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RESEARCH INCREASES IN THE LABORATORIES AND CLINICIS

With an increased amount of research supported and increased voluntary income, the Centre can look back on a satisfactory year with fundraising and administrative costs running at less than 20p in the £.

Thanks to the James Tudor Foundation and other Charitable Trusts there will be a considerable expansion of research in Bristol, not only in the laboratories but also in the ophthalmic clinics; an increasing number of clinical trials are taking place to evaluate new drugs and treatments.

New appointments being supported in Bristol include: a Post-Doctoral Research Fellow to develop new treatments for inflammatory eye disease which is a major cause of severe visual impairment in the working age population. A Clinical Research Fellow to investigate the role of a defined population of immune cells that regulate the immune response and enhance treatments for inflammatory eye disease. A PhD student to carry out a comparative study of retinal neural progenitor

cells as part of the research group aiming to transplant cells from donated eyes to the living eyes of those who suffer from currently untreatable causes of sight loss such as age related macular degeneration, diabetic retinopathy, inflammatory eye disease, inherited retinal disease and failed retinal detachment surgery.

Outside Bristol the Centre has awarded two new PhD Studentships in Cardiff University and University of Manchester and in Yorkshire the amount of research being supported by Yorkshire Eye Research is increasing and funds continue to be raised to establish a Chair of Ophthalmology in Leeds.

The Trustees have decided the Centre should join the Fundraising Standards Board to take advantage of a new scheme for self-regulation which supports best practice in fundraising.



Professor Andrew Dick, Director of Research, Mr Roderick Shaw, Chief Executive of the James Tudor Foundation and Colonel Sam Gausson, Director



DIRECTOR'S REPORT

by Professor Andrew Dick MD, FRCP, FRCS, FRCOphth

With NERC's support we continue to flourish in our research endeavours which have direct impact on patient welfare and health.

Our primary mission is to investigate and understand the causes of blindness and translate our laboratory findings directly into improved therapies or better ways of implementing health care. This is a rather tall order to undertake and therefore we focus utilising our research and clinical strengths within the Academic Unit of Ophthalmology in collaboration with the research strengths of one of the top 50 research universities in the world. I will expand later on the excitement and success of our interactions with other departments within the university and with others world-wide that lead to a multi-disciplinary approach to research and development, opening alternative approaches of investigating disease.

In my previous report I was happy to announce an essential increase in senior staffing levels to maintain our progress. This year with NERC support we have consolidated the research base with grant incomes from other trusts and industry facilitating our expansion with junior researchers and PhD students within the unit. Our work continues on our themed approach. The Corneal and Tissue Bank under the

directorship of Professor John Armitage thrives with leading roles in guidance of the use of tissue for transplantation backed by evidence of on-going laboratory and clinical research. In consort Dr Monica Berry thrives internationally with her work on the constitution of the ocular surface and how this is maintained in health and disordered in dry eyes or due to physical and chemical trauma. Together they provide the research network for reconstituting the cornea and the ocular surface following corneal transplantation.

Major causes of visual loss in the working age population include Diabetes and ocular inflammation. Dr Amanda Churchill has recently profited from grant funding to continue her exciting work in collaboration with Dr David Bates in the Department of Physiology at the University of Bristol on chemicals such as VEGF (Vascular endothelial Growth Factor) and its influence in the progression of blinding diabetic retinopathy. Our laboratories, as part of the immunology laboratories in the School of Medical Sciences at the University of Bristol continue to investigate the intricacies of the immune system and its dysregulation during ocular inflammation and uveitis. This work has resulted in an international award for the best research work in the field of ocular immunology in 2005 by DUAG (Deutsche Uveitis-Arbeitsgemeinschaft, the roof

organisation of all German uveitis patient interest groups). Underpinning all our research is our development of how tissue regenerates after insult such as diabetic retinopathy, macular degeneration and inflammation (uveitis) with our on-going projects on retinal stem cells under the guidance of Dr Eric Mayer. Our work in this area has made significant advances with isolation of specific stem cell population and our knowledge that their function and ability to regenerate is inhibited by other cells within the retina following degeneration or inflammation. This fundamental advance was awarded in 2006 the Founder's Cup, a prize awarded for research endeavour at the international Oxford Ophthalmological Conference.

Of course all this laboratory research requires to be put into practice and we continue to expand our Clinical Research Facility in which we are able to translate our findings into trials to assess the effect of modern therapies in disease. This very much relies also on the expertise of the consultant body at the Bristol Eye Hospital where we can use their clinical skills and expertise to study improved delivery of service in glaucoma and cataracts and corneal grafting and new therapies for diabetes, age-related macular degeneration and other macular disorders and for uveitis. I am proud to

announce that the culmination of and testament to all this hard work and expertise in the unit is the honour of myself presenting the biennial Duke Elder Lecture at the Royal College of Ophthalmologists in 2007 and Mr Richard Harrad, Consultant

Ophthalmologist at the Bristol Eye Hospital who will deliver the Edridge-Green lecture in vision science at the same meeting. With NERC support this has been made possible. We also embrace research throughout the UK in a NERC-sponsored annual

Vision research meeting which is held in Bristol to forward the benefits of inter-university collaboration and education to encourage researchers in the quest to treat blinding conditions.

