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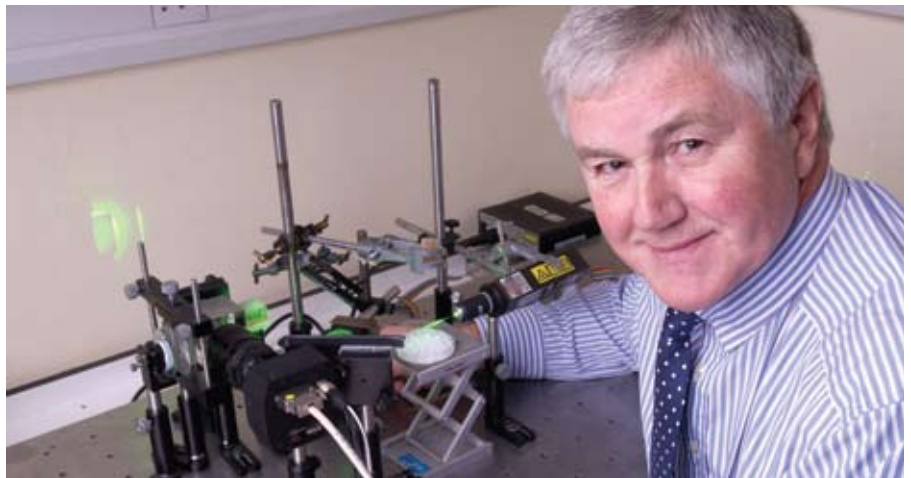
**FIGHT  
FOR  
SIGHT**  
EYE RESEARCH

# news 04

News for Fight for Sight supporters – spring 2008

## Pioneering research into AMD

**Age-related macular degeneration (AMD) is the leading cause of sight loss amongst people over 60 in developed countries. It is estimated that up to 500,000 people in the UK are affected by the condition.**



Leading scientist in the field of AMD research, Professor John Marshall from King's College London, St Thomas' Hospital, right, was awarded two grants in 2007 totaling £250,000. One of these projects involves research into a promising new treatment for AMD, the principles of which have already been trialed successfully in people with diabetic macular oedema.

### Delaying the ageing process

The treatment involves targeting the retinal pigment epithelium (RPE) with an ultra short pulse laser so that the RPE releases enzymes that rejuvenate Bruch's membrane. This is the innermost layer of the choroid through which nutrients pass to help maintain a healthy retina. Bruch's membrane

tends to thicken with age and becomes less effective at passing nutrients because of a build-up of waste products. In people with a genetic predisposition to AMD this process is exaggerated and eventually gives rise to the symptoms of AMD. The proposed treatment cleans up Bruch's membrane to help delay the ageing process in the outer retina and the onset of AMD.

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## Inspired by aero engineers

The challenge faced by Professor Marshall is how to effectively control the energy from the laser to avoid damaging the surrounding tissue.

His inspiration came whilst at a conference in America: *"I inadvertently found myself in a meeting of aerospace engineers who were discussing heat-flow equations in relation to aircraft braking systems. They faced a similar challenge: how to modulate heat effectively to avoid damage to surrounding matter. Using mathematics we have since been able to tailor the heat-flow more effectively to target the retinal pigment epithelium alone."*

This approach to treating AMD is looking promising with a clinical trial in the pipeline. It may not be long before the ageing process in the outer retina is successfully delayed helping to prevent the onset of the symptoms of AMD.

## Breakthrough in amblyopia research

**Researchers from City University London who received a project grant of £100,000 from Fight for Sight in 2002, have made a significant breakthrough in the treatment of childhood amblyopia, or 'lazy-eye'. This has led to an important change of approach in treating patients.**

Children with amblyopia usually wear an eye patch on the good eye to make the affected eye work harder but doctors have not known for certain how long this should take. This has resulted in many children wearing a patch for up to 12 hours a day, in some cases for several years, which can be very distressing for them.

The research team found that the length of time an eye patch is worn may be significantly reduced without compromising the outcome of the treatment. In fact, most

children only need to wear an eye patch for just three to four hours a day for 12 weeks to produce the desired improvement in vision.

