

Selected Abstracts from the Orthoptics Australia 71st Annual Scientific Conference held in Brisbane 23 to 26 November 2014

PATRICIA LANCE LECTURE A LIFE IN ORTHOPTICS

Patricia Dunlop

Patricia Dunlop has been in orthoptics since graduating with the first Maddox Prize from Moorfields in 1949. This training school was run by Sheila Mayou who was a pupil of Mary Maddox, the first orthoptist. Patricia Maguire Dunlop was born in Enniskillen, Northern Ireland and graduated from school there with three top places in the state, Physics, Maths and Chemistry at the end of the war (1939-1945). The family moved to London where she joined the first orthoptic training school at Moorfields (City Road).

Moorfields Eye Hospital ran a training course for doctors from many countries worldwide, wishing to specialise in ophthalmology. After graduating in orthoptics she was taken on the staff of Moorfields where she helped in training the doctors aiming to specialise in ophthalmology. There she met her future Australian husband. She came out to Australia after her marriage in 1950 as a '£10 Pom' going to live and practise orthoptics, privately in a large ophthalmic practice in Newcastle and publicly at the Royal Newcastle Hospital. Meeting Patricia Lance in 1952 she joined the Australian Orthoptic Association, of which she has been elected President on two occasions (1967-1968 and 1978-1979).

Patricia's life has been busy and very stimulating, attending many overseas conferences and making many friends in ophthalmology from all over the world. In 1978 she received the Demonstrator's Diploma to add to her DBO and the Charles Leonard Gimblett Memorial Prize for work in dyslexia in 1975. She and her husband Donald, have been part of a team investigating binocular vision, stereopsis and dyslexia and have received NH&MRC grants for a period of 17 years. They were one of the first to bring Botulinum toxin A into Australia and were part of Alan Scott's group in testing its efficacy in squint. The toxin is now produced under the name of Botox and is used by many people for a myriad of conditions.

Orthoptics has now increased its role in many aspects of ophthalmology and orthoptists have been recognised for their contribution. Joyce Mein, from Sheffield UK, received an MBE from the Queen. She came to Australia in the 1970s and helped set up the training school in Sydney before it moved from Salisbury Road to Lidcombe and thence to Sydney University. Now the NSW course will be at UTS. Such is the progress of our profession.

There are many highlights in her life, not least of all Donald and Patricia's family of six doctors, all graduating from Sydney University and now all specialising in postgraduate medicine with three in ophthalmology, one in pathology, one in cosmetic laser and one in ENT.

CALCULATING IOL POWERS IN POST RADIAL KERATOTOMY PATIENTS

Ana Alexandratos

It is now a weekly occurrence that we are faced with calculating the intraocular lens power for patients who have undergone LASIK and PRK. Whilst most formulae these days give accurate results, calculating implant powers for patients who have undergone 8-12 cut radial keratotomy (RK) is a more challenging process. The current recommendations for calculating this special group were presented. A short case study with immediate and long-term results demonstrated the accuracy of these suggested theories.

THE ROLE OF ORTHOPTISTS IN DELIVERING OPHTHALMIC CARE TO DEVELOPING COUNTRIES

Angelique Antonio, Donna Ha, Mitchell Bagley

Purpose: To determine the level and type of contribution made by orthoptists in delivering ophthalmic care in developing countries.

Method: An observational study was performed investigating the role of orthoptists in delivering community ophthalmic care in Myanmar, the Philippines and Vietnam. Information and statistics concerning each clinic were gathered. Pre and postoperative orthoptic investigations involved VA, biometry, keratometry, autorefraction, intraocular pressure and recommendation of intraocular lens.

In Myanmar the orthoptist was also involved in triaging, subjective refraction, slit lamp examination and diagnosis, binocularity assessment and treatment and training of the local ophthalmic workforce. The orthoptist in the Philippines assessed a range of ophthalmic conditions and assisted in training ophthalmic screening techniques. The orthoptist who contributed to the Vietnam Vision Project counselled suitable patients regarding surgical risks and complications, enabling informed consent.

Results: Over a 19-day period, the total number of patients seen in Myanmar was 1,542. There were 455 operations performed including cataract, pterygium, oculoplastic, strabismus and trabeculectomy surgeries. Over a 14-day period in Philippines, 157 cataract surgeries and one corneal repair was completed. During the two weeks in Vietnam, 353 cataract operations were completed and an additional 170 consultations were performed by orthoptists and optometrists.

