The All-Party Parliamentary Group on Medical Research includes MPs and peers from across the political parties. Established in December 2005, it provides a network for Parliamentarians with an interest in the medical research sector. The APPG is supported by the Medical Research Council (MRC), The Academy of Medical Sciences (AMS), the Association of Medical Research Charities (AMRC), Cancer Research UK, and the Wellcome Trust.

The theme of this year’s Summer Reception is the lifecycle of medical research, from underpinning science to clinical practice, encompassing epidemiology, applied and translational research, influencing policy and supporting infrastructure projects.

Researchers from across the country are coming together in Parliament to talk about how they are working together to develop the drugs and treatments that will go on to transform patients’ lives. This will be a great opportunity to find out more about how they do this and where you, as Parliamentarians, can help.

Event Programme

Speakers:

Lord Turnberg – Chair of the APPG on Medical Research
David Willetts – Minister of State for Universities & Science
Sir Mark Walport – Director of the Wellcome Trust
Claire Daniels – cancer survivor
Julian Huppert – MP for Cambridge and member of the APPG on Medical Research

Cover image: a cluster of nerve cells called cerebellar granule cells, growing in culture. Ludovic Collin/Wellcome Images
Welcome to the All-Party Parliamentary Group on Medical Research’s summer reception 2010.

This is a critically important year for medical and health research. Earlier this month the Government set out its ambitions for the NHS. Over the summer, details of the Comprehensive Spending Review (CSR) and the Government’s strategy for economic growth will be concluded. Science and, in particular medical and health research, must be at the heart of both. Not only is the UK’s leadership in life sciences an engine for economic growth. But it is also integral to the nation’s long-term health and wellbeing. Recent Government statements on science have been encouraging and we are delighted that the Science Minister, David Willetts MP, is able to join us.

As you arrive today, you will find many outstanding examples of the way in which medical and health research is helping us to fight disease and ill-health through better scientific understanding and knowledge ultimately leading to the development of new therapies and interventions of patient benefit. It will become readily apparent to you that the UK’s research capabilities are built on a strong philosophy of excellence, value for money, collaboration and focus on patient benefit. They are strong platforms on which we believe Government can build a world-beating strategy.

The All-Party Parliamentary Group and its partners are clear about the policies needed to ensure a strong medical and health research sector: sound and sustained investment by Government; the end of excessive regulation that is not in the interest of either patients or researchers, speeding-up the innovation process so that discoveries reach the patients who need them and; measures to maintain the UK as a global leader in science not least by investing in the scientists of tomorrow.

And, in our experience, it is increasingly patients and the public who are driving this agenda just as much as it is researchers. Last month a Eurobarometer poll showed that the UK is second only to the Netherlands in the proportion of people who have given to fundraising campaigns for medical research. More and more are participating in clinical trials or supporting research in other ways. It has also been the public who have been important in helping parliamentarians and others to understand the importance of cutting edge science such as stem cell research.

In this new parliament the All-Party Parliamentary Group aims to support all MPs, Peers and their offices to keep abreast of the latest developments in science and how the policy environment can help or hinder its advance. We also aim to facilitate debate and discussion on key issues. In doing so, we will work with many partners both inside and outside parliament. We would therefore like to take this opportunity to warmly welcome new members of both Houses and encourage them to continue to support our work in this session and beyond.

I very much hope you will enjoy today’s reception.

Lord Turnberg of Cheadle, Chair of the All-Party Parliamentary Group on Medical Research
Underpinning research

Research carried out in the laboratory which studies how the cells in our bodies work, and what goes wrong when we develop diseases. This type of research isn't always about finding treatments or new drugs, but these discoveries underpin later stages of the research cycle.

1. Aeronautics flies in to fight heart disease

**British Heart Foundation**  
*Peter D Weinberg MA MSc DIC PhD, Professor of Cardiovascular Mechanics & Director of Research, Department of Bioengineering, Imperial College London*

Aeronautical engineers are joining forces with bioengineers and cardiovascular scientists to tackle heart disease in exciting new ways at the British Heart Foundation (BHF) Centre of Research Excellence at Imperial College London.

Fatty deposits in the arteries lead to heart disease. But the build-up tends to occur largely at bends and branches of the vessels, where blood flow is slow or disrupted.

Researchers have discovered that cells in the arteries’ inner wall ‘feel’ blood passing over them and react by producing different chemicals depending on the blood’s speed.

