

**IRISH COLLEGE  
OF  
OPHTHALMOLOGISTS  
YEARBOOK  
2009-2010**

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Incorporating the Scientific Programme for the  
Annual Meeting in the Royal College of Surgeons in Ireland, Dublin  
Wednesday 28th – Friday 30th April, 2010

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# IRISH COLLEGE OF OPHTHALMOLOGISTS

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## **COUNCIL 2009/2010**

*President:* Paul Moriarty

*Vice President:* Peter Tormey

*President Elect:* Patricia Logan

*Secretary:* David Kent

*Treasurer:* Marie Hickey - Dwyer

*Members of Council*

Alison Blake, Mark Cahill, Fatima Hamroush, Aideen Hogan, David Keegan,  
Joanne Kearney, Catherine McCrann, Gerard O Connor, Patricia Quinlan, Denise Curtin.

## **STANDING COMMITTEES:**

*Medical Eye Specialists Committee*

*Chairman:* Joanne Kearney

*Members:* Amanda Collum, Marie Houlihan, Gary Treacy, Ursula Behan, Susan Mullaney,  
Grace O Malley, Fatima Hamroush, Tim Horgan, Fiona Kearns, Catherine McCrann,  
Collette Dalton, Aideen Hogan

*Finance, Policy and Professional Standards Committee*

*Chairman:* M. Hickey-Dwyer

*Members:* Honorary Officers

*Manpower, Education and Research Committee*

*Chairman:* David Keegan

*Members:* Paul Moriarty, Denise McAuliffe-Curtin, Peter Tormey, Tim Horgan, Marie  
Hickey-Dwyer, Frank Kinsella, Shauna Quinn, Yvonne Delaney, Patricia McGettrick, Tim  
Fulcher, Sinead Fenton, Maureen Hillery, Mark Mulhern, Conor Murphy, Patricia Logan

*Scientific and Yearbook Committee*

*Chairman:* Mark Cahill

*Members:* Colm O'Brien, David Kent, Aoife Doyle, Denise Curtin and Honorary Officers

*Public Affairs Committee*

Mark Cahill, Colm O'Brien, Gary Treacy, Alison Blake, David Keegan

# EDITORIAL

Once again it has been an incredibly busy year for the Irish College of Ophthalmologists as it continues to pursue the interests of its members on many fronts. The plight of our trainees continues to take centre stage as the college strives to ensure the highest possible standards for the eye doctors of the future. At the forefront of these endeavours is Conor Murphy the new Professor of Ophthalmology at the Royal College of Surgeons in Ireland. Already he has restructured the exit examination and is set to make other significant changes to our examinations format.

2010 also sees the commencement of a public relations offensive. There is a general consensus among members that as an organisation we need to do more to promote 'our brand' amongst the general public and to this end we have engaged the services of Pembroke Communications, a public relations agency and this together with our new look website [www.eyedoctors.ie](http://www.eyedoctors.ie) should ensure that going forward we are seen as the primary source of eye care provision and disease prevention in Ireland.

Our meeting this year has a special significance in that it is being held in the RCSI on the occasion of its 200<sup>th</sup> anniversary since it move to St Stephens Green in 1810. We are delighted to participate in its celebrations and are grateful to the RCSI for their invitation to host our meeting in this historical location.

As ever the Scientific and Yearbook Committee has worked hard to create a diverse programme to cater for the broad church that is modern day ophthalmology. A special welcome to our overseas speakers while we're also delighted to welcome back our colleagues from the New England Ophthalmological Society (NEOS) and we look forward to reciprocating their gesture later on in the year. Enjoy the meeting.

**David Kent**

**Hon. Secretary**

# REPORT OF COUNCIL 2009-2010

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**David Kent**, *Honorary Secretary*

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There have been four Council meetings May 8th 2009, October 3rd 2009, January 16th, 2010 and March 20th 2010,

Attendance has been as follows:

Paul Moriarty	4
Peter Tormey	3
Marie Hickey-Dwyer	4
David Kent	4
Mark Cahill	4
Joanne Kearney	3
Gerard O Connor	4
David Keegan	3
Aideen Hogan	4
Catherine McCrann	2
Fatma Hamroush	2
Patricia Quinlan	3
Alison Blake	3
Denise Curtin	4
Patricia Logan	4

## **Appointment of Standing Committees:**

### ***Finance and Professional Standards***

#### ***Committee:***

**Chairman:** Marie Hickey-Dwyer

**Members:** Hon. Officers

### ***Medical Eye Specialists Committee:***

**Chairman:** Joanne Kearney

**Members:** Amanda Collum, Marie Houlihan, Gary Treacy, Ursula Behan, Susan Mullaney, Grace O Malley, Fatima Hamroush, Tim Horgan, Fiona Kearns, Catherine McCrann, Collette Dalton, Aideen Hogan

### ***Scientific and Yearbook Committee:***

**Chairman:** Mark Cahill

**Members:** Aoife Doyle, Denise Curtin, Colm O'Brien, David Kent and Hon. Officers

### ***Manpower Education and Research Committee:***

**Chairman:** David Keegan

**Members:** Paul Moriarty, Denise McAuliffe-Curtin, Peter Tormey, Tim Horgan, Marie Hickey-Dwyer, Frank Kinsella, Shanua Quinn, Yvonne Delaney, Patricia McGettrick, Tim Fulcher, Sinead Fenton, Maureen Hillery, Mark Mulhern, Conor Murphy, Patricia Logan

## **Changes in Council Membership**

The following terms on Council are coming to a close; Dr Alison Blake & Dr Fatima Hamroush. Many thanks to all for their hardwork during their time on Council and their continuing committee work.

The new appointments to Council will be announced at the AGM.

## **College Membership**

The college membership remains very strong and we currently have 191 members.

# FINANCE, POLICY AND PROFESSIONAL STANDARDS COMMITTEE REPORT

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**Marie Hickey-Dwyer, *Chairman***

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At the close of 2009, the membership for the Irish College of Ophthalmologists stood at 191, subdivided into the following four categories of membership:

Ordinary Members	124
Affiliate Members	24
Overseas Members	13
Senior Members	11
Life Members	17
Hon Life Members	2
<b>Total</b>	<b>191</b>

## **Membership Fees**

The membership fees for the Irish College of Ophthalmologists for 2010 are:

Ordinary members	€480.00
Affiliate members	€360.00
Overseas members	€200.00
Senior members	€160.00

## **Current Financial Status as at 31.12.2009**

### **Bank of Ireland:**

Total cash at bank € 479,095

### **Anglo Irish Bank Corporation plc:**

Mooney Lecture Fund €62,871

(This money has subsequently been transferred to the Bank of Ireland)

### **Canada Life Policy:**

Investment Portfolio €23,803

# MANPOWER, EDUCATION & RESEARCH COMMITTEE

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**David Keegan**, *Chairman*

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*Committee Members:* Paul Moriarty, Denise McAuliffe-Curtin, Peter Tormey, Tim Horgan, Marie Hickey-Dwyer, Frank Kinsella, Shanua Quinn, Yvonne Delaney, Patricia McGettrick, Tim Fulcher, Sinead Fenton, Maureen Hillery, Mark Mulhern, Conor Murphy, Patricia Logan

The committee met on five occasions in 2009-10; May 8th, September 5th, November 11th, January 30th and April 10th

**National Basic Specialist Training Programme:** The National Basic Specialist Training Programme is now established and an induction day is held in the College for all new trainees as they begin the programme. The Dean, Dr Denise Curtin has organised and overseen several training course which are now mandatory for trainees, including a Surgical Skills Course in Hemel Hempsted, a Refractive Surgery Study day and a Pathology Study Day expertly delivered by Prof Susan Kennedy Mr Peter Tormey ran a very successful Basic Ocular Motility Course in Waterford in October, while Miss Marie Hickey Dwyer chaired a course on Retinal Imaging in Limerick in October. Thanks to Dr Curtin and all those who gave of their time to deliver these important competency based courses.

Thanks also to Ms Yvonne Delaney and Ms Pat McGettrick, for their on going work on the School for Surgeons and the surgical simulator.

**CME/CPD:** The Minister for Health has signed the CPD element of the Medical Practitioners Act into law and all doctors on the specialist register are now obliged to undergo continuing professional development. Dr Maureen Hillery has stepped down as the College's CME Co-Ordinator after many years of dedicated service. All of the College are extremely grateful to Dr Hillery for her tireless efforts on our behalf over the last number of years. I am delighted to confirm that Dr Susan Mullaney has agreed to form a new CME sub committee with the Dean to continue Dr Hillery's work. Under the guidance of Miss Yvonne Delaney the College has signed up to the American Academy of Ophthalmology's ONE Network, which may be utilised for CME. Miss Delaney will make a short presentation on the ONE Network to conference delegates.

**Higher Surgical Training:** Six SpRs successfully completed their exit assessment and will be conferred with their Fellowships in July. Six new trainees have been appointed to the Higher Surgical Training Programme and will commence their training in the coming months

**Manpower Report:** The Manpower Report has been produced and submitted to the Irish Surgical Postgraduate Training Committee to aid planning for future numbers of ophthalmologists in Ireland

# SCIENTIFIC AND YEARBOOK COMMITTEE

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**Mark Cahill**, *Chairman*

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*Committee Members*; Denise Curtin, Aoife Doyle, David Kent, Colm O'Brien

Last year's annual conference was held in the Lyrath Estate, Kilkenny May 6th to 8th. The meeting was a great success and the venue enjoyed by all attendees.

## **Pfizer/ICO Fellowship**

Congratulations to Dr Fergus Doyle and Dr We Fong Siah who will equally share this year's Pfizer/ICO Research Award and the prize will be presented during the Conference.

The College very much appreciates the help of Dr David Henshall, Senior lecturer in the Department of Physiology in RCSI and Prof Conor Murphy in deciding this year's recipients. I would also like to thank Dr Declan O Callaghan and Ms Luan Smith from Pfizer Healthcare for their continued support of this important research award.

During the Conference, last year's winner Dr Catherine Cleary will give an update the research she is carrying out in the Doheny Eye Institute in California on OCT guided femtosecond laser keratoplasty

## **ICO Medals**

Dr Sorcha Ni Dhughbhaill was the winner of the Barbara Knox medal at the 2009 Conference for her paper "The Effects Of Acute Cigarette Smoke Exposure on Retinal Pigment Epithelial Cells (Arpe-19)"

The winner of the William Wilde Medal was Clare Kelliher for her poster "A Cellular Model of Fuchs' Endothelial Dystrophy"

## **Montgomery Lecture**

The Montgomery lecture was held in Trinity College on Friday 6th of November. The Montgomery Lecturer was Dr Geroge Spaeth and the title of his talk was "Practical Thoughts on how we Doctors can Best Help our Patients, Ourselves and the World" 6th November, 2009 Trinity College.

This year's Montgomery lecture will take place in Trinity College on November 5th and will be given by Mr John Lee, Honorary Life member of the College and President of the Royal College of Ophthalmologists in London .

## **Mooney Lecture**

The 2009 Mooney lecture was delivered by Dr Brooks W. McCuen, Robert Machemer Professor of Ophthalmology at Duke Eye Center in Durham, North Carolina. The lecture was entitled "Evolving Concepts in Pharmacologic Vitreolysis"



# MEDICAL EYE SPECIALISTS COMMITTEE

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**Joanne Kearney, *Chairman***

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*Secretary:* Tim Horgan.

*Committee Members:* Ursula Behan, Amanda Collum, Collette Dalton, Fatima Hamroush, Aideen Hogan, Marie Houlihan, Fiona Kearns, Susan Mullaney, Catherine Mc Crann, Grace O' Malley and Garry Treacy.

The committee met on four occasions in the past year and we were involved in a number of projects which included the following:

**Paediatric Services Document:** Much work has gone into producing this document by the Medical Eye Specialists which outlines the Ophthalmic Paediatric Policy Guidelines of the Irish College of Ophthalmologists. Special thanks to Catherine Mc Crann and Grace O' Malley for their involvement in setting it up and to the committee in finalising this important document.

**Public Affairs Forum:** Many thanks to Alison Blake who is the Medical Eye Specialists representative on this committee. A Community Eye Care Strategy Document has been produced, the final draft being revised and agreed by the Medical Eye Specialists, which correlates with the Paediatric Policy Document and reiterates the important role of the Community Eye Doctor in the provision of comprehensive care to all medical eye problems within the primary care network.

**Manpower Committee:** Tim Horgan has been a longstanding and dedicated member of this committee representing the Medical Eye Specialists. The Manpower Report on Ophthalmology in Ireland is an important strategy document and again points to the need to increase the number of Medical Eye Specialists, to expand community based services

and look at defining the role of the COP, e.g. Consultant Community Ophthalmologist, the latter being supported by the Medical Eye Specialists committee.

**Council Elections:** Congratulations to Catherine Mc Crann and Garry Treacy on their election success and who will now join Aideen Hogan and myself as Medical Eye Specialist representatives on the council of the ICO.

**COP Review:** Unfortunately there has been no progress on DOHC/HSEA/IMO review on Community Ophthalmic Physician post. There have been several changes of personnel in IMO with subsequent loss of continuity. Members of committee will continue to pursue the publication of review.

**Annual Conference 2011:** The committee welcomes the opportunity for us to chair and organise a Medical Eye Specialists session at the next ICO annual conference.

Many thanks to my dedicated colleagues who travelled great distances, at their own expense, gave of their time on a Friday, and worked on e-mails, phonecalls and texts between times, to contribute to the important work of this committee. I hope in the coming year to increase communication between Medical Eye Specialists by setting up a news letter for those interested in the work of the Medical Eye Specialist committee and to allow contributions to the agenda.

And finally, a special thanks you to Siobhan Kelly, ICO secretary, for her valuable input.

*Chairperson; Joanne Kearney*

# PUBLIC AFFAIRS COMMITTEE

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**Mark Cahill**, *Chairman*

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*Committee members;* Alison Blake, Gary Treacy, Colm O'Brien, David Keegan

The College's Public Affairs Committee was established following last year's Annual General Meeting. The remit of the Committee is to increase the public profile of the College.

**New Website:** A new College website has been developed and launched [www.eyedoctors.ie](http://www.eyedoctors.ie). The new site includes all the information relevant to trainees and general information on eye conditions and eye health for members of the public. It also includes a directory of practice contact details for College members and I encourage you to upload your details if you have not already done so.

**Eye Care Strategy Document:** The Public Affairs Committee has also facilitated the development of a strategy document on the delivery of eye care which will be discussed in greater detail at the AGM.