Conclusion: Orthoptists are a valuable and unique asset when delivering ophthalmic care to developing countries. Their broad ophthalmic knowledge and skills reduce the clinical burden on surgeons, enabling the surgeon to utilise their time and expertise in performing vital surgery leading to improved efficiency and patient care.

I WOKE UP WITH DOUBLE VISION ... HELP!

Jodie Attard

A 27-year-old male presented to Sydney Eye Hospital Emergency Department with sudden onset horizontal diplopia, short episodes of right sided periorbital pain, dizziness and gradually worsening visual acuity. The orthoptic investigation, ancillary testing and diagnosis was presented and discussed.

UNDERSTANDING OCULAR MOTOR APRAXIA

Nicole Carter

Ocular motor apraxia (OMA), also known as saccadic initiation failure, is a rare condition that affects a person's horizontal eye movements. OMA is a neurological condition, which occurs when there is a defect in any of the numerous structures within the brain that are used to control horizontal eye movements. It can be acquired or congenital. This presentation focused on congenital OMA.

The most recognisable clinical feature of OMA is a jerky head thrust which is used to compensate for the lack of horizontal saccades. This movement utilises the intact vestibulo-ocular reflex in order to change fixation from one object to another without the need to make a saccade. In this presentation OMA was discussed and case studies presented.

AMD PROGRESSION THROUGH THE EYES OF OPTICAL COHERENCE TOMOGRAPHY (OCT)

Emily Caruso

OCT has become a crucial diagnostic tool, in many ocular diseases, especially in retinal diseases such as age-related macular degeneration (AMD). Spectral-domain OCT (SD-OCT) technology allows us to obtain high resolution images which enables us to diagnose and monitor signs of progression in AMD at much earlier stages. This presentation discussed the risk factors and the early signs of progression that can be identified on SD-OCT.

MANAGEMENT OF VISUAL IMPAIRMENT IN PAEDIATRIC PATIENTS: THE ROLE OF THE ORTHOPTIST. WHAT IS OUR SCOPE OF PRACTICE?

Melanie Cortes

At The Sydney Children's Hospital Lion's Eye Clinic for Children all paediatric patients reviewed by ophthalmologists are also assessed by an orthoptist. With increasing demand for eye services in the public health system, current workflow processes of paediatric eye services were reviewed with the aim of improving patient journeys through better allocation of resources.

Method: A retrospective study was undertaken to review the roles of the multidisciplinary team in the management of paediatric patients with reduced vision. More specifically the input of the ophthalmologist and orthoptist into management decisions regarding glasses and/or patching was reviewed.

Results: The role of the orthoptist and ophthalmologist in the management decisions of paediatric patients with visual impairment was discussed.

FOUNDATIONS ARE THE KEY: DIFFERENTIAL DIAGNOSIS IN NEURO-OPHTHALMOLOGY

Melanie Cortes

An unusual and complex neuro-ophthalmic case of an intracranial aneurysm and third nerve palsy was presented. The importance of a sound knowledge of neuro-anatomy for differential diagnosis was highlighted in the presentation of this case.

ORTHOPTIST-LED CLINICS: INVESTIGATING THE EFFECTIVENESS AND EFFICIENCY OF ORTHOPTISTS IN DIABETIC RETINOPATHY SCREENING AND CATARACT ASSESSMENT

Allanah Cramer, Konstandina Koklanis, Zeina Dayoub, Jana Gazarek

Northern Health in Melbourne has been active in expanding its orthoptic services to cater for the changing population and increase in chronic eye disease. It is one of the first public health services in Australia to introduce orthoptist-led diabetic retinopathy (DR) screening and cataract assessment clinics whereby the orthoptist manages the care of a patient with low acuity disease in accordance with clinic protocols or guidelines.