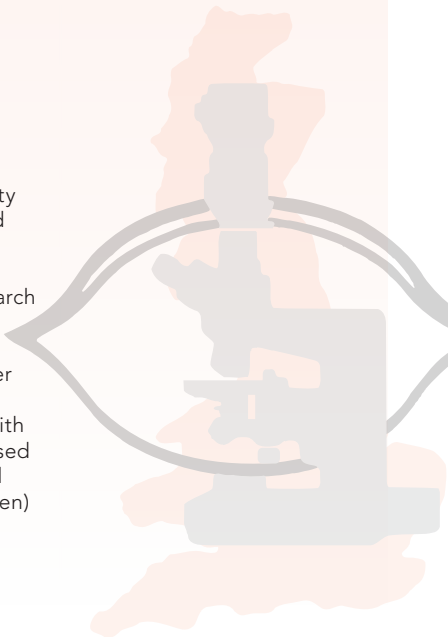
MULTI-DISCIPLINARY RESEARCH

Over the past 10 years there has been an increasing drive to get biologists, biomedical and clinical scientists to engage with other scientists in non-medical or related disciplines and collaborate. The University of Bristol certainly endorses such approaches and continues to push strongly such collaborations. We have benefited from this and have actively sort fertile links. For example, Dr Monica Berry has for sometime succeeded in her research programme with physicists in investigating the properties of mucins on the ocular surface. There are joint grants, PhD students and post-doctoral researchers from both disciplines bringing together each individual strengths and expertise to the project. In immunology, Dr Lindsay Nicholson works with mathematicians to model how the immune system may respond to infection or how it activates in autoimmune and in our work with retinal stem cells we actively collaborate with electrical engineers and chemists to define the

function and activity of these cells.

Such collaborations are important to open doors to newer ways of investigating and solving biological questions. Moreover, our work within the unit is focused to dove-tail the major research themes and success of the University of Bristol. For example, the work on VEGF in diabetic retinopathy and macular degeneration is within the successful overarching cardiovascular research theme, our work with immunology is well embedded in the world-class infection and immunity theme of the university and our retinal stem cell work is in collaboration with the leading neuroscience research theme of the university. Visual development in children is maximised under the leadership of Dr Cathy Williams in collaboration with the internationally recognised ALSPAC (Avon longitudinal study of parents and children) within the university. It is with this approach that we can maximise our research

potential and maximise the gains for patients in the long run. This is already reaping success with joint grants and PhD students and the university investing in us by attracting exceptional talent to further underpin the research themes in both cardiovascular science and in regenerative medicine and stem cells.



INVESTIGATING THE IMMUNE SYSTEM TO OVERCOME INFLAMMATORY EYE DISEASE

by Dr Lindsay Nicholson MRCP, PhD, Senior Research Fellow & Professor Designate

The immune system provides a robust defence against infection. It does this by identifying germs and targeting them for destruction in a number of different ways. Sometimes though, targeting goes wrong and instead of curing an infection, the immune system damages normal tissues. In the eye this leads to a number of different conditions which together are described as 'posterior uveitis'. Uveitis (inflammation) involving the posterior segment (back) of the eye is second only to diabetic eye disease as a cause of visual disability and

blindness in adults of working age. The majority of cases are not caused by infection itself, but by a failure of the normal immune response to work properly, and some cases are associated with other autoimmune diseases such as multiple sclerosis.

The research in our group is focussed on understanding how the immune system behaves when it attacks the eye. We do this by analysing the cells that are involved. We focus on specialised cells that control the immune response, called T cells, and on cells called macrophages that are

drawn to sites of immune activation, where they cause damage. By understanding the specific molecules that such cells use to create an immune response in the eye, we will be better able to find new methods for treatment. Currently the drugs that are given to patients with posterior uveitis, such as steroids, usually have powerful general effects throughout the body. When we know what molecules are causing damage in the eye during disease, we can target these molecules more precisely and develop improved treatments.

DEVELOPING A BLOOD TEST TO OPTIMISE INFLAMMATORY EYE DISEASE TREATMENT

by Dr Richard Lee BMedSci, MRCS, MRCOphth

Inflammatory eye disease is a leading cause of blindness in the working age population, affecting an estimated 75 people per 100 000 in the UK every year, and its treatment depends on the use of drugs to suppress the immune system. At present, establishing the type and amount of immunosuppressive therapy required to control an individual's eye inflammation is a matter of trial and error, potentially exposing patients to the side-effects of drugs to which they do not respond and delaying control of their disease. Consequently, it would be a great advance if we could predict an

individual's response to immunosuppression before starting treatment, enabling our choice of therapy to be optimized from the outset, and we are developing a blood test to achieve this.

The test uses key cells in the immune system, called lymphocytes. These are isolated in the laboratory from patients' blood samples, labeled with special biological substances and exposed to a range of immunosuppressive drugs. Advanced laboratory techniques are then used to assess the effect of the drugs on the labeled cells, giving us a measure of whether they are 'responsive' to treatment.

Our initial results have been very promising with a good correlation between treatment response measured in the laboratory and clinic. We now aim to validate this laboratory test for clinical application, and the National Eye Research Centre has supported the recent appointment of a Research Assistant to help us achieve this.