Using a combination of engineering, gene technologies and photographic imaging, this multidisciplinary team is teasing out the mechanics of blood flow and how it contributes to narrowing of arteries.

Over 140,000 people suffer heart attacks in the UK each year. This research could help us understand how to target vulnerable arteries with medical therapies to prevent or reduce artery disease that causes heart attacks.

This research is a great example of the cross-discipline, cutting-edge, approach that the BHF have encouraged. It has attracted new talent to the UK economy and is providing the roots from which the next generation of world-leading heart researchers will grow.

2. Genetics and Alzheimer’s disease: a path to new treatments?

**Alzheimer’s Research Trust**  
*Professor Julie Williams, Professor of Neuropsychological Genetics, Cardiff University*

Dementias (of which Alzheimer’s disease is the most common) have been described as posing one the greatest medical challenges of our time. In addition to the emotional and physical burden of the disease to the 820,000 people with dementia in the UK and their families and carers, dementia costs the UK over £23 billion per year. There is an urgent need to tackle dementia at every level, and an important aspect is to understand precisely what causes it.

Late-onset Alzheimer’s disease makes up over 99% of Alzheimer’s disease cases, and like many other diseases, it is a caused by a complex mix of environmental and genetic factors, of which very few are properly understood.
Within the last year, a UK-led international consortium of researchers (funded by the Wellcome Trust, the Medical Research Council, the Alzheimer’s Research Trust and others) identified six genes which increase the risk of developing Alzheimer’s disease.

Whilst there are potential future implications of this research for the identification of individuals who may more likely to develop Alzheimer’s disease, a key result of these findings will be to highlight new pathways in the disease process, thereby pinpointing possible targets for novel therapeutic interventions.

3. Is it possible to prevent multiple sclerosis through sunshine and vitamin D?

**MS Society**  
**Professor George Ebers, John Radcliffe Hospital, Oxford University**

Multiple sclerosis (MS) is the most common disabling neurological condition affecting young adults in the UK. Often debilitating, MS is a chronic condition that impacts on an individual’s day-to-day life.

The exact cause of MS remains unknown, but evidence suggests that both genetic and environmental factors are involved. Finding the causes of MS is critical in developing prevention strategies in people at risk of developing the condition.

Research at the John Radcliffe Hospital, Oxford University was funded by the MS Society, the Medical Research Council and the Wellcome Trust and suggests that vitamin D deficiency may play a role in MS.

Three genes associated with MS each respond to vitamin D. Low vitamin D levels during foetal development and early childhood may influence the way these genes are expressed and increase the risk of an individual developing MS later in life. This taken together with other work suggests that MS is determined by an interaction between the genes and environment, something that has never been identified before. This research implies that having enough vitamin D before birth and during early childhood may be critical in reducing the risk of developing MS later in life.
Epidemiology and public health

Public health research is about understanding and preventing disease in large groups of people. Epidemiology is a branch of public health that studies groups of people over time and relates factors in their lives to health and illness.

4. Can legislation benefit the public’s health: the example of Smokefree England

Academy of Medical Sciences and the Health Foundation Clinician Scientist Fellow
Dr Anna Gilmore, with Dr Michelle Sims, Tobacco Control Research Group, University of Bath

This project aims to evaluate the health impacts of Smokefree England, the smokefree legislation implemented in July 2007.

Funded by the Health Foundation through a Clinician Scientist Fellowship (managed by the Academy of Medical Sciences) and the Department of Health’s Policy Research Programme through a grant to the University of Bath. It uses publicly funded datasets to ascertain, inter alia, whether the legislation reduced exposure to tobacco smoke and hospital admissions for heart attacks and whether it led to a transfer of smoking to the home. It also identifies which groups of children in England are most exposed to tobacco smoke.

Its political importance is underlined by current debates over the future of smokefree legislation, with some suggesting the existing legislation should be rolled back and others suggesting it should be extended. It also makes important scientific contributions, furthering our understanding of the health impacts of tobacco smoke exposure and of the health benefits of smokefree public places. Above all, public health interventions including legislation such as this, despite often being the most cost-effective means of achieving large scale health improvement, have historically been poorly evaluated and this study helps address this research gap.

5. UK Biobank

The Wellcome Trust
Professor Rory Collins, Chief Executive Officer & Principal Investigator, UK Biobank

What causes cancer, heart diseases, diabetes, dementia, depression, arthritis and a host of other painful and life-threatening illnesses that occur in mid to later life?