**Public Relations:** The College has engaged the services of a public relations firm to increase its public profile and the Committee has been co-ordinating this work with the help of Pembroke Communications, who have been increasing media awareness of the Annual Conference and of the topics of particular interest to the public.

## **NEW ENGLAND OPHTHALMOLOGICAL SOCIETY**

The Irish College of Ophthalmologists is twinned with the New England Ophthalmological Society and the College is delighted to welcome a group of our NEOS colleagues to this year's conference.

*The New England Ophthalmological Society (NEOS)* was founded in 1884 for the study and advancement of ophthalmology, with current membership today totalling some 700 ophthalmologists from throughout the New England states. NEOS is dedicated primarily to continuing education for its members in clinical arts and sciences, but is also encourages scientific and clinical research in ophthalmology and is active in public service and education. In addition to organizing five educational meetings per year for ophthalmologists, NEOS conducts ongoing programs to educate the public about diseases and conditions of the eye through detection, treatment, and prevention.

Although NEOS has been a regional society for nearly all of its history, in 2008 the American Academy of Ophthalmology suggested that NEOS forge international relationships as part of the Academy's "twining" program. At the suggestion of Mike Brennan, David Noonan and others within the Academy, an exchange with ICO was suggested in order to build on social and professional ties already in place, including prior initiatives such as the Irish American Ophthalmological Society.

NEOS is delighted to join the Irish College of Ophthalmology on the occasion of your annual meeting in order to continue to build on traditions of connection between New England and Ireland, and to foster growth in this relationship for the future of ophthalmology.

## **EUROPEAN BOARD OF OPHTHALMOLOGY**

Dr Denise Curtin and Ms Aoife Doyle are the ICO representatives to the European Board of Ophthalmology and are also the College representatives at the European Union of Medical Specialists (UEMS).

Dr Curtin and Ms Doyle acted as examiners at last year's Diploma exam held in Paris in May. Congratulations to the Irish candidates who were successfully awarded the EBO Diploma.

# Past Presidents

**2007 – 2009**

Mr Peter Tormey

**2005 – 2007**

Mr. Robert Acheson

**2003 -2005**

Prof. Philip Cleary

**2001-2003**

Mr. Brendan Young

**1999-2001**

Professor Louis Collum

**1997-1999**

Mr. Roger Bowell

**1995-1997**

Mr. John Nolan

**1993-1995**

Professor Peter Eustace

**1991-1993**

Mr. Stewart Johnston

*The Council and Members of the Irish College of Ophthalmologists are grateful to the following companies for their support of the College activities:*

Alcon  
Allergan  
John Bannon & Co.  
EuroSurgical  
Fannin Healthcare  
Genzyme  
Grafton Optical  
Haag-Streit  
Hospital Services  
IBT-Bedig  
Ipsen Pharmaceuticals  
MEDA  
MED Surgical  
Merck Sharp & Dohme  
Novartis  
Ocuco  
Optos  
Pharma Global  
Pfizer  
Raynor  
Sedena  
Scope Healthcare  
Stat One  
Topcon  
T. P. Whelehan  
WMO Healthcare

**ICO Conference Timetable 2010**  
**Royal College of Surgeons in Ireland, St Stephen's Green, Dublin**  
**Wednesday 28th April – Friday 30th April**

**Day 1 Wednesday 28th April**

- 8.00am Registration
- 8.30am **Welcome**  
Mr Paul Moriarty  
*President Irish College of Ophthalmologists*
- 8.40am First Paper Session  
Chair; Mr Gerry Fahy
- 8.45am **“Learning Curve On Structured Proficiency-Based Progression Training Curriculum For Cataract Surgery With Eysi Simulator”**  
*P Lee*
- 8.51am **“Effectiveness of Intracameral Cefuroxime in Preventing Postoperative Endophthalmitis”**  
*F Meszaros*
- 8.57am **“European Registry of Quality Outcomes In Cataract And Refractive Surgery (EUREQUO) – Roll Out In Ireland**  
*P Barry*
- 9.03am **“Preoperative Optical And Psychophysical Predictors Of Patient Satisfaction Following Cataract Surgery”**  
*S Charalampidou*
- 9.07am **“The Impact Of Lens Constant Personalisation On Refractive Outcomes Following Cataract Surgery Using The Haigis Formula”**  
*S Charlampidou*
- 9.13am **“The Importance Of Topographic And Refractive Changes In Myopic Orthokeratology Patients Unsuitable For Laser Refractive Surgery”**  
*P Condon*
- 9.19am Q&A - Discussion
- 9.34am **“A Novel Way Of Identifying Stable Glaucoma And Ocular Hypertension Using An Electronic Medical Record System (Medisoft®)**  
*S Jungkim*
- 9.40am **“Calcium Related Regulation Of Tgf-β1 In Lamina Cribrosa Cells”**  
*B Quill*

- 9.46am      **“Lipofuscin Accumulation In Glaucomatous Lamina Cribrosa Cells: Evidence Of Oxidative Stress”**  
*E McElnea*
- 9.52am      Q&A - Discussion
- 10.00am     Keynote Address  
**“Fine Gael’s Faircare Policy”**  
Dr James Reilly TD  
*Fine Gael Spokesperson for Health and Children*
- 10.30am     Coffee
- 11.00am     Glaucoma Symposium  
Chairman; Prof Colm O Brien
- “Measuring Progression in Glaucoma”**  
Professor Balwantray Chauhan  
*Research Director and Chair in Vision Research,  
Dalhousie University. Halifax, Canada*
- “Costs of Glaucoma Care”**  
Prof Anja Tuulonen  
*Professor of Ophthalmology,  
University of Oulu, Finland.*
- 12.30pm     **Pfizer/ICO Research Award Presentation**  
  
2009-10 Recipient Dr Catherine Cleary  
  
Presentation to 2010-11 Recipients; Dr We Fong Siah & Dr Fergus Doyle
- 12.40pm     Lunch
- 2.00pm      Workshops
- “Prescribing Spectacles for Children”**  
Ms Kathryn McCreery  
*Consultant Ophthalmic Surgeon,  
Our Lady’s Hospital for Sick Children Crumlin, Dublin*
- Dr Alison Blake  
*Community Ophthalmologist  
Cavan General Hospital*
- 3.00pm      **Diplopia**  
Mr Tony McAleer  
*Senior Orthoptist  
Royal Victoria Eye & Ear Hospital, Dublin*

Ms Clare Sheehan  
*Senior Orthoptist*  
*Royal Victoria Eye & Ear Hospital, Dublin*

4.00pm

**Gonioscopy**  
Ms Aoife Doyle  
*Consultant Ophthalmic Surgeon*  
*Royal Victoria Eye & Ear Hospital, Dublin*

Golf

Portmarnock Golf Links 1.45pm – 2.20pm,  
20 tee times

8.00pm

**“Twinning of New England Ophthalmological Society & Irish College of Ophthalmologists”**  
Welcome  
Mr Paul Moriarty  
*President Irish College of Ophthalmologists*

Dr Charles Zacks  
*President, New England Ophthalmological Society*

Dr Mike Brennan  
*Past President AAO, Hon Life member ICO*

Mr Mark Cahill  
*Chairman Scientific & Yearbook Committee, Irish College of Ophthalmologists*

The above event takes place in the Guinness Storehouse  
transport will depart the RCSI for the Storehouse at 7.30pm

## Day 2 Thursday 29th April

8.30am

Second Paper Session  
Chair; Dr Joanne Kearney and Dr Aideen Hogan

8.30am

**“Adjustable Squint Surgery In Paediatric Patients”**  
*A Mokashi*

8.36am

**“A National Audit Of New Referrals To Orthoptic Departments 2009”**  
*T McAleer*

8.42am

**“Paediatric Optic Pathway Glioma In Ireland Over The Last 10 Years”**  
*D Townley*

8.48am

Q&A - Discussion

8.54am

**“The Effects Of Cigarette Smoke Exposure On Choroidal Neovascular Membranes In A Laser Induced Animal Model”**  
*S Ni Dhughbhaill*



- 9.00am      **“Transient Blockade Of Transforming Growth Factor-B1 In Diabetic Human Cd 34+ Cells Enhances Their Survival And Proliferation *In Vitro* And Vascular Reparative Functions *In Vivo*”**  
*D Kent*
- 9.06am      **“Further Insights Into Why Subretinal Grafts Fail”**  
*K Kennelly*
- 9.12am      Q&A - Discussion
- 9.18am      **“Epidemiology And Clinical Associations Of Primary Retinal Detachment In Scotland: 2 Years Of Prospective Recruitment”**  
*D Mitry*
- 9.24am      **“An Audit Of Indications And Major Complications Of 25-Gauge Vitrectomy”**  
*E Ng*
- 9.30am      **“25-Gauge Vitrectomy In Diagnosis And Treatment Of Uveitis”**  
*N Collins*
- 9.36am      Q&A - Discussion
- 9.45am      Posterior Uveitis Symposium  
Chair; Mr Dara Kilmartin
- “Uveitis, Infections and Systemic Disease”**  
Prof Dr Aniki Rothova  
*Dept of Ophthalmology*  
*University Medical Centre, Utrecht, The Netherlands*
- “Targeted Systemic Therapies”**  
Prof John Forrester  
*Head of Section of Immunology & Infection, University of Aberdeen, Aberdeen, Scotland*
- “Surgery in Posterior Uveitis”**  
Mr Dara Kilmartin  
*Consultant Ophthalmic Surgeon*  
*Royal Victoria Eye & Ear Hospital, Dublin*
- 11.30am      Coffee

12.00pm **Presentation on elogbook**  
Mr Ian Flitcroft  
*Consultant Ophthalmic Surgeon*  
*Children's University Hospital, Temple St, Dublin*

**O.N.E. Network**  
Ms Yvonne Delaney  
*Vice Dean of Distance Learning*  
*Irish College of Ophthalmologists*

12.10pm Volunteering in Ophthalmology Symposium  
Chairman; Mr Donal Brosnahan

**“Giving Back - Volunteering in Ophthalmology”**  
Dr Mike Brennan  
*Past President AAO, Hon Life member ICO*  
*Burlington, North Carolina*

**“Needless Cataract Blindness in Africa, a Solvable Crisis, Can You Help?”**  
Miss Kate Coleman  
*Ophthalmic Surgeon*  
*Founder/Chairperson, Right to Sight International*

**“The Case for a National Vision Strategy in the Light of Ireland’s Changing Demographics”**  
Ms Elaine Howley,  
*Director of Services, National Council for the Blind in Ireland*

**“Eliminating Blinding Trachoma in Southern Ethiopia”**  
Dr Alemayehu Sissay  
*Program Director*  
*Orbis Ireland Project, Southern Ethiopia*

Questions

1.10pm Lunch

2.30pm **Annual General Meeting of the Irish College of Ophthalmologists**

3.30pm Mooney Lecture

**“The Link between Infection and Uveitis”**  
Prof John Forrester  
*Head of Section of Immunology & Infection, University of Aberdeen, Aberdeen, Scotland*

7.30pm Black-tie dinner, RCSI

## Day 3 Friday 30th April

- 9.00am First Poster Session  
Chairman; Mr David Kent
- 9.00am **“Bilateral Optic Neuropathy Following Intralasek For Myopia”**  
*C Kirwan*
- 9.04am **“Management Of Corneal Ulcers In An A&E Department”**  
*A Martin*
- 9.08am **“Ultraviolet Riboflavin Collagen Cross Linking”**  
*J Brady*
- 9.12am **“Corneal Dehydration With The Application Of Topical Riboflavin 0.1% Used In Corneal Collagen Crosslinking”**  
*E Ng*
- 9.16am **“The Use Of 3d Animation In Teaching Cataract Surgery”**  
*P Lee*
- 9.20am **“Prediction Of Effective Lens Position Using A Method Independent Of Preoperative Keratometry Readings”**  
*I Dooley*
- 9.24am **“The Impact Of Cataract On Visual Performance And Experience Is Related To Lens Optical Density”**  
*S Charalampidou*
- 9.30am **“How Reliable Is First Day Postoperative Automated Refraction Following Sutureless Small Incision Cataract Surgery? Findings From Kenya**  
*S Briesen*
- 9.34am **“The Relationship Between Oxidative Stress, Calcium Homeostasis And Extracellular Matrix Remodeling In Human Lamina Cribrosa Cells”**  
*W F Siah*
- 9.38am **“C6ORF129- An Unknown Protein Identified In The Serum Of Patients With Pseudoexfoliation Glaucoma”**  
*F Doyle*
- 9.42am **“Abnormal Calcium Homeostasis In Glaucomatous Lamina Cribrosa Cells”**  
*M Irnaten*
- 9.46am **“Use Of Iopidine 1% In The Diagnosis Of Horner’s Syndrome”**  
*J O Connor*
- 9.50am **“Video Presentation; Sutureless Broad Re-Insertion Repair Of Complex Iridodialysis”**  
*E Ng*

- 9.54am      **“Audit of Newly Diagnosed Uveal Melanoma Cases At The Royal Victoria Eye & Ear Hospital”**  
*M Chuen Tay*
- 10.00am      Ocular Oncology Symposium  
Chair; Mr Noel Horgan
- “Understanding Prognosis in Uveal Melanoma”**  
Prof Bertil Damato  
*Consultant Ophthalmologist*  
*Royal Liverpool University Hospital, Liverpool*
- “Up date on Current Management of Retinoblastoma”**  
Prof Michael O Keefe  
*Consultant Ophthalmic Surgeon*  
*University Children’s Hospital, Temple St, Dublin*
- “Practical Management of Ocular Surface Tumours”**  
Mr Noel Horgan  
*Consultant Ophthalmic Surgeon*  
*Royal Victoria Eye & Ear Hospital, Dublin*
- 11.30am      Coffee
- 12.00pm      **Postgraduate Education & Training in Ireland**  
Dr Denise Curtin  
*Dean, Irish College of Ophthalmologists*
- 12.10pm      Second Poster Session  
Chair; Mr David Kent
- 12.10pm      **“Visual Perceptions Induced By Intravenous Injection Of Therapeutic Agents”**  
*S Charalampidou*
- 12.14pm      **“The Natural History Of Tractional Cystoid Macular Edema”**  
*S Charalampidou*
- 12.18pm      **“Primary Rhegmatogenous Retinal Detachment Surgery Outcomes in a Tertiary Referral Unit; a 2 Year Review (2006-2008)”**  
*B de Boer*
- 12.22pm      **“Investigating The Ability Of Anti-Oxidant Gene Expression In Mesenchymal Stem Cells To Promote Cell Protection And Recovery In An *In Vitro* Model Of Age-Related Macular Degeneration”**  
*A Lynch*
- 12.26pm      **“Diabetic Retinopathy Screening Workflows: The Effect Of Targeted Mydriasis”**  
*T Wall*

- 12.30pm      **“Automated Image Grading As A Workload Reduction Element In Diabetic Retinopathy Screening”**  
*J Smith*
- 12.34pm      **“Review Of A Diabetic Ophthalmology Waiting List”**  
*C Guinane*
- 12.40pm      **“Selective Laser Trabeculoplasty, An Additional Line of Management For Open Angle Glaucoma”**  
*F Hamroush*
- 12.44pm      **“Spontaneous Resolution Of Lacrimal Gland Maltoma”**  
*S Moran*
- 12.48pm      **“A Case Of Orbital Juvenile Xanthogranuloma”**  
*Q Nasser*
- 12.52pm      **“The Orbital Branch Of The Infraorbital Artery”**  
*S Chamney*
- 12.56pm      **“A Rare Case Of Intermittent Fluctuating Bilateral Horner’s Syndrome”**  
*D Kollipara*
- Presentation of Medals  
                 – Sir William Wilde Medal for Best Poster Presentation  
                 - Barbara Knox Medal for Best paper Presentation
- 1.15pm      Close



*Book  
Of  
Abstracts*

# LEARNING CURVE ON STRUCTURED PROFICIENCY-BASED PROGRESSION TRAINING CURRICULUM FOR CATARACT SURGERY WITH EYESi SIMULATOR

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**Objectives;** To design and implement a structured proficiency-based curriculum for ophthalmologists in training for cataract surgery. Trainees have to reach the target skill levels in each module on the EYESi simulator in order to complete the course.