Our experiments have also characterised a sub-group of lymphocytes which are 'resistant' to steroids, and we have identified a protein on the surface of these cells which enables them to be distinguished from their steroid 'sensitive'

counterparts. Further studies to establish the function of these steroid 'resistant' cells are now being pursued as part of a Clinical Research Fellowship set up with the support of the National Eye Research Centre. This work

will also determine whether targeted drug therapies (using monoclonal antibodies) can 'sensitise' previously steroid resistant cells. If successful, such a discovery would not only potentially benefit patients with inflammatory

eye disease, but also sufferers of a broad range of immune mediated conditions in which steroid resistance is a well recognized problem, such as arthritis, inflammatory bowel disease and transplant rejection.

ESTABLISHING THE BEST TREATMENT FOR THYROID EYE DISEASE

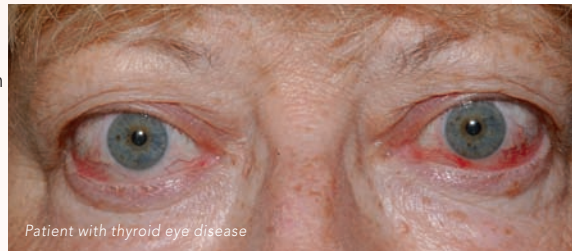
by Dr Richard Lee BMedSci, MRCS, MRCOphth

The Combined Immunosuppression and Radiotherapy in Thyroid Eye Disease (CIRTED) trial has been set up by researchers in Bristol in collaboration with ophthalmologists from Moorfields Eye Hospital in London. It is the largest study ever to be conducted in this field and promises to answer important questions about the risks and benefits of immunosuppressive treatments for patients with Thyroid Eye Disease, which affects an estimated 400,000 people in the United Kingdom. The National Eye Research Centre is joining forces with two other medical charities (Moorfields Eye Hospital Special Trustees and the United Bristol Hospitals Special Trustees) to support this work and a Clinical Research Fellow has been appointed to run the trial, which started recruiting patients at the beginning of this year. A steering committee which includes Thyroid Eye Disease experts from around the

world has recently been established to supervise the trial's progress, and The Western Eye Hospital, London and University College London Hospitals have been set up as additional study centres. Further support from Moorfields Eye Hospital Special Trustees and the National Hospital of Neurology and Neurosurgery at Queen Square has also been secured to run an ancillary Magnetic Resonance Imaging (MRI) study alongside the trial, which promises to give new insight in to the biological processes underlying Thyroid Eye Disease and set a new standard for grading disease severity.

The principal goal of the trial is to establish whether (i) a drug which suppresses the immune system

(called azathioprine) or (ii) radiotherapy (directed behind the eyes) are effective treatments for Thyroid Eye Disease. It is unusual to test two treatments in one study and we are able to achieve this efficiency using an advanced ('factorial') trial design. Great efforts have been made to ensure the trial is conducted to the



Patient with thyroid eye disease

best standards of clinical research and an important part of this is the use of placebo treatments (which appear to be the same as the treatment which is being tested, but do not contain the 'active' ingredient). Hence we have manufactured placebo tablets which look exactly like azathioprine, and

set-up a 'sham'-radiotherapy procedure. We are also working with researchers from the Centre for Appearance Research at the University of the West of England to assess the benefits of each treatment from the patients' perspective

through the use of detailed questionnaires and interviews.

CIRTED is an example of collaborative clinical research which involves patients and research resources from several institutions

with a common goal of establishing a proper base of medical evidence on the use of immunosuppressive treatments for the benefit of future Thyroid Eye Disease sufferers.

PROGRESS IN CORNEAL GRAFT REJECTION RESEARCH

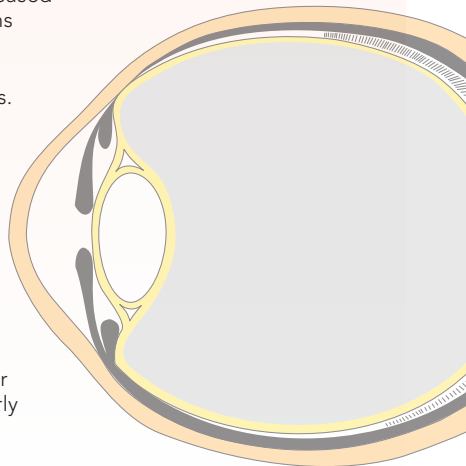
by Dr Sue Nicholls Research Fellow

The cornea can be thought of as a modified form of skin at the front of the eye. If undamaged it contains few cells of the immune system (leukocytes) compared with normal skin and no blood vessels (blood vessels stop at the boundary between the white of the eye and the cornea). This confers upon it a degree of "immunoprivilege" – in other words the immune response within it is suppressed in comparison with other tissues, a feature also true of other parts of the eye. It explains how the cornea was one of the first types of graft to be successfully transplanted and is thought to be an adaptation to prevent its delicate architecture being incidentally damaged by immune reactions to bacteria or viruses. Today, approximately 3000 corneal grafts are performed per year in the UK and many more in Europe, the USA and other parts of the world, but even with the best treatments, approximately 25% of grafts have been

irreversibly rejected by 10 years or so after the transplant operation.