Some people blame our genes, others our lifestyles or the environment in which we live. The reality is that, in most cases, it’s a complex mixture of all three.

With the help of 500,000 volunteers aged 40-69, UK Biobank is building the most detailed resource of its kind anywhere in the world to help answer some of these difficult questions.

Participants have been joining the project at the rate of about 700 people a day over the past three years, in assessment centres in Scotland, England and Wales. They have been weighed, measured, answered a wide range of questions on their daily lives and provided information on their medical
histories. They have also donated small amounts of blood and urine (and more recently, saliva) for long-term storage and analysis, and given UK Biobank permission to follow their health over many years.

This £60 million investment will build a unique resource to allow scientists to find out why some people develop particular illnesses and others do not – paving the way for better treatment and prevention strategies.

UK Biobank recruits its half millionth participant ahead of schedule and within budget in July this year.

It is funded by the Wellcome Trust, the Medical Research Council, the Department of Health, the Scottish Government, the Welsh Assembly Government and the Northwest Regional Development Agency.

The UK Biobank Ethics & Governance Council has independent oversight of the project. www.ukbiobank.ac.uk
Applied and translational research

What happens to promising results from underpinning research? The next stage examines their potential to be developed into new treatments.

6. Harnessing white blood cells of the immune system to treat breast and other cancers

**Breast Cancer Campaign**
Dr John Maher, King’s College London

Although screening, diagnosis and treatment have improved as a result of research, breast cancer remains the UK’s most common cancer. With 12,000 women dying each year in the UK we desperately need to find better treatments. One Breast Cancer Campaign-funded research project, led by Dr John Maher at King’s College London, is developing a radical new way to fight cancer using the body’s immune system.

These researchers are ‘teaching’ the white blood cells of the immune system (T-cells) to identify and kill cancer cells, just as they would an infection. Results have shown that altered white blood cells destroy breast cancer cells grown in the laboratory and that after they become ‘active’ they grow to make even more cells that can attack the tumour. The next step for this research is to be tested in patients and the researchers have developed an innovative system of growing T-cells in the laboratory to enable this.

If successful, this innovative treatment would reduce many of the side effects of currently available treatments as the T-cells will only recognise and kill breast cancer cells, leaving healthy cells intact. This could improve treatment for the nearly 46,000 people diagnosed with breast cancer in the UK every year.

7. PARP-inhibitors: new direction in cancer drug development

**Breakthrough Breast Cancer**
Dr Chris Lord and Professor Alan Ashworth, Breakthrough Breast Cancer Research Centre, The Institute of Cancer Research, London

Breast cancer is the most commonly diagnosed cancer in the UK, almost 46,000 women and 300 men are diagnosed each year and around 1,000 women die of breast cancer every month. Breakthrough’s vision is a future free from the fear of breast cancer and our research ensures that women receive the most appropriate and effective treatments.

The most significant advances in cancer treatment have been based on the understanding of the underlying biology of the disease. However, it takes on average 17 years and an estimated cost of $0.5 to $2 billion to ‘translate’ a drug from research in the laboratory to a clinical treatment. This project illustrates the development of a new treatment, a drug called a PARP-inhibitor for breast cancer patients, in ‘near record speed’ and ‘at a fraction of cost’. The initial laboratory studies were published in 2005 and today there are over 30 clinical trials using PARP-inhibitors ongoing worldwide. This laboratory and early translational research was funded by Breakthrough Breast Cancer and the clinical trials were conducted by Kudos pharmaceuticals, a subsidiary of AstraZeneca.
8. Developing a new treatment for advanced prostate cancer

**Cancer Research UK**

**Professor Johann-de Bono, The Institute of Cancer Research, Royal Marsden, Sutton**

Prostate cancer is the most common cancer, and the second most common killer from cancer, in men. Common in men older than sixty five years, a substantial proportional of prostate cancer is diagnosed in younger men.

There have been few significant advances for the treatment of advanced prostate cancer since Charles Huggins identified the dependence of prostate cancers on the male hormone testosterone, for which he won the Nobel prize. This led to treatment by initially surgery, and more recently drug-induced castration. Advances in the treatment of this disease are urgently needed to decrease morbidity and mortality.