Dr Catherine Stewart who led the research, said: *"Children and their parents may now have a more realistic expectation of how long treatment may take. We're already seeing the impact of these findings on the treatment of amblyopia in the clinic."*

Michele Acton, Fight for Sight Chief Executive, said: *"This is great news for children with amblyopia and their parents. Wearing eye patches can be stressful and anything that reduces the time they need to be worn while still being effective is to be welcomed. We are delighted to have been able to fund this research, which will make a real difference to the lives of children affected by amblyopia."*

## Celebrities 'chit chat' for charity

Fight for Sight has teamed up with journalist Jackie Weiler and Wienerworld to produce a unique double CD, Chit Chat Celebrity Interviews. The CD contains exclusive interviews with some of the UK's best-loved entertainers and sports stars including Spike Milligan, Rolf Harris, Gary Lineker and David Gower.

The CD costs £10 and the charity will receive 50% of the manufacturer's profits.

To order a copy call **020 8206 1177** or visit **[www.fightforsight.org.uk](http://www.fightforsight.org.uk)**



# Corneal disease and infection



**Mr Frank Larkin from Moorfields Eye Hospital, pictured with Dr Sarah Zaher, and his co-investigator Professor Andrew George from Imperial College London, were awarded a two-year project grant of £125,000 in 2006 to investigate why corneal transplants fail.**

There are many types of corneal disease, which may be caused by genetic factors, age and degeneration, or infection. For patients with advanced progressive diseases a corneal transplant may be the best treatment option. Up to 40% of transplants fail within five years, however, because the

immune system rejects the donor tissue.

Dr Larkin commented: *“Our research involves testing the function and usefulness of a recently discovered ‘immune privilege’ molecule, known as IDO, in protecting transplanted corneas from rejection. IDO was first discovered in the placenta, where it is important in preventing immune rejection of the foetus in pregnancy. We have found IDO to be present in small amounts in the cornea: increasing the amount of IDO in donor cornea may be a key to preventing rejection.”*

Understanding why corneal transplants fail will help doctors to improve the success rate of the procedure.

## Stimulating the body’s natural defenses

If the cornea becomes infected doctors may prescribe antibiotics. The availability and cost of manufactured antibiotics are major issues, however, particularly in the developing world, as is our increasing resistance to these drugs.

The good news is that researchers have discovered that the cornea produces its own natural antibiotics called antimicrobial peptides (AMPs).

Professor Harminder Dua from Nottingham University, right, was awarded a three-year PhD Studentship of £77,000 for Imran Mohammed to investigate how production of these natural antibiotics could be stimulated further during infection as an alternative to using manufactured antibiotics.

This research, now in its second year, could have significant benefits for treating the millions of cases of corneal infection diagnosed each year.



## Spotlight on diabetic retinopathy

**The incidence of diabetes is increasing at a startling rate and diabetic retinopathy, a common side-effect of the disease, is now the leading cause of blindness amongst the working-age population in developed countries.**



Diabetes causes blood vessels in the retina to become progressively dysfunctional leading to leakage and vessel closure. A deficit in blood delivery can eventually lead to the growth of fragile new blood vessels on top of the retina, which bleed and cause scarring. Permanent sight loss may occur if the condition is not identified early enough and presently there are limited therapies for this debilitating condition.

Dr Tim Curtis from Queen's University of Belfast, pictured, was awarded a three-year PhD Studentship of £80,000 for Joanna Kur to research substances in the body called advanced lipoxidation end-products (ALEs), which are known to accumulate in patients with diabetes and are believed to damage the cells of the retina.

Dr Curtis is working on ways of reducing and preventing ALE formation in the body. He said: *"Thanks to the support provided by Fight for Sight, we are hopeful that our work will lead to the development of new medical therapies for the treatment of diabetic retinopathy based on the targeting of ALEs."*

This project is now in its second year.

Fight for Sight also awarded a three-year project grant of £150,000 in 2007 to Professor Alan Stitt from the Royal Victoria Hospital in Belfast. Professor Stitt is researching the therapeutic potential of a substance in the body called erythropoietin (EPO), which is effective in protecting many tissues and organs from injury. Although its role in diabetic retinopathy is as yet unclear, Professor Stitt's

hypothesis is that EPO may protect against the damaging effects of new blood vessel growth.

He commented: *"Our research seeks to understand the role of EPO in all aspects of this disease and could lead to an important advance in the treatment of diabetes-related blindness. We are seeking novel ways to enhance EPO's beneficial effects on the retina and its tiny blood vessels and thereby prevent some of the early and late changes occurring in diabetic retinopathy."*

These projects offer real potential to better understand, and to find new treatments for, one of the UK's most prevalent and devastating eye diseases.