The aim of this study was to (i) investigate the effectiveness of orthoptist-led diabetic retinopathy screening clinics and cataract assessment clinics at Northern Health in terms of clinic efficiency, and (ii) to investigate the diagnosis agreement between orthoptists and ophthalmologists. Data was retrospectively collected from the medical histories of patients who attended the DR screening clinic and/or cataract assessment clinic at the Northern Health service. The information collected included patient demographics, appointment and referral details and clinical data. Clinical data included

visual acuity, diagnosis by the orthoptist and the ophthalmologist. The classification and stage of the ophthalmic condition was also documented. Strong agreement was found between the orthoptists and ophthalmologists when detecting and diagnosing DR and/or cataract for patients attending the Northern Health orthoptist-led clinics.

This study indicated that there is the potential for the extended role of orthoptists in hospital outpatient settings to improve efficiencies in clinics whilst maintaining a high level of care.

AN UNUSUAL CASE OF OPTIC NEURITIS

Susan Downing

A 47-year-old female presented to Sydney Eye Hospital Emergency complaining of a five-day history of blurred vision and pain in the left eye. Taking a thorough history revealed the likely cause of optic neuritis and a plan for future prevention.

BEING THE PATIENT AND ALL THE THINGS YOU SHOULD REMEMBER

Cynthia Dykes

After finally agreeing to have adjustable suture surgery for a large secondary exotropia with troubling diplopia, this presentation presented a personal journey. Knowing a bit about eyes and surgery, what could possibly go wrong? The things I may have been dismissive about in relation to patient complaints and their fears about surgery will be viewed more sympathetically in the future. The presentation included 'before and after' photographs of the strabismus and its progression, has it made a difference?

DRAGGED FOVEA DIPLOPIA SYNDROME

Keren Edwards

A case demonstrating the diagnosis and management of a patient with binocular diplopia resulting from macular pucker was presented.

RETINAL HAEMORRHAGES IN INFANTS AND CHILDREN: ABUSE OR NOT?

Suzy Edwards

Retinal haemorrhages are one of the most common findings for shaken baby syndrome or abusive head trauma as it is otherwise known. However they may also be associated with other accidental traumas or systemic illness. There is a significant amount of information in the literature discussing retinal haemorrhages associated with child abuse, with less of a focus on the other possible causes of retinal haemorrhages in children including accidental trauma, birth trauma, convulsions, systemic illness and cardio-pulmonary resuscitation.

Any sign of retinal haemorrhages in a child or infant, prompts thorough investigation but there are many differential diagnoses that must be considered. This presentation discussed the variety of possible causes for retinal haemorrhages and identified the differences in clinical presentation.

LOSS OF VISION WITHOUT PATHOLOGIC CAUSE: A COMPLEX CASE STUDY

Rachel Elliott

This case study described a student's vision loss in the absence of pathologic cause and highlighted the value of a collaborative multidisciplinary team approach in achieving a good outcome. The orthoptist has an important role in careful assessment of visual function and observation of visual behaviours. A holistic approach to management, an awareness of associated factors and appropriate referral pathways is needed. In collaboration with educators, a psychologist, paediatrician, speech pathologist, occupational therapist and parents, the needs of a young woman with possible conversion disorder were identified and addressed.

IOL POWER PREDICTABILITY POST LASER REFRACTION SURGERY

Lilian Farag, Penny Chow

How do we choose IOL powers for post refractive patients using Haigis-L predictability?

EFFICACY OF NULL POINT TRAINING: A PILOT STUDY

Kerry Fitzmaurice, Norliza Fadzil, Linda Malesic

Nystagmus is associated with reduced visual acuity. Null point strategy is a non-surgical intervention observed clinically to reduce the impact of nystagmus. A pilot study has been conducted with children with nystagmus to evaluate the efficacy of null point training to improve visual performance and to reduce reliance on a compensatory head posture. Nineteen participants aged between 12 and 19 years with reduced vision due to nystagmus were recruited. Participants were trained in null point technique. Outcome measures were print size, reading speed and performance of activities of daily living (ADLs) measured at three time points: pre training, post training and six months follow-up. Results indicated print size decreased and self-perceived performance of ADLs improved between pre and post training and maintained at follow-up. Reading speed increased between post training and follow-up. These performance changes were significant ($p=0.001$). Actual performance of ADLs demonstrated gradual improvement at each test time with change being significant ($p=0.001$) between pre training and follow-up. Abnormal head posture was eliminated or reduced in 12 participants. These results support the efficacy of null point training as a strategy to reduce the impact of nystagmus and support the need for further study.