An increased molecular understanding of this disease is vital to accelerate progress. Recent studies have shown that prostate cancer comprises several different molecular diseases, having different genetic drivers. Although only a small proportion of patients with prostate cancers have a hereditary predisposition. Moreover, several studies have shown that despite castration, prostate cancers continue to contain high concentrations of testosterone with evidence that cancer cells can synthesize male hormones. These findings, combined with the discovery of genetic changes in the tumour cells of a small number of ‘hijacked’ genes that can lead to hormone driven acceleration of cell growth and survival, have fuelled hope that better treatments for this disease are around the corner.

One such significant advance may be the development of a new drug called abiraterone, which was generated by chemists at The Institute of Cancer Research and then studied in clinical trials at the Royal Marsden Hospital. This drug inhibits an enzyme critical to the ability of a prostate cancer cell’s ability to make its own hormones, which are necessary for its growth and survival. Multiple clinical trials have shown that this drug has a high level of anti-tumour activity in men whose advanced prostate cancers are resistant to all available treatments. Large pivotal trials have been conducted to show that this drug can improve both life expectancy and quality of life in men with this disease. These promising results led to Johnson & Johnson acquiring this drug for $1billion last summer.

9. Transforming the diagnostic and therapeutic pathway of prostate cancer

**St Peter’s Trust for Kidney, Bladder & Prostate Research**

**Hashim Uddin Ahmed, MRCS, BM, BCh, BA(Hon), MRC Research Fellow and Specialist Registrar in Uro-oncology, Division of Surgery and Interventional Science, UCL (University College London)**

Current prostate cancer tests are deeply flawed. The initial blood test is not specific because it measures levels of Prostate Specific Antigen, which can be high due to infection, inflammation and age as well as cancer. This is followed by a biopsy, which is effectively carried out ‘blind’, inserting a needle through the back passage to take samples. It risks infection and is inaccurate: tissue is taken randomly and the needle may just skim the edge of a tumour or miss the cancer completely.

We are assessing a new form of ultrasound called Histoscanning, and state-of-the-art magnetic resonance imaging. If these imaging tools reliably show prostate cancer, biopsies could then accurately target the cancer.
Treatment for prostate cancer usually involves radical surgery or radiotherapy. These risk incontinence and impotence because the whole prostate is treated rather than the tumour alone. Focal therapy is a novel approach in which light, heat or cold are targeted to destroy only the cancerous tissue. Early results show that 95% of men have no consequent problems with back-passage, urine or sexual function.

These changes in the diagnosis and treatment of prostate cancer could be brought into the NHS within 5 years to benefit men who are currently subject to much harm and uncertainty.

Our research programme is a large collaboration between basic scientists and clinicians funded by government and charities with strong support from industry. We work with other centres in the UK and also have a number of international collaborations with centres in France, the Netherlands, Germany and the US.

10. Reversing chemotherapy resistance in ovarian cancer

**Ovarian Cancer Action**

*Dr Euan Stronach, Research Fellow, Ovarian Cancer Action Research Centre, Imperial College London*

Ovarian cancer is a relatively common cancer in women, with poor survival rates. Surgery with chemotherapy forms the mainstay of treatment. However, 70% of ovarian cancer patients become resistant to the most effective platinum-based chemotherapy treatments and subsequently less than 40% of women survive five years beyond diagnosis. Almost every woman who dies of ovarian cancer does so because the disease relentlessly worsens after platinum resistance ensues.

The Ovarian Cancer Action Platinum Resistance Group is investigating why ovarian cancer develops resistance to platinum-based chemotherapies. Using samples donated by women before and after their cancer has become resistant, the team has identified three proteins that play an important role in platinum resistance. The researchers are now investigating how these proteins act in the cell in order to identify treatments which may reverse platinum resistance, enabling platinum-based chemotherapies to become effective once again. Through close interactions with clinicians and industry, the group are now progressing their work towards clinical trials.

The team is based at the Ovarian Cancer Action Research Centre, a collaboration between Imperial Hammersmith Hospital, the Royal Marsden Hospital and the Institute of Cancer Research. Established in 2006, the centre now houses over 40 scientists.

11. Clinical trial of gene therapy for inherited blindness

**British Retinitis Pigmentosa Society (RP Fighting Blindness)**

*Professor Robin Ali, Institute of Ophthalmology, UCL (University College London)*

This trial is at the very forefront of medical science. Its importance cannot be overstated; it provides an insight into how gene therapy could be used to treat a range of retinal and indeed other conditions in the future.