**Methods;** Proficiency level on the EYESi simulator was set based on the performance of a group of expert cataract surgeons on the simulator. The ophthalmology trainees (n=10) with less than 80 cases of phacoemulsification completed the simulator training. Each participant underwent baseline assessment. The simulator curriculum contains a total of 41 tasks consist of various skill and procedural training modules. Three consecutive scores above the proficiency level must be obtained in order to move on to the next task. The trainees repeated the assessment after completion of the training curriculum.

**Results;** The trainees took an average of 12 sessions (range 9-15) with a mean of 19.5 hours (range 14.5–27) to complete the course. The number of attempt to achieve the target score once, twice, and three times consecutively are 132 (range 94-189), 287 (range 208-409), 440 (range 300-603), respectively. After training on the simulator to proficiency level, the trainees significantly improved on the capsulorrhexis and phacoemusification modules in the overall score ( $p=0.001$ ,  $p=0.001$ ), committed less error ( $p=0.01$ ,  $p=0.001$ ), and improved instrument handling ( $p=0.003$ ,  $p=0.002$ ) when comparing to their baseline assessment.

**Conclusions;** Individual trainees differ in their innate ability, consequently, the time and the number of cases required to reach target proficiency level. Proficiency based surgical training curriculum on the EYESi simulator improves the overall score, instrument handling, fulcrum effect and maintenance of red reflex.



# INCIDENCE OF PRESUMED POSTOPERATIVE ENDOPHTHALMITIS AFTER COMMENCING THE USE OF INTRACAMERAL CEFUROXIME IN DUBLIN FOR A 2.5-YEAR PERIOD

*Meszaros F, Khan R, Kennedy S, Barry P  
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**Objectives:** To evaluate the incidence of presumed endophthalmitis following cataract surgery after commencing the use of intracameral cefuroxime in Royal Victoria Eye and Ear Hospital and to compare with the incidence before that.

**Methods:** A retrospective series of 3494 consecutive cases of cataract extraction with intraocular lens implantation carried out during a period of 2.5 years from January 2007 to June 2009 were studied. All cases requiring readmission due to suspected postoperative infection were investigated. The criteria were identical to those reported by us for a 5-year period (1997 – 2001) before the commencement of intracameral cefuroxime which identified a rate of suspected endophthalmitis of 0.5 %.

**Results:** A total of 3494 patients had a cataract procedure. Four of them were readmitted with suspected endophthalmitis, giving a total suspected endophthalmitis rate of 0.11%. Of the 4 readmitted cases, 2 patients had complicated cataract surgery; 2 cases had hypopyon and 2 cases had fibrinous uveitis. Two cases had a vitreous biopsy, one culture was positive for coagulase negative *Staphylococcus*, in the other case PCR was positive for *Staphylococcus epidermidis*. Visual acuity of 6/12 or better was achieved in 2 patients. The incidence of presumed postoperative endophthalmitis in our hospital before commencing the use of intracameral cefuroxime was 0.5% over a 5-year period. Starting to use intracameral antibiotics reduced the suspected endophthalmitis rate by a factor of 4.5.

**Conclusions:** Intracameral cefuroxime administered at the time of surgery significantly reduced the risk for developing endophthalmitis after cataract surgery in our ophthalmology unit. This correlates well with the results of the ESCRS study of prophylaxis of postoperative endophthalmitis after cataract surgery.

# EUROPEAN REGISTRY OF QUALITY OUTCOMES IN CATARACT AND REFRACTIVE SURGERY (EUREQUO) – ROLL OUT IN IRELAND

*Barry P. 1, Horgan N. 2, Power W. 3, Kelly G. 4*

*1. The Eye Clinic, Dublin 4. 2. European Society of Cataract and Refractive Surgeons, Blackrock Co. Dublin*

**Objectives:** EUREQUO is an EU project co-funded by the ESCRS and EU. The purpose of this registry is to improve treatment and standards of care for cataract and refractive surgery and to develop evidence-based guidelines for cataract and refractive surgery across Europe.

**Methods:** A system for collecting data via internet using web-based forms or direct transfer of data from existing electronic databases to EUREQUO has been established. A national Registry Manager in Ireland has been appointed and the system has been rolled-out at St. Vincent's University Hospital. The database has a report function and gives output data both for the surgeon, the country and the whole database. A large number of selections can be made including time period, demographic data, surgical method and co-morbidity.

**Results:** For cataract outcomes final visual acuity, biometry prediction error and surgical complications are important quality indicators that the system delivers for comparison and benchmarking purpose.

For refractive surgery outcomes a set of standard graphs will be delivered showing the requesting surgeon's results.

**Conclusions:** The output of data from the EUREQUO system is suitable for comparison, benchmarking and audit purposes. With sufficient data evidence-based guidelines can be developed.

# PREOPERATIVE OPTICAL AND PSYCHOPHYSICAL PREDICTORS OF PATIENT SATISFACTION FOLLOWING CATARACT SURGERY

*Charalampidou S.<sup>1</sup>, Cassidy L.<sup>2,3</sup>, Nolan J.<sup>4</sup>, Loughman J.<sup>4,5</sup>, Stack J.<sup>4</sup>, Beatty S.<sup>1,4</sup>*

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**Objectives:** To identify the most appropriate objective and/or subjective clinical test to accurately predict patient benefit following cataract surgery.

**Methods:** Visual performance of 35 patients (35 eyes), with age-related cataract and no other ocular pathology, was assessed preoperatively and 2 months postoperatively, by measuring high contrast corrected distance visual acuity rating (CDVAR), contrast sensitivity (letters and sinusoidal gratings) at low, medium and high spatial frequencies, glare disability (F.A.C.T<sup>®</sup>), reading performance (Radner Reading chart<sup>®</sup>), stereopsis (TNO<sup>®</sup> random dot test), retinal sensitivity (Microperimeter MP1<sup>®</sup>), and functional vision satisfaction (Priquest<sup>®</sup> questionnaire)<sup>1</sup>. In addition, optical characteristics of the cataract were evaluated preoperatively by measuring lens optical density (Pentacam<sup>®</sup> Scheimpflug images) and by a validated grading system (Lens Opacities Classification System [LOCS III]).

**Results:** The mean ( $\pm$  SD) age of patients recruited was 70 ( $\pm$  8) years. The female to male ratio was 23: 12. The right eye to left eye ratio was 14: 21. The fellow eye was phakic in 24 patients and pseudophakic in 11 patients. The mean ( $\pm$  SD) functional vision satisfaction score improved from 1.67 ( $\pm$  0.46) to 1.31 ( $\pm$  0.29) following cataract surgery ( $p < 0.001$ ). Statistically significant relationships between improvement in functional vision and change in psychophysical measures are presented in Table 1.

**Conclusions:** Improvement in contrast sensitivity at medium and high spatial frequencies correlated strongly with improvement in functional vision satisfaction, while improvement in CDVAR failed to demonstrate a relationship with functional vision satisfaction ( $r = -0.122$ ;  $p = 0.492$ ). Contrast sensitivity is a better predictor of patient satisfaction in cataract surgery than visual acuity.

# THE IMPACT OF LENS CONSTANT PERSONALISATION ON REFRACTIVE OUTCOMES FOLLOWING CATARACT SURGERY USING THE HAIGIS FORMULA

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**Objectives:** To investigate, describe and quantify the effect of personalisation of Haigis lens constants, for a given surgeon/intraocular lens (IOL) combination, on refractive outcomes following cataract surgery.

**Methods:** Mean error (ME) of prediction and mean absolute error (MAE) were calculated for a single-surgeon (SB) series of eyes after biometry by partial coherence interferometry (PCI) with the IOL Master and phacoemulsification cataract surgery, where the IOL prediction was based on the Haigis formula and optimised lens constants derived from pooled data from the ULIB (User Group for Laser Interference Biometry) website. Personalisation of Haigis lens constants to the same operating surgeon was then performed. An ME of prediction and an MAE using the personalised lens constants was then calculated for the same series of eyes which had been operated upon using the Haigis optimised (but not personalised) lens constants, thereby allowing us to investigate and quantify the maximum realisable refractive benefits (if any) of personalisation.

**Results:** The ME ( $\pm$  SD) of prediction and the MAE ( $\pm$  SD) with Haigis optimised lens constants were  $-0.09$  D ( $\pm 0.48$ ) and  $0.38$  D ( $\pm 0.31$ ), respectively, and this compares with  $+0.01$  D ( $\pm 0.47$ ) and  $0.36$  D ( $\pm 0.30$ ), respectively, for personalised lens constants. There was no statistically significant difference between personalisation and optimisation of Haigis lens constants in terms of the AE (paired t-test:  $p > 0.05$ ) or in terms of the proportion of eyes within  $\pm 1.00$  D, within  $\pm 0.50$  D or within  $\pm 0.25$  D of target postoperative refraction in all eyes, short eyes (AL  $< 22$ mm,  $n=19$ ), average eyes (AL  $\geq 22$ mm and AL  $< 24.5$ mm,  $n=149$ ) or long eyes (AL  $> 24.5$ mm,  $n=46$ ) (McNemar's test:  $p > 0.05$  for all). Ten eyes had a smaller AE by  $0.3$  D or more in association with personalised lens constants when compared with optimised lens constants, and all of these eyes were short. However, no eyes exhibited a smaller AE by  $0.5$  D or more in association with personalised lens constants when compared with optimised lens constants.

**Conclusions:** Personalised Haigis lens constants showed marginal, but statistically non-significant, refractive advantages over optimised Haigis lens constants, but only in short eyes. However, clinically meaningful refractive advantages of personalised Haigis lens constants were not demonstrated, and would be restricted to very high volume cataract surgeons, and then only as long as they continue to use the same model of IOL that was employed in the process of personalisation.

# THE IMPORTANCE OF TOPOGRAPHIC AND REFRACTIVE CHANGES IN MYOPIC ORTHOKERATOLOGY PATIENTS UNSUITABLE FOR LASER REFRACTIVE SURGERY.

*Condon P.I.*

*Waterford Eye Specialists, Waterford.*

**Objectives:** To document the variations in topographic control in order to provide optimal refraction and visual results with the wearing of overnight reverse contact lenses

**Methods:** 45 Patients with myopic progression and or myopia of -1.00DS - -4.00DS found unsuitable for refractive surgery were fitted with Paragon Ortho-K lenses over a four year period between 2005 – 2009. Topography control of the corneal moulding process was monitored with a Keratron Scout instrument and regular visits from one day to four years carried out with adjustments to the lenses based on the topography and refraction.

**Results:** The rapid restoration of excellent VA within a very short period between 2-5 days provided a very positive motivation to continue with these lenses, so much so that only two patients opted out over a four year period. Both had severe allergic giant papillary conjunctivitis. No corneal or conjunctival complications were seen in any of the patients.

**Conclusions:** The provision of Ortho-K in a standard laser refractive practice provides an excellent alternative for those found to be unsuitable for laser refractive surgery, such as those with progressive myopia and those where corneal thickness might be inadequate. The provision of an oblate cornea with a graduated control of the myopic refraction which is totally reversible enables these patients to go on hold while waiting for further developments in refractive surgery which might be more appropriate.

# A NOVEL WAY OF IDENTIFYING STABLE GLAUCOMA AND OCULAR HYPERTENSION USING AN ELECTRONIC MEDICAL RECORD SYSTEM (MEDISOFT®).

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**Objectives:** Recent NICE guidelines have led to a review of the role of primary healthcare in glaucoma management. In the UK, glaucoma clinics are continually expanding and the ability to identify the “stable” glaucoma patient who may be monitored in the community has become a priority. In this study, we have devised a new glaucoma summary chart as part of the Medisoft® ERS incorporating all the currently acceptable individually measured parameters to identify non-progressing, stable glaucoma patients.

**Methods:** Standard methods of monitoring glaucoma include the assessment of IOP, the vertical cup-to-disc ratio (CDR) and Humphrey visual field (HVF) analysis. Most clinics now also use confocal laser scanning ophthalmoscopy (HRT II) and scanning laser polarimetry (GDx-VCC). We incorporated into a summary chart the following parameters: IOP, HVF mean deviation (MD) and pattern standard deviation (PSD), HRT II CDR ratio, rim area and volume, and the GDx nerve fiber index (NFI). Medical and surgical intervention were also recorded.

**Results:** Of the 50 glaucoma patients followed up on average for 8.43 years (+/- 3.36 years SD), 25 patients were identified as non-progressive. These were defined as stable according to whether on average a flat line was apparent. Although fluctuations in individual parameters were seen, it was possible to show agreement between several parameters over time. Rim volume changes, as calculated by HRT II, was found to be the correlate best with HVF MD.

**Conclusions:** We believe the newly devised glaucoma summary sheet provides a easily interpretable multifactorial trend analysis . Furthermore we have shown that it can be readily applied to identifying stability in glaucoma patients who would therefore require less frequent follow-up and be appropriate for monitoring in a primary care setting.