Our research into corneal graft rejection is currently focusing on the anterior chamber, because its fluid bathes the corneal endothelium, the layer of cells on the back of the cornea. Until now this has received less attention than the cornea itself and events in the anterior chamber during rejection are poorly understood. In an undiseased eye, the chamber contains substances that help to protect the endothelium from attack by leukocytes. However this protective mechanism becomes overwhelmed during rejection, when the chamber becomes heavily infiltrated by a whole range of different types of leukocyte. By analysing these cells we are trying to understand their characteristics, particularly the role of macrophages,

which could have a number of possible functions in rejection. Interestingly, we have found that even when the corneal endothelium is under attack, there are still some unexpected protective mechanisms in operation. Our long-term aim is to learn how to manipulate these mechanisms to tip the immune response away from rejection in favour of graft survival and help those patients for whom current therapy fails.



OPHTHALMIC GENETIC RESEARCH

by Jim Carter, Research Assistant

One of the primary roles of Molecular Ophthalmology is the diagnosis of genetic mutations; changes in genes that lead to the development of eye disease. Our screening process allows us to examine large numbers of different patients and families for a whole variety of different conditions.

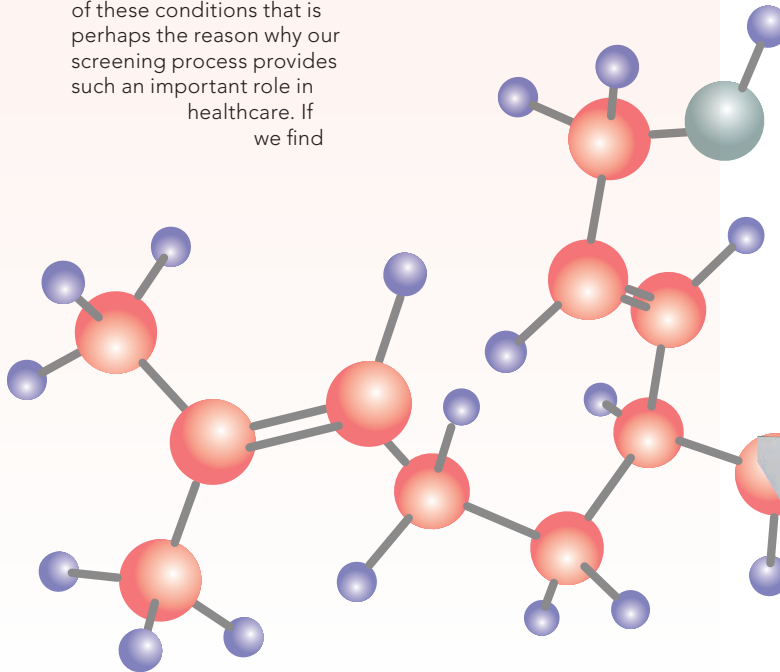
Dominant Optic Atrophy (DOA) is a degenerative condition, affecting around 1:10,000 people, that can lead to severe vision loss. It is also a difficult condition to diagnose, and can be mistaken for other eye diseases. The majority of mutations causing DOA are found in the OPA1 gene, and it is this, coupled with its tricky diagnosis that makes it an excellent target for our screening work. So far this year, we have carried out three OPA1 screening sessions, and have found eight mutations, two of which have not been previously reported. We have also identified 13 other sequence changes, of which 3 are novel.

Genetic testing, however, is not limited to rare disorders. In more common conditions, such as glaucoma, it has been shown that particular genetic

mutations can predict more severe disease. Glaucoma patients can be screened for changes in several different genes, including the MYOC and CYP1B1 genes. We have been involved in exactly this form of screening as well as several other less common developmental eye conditions e.g. Peter's Anomaly is linked to the PAX6 gene and Riegers Syndrome has several targets for screening, including FOXC1 and PITX2. There are a whole range of other eye conditions that have a genetic and therefore a hereditary basis and offering genetic screening allows individuals to understand the exact cause of their condition.

It is the hereditary nature of these conditions that is perhaps the reason why our screening process provides such an important role in healthcare. If we find

disease-causing mutations in a single family member, we can then proceed with screening other relatives. There is also the potential for pre-natal diagnosis. Predictive testing can be particularly advantageous in children, where early detection of a genetic change can allow closer monitoring and lead to earlier and more effective treatment. At the very least it enables us to provide better counselling and advice to families. We are very proud of what we can offer in Bristol and should like to acknowledge the generous support of The Underwood Trust without which this would not be possible.



IMPROVING TREATMENT FOR 'LAZY EYE'

by Professor Irene Gotlob, University of Leicester

Amblyopia (lazy eye) is the most common eye disease in children occurring in approximately 4 in 100. It consists of a weak eye due to suppression of visual information passed between the eye and brain. It can be caused for example by a turn of the eye or a difference in the power of the glasses between both eyes. In children up to approximately seven years of age plasticity of the brain allows treating amblyopia by patching the good eye and forcing the amblyopic eye to see. Little is known about best treatment methods for amblyopia and treatment outcomes are often poor.

In a previous study we used a new temperature sensitive device called the "occlusion dose monitor" placed on the eye patch measuring the effective time of patching. We found that the more hours patched per day the better the visual improvement. However, most children patched only a fraction of the time prescribed.