The objective has been to develop and test gene therapy for retinal degeneration caused by abnormality in a gene called RPE65. Leber’s Congenital Amaurosis (LCA) results in poor vision at birth then progressive deterioration to blindness. There is currently no treatment.
Following testing in animal models, the first patients were enrolled in 2007. The patients underwent a series of tests to establish the effects of the therapy and the first results were published in The New England Journal of Medicine (2008). Professor Ali and his team reported an improvement in vision, thus establishing proof of principle that gene therapy for retinal degeneration is safe and can result in patient benefit. The results from the trial were landmark and will have significant impact on future treatments - not only for eye disease but also other currently untreatable conditions.

This complex, multidisciplinary project has been supported by a range of funders including the Department of Health, the Medical Research Council and the National Institute for Health Research, and is a flagship, world leading technology project for the UK. We are now developing clinical trials for other inherited disorders that cause blindness.

12. Five-minute screening test could save thousands from bowel cancer

Medical Research Council (MRC)
Professor Wendy Atkin, Department of Surgery and Cancer, Imperial College London

A quick one-off screening test, the ‘Flexi-Scope’ test, could cut the risk of developing bowel cancer by a third and save thousands of lives according to research funded by the MRC.

Around one in 20 people in the UK will develop bowel cancer during their lifetime. It causes over 16,000 deaths each year and is the UK’s second biggest cancer killer. Worldwide, it accounts for 600,000 deaths each year.

The 16-year study showed that a single flexible sigmoidoscopy examination in men and women aged between 55 and 64 reduced the incidence of bowel cancer by a third, compared with a control group who had usual care. The screening test was particularly effective in the lower bowel, where it halved incidence of the disease. Over the course of the study, bowel cancer mortality was reduced by 43 per cent in the group that had the Flexi-Scope test.

The researchers behind the study suggest that in addition to saving lives, a screening programme using Flexi-Scope would reduce the costs associated with treating people with bowel cancer. Research commissioned by the Department of Health, published in the journal Gut in 2006, suggested that a screening programme based on this test could save an average of £28 for every person screened.

This collaborative study was carried out by researchers from Imperial College London, University College London, Queen Mary University of London, the University of East Anglia, St Mark’s Hospital and the University of Oxford. The study was funded by the MRC, Cancer Research UK and the National Institute for Health Research.

http://www.mrc.ac.uk/Newspublications/News/MRC006794
13. New cooling treatment to prevent brain injury at birth

Medical Research Council (MRC)
Professor David Edwards, Head of the Neonatal Medicine Group, MRC Clinical Sciences Centre

The first effective treatment for brain damage caused by oxygen starvation at birth (asphyxia) has been developed by scientists at the MRC Clinical Sciences Centre at Hammersmith Hospital, working with colleagues around the world.

Birth asphyxia occurs when a baby's brain and other vital organs are starved of oxygen or blood. It leads to severe and permanent brain damage or death. In the UK around 1,400 infants a year are affected, two in every thousand full-term births. The researchers showed that ‘hypothermic neural rescue therapy’ – cooling the baby’s body temperature by a few degrees – reduced the risk of death and disability in babies suffering birth asphyxia and led to fewer cases of cerebral palsy in survivors.

In May 2010, hypothermic neural rescue therapy was deemed “safe and effective” for NHS use by the National Institute for Health and Clinical Excellence (NICE). NICE have now produced guidance for the NHS outlining the circumstances in which this therapy should be offered to babies. The guidance encourages healthcare professionals to record the details of babies undergoing therapeutic hypothermia in a national register – the UK TOBY cooling register. This will help define how the treatment can best be implemented within the NHS.

This collaborative, long-term research programme received substantial investment from the MRC, including an Experimental Medicine Grant. The goal of experimental medicine is to build confidence in research before undertaking large-scale clinical trials. It particularly refers to a drug or treatment that is ready to be studied in humans for the first time. The MRC’s Experimental Medicine portfolio is part of its overarching translational research strategy, carried out in close collaboration with the National Institute for Health Research (NIHR). The MRC and NIHR partnership supports coordinated progression from early phase studies to late-stage trials.

http://www.mrc.ac.uk/Ourresearch/ResearchInitiatives/ExperimentalMedicine/index.htm
14. Cochlear implants – which children will benefit? How charity-funded research helps to improve national health policies

RNID (The Royal National Institute for Deaf People)
Dr Deborah Vickers and Dr Rosemary Lovett, UCL (University College London)

It is now common to provide cochlear implants in both ears (bilateral implantation) to children who have some residual hearing. However, it is still not clear how much residual hearing a child needs to possess in order to function better with hearing aids than with implants.