# CALCIUM RELATED REGULATION OF TGF- $\beta$ 1 IN LAMINA CRIBROSA CELLS

Quill B<sup>1,2,3</sup>, Docherty<sup>1</sup> N, Wallace<sup>1,2</sup> D, Clark<sup>4</sup> A, O'Brien C<sup>1,2,3</sup>

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**Introduction:** Mechanical stress as a result of elevations in intra-ocular pressure is a key environmental stimulus for extracellular matrix (ECM) remodelling of the lamina cribrosa (LC) in glaucoma. Transforming growth factor beta 1 (TGF- $\beta$ 1) is a driver of this response. Transient increases in intracellular calcium are implicated in the cellular response to mechanical stretch, including the activation of an altered transcriptional profile in affected cells. This study examined the effect of the L-type calcium channel blocker verapamil (V), on mechanical stretch induced TGF- $\beta$ 1 upregulation in LC cells from the optic nerve head of glaucomatous (GLC) and non-glaucomatous donors (NLC).

**Methods:** Confluent LC cell cultures were serum starved for 24h, then exposed to cyclical mechanical stretch (15%, 1Hz) for 24h in the presence or absence of V (10mM). TGF- $\beta$ 1 mRNA levels were assessed by real time RT-PCR.

**Results:** In NLC, treatment with V caused no change in TGF- $\beta$ 1 mRNA levels under baseline (static) conditions. Following exposure to mechanical strain, TGF- $\beta$ 1 mRNA levels were increased 1.6 fold ( $p=0.02$ ). This response did not occur in the presence of V, with TGF- $\beta$ 1 mRNA levels falling below baseline static levels (1.6 v's 0.7,  $p=0.03$ ). No stretch induced alteration in TGF- $\beta$ 1 mRNA levels was observed in GLC. However, a significant 35% decrease in TGF- $\beta$ 1 mRNA levels was observed in GLC in the presence of V ( $p<0.01$ ).

**Conclusions:** This study demonstrates that mechanical stretch induced upregulation of TGF- $\beta$ 1 expression involves the activation of L-type channel derived calcium currents. This highlights the potential involvement of calcium transients in the activation of remodelling responses in the optic nerve head glia and supports the rationale that calcium channel blockers may directly attenuate disease progression in glaucoma.

# LIPOFUSCIN ACCUMULATION IN GLAUCOMATOUS LAMINA CRIBROSA CELLS: EVIDENCE OF OXIDATIVE STRESS.

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<sup>3</sup>Department of Neuropathology, Beaumont Hospital, Beaumont Rd. Dublin, Ireland.

**Objectives:** Disease associated alterations in the phenotype of glial cells of the lamina cribrosa are implicated in extracellular matrix remodelling at the optic nerve head (ONH) in glaucoma. Mitochondrial dysfunction and oxidative stress may play important roles in the emergence of this altered cellular phenotype. Lipofuscin is an intralysosomal, non-degradable, autofluorescent macromolecule which accumulates in the peri-nuclear region of cells with oxidative stress induced elevations in the rate of mitochondrial turnover. The objective of our study was to compare levels of lipofuscin-like material in lamina cribrosa cells from normal donor eyes (NLC) and from glaucomatous donor eyes (GLC).

**Methods:** Post-confluent cultures of NLC and GLC were examined by TEM and the number and size of peri-nuclear lysosomes per high powered field (x 20,000) recorded. Cells were stained with Sudan Black B, to assess peri-nuclear lipophilic body number and size. Peri-nuclear bodies were examined by live cell fluorescence microscopy and cellular autofluorescence quantified using flow cytometry (emission at 563-607nm).

**Results:** The number of peri-nuclear lysosomes was increased in GLC (11.1 +/- 3.8 v 4.2 +/- 3.7, p = 0.002). A similar observation was made using Sudan Black B staining of peri-nuclear lipophilic body number (22.10 +/- 3.57 v 13.77 +/- 5.66, p = 0.07), and size (2023.6 +/- 611.23 v 862.8 +/- 74.23, p = 0.04). Perinuclear lysosomes were found to be autofluorescent and an increase in whole cell autofluorescence was observed in GLC (83062 +/- 45.1 v 41.01 +/- 3.9, p = 0.2).

**Conclusions:** We present evidence supportive of increased lipofuscin formation being a characteristic of lamina cribrosa cells derived from glaucomatous donors. The persistence of this phenomenon *in vitro* is suggestive of permanent alterations in mitochondrial function and oxidative stress as being of importance in ONH remodelling in glaucoma. Potential future anti-glaucoma strategies may therefore include attempts at reduction of oxidative stress and/or stimulation of cellular degradation systems.



# ADJUSTABLE SQUINT SURGERY IN PAEDIATRIC PATIENTS.

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**Objectives:** To evaluate the effectiveness of adjustable squint surgery in the paediatric age group.

**Methods:** A retrospective audit was carried out on all patients under the age of 16 years undergoing adjustable squint surgery. Surgery was performed under general anaesthesia and post-operative adjustment was carried out using a combination of sub-tenons and topical anaesthesia in the awake patient. Angles of deviation were measured pre-operatively and at 2 months post-operatively for each patient.

**Results:** 21 paediatric patients underwent adjustable squint surgery performed by the same surgeon (JDS). The postoperative adjustment was well tolerated by 20 patients, with a single patient unable to tolerate the adjustment. The mean age was 12.3 years (SD 2.2; range 9 – 15 years). 2 patients underwent surgery for vertical squint, the remainder undergoing surgery for horizontal deviations including consecutive exotropias (11), accommodative esotropias (6) and decompensating exophoria (1). Mean pre-operative deviations were 29.16<sup>Δ</sup> (SD 11.4) for horizontal squint and 19.0<sup>Δ</sup> for vertical (SD 1.4). Post-operatively these measurements had reduced to 8.22<sup>Δ</sup> (SD 7.86) and 7.5<sup>Δ</sup> (SD 3.53) for horizontal and vertical respectively. Alignment to within 10<sup>Δ</sup> of orthophoria was achieved in 85% of cases at 2 months postoperatively.

**Conclusions:** Adjustable squint surgery in children over the age of 8 is generally well tolerated and is an effective means of optimising ocular alignment.

# A NATIONAL AUDIT OF NEW REFERRALS TO ORTHOPTIC DEPARTMENTS 2009

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*1. Royal Victoria Eye and Ear Hospital, Dublin 2. Adelaide Meath and National Children's Hospital, Tallaght, Dublin*

**Objectives:** To examine all new referrals to orthoptic departments nationally to determine referral sources, waiting times, reason for referral and clinical findings.

**Methods:** All new referrals over a 4 week period in February 2009 were recorded. Data was collected on patient age, sex, referral source and reason, and clinical finding, then collated to give a national picture.

**Results:** 1122 new patients were seen, 86% routine, 14% urgent, average waiting time 26 weeks (range 10-75 weeks). 40% were found to have no pathology, 23% reduced VA, 20% squint. 23% were under 1 year at referral and 64% of these were NAD.

**Conclusions:** There is a wide variation in caseload in orthoptic departments nationally. There is an excessively high rate of false positive referrals, particularly of children under 1 year. Significant resources are being used on inappropriate referrals.

# PAEDIATRIC OPTIC PATHWAY GLIOMA IN IRELAND OVER THE LAST 10 YEARS

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**Objectives:** To evaluate paediatric optic pathway glioma in Ireland over the last 10 years in terms of epidemiology, clinical features, treatment and outcomes.

**Methods:** Retrospective study of children with optic pathway glioma in Ireland over the last 10 years.

**Results:** There were 24 cases, 11 male and 13 female who presented during this period with a mean age of 52.8 months (range 9- 170 months).

Patients presented with ocular (75%) and systemic (25%) abnormalities. Presenting features included : strabismus(33%), nystagmus(40.8%), abnormal gait(16.5%), decreased visual acuity(25%), proptosis(16.5%) , developmental delay(8.33%), ptosis(8.33%), precocious puberty(4.16%), neurofibromatosis(4.16%) and maxillary swelling( 4.16%).

The visual acuity was markedly impaired (i.e. <6/36) in 62.5% with bilateral involvement in 33.3%. Vision was impaired as a result of optic nerve, chiasm or optic tract involvement with OPG. The most common sites of glioma were : chiasmal(54%), optic nerve(33.3%) and chiasmal & hypothalamus(12.5%).

66% of our patients had NF1. Some patients were treated with chemotherapy, radiotherapy and surgery.

**Conclusions:** Paediatric optic pathway glioma presents significant challenges in both clinical evaluation and choice of treatment modality. OPG should be observed for signs of progression which would influence treatment choice. Monitoring and follow up involves clinical evaluation (with particular notice given to vision, and colour vision), VER and MRI. Follow up and treatment is managed by a multidisciplinary approach involving radiology, oncology and ophthalmology Further investigation into this aera is necessary in order to ascertain how best to manage these patients in terms of diagnosis, follow up and treatment.

# THE EFFECTS OF CIGARETTE SMOKE EXPOSURE ON CHOROIDAL NEOVASCULAR MEMBRANES IN A LASER INDUCED ANIMAL MODEL

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**Objectives:** To determine the effects of cigarette smoke exposure on the development of choroidal neovascular membranes (CNV) in superoxide dismutase 1 (SOD1) deficient mice.

**Methods:** The laser-induced mouse model of choroidal neovascularisation is a well-established technique of generating CNV. Once Bruch's membrane has been breached by laser photocoagulation, the choroidal vasculature responds by proliferation of blood vessels throughout the affected areas. All mice used for experimentation were SOD1 deficient. Prior to laser treatment mice were exposed to either cigarette smoke extract or control PBS. Specimens for CNV analysis are prepared by dissection and flat mounting of choroid and retinal pigment epithelium. Endothelial cells are stained with FITC-Isolectin B4 that fluorescently marks infiltrating vessels projecting from the choroidal surface. Confocal laser scanning microscopy enables accurate three-dimensional digital quantification (VLOCITY software) of the load of CNV induced.

**Results:** Cigarette smoke exposure increased the volume of choroidal neovascular membranes produced by laser photocoagulation (mean 125,900um vs 193,200um)  $p = 0.0171$ .

**Conclusions:** Cigarette smoke exposure has a significant effect on the growth and proliferation of endothelial cells through the retinal pigment epithelium. SOD1 mice are more susceptible to environmental oxidative stresses including cigarette smoke. Accumulation of cigarette smoke oxidative stress within the retinal pigment epithelium leading to the loss of balance between angiogenic factors may facilitate the growth of new vessels in AMD.

# TRANSIENT BLOCKADE OF TRANSFORMING GROWTH FACTOR- $\beta$ 1 IN DIABETIC HUMAN CD 34+ CELLS ENHANCES THEIR SURVIVAL AND PROLIFERATION *IN VITRO* AND VASCULAR REPARATIVE FUNCTIONS *IN VIVO*

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**Objectives:** To determine whether the reparative ability of diabetic CD34+ cells is improved by transient blockade of TGF- $\beta$ 1, a key factor regulating stem cell quiescence.

**Methods:** Peripheral blood CD34+ cells were treated *ex vivo* with antisense phosphorodiamidate morpholino oligomers (TGF- $\beta$ 1-PMO) previously demonstrated to inhibit TGF- $\beta$ 1 protein expression in stem cells. CD34+ cells were then analyzed for cell-surface TGF- $\beta$ 1 R2 and CXCR4 expression, cell survival in the absence of added growth factors, SDF-1-induced migration, NO release, and *in vivo* vascular reparative ability.

**Results:** Compared to control-PMO treatment, TGF- $\beta$ 1-PMO treatment of both healthy and diabetic CD34+ cells induced CXCR4 up regulation, survival in the absence of growth factors, and enhanced migration to SDF-1. In diabetic CD34+ cells, these effects of TGF- $\beta$ 1-PMO were accompanied by restoration of NO production to non-diabetic levels. Using a retinal ischemia reperfusion rodent model, we observed that recruitment of both healthy and diabetic CD34+ cells to injured acellular retinal capillaries was greater following TGF- $\beta$ 1-PMO treatment than following control-PMO treatment.

**Conclusions:** Transient blockade of TGF- $\beta$ 1 may represent a promising therapeutic strategy for restoring vascular reparative function in dysfunctional diabetic CD34+ cells.

## FURTHER INSIGHTS INTO WHY SUBRETINAL GRAFTS FAIL.

*Kennelly K.P.<sup>1,2</sup>, Holmes T.M.<sup>1</sup>, Wallace D.M.<sup>2</sup>, Keegan D.J.<sup>2</sup>*

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**Objectives:** Graft failure remains an obstacle to subretinal cell transplantation despite suppression of the adaptive immune response. This study aimed to optimise the graft preparation technique and to determine if the innate immune response plays a role in graft failure.

**Methods:** Optimisation of DH01 graft cell preparation was ascertained by phase contrast microscopy, flow cytometry and DNA fragmentation. Subretinal allogeneic transplants in C57BL/6 mice were harvested at post operative day (POD) 1, 3, 7 and 28. Sections were immunostained for macrophage (CD11b & F4/80) and neutrophil (Gr-1 Ly-6G) markers. Graft cells were detected with an SV40 T antibody and apoptosis was assessed by TUNEL-labelling.

**Results:** Subconfluent DH01 cells had significantly lower ( $p < 0.0001$ ) levels of cell death and apoptosis (4.77% +/- 0.54%) compared to post-confluent cells (16.49% +/- 0.94%). DNA fragmentation showed no increase in apoptosis under transplant conditions. TUNEL-labelling of subretinal grafts showed low levels of apoptosis. The subretinal bolus at POD 1 & 3 comprised largely SV40T +ve graft cells. CD11b, F480 and Gr1 Ly6G cells infiltrated the graft by POD 1 and predominated over grafted cells by POD7. Grafts were largely eliminated by POD 28.

**Conclusions:** DH01 cells cultured for transplantation should be harvested when subconfluent. Subretinal grafts are infiltrated by macrophages and neutrophils by POD 1 with massive graft cell loss by POD 7. We have identified a mechanism of rapid graft cell loss which will have to be overcome for future long term graft survival.

# EPIDEMIOLOGY AND CLINICAL ASSOCIATIONS OF PRIMARY RETINAL DETACHMENT IN SCOTLAND: 2 YEARS OF PROSPECTIVE RECRUITMENT

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**Objectives:** Rhegmatogenous retinal detachment (RRD) is the most common ophthalmic emergency. Population-based data on primary RRD incidence has been variable with large differences in reported rates. There have been no previous population based estimates of RRD incidence in the U.K. or Ireland. Our aim is to estimate the annual incidence and associations of primary RRD in Scotland.