## Understanding glaucoma

**Primary open-angle glaucoma is the most common form of glaucoma in the UK, affecting 2% of people over the age of 40.**

The condition arises when the flow of fluid in the eye becomes blocked leading to a build-up of pressure in the eye and damage to the optic nerve. Doctors do not yet know for certain why this blockage occurs.

This is the focus for Professor Ian Grierson's research at the Royal Liverpool University Hospital. Professor Grierson was awarded a three-year PhD Studentship of £72,000 for Stephen O'Reilly to investigate the hypothesis that the blockage is caused by the failure of the muscle-action of the cells

of the eye's drainage system weakening over time.

Their research, now in its second year, has already identified structures in the cells of the eye's outflow system called CLANS (cross linked action networks) that may interfere with the important contractile functions of these muscle-like cells.

Because of the silent and progressive nature of the disease, regular eye examinations with an ophthalmologist are vital. With early detection, glaucoma may be treated effectively before significant vision loss occurs.

## Corneal deterioration in aniridia

Aniridia is a rare genetic disease in which the iris does not develop fully and the cornea deteriorates leading to blindness. The disease may be associated with other eye conditions such as glaucoma, corneal disease, cataract and optic nerve disease.

Dr John West from Edinburgh University was awarded a three-year PhD Studentship of £80,000 in 2006 for Panagiotis Douvaras to study the causes of corneal deterioration in aniridia.

Dr West said: *"Although it is widely believed that the corneal deterioration is caused by a deficiency in special stem cells called limbal stem cells, several factors are probably involved and it's important to know whether stem cells really are affected."*

This research will provide important information to help develop targeted treatments to prevent corneal deterioration and restore vision.

## Eye cancer: appeal update

Thank you to everyone who responded to our Christmas appeal, which featured Dr Sarah Coupland's research into treating eye cancer. Half of all people who develop eye cancer are likely to die because they have a fatal form of the disease that spreads to the liver.

So far you have donated £13,000 including Gift Aid, which will go towards funding more vital research into this devastating disease.

## New programme grant for translational research

Fight for Sight has announced a new five-year programme grant for translational research that has clear and demonstrable benefits for patients. A grant of up to £0.5m is available. All applications have now been received and a final decision will be made in May 2008.



## Golden anniversary

**Dorothy Tuwie and her husband Harold, pictured, have been supporting Fight for Sight since Dorothy was first treated by surgeons at Moorfields Eye Hospital in 1991.**

The couple celebrated their 50th wedding anniversary with a party for 60 of their closest family and friends and asked for donations in lieu of presents, raising nearly £1,000 for the charity.

Are you celebrating a special anniversary or birthday and thinking of raising money for charity at the same time? Get in touch with Fight for Sight on 020 7929 7755 for help and information on organising your special event.

## 'Antiques Roadshow' visits Northampton

Fight for Sight's Northamptonshire Committee are hosting an evening with Henry Sandon, china and ceramics expert from The Antiques Roadshow, on Saturday 15 March 2008 in the Great Hall of St Andrew's Hospital, Northampton. This is a one-off opportunity to dig out those family

heirlooms and find out how valuable they are.

Tickets cost £20 including buffet and a drink, and £5 for each item valued by Henry. The evening runs from 6-8pm with a talk afterwards from Henry on his experiences as a self-confessed 'Pot-aholic'.

Contact Yvonne Mitton on **01604 505716** for further details.

## Legacies: a lasting contribution

More than 40 people remembered Fight for Sight in their will who, together, left us £654,000 last year. Legacies are an important source of income for Fight for Sight, enabling us to fund much needed research into eye disease.

Leaving a legacy is also an incredible way for your generosity to last beyond your own lifetime.

If you would like to discuss leaving a legacy to Fight for Sight please contact Annu Mayor on **020 7929 7755** in strictest confidence.

## Art competition raises funds

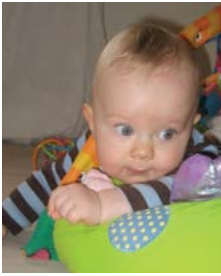


**An art competition organised by the Lesley Arkin Optometrist practice in Stony Stratford near Milton Keynes, took place during December 2007 raising £835 for Fight for Sight.**

More than 70 paintings were entered into the competition, which were available to buy with 15% of proceeds going to the charity. Pictured above from left, Hali Sun, David Pedley, local artists Diana Winkfield who judged the event, Lesley Arkin and Carol Higgins.