In this RNID-funded study, the research team at UCL will compare the performance of children using different devices and – by correlating this with the level of their hearing loss – they will improve the criteria of candidacy for bilateral implantation.

It is essential that the evidence base used to decide whether to provide implants is accurate and robust, as a cochlear implant is one of the most expensive procedures available on the NHS and the decision will affect the child’s quality of life and is also irreversible: bilateral implantation usually destroys a child’s residual hearing.

Results from the first stage of this research will be submitted to the National Institute for Health and Clinical Excellence review on cochlear implantation in February 2011, ensuring the NHS provides the best treatment for UK patients.

15. Medicines for early dementia – reaching the unmeasured outcomes

Pharmacy Practice Research Trust
Dr Denise Taylor, Department of Pharmacy and Pharmacology, University of Bath

Living with dementia or caring for a person with dementia can be difficult if forgetfulness or social withdrawal increases. This study looked at the effect of medicines for dementia on the lives of people in the early stages of dementia and their spouse, over a 13-month period. It was supported by a research grant from the Pharmacy Practice Research Trust.

Participants were interviewed up to four times over this period and relevant healthcare professionals were interviewed once. The medicines seemed to lead to improved social skills including talking, socialising and interacting with their children and grandchildren. This is not a response measured by current clinical scales.

Health care professionals experienced frustration at not being able to prescribe medicines for dementia at all stages of the illness (NICE currently restricts prescribing to moderate stages of the illness). Other findings included a need for proactive medicines management interventions by pharmacists to improve effective use of medicines.
16. Enhancing communication in aphasia through gesture

The Stroke Association
Professor Jane Marshall, City University, London

One devastating consequence of stroke is aphasia. This is a language problem affecting speech, reading, writing and comprehension. When problems are severe, regaining language, even with therapy, can be difficult. Aphasia is costly for the individual and society. It affects employment, personal relationships and leisure, and increases the burden on carers (Bakas et al., 2006).

Speech and language therapists often encourage aphasic people to use alternative communication methods, such as gesture. However, there is uncertainty as to whether this approach works. We investigated if gesture could be taught by speech and language therapy for everyday communication.

Two forms of therapy were tested. The first used 30 individual gestures and 30 spoken words, half of which were personally selected by participants. The second involved conversational activities with a regular communication partner. For example, the aphasic person might tell their partner a story or help them plan a holiday. Sixteen people with severe aphasia have completed the project. Results show significant gains in gesture production, particularly on gestures that featured in therapy.

Stroke care and rehabilitation is a major social issue, and costs are rising with the aging population. Finding an effective response to aphasia is particularly crucial, given its profound impact on quality of life and carer burden. This project has generated a therapy package that can be applied in speech and language therapy clinics across the UK.

This study was funded by The Stroke Association, which in partnership with City University and University College London, has pioneered new therapy approaches for people with severe aphasia.

17. Treatment of childhood obesity by retraining eating behaviour

The Bupa Foundation
Professor JP Hamilton-Shield, University of Bristol

This project is based on observations that the speed at which food is consumed might be a key factor in obesity. Eating food too fast circumvents normal satiety (awareness that you are full) mechanisms transmitting messages to the brain that you should stop eating.

The study examined the hypothesis that re-educating obese adolescents to eat more slowly using a ‘mandometer’ device would reduce total food consumed at mealtimes and improve satiety, allowing improved weight loss as part of a multi-component lifestyle modification programme.

It was funded by the Bupa Foundation and undertaken at Bristol University and Bristol Royal Hospital for Children by a collaborative group of British and Swedish scientists and doctors.

Teenagers randomised to a mandometer ate more slowly after 12 months, had reduced self-determined portion sizes and had three times the BMI improvement of those on standard treatment. This improvement persisted six months after finishing treatment, a result not achieved in any other successful obesity intervention, suggesting this approach has long-term benefit.

In a third of secondary schools in England the average time allocated for lunch is 13 minutes: classified as “rushed”.


Myeloma UK
Professor T. Curly Morris, Belfast City Hospital, Northern Ireland

The development and access to new drugs in the UK for myeloma, a debilitating cancer of the bone marrow, is a frustratingly slow and ineffectual process. As part of our innovative bench to bedside research model, we are funding a programme which uniquely brings together researchers, doctors, the pharmaceutical industry and the NHS to help transform laboratory based discoveries into real therapies for myeloma patients.