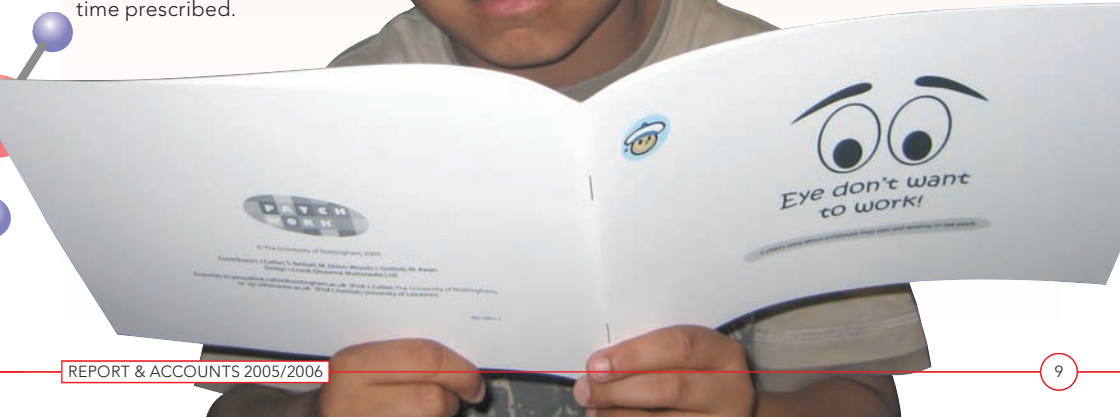
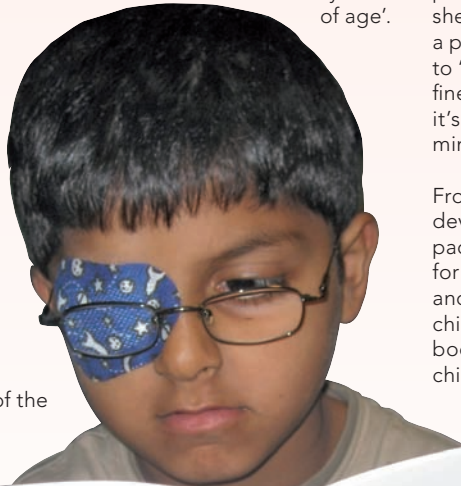
We therefore, performed interviews in 25 families to find out what causes the difficulties in patching. The interviews showed that patching was arduous. Parents were obliged managing patching therapy with little information involving tensions with children. For example a mother of a 5-year-old girl said:

'It's hard. She thinks it's not normal. She thinks that she's disabled; she's not like other children. We have tried explaining to her that it's nothing serious but it is hard to explain to children, especially when she was only five years of age'.

Parents did not believe in the treatment. Information they were given in clinic was insufficient. Parents were likely to abandon or modify the treatment themselves if no further improvement was detected or if the child suffered socially or educationally. Parents felt that strategies such as reward systems, explanation, improving the appearance of the patch and establishing a routine contributed to better adherence to patching. A father of a 7-year-old girl said:

'When she first started wearing patches she used to 'ave a teddy that she put a patch on as well, it made it so she weren't the only one w' a patch 'cos the teddy used to 'ave one on so she was fine...as long as you make it so it's not a big deal...they don't mind.'

From the interviews we developed an educational pack containing information for parents, teachers, siblings and friends, the amblyopic children and a quotation booklet of parents and children's experience with



amblyopia diagnosis and treatment and a children's story book about amblyopia. In addition, families received a 'passport' showing differing members of staff in ophthalmology and what their work entails, together with stickers.

We are now investigating whether the educational material improves adherence and visual outcome of patching. The study involves a control group receiving usual NHS treatment without additional material and an interventional group receiving the educational material.

Adherence is monitored using occlusion dose monitors.

If educational intervention improves outcome this has the potential to be integrated in standardised NHS treatment and in the treatment of thousands of children worldwide.

SEEKING A CURE FOR MACULAR DEGENERATION

by Linda Bakker, NERC funded PhD student, and Dr Malgorzata Rozanowska, School of Optometry and Vision Sciences, Cardiff University.

Age-related macular degeneration (AMD) is the leading cause of blindness in the developed world, and is estimated to cause visual impairment in almost 200,000 people aged 75 years or over in the United Kingdom. Although there are many known risk factors for AMD, (including age, smoking, genetic background, dietary factors etc), the exact development of this condition is not yet fully understood. AMD affects the retina – the part of the eye which receives light signals. The macular region, in the centre of the retina, is most affected and AMD therefore results in a loss of central vision.

It is known that the retina contains very high levels of the

essential omega-3 fatty acid, docosahexaenoic acid (DHA). DHA is vital for normal function of the retina, but unfortunately, it can become damaged through the process of oxidation. This would result in a loss of the positive effects of DHA, and due to the products formed, it may also cause detrimental effects. The aim of this project is to investigate whether oxidised (i.e. damaged) DHA can be harmful to the retina – particularly when light is also

involved – and whether this may play a role in the onset of AMD.