**Methods:** Since November 2007 we have initiated and co-ordinated a national, multi-centre, prospectively recruited, population based study where every case of primary RRD presenting to one of six vitreo-retinal surgical sites in Scotland is examined and approached for study inclusion. Through rigorous validation of case ascertainment, this database represents > 96% of all operated cases of RRD in Scotland over a two year period. Using a national population based tool, the Scottish Index of Multiple Deprivation (SIMD), we examined the socioeconomic distribution of all incident cases.

**Results:** A total of 1,244 patients were identified during the study period from a population of 5,168,500 yielding an annual incidence of 12.05 per 100,000 population (95%CI=11.35-12.70). The age-specific incidence rose with increasing age up to a peak incidence in both genders in the 60-69 year age group. RRD was significantly more frequent in males than in females (14.70 vs 8.75 per 100,000,  $p<0.001$ ). 53.15% of cases without previous intra-ocular surgery were myopic with a spherical equivalent refractive error  $>-1$  dioptries(D). When categorized by type, 23.4% of cases had previous cataract surgery and 10.4% of cases reported ocular trauma. A strong association was found between RRD incidence and affluence, with a highly significant rising trend across quintiles of deprivation.

**Conclusions:** The estimated annual incidence of primary RRD in Scotland is 12.05 per 100,000. Based on this estimate, there are approximately 7,300 new cases annually in the U.K. RRD incidence varies with age and gender, and is strongly associated with affluence.

# AN AUDIT OF INDICATIONS AND MAJOR COMPLICATIONS OF 25-GAUGE VITRECTOMY

*Ng E, Collins N, Kilmartin D  
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**Objectives:** To review the indications and major complications of 25-gauge vitrectomy from a single surgeon case series.

**Methods:** A retrospective study of all 25-gauge vitrectomies performed between 2008 and 2009. Surgical lists and patient charts were reviewed.

**Results:** A total of 145 consecutive 25-gauge vitrectomy cases were recorded. Eighty three cases (57%) were performed for macula pathology, namely macula holes and epiretinal membranes while 33 cases (23%) were performed for diabetic retinopathy. In 2008, 58 cases were performed and in 2009, 87 cases were performed.

A quarter of all macular surgeries were combined with phacoemulsification and 30% of vitrectomies for diabetic retinopathy required fibrovascular dissection.

There were no cases of endophthalmitis or retinal detachment observed in this series. However, 8 cases of intra and post-operative retinal tears were recorded. Five cases required conversion to 20 gauge vitrectomy. Eleven cases of hypotony (IOP  $\leq$  5mmHg) were recorded, all resolving by post-operative day 3.

Routine cryotherapy behind vitrectomy ports, intravitreal or intracameral (if gas tamponade was employed) cefuroxime and shelved trocar insertions have kept complications below previously reported incidence.

**Conclusions:** Macula pathology and diabetic retinopathy were the most common indications for 25-gauge vitrectomy. The trend of increasingly adoption of 25-gauge vitrectomy is partially due to its low rate of major complications.



# 25-GAUGE VITRECTOMY IN DIAGNOSIS AND TREATMENT OF UVEITIS

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**Objectives:** To investigate whether 25-gauge vitrectomy is useful in patients with uveitis, in terms of contribution of the vitreous biopsy to final clinico-pathologic diagnosis of the cause of uveitis (including diagnosis of intraocular malignancy); improvement in visual acuity and amelioration of CMO.

**Methods:** Non-comparative retrospective case series, including 22 consecutive patients who underwent diagnostic or therapeutic 25gauge vitrectomy (25 procedures on 24 eyes) from 2005 through 2009.

**Results:** Patient records were available in 19 of 22 patients (23 vitrectomies in 21 eyes of 19 patients). Indications for vitrectomy were diagnosis (eight cases, 30%), treatment (six cases, 26%) and combined diagnosis and treatment (nine cases, 39%). The median age of the 19 patients (eight male, eleven female) was 49 years (range 6 – 82 years). The 19 cases were classified as posterior uveitis (n=9), panuveitis (n=7) and intermediate uveitis (n=3). One intraoperative complication occurred: an iatrogenic extension of a pre-existing retinal tear causing retinal detachment and requiring conversion to 20gauge vitrectomy. Postoperative complications included hypotony (one eye), transiently increased IOP (two), hyphaema (two), and extension of a chorioretinal lesion in an operated eye two weeks postoperatively. Where vitrectomy was performed for diagnosis (16 eyes), the vitreous biopsy contributed to the final clinico-pathologic diagnosis in 12 eyes (cytology (7 eyes) and microbial PCR (5 eyes) were the main contributors to diagnosis, immuno-histochemistry was helpful in one case, and microbial culture in one case). Of 11 eyes where intraocular malignancy was suspected preoperatively, it was ruled out based on cytology in seven cases, leukaemia was confirmed in one case, and in three cases cytology was equivocal for diagnosis. Mean visual acuity improved from LogMAR 1.49 (SD 1.07; 6/120 Snellen equivalent) preoperatively, to LogMAR 0.77 (SD 0.85), 6/36 Snellen equivalent, at three months following vitrectomy (mean difference 0.63 (95% CI of difference (-0.02, 1.28) p=0.056), with 7 eyes reaching Snellen acuity of 6/12 or better by three months. Mean visual acuity improved further to LogMAR 0.33 (SD 0.27) at one year. Following therapeutic vitrectomy (n=15 eyes), there was a significant improvement in visual acuity at three months (mean difference LogMAR 0.81 (SD 1.27), 95% CI of difference (0.002, 1.61), p=0.05). Four patients had documented CMO preoperatively. Post-operatively CMO improved on OCT in three eyes, and deteriorated in one eye.

**Conclusions:** 25-gauge vitrectomy is an effective procedure for both diagnosis and treatment of uveitis. The complication rate in this series is highly favourable in comparison to published series of 20gauge vitrectomies, and is no worse in patients with uveitis than in 25gauge vitrectomies for other indications. The diagnostic yield from 25gauge vitreous biopsy was promising, and contributed to diagnosis in the majority of cases, particularly cytology and microbial PCR. Treatment benefits include a significant improvement in visual acuity and a reduction in CMO.

# BILATERAL OPTIC NEUROPATHY FOLLOWING INTRALASIK FOR MYOPIA

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**Objectives:** Reported cases of optic neuropathy following laser in situ keratomileusis (LASIK) are extremely rare. High intraocular pressures are generated during LASIK flap creation using a mechanical microkeratome. However, during femtosecond laser flap creation, the pressures generated are considerably lower. We report a case of bilateral optic neuropathy in a young female myopic patient following IntraLASIK.

# MANAGEMENT OF CORNEAL ULCERS IN AN A&E DEPARTMENT

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**Objectives:** To examine the initial A&E assessment of patients presenting with corneal ulcers regarding appropriate history taking, clinical evaluation and treatment.

To compare current practice with the Preferred Practice Guidelines compiled by the American Academy of Ophthalmology Cornea/External disease panel in September 2008.

**Methods:** This is a retrospective review of thirty four patients admitted through the A&E department of the Royal Victoria Eye and Ear Hospital over a one year period. Documentation of pertinent ocular and systemic conditions and medications as well as examination findings and treatment instituted at the time of initial A&E presentation were recorded and compared to the Preferred Practice Guideline standards.

**Results:** The results revealed a lack of consistency among A&E officers. The documentation of clinical findings was very variable although appropriate follow-up and treatment were implemented in the majority of cases.

**Conclusions:** This review highlights the need for a standardised approach to the primary evaluation of patients with corneal ulceration in the A&E department.

# ULTRAVIOLET RIBOFLAVIN COLLAGEN CROSS LINKING

*Brady J, Power W, Lee W*

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**Objectives:** To evaluate patient response to ultraviolet riboflavin collagen cross linking at greater than twelve months follow-up

**Methods:** We carried out a retrospective review of all keratoconus patients undergoing ultraviolet riboflavin collagen cross linking with a minimum of twelve months follow-up. Patients were assessed with regard to uncorrected and best-corrected visual acuity, mean astigmatism and stability of keratometry readings.

**Results:** 24 eyes in 16 patients have undergone cross linking to date with greater than 12 months follow-up. Preoperative Best corrected visual acuity was  $0.49 \pm 0.16$  with a mean astigmatism of  $3.5 \pm 1.9$  and  $k_{\max}$  of  $44.2 \pm 2.7$ . At twelve months the average reduction in  $k_{\max}$  was  $0.93 \pm 0.74$  and reduction in mean cyl was  $1.34 D \pm 1.12$ . No patient had deterioration in Best Corrected visual acuity and it improved by at least one line in 23/24.

**Conclusions:** Our results follow on from last years study of our initial cohort undergoing ultraviolet riboflavin collagen crosslinking and confirm the stabilisation of corneal parameters post treatment at a minimum of twelve months follow-up.

This minimally invasive, technically simple, once-off treatment is a promising new development in the stabilisation of keratoconus and other corneal ectasias.

# CORNEAL DEHYDRATION WITH THE APPLICATION OF TOPICAL RIBOFLAVIN 0.1% USED IN CORNEAL COLLAGEN CROSSLINKING

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**Objectives:** Traditionally, a lower limit of 400microns of corneal thickness (before removal of epithelium) was set as a safe thickness for crosslinking of the cornea with ultraviolet light. However, we report a novel phenomenon of corneal dehydration with the application of Medio-Cross (topical riboflavin 0.1%; Dextran 500 isotonic 20%) used in collagen crosslinking (CXL).

**Methods:** Central corneal pachymetry was performed with ultrasound every 5 minutes throughout the whole procedure. All patients underwent CXL for keratoconus.

**Results:** The average pachymetry of 15 consecutive CXL eyes after removal of epithelium was 439 microns (range 404 to 490 microns). However, there was a 26% (115 microns) average loss of corneal thickness from the time the first riboflavin 0.1% drop was instilled to the time of ultraviolet light initiation (t-test; p=0.000). This meant that by the time ultraviolet light was initiated, the average cornea was only 328 microns thick (range 287 to 391microns). This phenomenon of dehydration was not correlated to initial corneal thickness (r squared = 0.28).

No further change in central corneal thickness was observed following treatment with ultraviolet light. Further studies using hypotonic riboflavin are underway.

**Conclusions:** Corneal dehydration following instillation of riboflavin 0.1% may change the way we perceive the traditional safe limit of corneal thickness for this procedure.

# THE USE OF 3D ANIMATION IN TEACHING CATARACT SURGERY

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**Objectives:** To evaluate the use of 3D animation in teaching complex surgical procedures. Minimal invasive surgery such as phacoemulsification demands knowledge in the interaction and manipulation of instruments in addition to the knowledge in anatomy and surgical procedures. Learning from text or diagrams alone is often inadequate to highlight the simultaneity of multiple operative maneuvers. Surgical videos are limited to the surgical field and failed to show the interaction of the entire surgical environment. The use of 3-dimensional animation can provide additional facet for knowledge transfer because it enables trainees to 'see' instead of 'imagine' how things are done.

**Methods:** 3-dimensional animated slides for teaching phacoemulsification were created by using Microsoft Power Point Software. The course material was presented to ophthalmology consultants (n=5) and trainees (n=24) for content validity. The trainees received this lecture as part of the proficiency based progression curriculum for phacoemulsification with simulator training.

**Results:** All five ophthalmology consultant and 24 trainees' agreed that the use of 3D animation are effective in explaining complex surgical procedures.

**Conclusions:** The use of 3D animation is an effective tool of teaching complex surgical procedures in addition to texts, diagrams and videos. It is interesting to watch and can help trainees to consolidate important surgical concepts by visualizing the simultaneous co-ordination of hand and foot movement for controlling surgical instruments.

# PREDICTION OF EFFECTIVE LENS POSITION USING A METHOD INDEPENDENT OF PREOPERATIVE KERATOMETRY READINGS

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**Objectives:** To test the validity of a method of predicting effective lens position (ELP) following uneventful phacoemulsification cataract surgery, which utilises Scheimpflug camera-measured corneal height to calculate a theoretical corneal radius ( $R_{rt}$ ) and thus is independent of preoperative keratometry readings.

**Methods:** The anterior chamber diameter (measured from anterior chamber angle to anterior chamber angle,  $AG_m$ ) and corneal height (measured from the internal cornea to the line connecting the anterior chamber angles,  $H_m$ ) in 102 unoperated eyes were measured using a rotating Scheimpflug camera prior to elective cataract surgery.  $R_{rt}$  was then calculated from  $H_m$  and  $AG_m$  by the Ho  $R_{rt}$  formula, thereby allowing ELP to be predicted (using the SRK/T and Holladay 1 formulae). The prediction error and outcomes were also compared for keratometry-based methods of ELP prediction using the SRK/T formula ( $ELP_s$ ) and Holladay 1 formula ( $ELP_h$ ) versus the Ho  $R_{rt}$  formula-based ELP prediction methods ( $ELP_{rs}$  and  $ELP_{rh}$ ). The anatomic lens position (post-operative ACD) was then measured 6 weeks following surgery, the proximity to the  $R_{rt}$ -based ELP prediction method and traditional keratometry-based methods were also compared.

**Results:** The biometric data in 102 preoperative eyes were used to obtain the mean ELP using traditional ( $ELP_s$ : 5.59mm and  $ELP_h$ : 5.62mm) and keratometry-independent methods ( $ELP_{rs}$ : 5.56mm and  $ELP_{rh}$ : 5.61mm). There was significant direct correlation between the  $ELP_h$  versus  $ELP_{rh}$  ( $r = 0.893$ ,  $r^2 = 79.7\%$ ,  $P < 0.001$ ), and also between the  $ELP_s$  versus  $ELP_{rs}$  ( $r = 0.814$ ,  $r^2 = 66.3\%$ ,  $P < 0.001$ ). The mean arithmetic error (ME) and mean absolute error (MAE) for the  $ELP_h$  versus  $ELP_{rh}$  estimation were  $-0.017 \pm 0.181$  and  $0.139 \pm 0.116$  mm, respectively. The ME and MAE for  $ELP_s$  versus  $ELP_{rs}$  estimation were  $-0.030 \pm 0.286$  mm and  $0.220 \pm 0.185$  mm, respectively. The relationship between the post-operative ACD and  $ELP_{rh}$  is also significantly correlated ( $r = 0.438$ ,  $r^2 = 19.2\%$ ,  $P < 0.001$ ), this relationship is further strengthened when several individual intraocular parameters are included ( $P < 0.0001$ )

**Conclusions:** This study is the first to confirm that the Ho  $R_{rt}$  formula is valid and is comparable to traditional methods of predicting this important post-operative parameter common to all forms of ocular biometry prior to cataract surgery. This is also the first study to relate this novel ELP prediction method with post-operative parameters. This Ho  $R_{rt}$  formula may be useful in cases where keratometry readings cannot be secured, or are of doubtful value, such as in patients who have undergone corneal refractive surgery

# THE IMPACT OF CATARACT ON VISUAL PERFORMANCE AND EXPERIENCE IS RELATED TO LENS OPTICAL DENSITY

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**Objectives:** To investigate whether measures of lens optical density reflect psychophysical changes attributable to cataract.