If you would like to organise an event to raise money for Fight for Sight contact Rowena Finn on **020 7929 7755** for more information.

## Sailing the UK to save Theo's sight



**One-year old Theo Holroyd, left, was born with a rare genetic eye condition called Leber's congenital amaurosis (LCA), an incurable condition resulting in severe sight loss from birth.**

Major advances have been made recently in the field of gene therapy to treat childhood blindness. Last year Fight for Sight supported the work of Professor Tony Moore from Moorfields Eye Hospital who undertook the world's first clinical trial of gene therapy in patients with LCA. More research and funding is needed, however, before gene therapy becomes available to patients.

Fortunately, Theo's Godfather, Mike Brooke, is determined to help Theo to see. Mike is a professional yachtsman turned fundraiser, and is preparing to sail a 19-foot Cape Cutter named "Theo's Future", around the UK to raise £27,000 for a vital piece of equipment for Professor Moore's work.

Mike sets sail on 5 July 2008 for 3 months. To sponsor him or to join him for part of his journey, contact Annu Mayor on **020 7929 7755** or visit **[www.justgiving.com/theosfuture](http://www.justgiving.com/theosfuture)**

## Artist raising awareness of macular degeneration

Adam Hahn is a successful portrait artist whose work has appeared in many galleries including the National Portrait Gallery in London. He is working on a project to help raise awareness of eye disease by painting a series of portraits of people with macular degeneration, as seen through their own eyes.

Adam said: *"My grandmother was affected by macular degeneration and I wanted a better understanding of the world as she saw it."*

An exhibition of Adam's work will take place at Mascalls Gallery in Paddock Wood, Kent, from 12 June until 17 July 2008.

If you are interested in finding out more about Adam's work or in meeting him as part of this project, please contact him on **07866 893 669** or **[adam@mascallsgallery.org](mailto:adam@mascallsgallery.org)**



## Collection box at Sainsbury's

A collection box in Sainsbury's on Cromwell Road in Kensington, London, raised more than £500 for the charity. And two of our volunteers, from left, Rachel Anstruther, and Joan Turk, donned silly glasses for the day recently to raise money outside the store.

Collection boxes may be placed in your local optician, supermarket, newsagent, shops, doctor's surgery or even in your own home.

If you can collect for us please contact Rowena Finn on **020 7929 7755**.

# 2008 Events Diary

Hundreds of supporters take part in our events each year helping to raise thousands of pounds for eye research. To get involved contact Rowena Finn on **020 7929 7755** or email [events@fightforsight.org.uk](mailto:events@fightforsight.org.uk)

March	15	Antiques Roadshow, Fight for Sight Northamptonshire
April	13	Flora London Marathon
May	25	Albert Bartlett Edinburgh Marathon
July	2	Annual Golf Day, Fight for Sight Warwickshire
	6	British 10K
August	9-10	The Mazda London Triathlon
September	5	Fight for Sight Clay Pigeon Shoot

## Cycling to save his sight

Nick Tuftnell, pictured left, from Bristol set himself a unique challenge recently: to cycle five times the height of Mount Everest to raise funds for choroideremia research, a genetic eye disease that affects several members of his family.

Nick and his friend, Steve Greetham, right, took ten days to complete the challenge and have so far raised more than £5K.

Nick said: *“Current research into choroideremia is looking really hopeful. By doing challenges such as this cycle ride I can actually affect my future.”*

All money raised by Nick is being used to fund research at Imperial College London to find a treatment for choroideremia.



## London Marathon

Twenty runners are preparing themselves for the London Marathon on 13 April, including Kate Taylor, an international lacrosse player who represented Wales at the World Championships in 2005. Last year, however, Kate sustained a serious eye injury during a game which brought her lacrosse career to an end.

She said: *“After having experienced serious eye problems recently it’s made me realise the importance of eye research.”*

Kate is also a trained sports therapist and personal trainer and is planning to use these skills to reach her fundraising target.

We wish all our runners the best of luck and look forward to seeing you on the day.

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Royal Patron: HRH The Duke of York KG KCVO President: The Right Hon Baroness Boothroyd OM PC

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