The retina consists of several types of cells, including photoreceptors which sense light, other nerve cells which carry the light signal to the brain, and retinal pigment epithelium (RPE) cells. RPE cells form a layer in the retina adjacent to the photoreceptors, for which they play an essential support role. They can also be grown in the laboratory and can be treated in different ways to try to understand how specific chemicals and

PhD Student at work

conditions can alter their function. We have found that when RPE cells are exposed to oxidised DHA, their function changes and they begin to die. This effect increases when the cells are also exposed to light. This suggests that more needs to be done to protect DHA from becoming damaged – possibly through

dietary intake of antioxidants by eating a healthy balanced diet, and through stopping smoking which can cause damage to many molecules – not just DHA.

Future research will investigate exactly how oxidised DHA actually causes RPE cell damage, and

whether antioxidants are able to prevent this damage. Overall, although AMD can not currently be cured, a greater understanding of the mechanisms by which it develops will aid in the search for new strategies and treatments to prevent or slow down the onset of the disease.

CHILDREN'S EYE RESEARCH

by Dr Cathy Williams Consultant Paediatric Ophthalmologist

The Children of the Nineties study (also known as Avon Longitudinal Study of Parents and Children – ALSPAC) continues and the “children” are now young people of 14 – 15!

We have completed a study (conducted by Dr Margaret Howard whose PhD was funded by NERC) on how vision affects physical co-ordination in 7-year olds. This confirmed for the first time in a population study that children with strabismus and other vision problems are likely to have some specific problems in motor co-ordination. This new information will be helpful in advising parents and teachers as to what to look out for and give support for where needed.

We have also recently completed collecting a unique library of pictures of the children's eyes, taken when they were aged 12, using a

state-of-the-art non-mydriatic (no eye-drops) fundus camera generously provided by NERC. This library is about to be systematically reviewed (by research optometrists also funded by NERC) and any abnormalities graded and described. In a pilot study carried out with colleagues in London at the Centre for Circulatory Health, some of these photographs have already been analyzed using a new technique to measure blood vessels. The exciting results

suggest important relationships between the tiny blood vessels at the back of the eye, and the child's weight at birth and their cardiovascular health at 7 and 9 years of age. It seems therefore that even in childhood, the eye may be able to provide early warning signs about later risk of heart disease. We are continuing this collaboration and also will use the pictures to look for early signs of optic nerve abnormality (as seen in glaucoma), and of myopic



degeneration (which can occur in short-sighted people), when we are joined by the team of NERC-funded optometrists.

NERC has been a major supporter of the Children of the Nineties study vision research theme, helping us to collect unique data that have been published

in journals and at meetings internationally. We look forward to reporting back further findings next year

ADVANCES IN STEM CELL RESEARCH

by Dr Eric Mayer, Department of Health Clinical Scientist Award

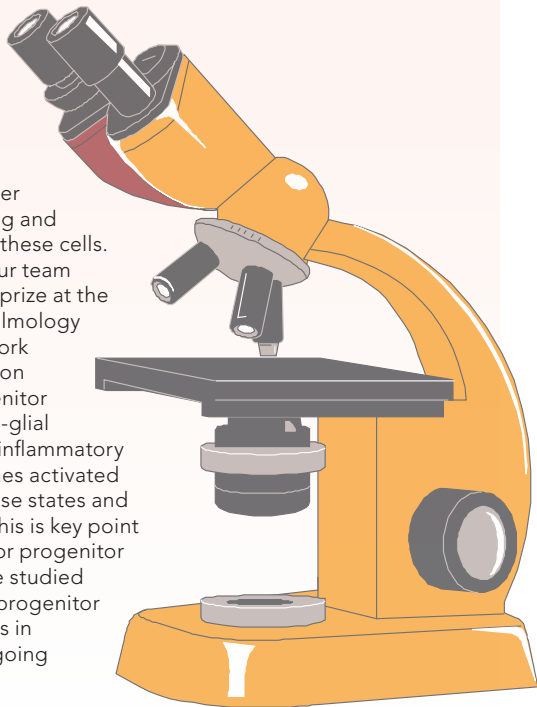
The Retinal Progenitor Cell group work with cells from the retina (the light-sensitive tissue at the back of the eye) which like brain and spinal cord tissue forms part of the central nervous system. These tissues were traditionally thought to be unable to repair themselves.

This view has changed with the identification of neural progenitor cells (a type of stem cell) which we identified within adult human retina. These cells have the potential to generate new / replacement cells for the retina. By understanding, manipulating and characterising these cells our group hopes to provide new solutions for understanding and treating retinal disease. Such diseases cause currently untreatable loss of vision. Our group works at the interface between the Laboratories of the University of Bristol, Bristol Eye Hospital (UBHT) and the National Corneal Transplant Service (NCTS) Eyebank. We work with tissue generously donated to the

NCTS Eyebank with consent for research.

Over the past year, neural progenitor cells from samples of adult human retina have been enriched in the laboratory by separating them from other retinal cells. By working with purer cell populations we have come closer to characterising and understanding these cells. A member of our team was awarded a prize at the Oxford Ophthalmology Congress for work on the interaction of neural progenitor cells with micro-gliial cells (a type of inflammatory cell that becomes activated in various disease states and tissue injury). This is key point of interaction for progenitor cells and will be studied along with the progenitor cells themselves in this groups ongoing research.

Since this project began in 2000 it has been supported by the NERC and would not have been able to achieve what it has without ongoing generous support.