**Methods:** Visual performance of 65 patients (65 eyes), with age-related cataract and no other ocular pathology, was assessed by measuring high contrast corrected distance visual acuity rating (CDVAR), corrected distance contrast sensitivity (letters and sinusoidal gratings) at low, medium and high spatial frequencies (photopic and mesopic conditions), glare disability (F.A.C.T.<sup>®</sup>) [photopic and mesopic conditions], reading performance (Radner Reading chart<sup>®</sup>), stereopsis (TNO<sup>®</sup> random dot test), retinal sensitivity (Microperimeter MP1<sup>®</sup>), and functional vision satisfaction (Priquest<sup>®</sup> questionnaire)<sup>1</sup>. In addition, optical characteristics of the cataract were evaluated by measuring lens optical density (LOD) [Pentacam<sup>®</sup> Scheimpflug images] and by a validated grading system (Lens Opacities Classification System [LOCS]III).

**Results:** The mean ( $\pm$  SD) age of patients recruited was 68 ( $\pm$  9) years. The female to male ratio was 40: 25. The right eye to left eye ratio was 26: 39. The fellow eye was phakic in 48 patients and pseudophakic in 17 patients. Visual performance and optical variables that demonstrated a statistically significant (or statistically borderline) relationship with lens optical density are presented in Table 1.

**Conclusions:** Lens optical density significantly correlated with macular sensitivity, LOCSIII score, functional vision satisfaction and contrast sensitivity measured at medium spatial frequencies, but it did not correlate with high contrast CDVAR ( $r = -0.87$ ;  $p = 0.491$ ). Lens optical density describes more appropriately the impact of cataract on visual performance and experience than visual acuity.



**Table 1:** Correlation of Lens optical density with visual performance and optical variables

Visual performance/Optical variable	Pearson correlation with LOD
Log CS at 2.4 cpd (letters)	-0.282*
Log CS at 15.16 cpd (letters)	-0.263*
Log CS (photopic) at 6 cpd (gratings)	-0.251*
Log CS (mesopic with glare) at 3 cpd (gratings)	-0.220†
Max reading speed	-0.231†
Functional vision satisfaction	-0.288*
MS at fixation	-0.432**
MS within central 5 degrees of fixation	-0.405**
MS between 5 and 10 degrees of fixation	-0.395**
MS within central 10 degrees of fixation	-0.288*
LOCSIII nuclear score	0.416**
LOCSIII total score	0.256*

LOD = lens optical density; CS = contrast sensitivity; cpd = cycles per degree; Max = maximum; MS = macular sensitivity; LOCS = lens opacities classification system

\* = Correlation is significant at the 0.05 level (2-tailed)

\*\* = Correlation is significant at the 0.01 level (2-tailed)

† = Correlation is statistically borderline at the 0.08 level (2-tailed)

**References:** 1. Lundstrom M, Albrecht S, Hakansson I, Lorefors R, Ohlsson S, Polland W, et al. NIKE: a new clinical tool for establishing levels of indications for cataract surgery. *Acta Ophthalmol Scand.* 2006 Aug;84(4):495-501

# HOW RELIABLE IS FIRST DAY POSTOPERATIVE AUTOMATED REFRACTION FOLLOWING SUTURELESS SMALL INCISION CATARACT SURGERY? FINDINGS FROM KENYA

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**Objectives:** To validate automated refraction obtained at day 1 after sutureless small incision cataract surgery (SICS) in a developing country.

**Methods:** A prospective study design was used. Cataract patients, operated at a secondary eye clinic in Kenya underwent automated refraction at day 1 after surgery and at a later follow up visit. The agreement of both measurements was calculated using a Bland/Altman plot.

**Results:** Ninety eyes were included in this study. Mean spherical equivalent (SE) at day 1 postoperatively was more myopic than at a later follow up visit (-0.38 D). In 65 eyes (72%) the SE-values measured at day 1 were within  $\pm 1$  D of those obtained at the follow up visit, 83 eyes ( 92%) agreed within  $\pm 2$  D. There was a weak correlation in the axis of astigmatism. In only 28 eyes (31%) the cylinder axis determined at day 1 postoperatively was within 10 degrees of that measured at a later follow up visit. There was no correlation between the amount of postoperative SE and the differences in SE-values measured at the two points in time.

**Conclusions:** Refractive data from the early postoperative period can provide useful data for qualitative control and monitoring of postoperative refractive outcomes in a developing country setup where “better” data is often not available.

# THE RELATIONSHIP BETWEEN OXIDATIVE STRESS, CALCIUM HOMEOSTASIS AND EXTRACELLULAR MATRIX REMODELING IN HUMAN LAMINA CRIBROSA CELLS.

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**Objectives:** Extracellular matrix (ECM) remodeling at the optic nerve head (ONH) may be responsible for retinal ganglion cell axon loss in glaucoma. The mechanisms underlying this pathological feature may include elevated intracellular calcium levels ( $[Ca^{2+}]_i$ ) and oxidative stress. Our group has shown that lamina cribrosa (LC) cells of the ONH are fibrotic and exhibit elevated ( $[Ca^{2+}]_i$ ) when subjected to mechanical stress. This study examines the link between oxidative stress,  $Ca^{2+}$  homeostasis and ECM remodeling in the ONH by investigating the effects of hydrogen peroxide ( $H_2O_2$ ) and calcium ionophore (A23187) on  $Ca^{2+}$  extrusion channels (plasma membrane  $Ca^{2+}$  ATPase, PMCA; sodium-calcium exchanger, NCX) and ECM gene expression.

**Methods:** Primary human LC cells were treated with  $H_2O_2$  or A23187. Real-time PCR for PMCA, NCX and ECM, was performed and confirmed at the protein level by Western blot.

**Results:** We found downregulation of PMCA and NCX-1 in LC cells after treatment with  $H_2O_2$  indicating abnormalities in  $Ca^{2+}$  extrusion system. ECM gene expressions were altered and confirmed by Western blot.

**Conclusions:** This study has shown that ECM remodeling at the ONH may be attributed to an increase in ( $[Ca^{2+}]_i$ ) and oxidative stress. Targeting of oxidative stress and  $Ca^{2+}$  dysregulation may provide a therapeutic avenue in abnormal ECM remodeling of the ONH.

# C6ORF129- AN UNKNOWN PROTEIN IDENTIFIED IN THE SERUM OF PATIENTS WITH PSEUDOEXFOLIATION GLAUCOMA

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**Objectives:** The aim of this study is to characterise c6orf129. C6orf129 was previously identified as a significantly ( $p=0.007$ ) elevated protein in the serum of patients with Pseudoexfoliation Glaucoma compared to control. We have found it to be expressed in both the brain and the retina. Initial investigations, using hydrogen peroxide and calcium ionophore (A23187), are designed to determine the effect of glaucoma-like stimuli on its expression in the RGC-5 cell line. Each of these stimuli has a proven relationship with retinal cell damage.

**Methods:** Altered expression of c6orf129 following induction treatment with glaucoma-like stimuli was performed by culturing RGC-5 cells in the presence or absence of hydrogen peroxide (at 200 $\mu$ M, 400 $\mu$ M and 600 $\mu$ M) and calcium ionophore (at 2 $\mu$ M and 5 $\mu$ M). Real time PCR using gene specific primers was used to quantify c6orf129 expression. Crystal violet assay was used to assess cell viability.

**Results:** Real time PCR results show a significant ( $p<0.05$ ) up-regulation of c6orf129 in RGC-5 cells following exposure to glaucoma-like stimuli at sub-toxic doses as measured by crystal violet assay.

**Conclusions:** These data show that RGC-5 cells upregulate c6orf129 expression in response to the glaucoma-like stimuli, hydrogen peroxide and calcium ionophore (A23187). Our initial results, in conjunction with elevated c6orf129 in Pseudoexfoliation Glaucoma patients (Dervan et al), are indicative of an association with Glaucoma/ Pseudoexfoliation Glaucoma. Further characterisation/ patient studies are required to fully elucidate the function of this protein.

# ABNORMAL CALCIUM HOMEOSTASIS IN GLAUCOMATOUS LAMINA CRIBROSA CELLS

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**Objectives:** Cupping of the optic nerve head (ONH) in glaucoma is associated with compression and collapse of the lamina cribrosa (LC) connective tissue. Calcium is a key regulator of diverse cellular functions and consequently intracellular  $\text{Ca}^{2+}$  ( $[\text{Ca}^{2+}]_i$ ) levels are tightly regulated as elevated  $[\text{Ca}^{2+}]_i$  is a feature of numerous neurodegenerative conditions. The purpose of this study was to examine the  $[\text{Ca}^{2+}]_i$  levels and homeostasis mechanisms in ONH glial fibrillary acidic protein (GFAP) negative lamina cribrosa cells in glaucoma.

**Methods:** Calcium entry, stores, extrusion and downstream pathways were assessed using patch-clamp, calcium imaging, Real-Time PCR and Western blot (+/- specific inhibitors)

**Results:** Compared with LC cells from normal donors (NLC), basal and stretch-induced  $\text{Ca}^{2+}$ -dependent maxi- $\text{K}^+$  channel activity, cytosolic free  $\text{Ca}^{2+}$  levels, and phosphorylated  $\text{PKC}\alpha$  are elevated in LC cells from glaucoma patients (GLC). In GLC, expression of the calcium regulators plasma membrane  $\text{Ca}^{2+}$  ATPase (PMCA) and sodium-calcium exchanger (NCX) are reduced, while sarcoplasmic reticulum  $\text{Ca}^{2+}$ -ATPase (SERCA) expression is increased.

**Conclusions:** Glaucoma LC cells show abnormalities in  $\text{Ca}^{2+}$  re-uptake and extrusion pathways associated with an elevation of cytosolic  $\text{Ca}^{2+}$ . This dysfunction in  $\text{Ca}^{2+}$  regulation may provide a stage on which to examine the role of  $\text{Ca}^{2+}$  in the long-term remodelling activity of ONH glia.

# USE OF IOPIDINE 1% IN THE DIAGNOSIS OF HORNER'S SYNDROME

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**Objectives:** Case report of a case of Horner's syndrome confirmed with Iopidine 1%. Options for pharmacological diagnosis of Horner's syndrome, and advantages of the use of Iopidine in such a setting are discussed.

**Methods:** A 49 year old woman presented with left ptosis and pupil constriction of 2 months duration. This had been preceded by a 10 day episode of moderate ipsilateral hemicranial headache that had resolved spontaneously. Diagnosis of Horner's was confirmed by instilling one drop of apraclonidine 1% (Iopidine) into both eyes, reversing the ptosis and anisocoria. Fat saturated axial T1-weighted MRI showed thrombus in the internal carotid artery (ICA) and MRA confirmed left ICA occlusion. A diagnosis was made of cervical ICA dissection that progressed to occlusion.

**Results:** Apraclonidine is primarily an  $\alpha$ -2 receptor agonist, with weak  $\alpha$ -1 affinity. In Horner's syndrome it acts through denervation hypersensitivity of  $\alpha$ -1 receptors in the pupil dilator muscle and Muller's muscle. While it does not differentiate between first order or second/third order neuron lesions, advantages of its use over traditional pharmacological agents include a high sensitivity and specificity, ease of availability in the clinic and its safety, especially in young children.

**Conclusions:** Iopidine is a safe, effective and convenient method of confirming Horner's syndrome in a busy clinic setting.

# VIDEO PRESENTATION; SUTURELESS BROAD RE-INSERTION REPAIR OF COMPLEX IRIDODIALYSIS

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**Objectives:** Repair of iris dialysis using sutures is technically challenging and the iris is fixated at only the points of needle entry. Hence, sutured repair carries immediate and long-term risks of cheese-wiring of sutures through iris and suture breakage resulting in disinsertion of iris root or irregular pupil.

We present a video showing techniques and pitfalls of complex iridodialysis repair along the entire length of the iris root without the use of sutures.

**Methods:** This is a case of a young male who suffered zonular and iridodialysis following blunt ocular trauma that resulted in not only poor cosmesis, polycoria and glare but was so large that it occluded his visual axis.

Since he had a superior 180 degree iridodialysis and concurrent traumatic cataract, repair was performed with synechiolysis, micro-incision temporal approach phacoemulsification, capsule tension ring and intraocular lens insertion and incarceration of iris root along its entire length of dialysis using vitreoretinal forceps through numerous 1mm incisions just behind the limbus.

Atropine was instilled for 2 weeks until fibrosis occurred at incarceration site.

**Results:** Caution needs to be taken to ensure that the forceps is released while in the scleral wound to prevent iris appearing beyond the surface. If used, removal of viscoelastic needs to be performed gently to prevent disinsertion at incarceration sites.

**Conclusions:** Fibrosis was established at incarceration sites by gonioscopy and inflammation had settled by post-operative week 4.

# VISUAL PERCEPTIONS INDUCED BY INTRAVENOUS INJECTION OF THERAPEUTIC AGENTS

*Charalampidou S.<sup>1</sup>, Nolan J.<sup>2</sup>, Opdebeeck Ormonde<sup>1</sup>, Beatty S.<sup>1,2</sup>*

*1. Institute of Eye Surgery and Institute of Vision Research, Whitfield Clinic, Butlerstown North, Cork Road, Waterford, Ireland; 2. Macular Pigment Research Group, Waterford Institute of Technology, Cork Road, Waterford, Ireland*

**Objectives:** We report a questionnaire-based survey designed to investigate and document subjective visual perceptions induced by intravitreal (IVT) injections of therapeutic agents.

**Methods:** Patients undergoing an IVT injection of ranibizumab, pegaptanib sodium or triamcinolone acetonide were administered a questionnaire in the immediate post-injection period and at 2 weeks of follow-up. They were asked about the presence of any unusual visual experiences induced by the IVT administration of the therapeutic agent, and to describe such perceptions (if any). The patients were also asked whether their visual experiences in the immediate and/or early post-injection periods represented a cause for concern on their part.