We have recently established an Early Phase Clinical Trial Network to develop a more structured approach to myeloma clinical trials to improve the speed and effectiveness at which they are started and completed.

Our aim is to enable patients to gain better access to new drugs across the UK: NHS priorities are integral in shaping the types of trials being conducted. Our approach is dependent upon working within existing infrastructures and initiatives where possible; injecting new and leveraging existing investment and clearly identifying challenges and barriers.

The Network is currently comprised of a Clinical Trial Coordinating Office to manage and coordinate a portfolio of novel myeloma trials that will run at eight strategically appointed Active Trial Centres across the country. Presently, three trials are being developed and we anticipate recruitment to begin in autumn 2010.

19. A legacy of life-saving research at Great Ormond Street Hospital

Great Ormond Street Hospital Children’s Charity
Dr Colin Wallis, Consultant Respiratory Paediatrician and Clinical Unit Lead, Great Ormond Street Hospital

Great Ormond Street Hospital is renowned as one of the world’s leading children’s research hospitals and is a place of last hope for sick children across the UK and abroad. Charitable funding has always been crucial to advancing the care we provide.

Research into heart and lung disease has underpinned some of our most exciting achievements over the years, and remains a key priority. In 1957, a charitable donation of £25,000 initiated a programme to develop the first ever heart and lung bypass machine to allow open-heart surgery in children. The individuals who are alive today thanks to previously unthinkable treatments are a testament to the impact of this work.

One of our current research projects hopes to tackle the devastating effects of cystic fibrosis – an inherited and incurable condition affecting a number of organs, including the lungs.

By tailoring early treatments for cystic fibrosis on the basis of tests that are reliable, simple to perform, and acceptable to the patient and their family, this project has enormous potential. If successful, it will provide the foundation for these children to lead healthy and productive early lives, despite their condition. As stressed by lead researcher Dr Colin Wallis, “Waiting for these children to become unwell is waiting too long.”
Building infrastructure

World-class research needs investment in world-class facilities and skilled researchers.

20. Diabetes – building today for a cure tomorrow

Diabetes Research & Wellness Foundation
Professor Paul Johnson MBChB, MD, FRCS (Eng + Edin), FRCS (Paed. Surg), FAAP, Professor of Paediatric Surgery, University of Oxford, Honorary Consultant Paediatric Surgeon, John Radcliffe Hospital, Oxford, Director, DRWF Human Islet Isolation Facility, Oxford

Pancreatic islet transplantation is a novel, minimally invasive treatment with the potential to reverse Type 1 Diabetes Mellitus (T1DM). Clusters of insulin-producing cells (islets) are extracted from a donor pancreas and infused into the liver of an individual with T1DM. Clinical trials have achieved insulin-independence in 80-85% of patients for at least a year post-transplant.

One of the greatest challenges of this therapy however, is the efficiency of islet extraction, which European/FDA guidelines dictate must be carried out in highly specialised facilities. The University of Oxford has contributed significantly to many aspects of this treatment, including fundamental research investigating ways of optimising islet extraction.

The Diabetes Research & Wellness Foundation (DRWF) awarded Oxford £1.2 million to build a state-of-the-art Human Islet Isolation Facility – the only one of its kind in the UK – to enable islet transplantation to progress from ‘the bench to the bedside’. The Oxford Islet Transplant Programme is now funded by the National Commissioning Group (Department of Health), and the DRWF Facility provides human islets to 5 other centres in the UK. This treatment is currently only suitable for adults with severe T1DM, but it is hoped that it will ultimately be offered to children soon after initial diagnosis.

21. Creating a world-leading centre for medical science and innovation

The UK Centre for Medical Research and Innovation (UKCMRI)
Katie Matthews, Stakeholder Engagement Consultant, Professor Jim Smith, Director, MRC National Institute for Medical Research, Dr Richard Treisman, Director, CRUK London Research Institute

UKCMRI is the new, world-leading biomedical research institute proposed for central London. It is a unique partnership between four leaders in biomedical research: Cancer Research UK; the Medical Research Council; the Wellcome Trust and UCL (University College London).

We will fight disease and improve lives; 1,250 of the best researchers from a range of disciplines will work in new ways to fight cancers, heart disease, infections, diseases of the immune and nervous systems, and the degenerative conditions linked to ageing. UKCMRI will be one of the biggest biomedical research centres in Europe, and this critical mass will offer researchers the freedom and flexibility to tackle the most difficult research questions.