(Part of the National Eye Research Centre)
Reg. Charity No. 294087

Eye Department, Clarendon Wing, Leeds General Infirmary, Leeds LS2 9NS
Tel 0113 292 2837

Appeal Secretary Ms Jo Hartigan

2005 was a busy year for Yorkshire Eye Research (YER), we updated and produced new promotional materials to reflect our new name and logo and created a new look newsletter 'InSight'. We also attended the Great Yorkshire Show to promote our new image which was launched at Ripon Race Day.

Dr Pete Semple, and Dr Andy Cassels-Brown, joined Pfizer's Michael Ruthen, and Driving Instructor, Robert Henson cycling from London to Paris raising £2,687.

During the year YER funded the following research projects:

- The post of Genetic Eye Nurse
- The Genetic Diagnosis of Retinitis Pigmentosa
- Reduction of Glare in Patients with Retinal Dystrophy
- Investigating the role of FEVR Genes in Childhood Blindness
- The effect of Aqueous and Vitreous Humours on the Invasion of Primary Uveal Melanomas
- Determining the Genetic Basis of Human Strabismus,

Research successes included; the continuation of funding for a third year of the Genetic Eye Nurse as this post was proving to be a vital link between patients, treatment and research. Due to its success the NHS has now agreed to continue funding the post.

Early 2006 saw the start of a new appeal to raise money for a new RetCam for the Special Care Baby Unit at Leeds General Infirmary. This specialist piece of equipment will enable premature babies to be screened for onset of the sight threatening condition, Retinopathy of Prematurity and will enable a telescreening service to be set up.

REPORT FROM THE DIRECTOR

Last Year

Thanks to an increase in voluntary income, income overall for the year was up and our fundraising and administrative expenditure was contained at 19p in the £. We thank our increased number of individual supporters, particularly those who contribute on a regular basis. We are most grateful to the many charitable trusts who support us and also to our corporate supporters.

Successful fundraising events during the year were the Garden Party given by Mrs Henshaw Fack at Widden Hill House in her beautiful garden overlooking the Severn estuary and an enjoyable performance of 'Sleeping Beauty' at the Bristol Hippodrome when our supporters enjoyed a pre-theatre supper at the Bristol Marriott Royal Hotel. We were most grateful to the Alveston Singers and the Owls of Pill who by their concerts and carol singing, raised significant funds. Fundraising Initiatives Limited recruited several hundred new supporters who we very much welcome.

Tax Efficient Giving

Most of our supporters take advantage of 'Gift Aiding' their donations which enables us to reclaim the basic rate of Income Tax on all donations, large or small, regular or one off, when made out of income on which UK tax has been paid. Higher rate tax payers can, in addition, claim 18% tax relief on 'Gift Aid' donations.

Those who submit a Self Assessment Tax Return can donate all or part of their tax rebates to charity by indicating their wish on the form and giving the NERC unique code number UAG05YG.

There can be tax advantages in granting shares direct to the charity.

LEGACIES

We thank all those who appreciate the message in our advertisements that 'Eyes are Precious' and send a donation now and leave a legacy later to fund eye research to save sight and prevent blindness.

Everyone is reminded of the importance of making a Will and reminded that legacies to registered charities can reduce liability to Estate Duty. Shares can be left direct to a charity with savings to the Estate.

IN MEMORIAM GIFTS

The passing of a loved one can be marked by an 'In Memoriam' gift and is a very much more lasting tribute that flowers. Such gifts can be linked to a particular research project or field of eye research.

THANKS

There is still so much to be done to understand the workings of the eye and we thank all those who help in many different ways to reduce the number of people who suffer from the devastating effects of eye disease and blindness.

COMPARATIVE BALANCE SHEET

as at 31 March 2006

	Bristol £	2006 Yorkshire £	Total £	2005 £
Fixed assets				
Tangible assets	5	5	10	10
Investments	1,978,329	-	1,978,329	1,732,418
	<u>1,978,334</u>	<u>5</u>	<u>1,978,339</u>	<u>1,732,428</u>
Current assets				
Debtors	20,781	-	20,781	39,252
Cash at bank and in hand	202,702	187,141	389,843	477,605
	<u>223,483</u>	<u>187,141</u>	<u>410,624</u>	<u>516,857</u>
Creditors: amounts falling due within one year	(623,820)	(150,375)	(774,195)	(1,071,888)
Net current liabilities	<u>(400,337)</u>	<u>36,766</u>	<u>(363,571)</u>	<u>(555,031)</u>
Total assets less current liabilities	1,577,997	36,771	1,614,768	1,177,397
Creditors: amounts falling due after more than one year	(353,066)	-	(353,066)	(539,565)
	<u>1,224,931</u>	<u>36,771</u>	<u>1,261,702</u>	<u>637,832</u>
Funds				
Unrestricted funds	954,288	36,771	991,059	448,035
Restricted funds	270,643	-	270,643	189,797
	<u>1,224,931</u>	<u>36,771</u>	<u>1,261,702</u>	<u>637,832</u>

Committed future expenditure

Included in creditors above are the following amounts relating to committed future charitable expenditure:

	2006 £	2005 £
Amounts falling due within one year:		
Grants committed	635,873	958,979
Research creditors	129,070	105,267
Amounts falling due after one year:		
Grants committed	353,066	539,565
	<u>1,118,009</u>	<u>1,603,811</u>

The summarised accounts may not contain sufficient information to allow for a full understanding of the financial affairs of the charity. For further information the full annual accounts and the auditors' report on those accounts should be consulted. Copies of these can be obtained from the National Eye Research Centre, Bristol Eye Hospital, Lower Maudlin Street, Bristol, BS1 2LX. The full financial statements were approved on 11 July 2006 with an unqualified audit opinion from the auditors, Mazars have been submitted to the Charity Commission.