**Results:** Visual perceptions following 180 IVT injections in 94 eyes of 82 patients are described in this study. In the immediate post-injection period, 58% of patients experienced some form of visual phenomenon induced by the IVT injection, and this increased to 75% by the two-week follow-up. The most commonly reported IVT-induced visual perceptions were colors and floaters in the immediate post-injection period and in the early post-injection period, respectively. Fifteen percent of surveyed patients were concerned as a result of the visual phenomena that they experienced (visual analogue scale [VAS] score: 4.5; SD: 1.7), and felt that such concerns would have been prevented or alleviated had they been informed of the possible and anticipated visual perceptions following the IVT injection.

**Conclusions:** Visual perceptions following an IVT injection of therapeutic agents are frequent and are variable in nature, and include (but are not limited to) colors, floaters, lights, darkness, bubbles and shadows. This data can be used to enhance patients' understanding of the procedure, alleviate concerns in the immediate and early post-injection period, and facilitate the process of informed consent.



# THE NATURAL HISTORY OF TRACTIONAL CYSTOID MACULAR EDEMA

Charalampidou S.<sup>1</sup>, Nolan J.<sup>2</sup>, Beatty S.<sup>1,2</sup>

**1.** Institute of Eye Surgery and Institute of Vision Research, Whitfield Clinic, Butlerstown North, Cork Road, Waterford, Ireland; **2.** Macular Pigment Research Group, Waterford Institute of Technology, Cork Road, Waterford, Ireland

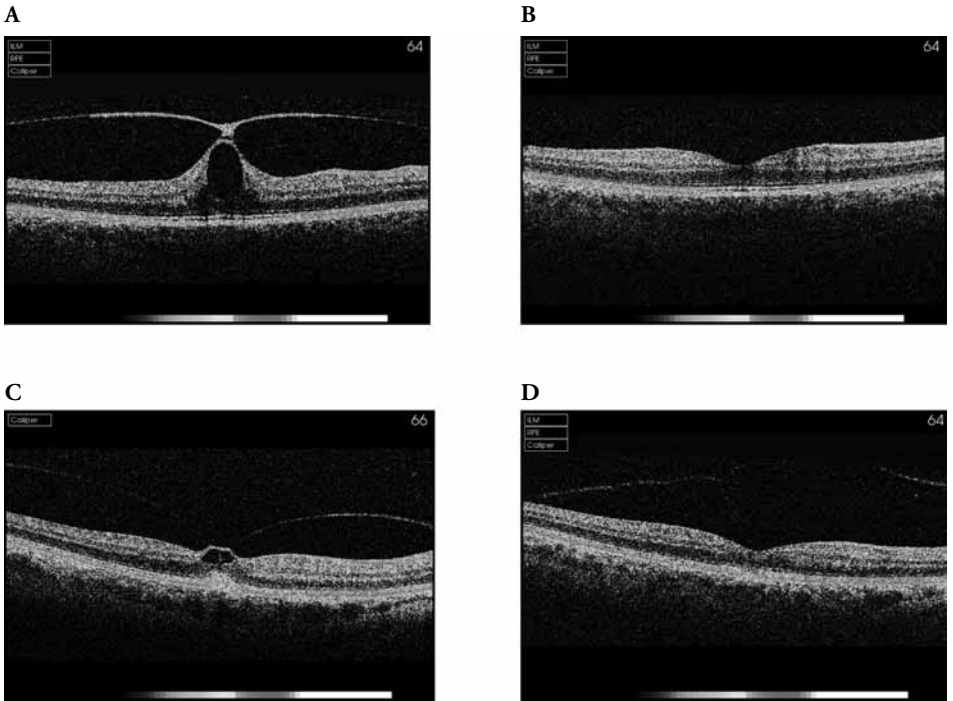
**Objectives:** To describe clinical findings and outcomes in a consecutive series of 13 eyes of 10 patients with tractional cystoid macular edema (TCME), a variant of vitreomacular traction (VMT) syndrome.

**Methods:** This is a prospective, uncontrolled, observational case series of 10 consecutive patients (13 eyes) presenting with cystoid macular edema caused by localized vitreofoveolar traction (TCME) at a retinal practice between November 2008 and January 2010. Each patient underwent a complete ophthalmic examination, including Snellen visual acuity testing, slit-lamp biomicroscopy, and optical coherence tomography (OCT). All the patients were monitored at regular 6-monthly intervals, unless a subjective change in symptoms prompted earlier follow-up.

**Results:** The mean age ( $\pm$  SD) at onset of symptoms was 69.2 ( $\pm$  8.6) years. All eyes exhibited TCME on OCT at presentation, with a mean corrected distance visual acuity (CDVA) ( $\pm$  SD) of 0.18 ( $\pm$  0.18), with a range of 0 to 0.60. The mean ( $\pm$  SD) maximum diameter of vitreofoveolar adhesion, as measured by OCT, was 273 ( $\pm$  133)  $\mu$ m, with a range of 81 to 545  $\mu$ m. After a mean follow-up of 7.5 ( $\pm$  4.4) months, 5 eyes exhibited spontaneous and complete posterior vitreous detachment (PVD), with resolution of the TCME and restoration of normal foveal anatomy in 4 of these eyes and persistence of a single foveal cyst in 1 of these eyes. The final VA ( $\pm$  SD) in the 5 eyes that underwent spontaneous and complete PVD improved from 0.22 ( $\pm$  0.16) [range: 0.10 to 0.50] to 0.20 ( $\pm$  0.12) [range: 0 to 0.3], but this change was not statistically significant ( $p = 0.8$ ). OCT images of representative cases are given in Figure 1.

**Conclusions:** In this series, complete PVD occurred spontaneously in nearly 40 % of cases within 7 months of presentation. Retinal specialists managing TCME, and their patients with this condition, should be aware that spontaneous PVD is not uncommon in this rare disorder.

**Figure 1:**



**Figure 1. A:** Optical coherence tomography (OCT) scan of the right eye of Patient 1, shows perifoveal vitreous detachment with focal foveolar attachment causing tractional cystoid foveal thickening with an associated large cystic space. **B:** OCT scan of the same eye at follow-up shows complete posterior vitreous detachment (PVD), and restoration of the foveal depression. **C:** OCT scan of the right eye of Patient 4, shows perifoveal vitreous detachment with focal foveolar attachment causing tractional cystoid foveal thickening. **D:** OCT scan of the same eye at follow-up shows complete PVD, and restoration of the foveal depression.

# PRIMARY RHEGMATOGENOUS RETINAL DETACHMENT SURGERY OUTCOMES IN A TERTIARY REFERRAL UNIT. A 2 YEAR REVIEW (2006-2008)

*de Boer BW, Ramasay P, Cullinane A  
Cork University Hospital*

**Objectives:** To compare re-attachment rates with the standards documented in the UK national audit for Retinal detachment surgery.

**Methods:** Retrospective chart review of consecutive primary rhegmatogenous retinal detachment repairs, performed by 1 surgeon at Cork University Hospital from July 2006 – June 2008.

**Results:** We report results that compares well to those reported in the UK national audit.

**Conclusions:** We propose that using SF6 gas tamponade, together with strict inpatient posturing for at least 48 hours, contribute to high success rates for primary rhegmatogenous retinal detachment repair

# INVESTIGATING THE ABILITY OF ANTI-OXIDANT GENE EXPRESSION IN MESENCHYMAL STEM CELLS TO PROMOTE CELL PROTECTION AND RECOVERY IN AN *IN VITRO* MODEL OF AGE-RELATED MACULAR DEGENERATION

*Lynch A, McGinley L, Coleman C, Howard L, Kent D and Barry F  
Regenerative Medicine Institute, National University of Ireland, Galway, Galway, Ireland*

**Objectives:** The aim of this study was to determine if lentiviral transduced mesenchymal stem cells (MSCs) expressing anti-oxidant genes could protect and recover the retinal pigment epithelial cell line, ARPE-19 from oxidative stress with *tert*-butylhydroperoxide (*tert*-BHP) treatment.

**Methods:** ARPE-19 cells were treated with varying concentrations of *tert*-BHP, ranging from 1 – 8 mM, to induce features of age-related macular degeneration (AMD). Control cells remained untreated. MSCs were transduced with lentiviral vectors expressing GFP, Catalase, HSP-27, HSP-70, SOD-1 or SOD-3. GFP transduced MSCs were used as a control. Treated ARPE-19 cells were grown in co-culture with transduced MSCs. Cell viability was assessed with the MTT and Live / Dead assays, while the production of ROS was measured with carboxy-H2DCFDA.

**Results:** Treatment with *tert*-BHP decreased the viability of ARPE-19 cells. Morphological changes and cell survival assays revealed that incubation with transduced MSCs aided ARPE to resist the free radicals induced by *tert*-BHP. In addition, activity of SOD-1 and 3 was enhanced in ARPE leading to a reduction in ROS levels.

**Conclusions:** These results suggest that transduced MSCs have potent antioxidant activity, protect RPE from oxidative injury and are therefore potential candidates for the modulation of oxidative stress-induced damage of RPE in the ageing retina.

# DIABETIC RETINOPATHY SCREENING WORKFLOWS: THE EFFECT OF TARGETED MYDRIASIS

*Wall T, Dervan E, Smith J*

*Department of Ophthalmology, Mater Misericordiae University, Dublin*

**Objectives:** Previous work by our group designed a table based on the patients pupil size and age that enables selective mydriasis to be targeted at those that require it in order to achieve gradable diabetic retinopathy screening photographs using a digital 45-degree non-mydriatic camera. Our aim in this study was to examine the implementation of a targeted mydriasis based workflow in a clinical setting by determining its effect on both the efficiency of screening clinics and the gradability of retinal photography.

**Methods:** Patients attending retinopathy screening clinics were assigned to one of two workflows: the standard mydriatic model where all patients were dilated, or the targeted mydriasis model where the need for mydriasis was determined by age and pupil size. The time taken to complete the screening process, the gradability of the images produced and by extrapolation the predictive accuracy of the table used to determine the need for mydriasis were all assessed.

**Results:** The table successfully predicted the requirement for mydriasis in 92% of patients. The average time taken to screen patients in routine mydriasis vs. targeted mydriasis was  $22.64 \pm 8.13$  min vs.  $12.84 \pm 10.81$  min ( $P < 0.0001$  Mann Whitney). 97% of photographs were gradable in the routine mydriasis group compared to 94% in the targeted mydriasis group.

**Conclusions:** Implementation of targeted mydriasis offers the possibility of significant time efficiencies for both patient and clinic in a systematic screening program without a significant reduction in the proportion of gradable images acquired.

# AUTOMATED IMAGE GRADING AS A WORKLOAD REDUCTION ELEMENT IN DIABETIC RETINOPATHY SCREENING

*Smith, J1, 2, Duncan, G3*

*1 Foresight Retinal Screening, 2 PCCC - HSE Dublin North East, 3 Medalyrix Ltd*

**Objectives:** To establish the accuracy of grading and potential for workload reduction to be achieved by the utilisation of automated digital image reading software

**Methods:** From March to September 2006 530 people with type 2 diabetes were screened for the presence of diabetic retinopathy using digital retinal photography in a primary care setting of 20 GP practices in a four county region in the North East of Eire. Photography and grading had been performed by manual graders according to the NSC screening recommendations for England and Wales. Automated image quality and automated “disease/no disease” detection was subsequently performed for comparison. It is important to stress that no gold standard was available for this process so the report compared the performance of the automated process against the final manual grade (either level one or level two) of accredited manual graders. Thereafter image sets are reviewed in cases where discrepancies exist that constitute a potential clinical risk and an opinion is offered on the “true” status of these image sets in terms of both gradability and recommendation. This review identified a number of cases where the opinion of the automated system differed from that of the manual grader

**Results:** A comparison of manual to automated level one grading resulted in a clinical discrepancy in 2/530(0.4%) image sets. In one case a borderline gradable image set was passed as fully assessable and disease –ve, when disease in the form of a single CWS was present and in another case passing an image set as disease –ve when potential evidence of +ve DR is apparent.

It is proposed that neither of these decisions constituted a true clinical risk. A workload reduction to the service in terms of level 1 grading would be in the region of 40%.

# REVIEW OF A DIABETIC OPHTHALMOLOGY WAITING LIST

*Guinane C., O'Toole L., Moriarty P., Early A.*

*Ophthalmology Department, Adelaide & Meath Hospital incorporating the National Children's Hospital (AMNCH), Dublin*

**Objectives:** Review AMNCH's Ophthalmology Diabetic Waiting List (WL) identifying those with sight threatening diabetic retinopathy (STDR).

**Methods:** All WL patients were contacted; those requiring assessment were booked for visual acuity, pupil dilation and retinal photography. An Ophthalmologist reviewed the photographs and determined follow-up.

**Results:** 1916 patients were removed from the WL over nine months. 1214 were given clinical appointments, 979 (51%) Retinal Photo, 235 (12%) General Ophthalmology. 233 (12%) had received care elsewhere, 43 (2%) were deceased, 301 (16%) no response to repeated contact, 5 (0.2%) removed for miscellaneous reasons.

1323 Retinal Photo appointments were booked, 979 attended, 26% DNA rate. 771 (79%) had no STDR. 208 were referred to Ophthalmology due to diabetic retinopathy or non-diabetic findings; 10 (1%) required assessment within 1 month, 71 (7%) required assessment within 3 months, 113 (12%) had non-urgent findings.

**Conclusions:** WL validation can contribute to efficient clinical time management, 582 WL entries did not require an appointment. The incidence of STDR was found to be low (<1%) in agreement with recent literature.<sup>1</sup>

## **References:**

1. Misra A, Bachmann MO, Greenwood RH, Jenkins C, Shaw A, Barakat O, Flatman M, Jones CD. Trends in yield and effects of screening intervals during 17 years of a large UK community-based diabetic retinopathy screening programme. *Diabet Med.* 2009 Oct;26(10):1040-7.

# “SELECTIVE LASER TRABECULOPLASTY, AN ADDITIONAL LINE OF MANAGEMENT FOR OPEN ANGLE GLAUCOMA”

*Hamroush F,*

*Our Lady Of Lourdes Hospital & The Newtown Clinic, Drogheda, Co. Louth.*

**Objective;** Selective laser trabeculoplasty is a relatively novel therapy for Glaucoma. From previous studies published on SLT, the overall success rate is 70%.