UKCMRI will make a significant contribution to the UK economy. We will develop research talent by providing the excellent core facilities, long-term funding and support to enable our scientists to become international leaders in their fields.
Through a focus on effective technology transfer we will help deliver innovations that improve health and strengthen our knowledge-based economy.

We will also enhance opportunities for the pharmaceutical and biotechnology industries, and through our links with the NHS we will bring long-lasting benefits to the UK and beyond.

22. The Human Genome Project – 10 years on

Wellcome Trust Sanger Institute
Professor Julian Parkhill, Director, The Wellcome Trust Sanger Institute, Professor Mike Stratton, Director of Sequencing

The UK’s Wellcome Trust Sanger Institute made the largest single contribution to the Human Genome Project: the tenth anniversary of the draft genome was celebrated in June 2010.

The publicly available genome produced by the Project has been a foundation for discovery in human biology, genetics and medicine.

Today more than 900 staff work at the Institute, in partnership with collaborators around the world. Institute scientists focus on human genetics, on disease-causing organisms, on models of human disease and on bioinformatics. Institute programmes have supported new developments in diagnosis and in trial for new treatments.

http://www.sanger.ac.uk/
THE APPG IS SUPPORTED BY THE FOLLOWING PARTNERS

The Association of Medical Research Charities

The Association of Medical Research Charities (AMRC) is a membership organisation of the leading medical and health research charities in the UK.

Established in 1987, AMRC has 120 member charities that contribute over £1 billion* annually to medical research aimed at tackling diseases such as heart disease, cancer and diabetes, as well as rarer conditions like cystic fibrosis and motor neurone disease. This is approximately one third of all public expenditure on medical and health research in the UK making the sector unique internationally in terms of its scale and impact and enabling us to contribute significantly to knowledge and understanding in the life sciences, medicine and health.

All our members have a clear process for the peer review and funding of research grants as well as a published research strategy outlining their objectives and priorities in funding research and they intend to achieve them. They also sign up to position statements on issues central to medical research.

We work together to support the sector’s effectiveness and advance medical research by developing best practice, providing information and guidance, improving public dialogue about research and science, and working with government.

www.amrc.org.uk

* AMRC 2009-10 Figures

Cancer Research UK

Cancer Research UK is the world’s leading charity dedicated to beating cancer through research. We have discovered new ways to prevent, diagnose and treat cancer that together have saved millions of lives across the world.

We have been at the heart of the progress that has already seen cancer survival rates double since the 1970’s. But one in three of us will still develop some form of cancer at some point in our lives. Our groundbreaking research, which receives no government funding, will help ensure that millions more people will survive.

We work in partnership with others to achieve the greatest impact in the global fight against cancer. We provide life-changing information to anyone affected by cancer. We run awareness initiatives so that cancer can be detected early and help people reduce their risk of the disease. Our campaigning and lobbying keeps cancer at the top of the political agenda.

http://www.cancerresearchuk.org/
The Academy of Medical Sciences

The Academy of Medical Sciences promotes advances in medical science and campaigns to ensure these are converted into healthcare benefits for society. Our Fellows are the UK’s leading medical scientists from hospitals and general practice, academia, industry and the public service. The Academy seeks to play a pivotal role in determining the future of medical science in the UK, and the benefits that society will enjoy in years to come. We champion the UK’s strengths in medical science, promote careers and capacity building, encourage the implementation of new ideas and solutions – often through novel partnerships – and help to remove barriers to progress.

www.acmedsci.ac.uk

The Wellcome Trust

The Wellcome Trust is a global charity dedicated to achieving extraordinary improvements in human and animal health. We support the brightest minds in biomedical research and the medical humanities. Our breadth of support includes public engagement, education and the application of research to improve health. We are independent of both political and commercial interests.

www.wellcome.ac.uk

The Medical Research Council

For almost 100 years the Medical Research Council (MRC) has improved the health of people in the UK and around the world by supporting the highest quality science.

The MRC is funded by the UK taxpayer. We are independent of Government, but work closely with the Health Departments, the National Health Service and industry to ensure that the research we support takes account of the public’s needs as well as being of excellent scientific quality. As a result, MRC-funded research has led to some of the most significant discoveries in medical science and benefited millions of people, both in the UK and worldwide.

http://www.mrc.ac.uk/index.htm