case manager who provides information, liaises with the GP and helps the participant to work through an evidence-based activity-focused intervention to identify ways for them

to get well and keep well in the future. A randomised trial evaluated this intervention for older adults with mild symptoms of depression, finding that it reduced symptoms, prevented deterioration and was good value for money. A second study is testing this approach in older people with major depression.

Gilbody S., et al. (2017). Effect of collaborative care vs usual care on depressive symptoms in older adults with subthreshold depression: the CASPER randomized clinical trial. *Journal of the American Medical Association*, 317(7), 728-737

Partnerships and impact

Our excellent research underpins national and international networks and partnerships that ensure maximum impact for our health and wellbeing research.

- Professor Ian Graham and our Centre for Novel Agricultural Products created higher yielding varieties of *Artemisia annua*, the plant source of artemisinin, a vital ingredient of anti-malaria drugs used by millions around the world.
- York Structural Biology Laboratory (YSBL) worked in collaboration with Novo-Nordisk to develop long-acting insulin which has been used to treat millions of diabetics worldwide. Recent YSBL work led by Professor Andrzej Marek Brzozowski is opening avenues for more novel insulin analogues.
- Working with the Bradford Institute for Health Research with Medical Research Council and Economic and Social Research Council funding, Professor Kate Pickett and colleagues are part of *Born in Bradford*, one of the largest cohort studies in the world, and *Born in Bradford Better Start*, a Big Lottery project identifying cost-effective interventions to improve children's lives.
- York researchers are part of four Department of Health Policy Research Units and carry out numerous additional advisory roles. Our research influences major government health policy decisions in the UK and around the world.

York's Centre for Health Economics, a world-renowned research institute, develops cutting-edge economic methods with international application, for example, developing cost-effectiveness thresholds in low and middle income countries.

Our research involves partnerships with UK public sector organisations including the Department of Health, the NHS and social care organisations; the voluntary and community sector; and companies including pharmaceutical and device manufacturers.

For more information on the University of York's interdisciplinary research themes see www.york.ac.uk/research

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