**Method;** In this study, a group of selected patients were treated following a set number of criteria; the results were compared to the previous studies and to each individual among the same group of treated patients, over a period of 6 to 10 months. All the patients were treated by the same doctor and at the same clinic.

**Conclusion:** Most treated individuals' IOPs reached a target pressure comparable to the target pressure obtained with medical therapy, leading to the conclusion that SLT can be adopted as a first line management to treat selected cases of Glaucoma or as an adjunctive therapy with a smaller number of medications.



# SPONTANEOUS RESOLUTION OF LACRIMAL GLAND MALTOMA.

*Moran S., McElnea E., Fahy G..*

*Department of Ophthalmology, University Hospital Galway.*

**Objectives:** To report a case of unilateral mucosa-associated lymphoid tissue (MALT) lymphoma of the lacrimal gland in a 63 year old lady which resolved spontaneously following biopsy of the gland.

**Methods:** This study describes the clinical, radiological, histological, immunohistochemical and molecular features used in the diagnosis and follow-up of this case.

**Results:** In a 63 year old lady presenting with unilateral lacrimal fossa mass. Orbital CT scanning demonstrated the presence of an enlarged lacrimal gland. Lacrimal gland biopsy revealed MALT lymphoma. Subsequent orbital MRI confirmed spontaneous disappearance of the lesion following the biopsy of the gland.

**Conclusions:** Spontaneous regression of MALTomas has been described with antibiotic therapy but complete resolution without treatment has not previously been described in the literature.

# A CASE OF ORBITAL JUVENILE XANTHOGRANULOMA

*Nasser QJ., O'Sullivan C. , Piers J. , McCreery K.*

*Our Lady's Children's Hospital, Crumlin, Dublin, Royal Victoria Eye and Ear Hospital, Dublin*

**Objectives:** We report a case of a 4 month old infant referred to the eye clinic with a history of a right orbital swelling. On examination, the patient had a right orbital mass visible at the lateral canthus with a large left face turn and limitation of abduction of the right eye. The infant had a central steady gaze and maintained fixation in each eye. In forced primary position there was right esotropia. With a large left face turn the eyes were orthotropic. There was no proptosis or other pathology evident on slit lamp exam. There were no other systemic signs.

Following intensive investigations including soft tissue orbital biopsy, the patient was diagnosed with Orbital Juvenile Xanthogranuloma.

**Methods:** Retrospective chart review case report

**Results:** In an effort to shrink the tumour, prevent medial rectus contracture and improve the anomalous head posture, the patient underwent injection of the tumour with 20mg of intralesional triamcinolone and 2.5units of botulinum toxin type A to the right medial rectus muscle. This was performed with direct visualization under general anaesthesia. 2 months following treatment, there was significant clinical improvement with resolution of the abnormal head posture and improved abduction. A repeat MRI Scan performed 5 months following treatment revealed a significant reduction in tumour size.

18 months onwards the patient has no limitation of abduction in his right eye, no mass visible clinically, and is orthotropic in primary position with equal vision in both eyes.

**Conclusions:** Solitary orbital involvement with Juvenile Xanthogranuloma is exceedingly rare. Our case is the second reported case in the literature where the disease was confined to a solitary unilateral orbital mass without any systemic abnormality.

Our case demonstrated the effectiveness of local therapy in tumour shrinkage with both clinical and radiologic resolution of the mass. Additionally the injection of botulinum toxin to the medial rectus prevented contracture which would have been inevitable and make subsequent amblyopia/strabismus management problematic. With this intervention the infant developed binocular vision and resolution of an anomalous head posture.

The investigation and management of Orbital Xanthogranulomas requires a multidisciplinary approach involving oncology, radiology, ophthalmology and dermatology services.

# THE ORBITAL BRANCH OF THE INFRAORBITAL ARTERY

*Chamney S, Tierney P  
Trinity College, Dublin*

**Objective:** The aim of this research project was to document the presence, point of entry into the orbit, dimensions, course within the orbit of the infraorbital artery.

**Method:** Twenty-four orbits were dissected. Crystal violet dye was injected into the infraorbital artery as it emerged from the infraorbital canal, which resulted in staining of the parent artery and its orbital branches. The distance of the origin of these branches from the orbital rim and the infraorbital canal were measured using handheld callipers. These parameters were also measured using scaled photographs and Adobe Photoshop CS3 software.

**Results:** Dye was visible in 17 infraorbital canals and 5 orbital branches of the infraorbital artery. Every orbit had a branch which both emerged medially to the infraorbital canal or directly above it, and terminated on the medial aspect of the orbit. These arteries emerged  $17 \pm 2$  mm from the orbital rim and  $2 \pm 1$  mm from the infraorbital canal. Twelve orbits had branches which emerged on the orbital floor lateral to the infraorbital canal.

**Conclusion:** The anatomical parameters of the orbital branches of the infraorbital artery documented in this study will be valuable to the clinicians who are involved in performing orbital surgery.

# A RARE CASE OF INTERMITTENT FLUCTUATING BILATERAL HORNER'S SYNDROME

*Kollipara D, Fitzsimons S, Lanigan B.  
Temple Street Children University Hospital, Dublin*

**Objectives:** Diagnosis and treatment of intermittent Horner's syndrome. A 7 year old male presented to our hospital with change in pupil size since 2 weeks which is alternating ,he has been diagnosed as having spinal intra medullary Glioma from about 3 years.

**Methods:** On examination VA both eyes is Normal. Biochemistry, Immunology and Haematology tests are all normal. CSF Analysis, Blood culture revealed no infection. Anatomical imaging studies MRI, MRA, LP, MPS revealed expansion of intra medullary Glioma. Video demonstration of intermittent fluctuating Horner's syndrome is included in the presentation.

**Results:** Findings of different tests which lead to diagnosis of Expansion of intra medullary spinal tumour (probable Glioma)at level of C6 and C7 caused intermittent Horner's syndrome.

**Conclusions:** Though intermittent and fluctuating bilateral Horner's syndrome is rare it can be a manifestation of dangerous clinical entity like expansion of spinal tumour. High degree of suspicion and thorough investigation leads to early diagnosis and treatment. Journal Literature revealed it could be a localising sign of spinal tumour at C2 to T1.

# PAST HONORARY LECTURES AND MEDAL WINNERS

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## Montgomery Lectures and Lecturers

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### University of Dublin, Trinity College

- 1986 “Radiation Retinopathy”  
Desmond Archer (Belfast)
- 1987 “Refractive Surgery”  
Herbert Kaufman (New Orleans)
- 1988 “The Management of Diabetic Retinopathy”  
Matthew D. Davis (Madison, Wisconsin)
- 1989 “Uveal Effusion”  
Jean Jacques de Laey (Ghent)
- 1990 “Some Factors Affecting the Visual Outcome of Corneal Transplantations”  
Douglas John Coster (Adelaide)

### Royal College of Surgeons in Ireland

- 1991 “Understanding Amblyopia”  
Colin Blakemore (Oxford)
- 1992 “Modern Lens Surgery”  
Thomas Neuhann, (Munich)
- 1993 “From the Eyelids to Cranio-Facial Surgery”  
Paul Tessier (Paris)
- 1994 “Complications of Diabetic Vitrectomy”  
David McLeod (Manchester)
- 1995 “Degenerative Retinal Disease: Towards Gene Therapy”  
Peter Humphries (Dublin)

### University of Dublin, Trinity College

- 1996 “Graves Eye Disease”  
Patricia Kendall-Taylor (Newcastle-upon-Tyne)
- 1997 “Meningiomas of the Anterior Visual System”  
Michael Sanders, (London)
- 1998 “Refractive Surgery – A replacement for Spectacles!”  
Patrick I. Condon (Waterford)
- 1999 “Unnatural Injuries “  
D. Taylor (London)
- 2000 “Blindness Prevention: From Science to Policy”  
A. Sommer (Boston)

### **Royal College of Surgeons in Ireland**

- 2001 “Pathogenesis of Glaucomatous Damage”  
J. Flammer, (Basle)
- 2002 “What’s new in Ocular Tumours and Pseudotumours?”  
Dr. Jerry A. Shields (Philadelphia)
- 2003 “Advances in the Diagnosis & Management Carotid-Cavernous Sinus Fistulas”  
Prof. Neil Miller (Baltimore)
- 2004 “Age – related maculopathy: New aspects of pathogenesis, prevention and treatment”  
Prof. Peter Wiedemann (Leipzig)
- 2005 “Biological Treatments of AMD”  
Prof. Alan Bird (London)

### **University of Dublin, Trinity College**

- 2006 “Developmental Eyelid Abnormalities”  
Mr Richard Collin(London)
- 2007 “Is there any Room for Surgery in AMD Treatment now?”  
Prof Dr Bernd Kirchhof (Dusseldorf)
- 2008 ‘Normal tension Glaucoma-does it exist?’  
Prof Roger Hitchings (London)
- 2009 “Practical Thoughts on how we Doctors can Best Help our Patients,  
Ourselves and the World”  
Dr Geroge Spaeth (Philadelphia)

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## Mooney Lecture and Lecturers

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- 1995 “A History of Neuro-Ophthalmology: An American Perspective”  
T. R. Hedges (Philadelphia)
- 1996 “Combined Cataract and Glaucoma Surgery”  
Bo Phillipson (Stockholm)
- 1997 “The Case for Corneal Transplantation”  
Louis Collum (Dublin)
- 1998 “Glaucoma Therapy in the 21 st Century”  
Harry Quigley (Baltimore)
- 1999 “High Risk Corneal Grafting – Is There an Answer?”  
David. Easty, (Bristol)
- 2000 “A Millenium Shift for Retinoblastoma”  
Brenda L. Gallie,
- 2001 No Lecture
- 2002 “What is Neuro-Ophthalmology”  
Professor Peter Eustace, (Dublin)
- 2003 “Worldwide Eye Disease – It’s Prevention and Treatment”  
Professor Gordon Johnson
- 2004 “The Twist and Turn of Macular Surgery”  
Mr. David Wong (Liverpool)
- 2005 “Challenging Cases and the Management of Complication during Cataract Surgery”  
Mr. Robert Osher (Cincinnati)
- 2006 “Reconstruction of the Anterior Segment”  
Mr Bruce Noble (Yorkshire)
- 2007 “Wavefront-Guided Refractive Surgery: Advances and Impediments”  
Dr Dimitri Azar (Chicago)
- 2008 “An Update on Amblyopia”  
Prof Gunther von Noorden (Houston)
- 2009 “Evolving Concepts in Pharmacologic Vitreolysis”  
Dr Brooks W. McCuen (North Carolina)

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## Barbara Knox Medal Winners

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- 1997 “Echographic Orbital Optic Nerve Measurements in Normal and Glaucomatous Eyes”  
S. Beatty
- 1998 “Community Ophthalmology – a Five Year Review”  
R.O’Regan
- 1999 “Might Gene -Based Pre-Treatment of Donor Cornea Prevent Graft Rejection?”  
R. Comer
- 2000 “Immunogenetics and Peptide Immunodominance in Sympathetic Ophthalmia in the UK and Ireland”  
D. Kilmartin
- 2001 “The Role of Tissue Inhibitor of Matrix Metalloproteinase-1 in Pseudoexfoliation Syndrome”  
S. L Ho
- 2002 “Incubation with Endogenous Retinal Antioxidants Inhibits Chemokine Release by PRE in an In-Vitro Model of Age-Related Macular Degeneration”  
G.T. Higgins
- 2003 “Macular Pigment Optical Density and Dietary Intake of Lutein and Zeaxanthin in Healthy Subjects”  
J. Nolan
- 2004 “Correlation of Central Corneal Thickness with vascular risk factors in Normal Tension Glaucoma”  
A. Doyle
- 2005 “A Randomized Placebo Controlled Double-Masked Phase 3 Study of the Treatment of Subfoveal Predominantly Occult Choroidal Neovascularization (CNV) Secondary to Age-Related Macular Degeneration (AMD) using Transpupillary Thermotherapy (TTT)”  
A. Hogan
- 2006 “Survivin Expression & Prognostic Significance in Choroidal Melanoma”  
C. Cleary
- 2007 “MRI as a Novel Non-Invasive Method for *In Vivo* Tracking of Endothelial Progenitor Cells in a Model of Choroidal Neovascularisation”  
D. Kent
- 2008 “A Retrospective Study of the Paediatric Practice of one Community Ophthalmologist Over Seventeen Years in Cavan”  
A. Blake
- 2009 “The Effects Of Acute Cigarette Smoke Exposure on Retinal Pigment Epithelial Cells (Arpe-19)”  
S Ni Dhughbhaill



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## Sir William Wilde Medal Winners

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- 1999 “Prospective Surveillance of Sympathetic Ophthalmia in the United Kingdom”  
D. Kilmartin
- 2000 “The Effects Of Topical Anti-Glaucoma Medications On The Ciliary And Optic Nerve  
Head Arterioles In The Rat Eye”  
S. Byrne
- 2001 “Ocular Toxoplasmosis-Pathogenesis Revisited”.  
H. McLoone
- 2002 “Gene Expression in Diabetic Reinopathy”  
R. Kane
- 2003 “Exposure of Photoreceptor outer segments to blue light induces a pro-angiogenic response  
from the retinal pigment epithelium”  
E. Cosgrave
- 2004 “Investigation and management of Epidemic intraocular lens opacification”  
R Altaie
- 2005 “The photopic and scotopic visual thresholds in eyes with solar retinopathy: a comparison  
with the anatomical damage”  
L O’Toole
- 2006 “The Role of Sonic Hedgehog Protein in Ethanol-Induced Ocular Teratogenesis”  
K. Kennelly
- 2007 “Visual Outcomes and Graft Survival following Corneal Transplants: the need for an Irish  
National Corneal Transplant Registry”  
M Guerin
- 2008 “Age Dependent Rat Retinal Ganglion Cell (Rgc) Susceptibility To Apoptotic Stimuli:  
Implications For Glaucoma Research  
M Guerin
- 2009 “A Cellular Model of Fuchs’ Endothelial Dystrophy”  
C Kelliher

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## IRISH COLLEGE OF OPHTHALMOLOGISTS

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Established in 1991, the Irish College of Ophthalmologists (ICO) is the professional body for medical and surgical eye doctors in Ireland.

The ICO is dedicated to promoting excellence in eye care through the education of its members, trainees and the public. Its goal is to maintain standards of excellence for the restoration of vision and the preservation of sight.

The College represents over 200 medical and surgical eye doctors throughout Ireland and Europe. It is the recognised body for ophthalmic training and education in the Republic of Ireland.

For further information, visit [www.eyedoctors.ie](http://www.eyedoctors.ie)