These accounts were prepared by: Mazars
Clifton Down House
Beaufort Buildings
Clifton, Bristol BS8 4AN

COMPARATIVE STATEMENT OF FINANCIAL ACTIVITIES

For The Year Ended 31 March 2006

	Bristol	Unrestricted funds		Bristol
	£	York	Total	£
		£	£	
Incoming resources				
Voluntary income	407,955	31,127	439,082	-
Grants received	-	-	-	57,411
Clinical trials	-	-	-	39,714
Income from investments	72,190	7,914	80,104	-
Total incoming resources	480,145	39,041	519,186	97,125
Resources expended				
Charitable expenditure				
Cost of activities in the furtherance of the charity's objects:				
Research grants paid during the year	599,268	-	599,268	20,061
Committed future charitable expenditure bfwd	(1,470,565)	(63,259)	(1,533,824)	(3,782)
Committed future charitable expenditure cfwd	967,634	63,259	1,030,893	-
Laboratory equipment grants paid during the year	19,425	-	19,425	-
	115,762	-	115,762	16,279
Cost of generating funds				
Fund raising	67,404	6,406	73,810	-
Publicity costs	12,092	-	12,092	-
Portfolio management	7,347	-	7,347	-
Support costs	9,586	707	10,293	-
Management and administration	3,535	19,288	22,823	-
Total resources expended	215,726	26,401	242,127	16,279
Net (outgoing)/incoming resources	264,419	12,640	277,059	80,846
Transfers	-	(42,649)	(42,649)	-
	264,419	(30,009)	234,410	80,846
Realised loss on disposal of investments	47,463	-	47,463	-
Unrealised loss on investments	261,151	-	261,151	-
Net movement in funds	573,033	(30,009)	543,024	80,846
Balances brought forward at 1 April 2005	381,255	66,780	448,035	189,797
Balances carried forward at 31 March 2006	954,288	36,771	991,059	270,643

Restricted funds			Total Funds 2006		2005
York	Total	Bristol	York	Total	Total
£	£	£	£	£	£
31,126	31,126	407,955	62,253	470,208	413,903
-	57,411	57,411	-	57,411	51,445
-	39,714	39,714	-	39,714	44,594
-	-	72,190	7,914	80,104	87,042
31,126	128,251	577,270	70,167	647,437	596,984
52,388	72,449	619,329	52,388	671,717	526,838
(66,205)	(69,987)	(1,474,347)	(129,464)	(1,603,811)	(1,805,757)
87,116	87,116	967,634	150,375	1,118,009	1,603,811
-	-	19,425	-	19,425	9,626
73,299	89,578	132,041	73,299	205,340	334,518
476	476	67,404	6,882	74,286	66,658
-	-	12,092	-	12,092	12,720
-	-	7,347	-	7,347	6,923
-	-	9,586	707	10,293	12,254
-	-	3,535	19,288	22,823	13,503
73,775	90,054	232,005	100,176	332,181	446,576
(42,649)	38,197	345,265	(30,009)	315,256	150,408
42,649	42,649	-	-	-	-
-	80,846	345,265	(30,009)	315,256	150,408
-	-	47,463	-	47,463	(1,190)
-	-	261,151	-	261,151	101,401
-	80,846	653,879	(30,009)	623,870	250,619
-	189,797	571,052	66,780	637,832	387,213
-	270,643	1,224,931	36,771	1,261,702	637,832

*Every day forty people are registered blind.
Your support today
could help many people look forward
to a brighter future*

PATRON

HRH Prince Michael of Kent GCVO

VICE PRESIDENT

Professor D L Easty MD, FRCS

TRUSTEES

Mr Tim Thom (Chairman)

Professor John Armitage BSC, PhD *

Professor Andrew Dick MD, FRCP, FRCS, FRCOphth *

Mr Rob Doran FRCS Ed, FRCOphth *

Mr Robert Drewett

Mr Rodney Grey FRCS, LACP *

Mr Michael Hill

Mr Martin McKibbin MB, BS, FRCOphth *

Mr Bruce Noble BSC, MB, MS, FRCS, FRCOphth (appointed July 2005)

Mr Richard Pearce

Mr Alan Tasker

* Current Ophthalmic Professionals

EX OFFICIO TRUSTEE

(as Chair of Scientific Advisory Committee)

Dr Colin Dayan MA, FRCP, PhD

DIRECTOR OF RESEARCH

Professor Andrew Dick MD, FRCP, FRCS, FRCOphth

DIRECTOR OF NATIONAL EYE RESEARCH CENTRE

Colonel Sam Gausson

**NATIONAL
EYE RESEARCH
CENTRE**

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