CURRENT TRENDS IN THE TREATMENT AND PREVENTION OF MYOPIA IN CHILDREN

Amanda French, Kathryn Rose

Myopia is a potentially sight-threatening condition and the prevalence is rising internationally, with some evidence of a rise in Australia as well. In addition, onset is frequently occurring at a younger age, thus presenting a greater risk of progression to high myopia and development of pathology. A number of environmental factors have been linked to myopia onset, most notably, a lack of time outdoors via reduced exposure to high intensity light. This is the focus of a number of outdoor intervention trials in children, currently being conducted in Asia.

Preliminary results suggest that increased time spent outdoors effectively prevents myopia development in children while its impact on the progression of myopia is less certain. Other types of interventions for myopia progression have been, or are currently under investigation,

with variable results. These include optical treatments either targeting accommodation (myopic undercorrection, bifocals or progressive addition lenses) or to reduce relative peripheral hyperopic defocus (orthokeratology and multifocal contact lenses). In addition, pharmacologic treatment using atropine (most recently low-dose atropine) has also been trialled. Randomised control trials of interventions for myopia were identified through database searches of PubMed and MEDLINE. Search terms included myopia, refractive errors, interventions, progression, eyeglasses, atropine, contact lenses, orthokeratology, and time outdoors. Further relevant studies were identified by searching citations and reference lists of included studies. The current evidence for the impact of outdoor light exposure on the onset and progression of myopia were reviewed and the effectiveness of other interventions to slow progression discussed.

IMPROVE PATCHING OUTCOMES USING AN APP

Dee Garland

Using the app 'Patching Pirate' is a method of combining patching and technology. In the future orthoptists may be held more accountable for patching treatment and this is a method of obtaining data which can be held in a patient's records. It can also be a tool for research into patching and amblyopia. The app was launched in July 2014. Google analytics data will show how the app has been taken up around the world.

THE EFFECTS OF TEMPORAL-OCCIPITAL RESECTION ON FUNCTIONAL VISION IN A CHILD WITH CORTICAL VISION IMPAIRMENT

Kylie Gouliotis

Lobectomy and resection are procedures to reduce seizure activity in people who are unresponsive to medication or have severe seizure disorders. This surgery carries risks of damage to surrounding structures in the brain and associated loss of function. In the occipito-temporal region, there is a risk of damage to the visual pathway. While the pattern of visual field loss can be predicted, the impact of this can be difficult to ascertain in the case of pre-existing neurological visual loss. This case outlines the pre- and postoperative assessments of an 8-year-old girl with cortical vision impairment and severe seizure disorder. Cortical vision impairment affects the way in which one is able to functionally use vision and process visual information. In this case, it was essential to understand the way in which the child is able to use and process her vision in order to ascertain if surgery will affect visual functioning.

THE DEVELOPMENTAL IMPLICATIONS OF OPTIC NERVE HYPOPLASIA

Kylie Gouliotis

Optic nerve hypoplasia is one of the most common causes of congenital vision impairment. While it can occur in isolation, it is commonly associated with abnormalities of the corpus colosum, pituitary gland and cerebellum. As a result, children with optic nerve hypoplasia may also face developmental delay, intellectual impairment, language disorders, learning difficulties, growth and endocrine abnormalities and behavioural disorders. In the past, it was thought that the behavioural and language anomalies could be attributed to the vision loss and so called 'blindisms'. However, optic nerve hypoplasia and vision loss as a whole has become more understood and as a result more children with optic nerve hypoplasia are now being diagnosed with autism. This presentation outlined the journey of a child with optic nerve hypoplasia and the developmental progression that lead to a diagnosis of autism and developmental delay. The issue of autism in vision impaired children and its implications were discussed.

THE PROFESSION'S RESPONSE TO THE TASMANIAN CHALLENGE: WHAT IS OUR PROFILE? WHAT CAN WE DO BETTER?

Neryla Jolly, Sue Silveira

At the 2013 conference in Tasmania members of the orthoptic profession were asked to spend time discussing and then recording their thoughts about the profile of Australian orthoptists and how we could move forward as a profession. The comments gathered from the session have been analysed and will be presented as feedback to the profession.

Areas raised include personal characteristics of orthoptists, diverse areas of employment, concerns facing the profession, and an improved future profile for the profession. Things we can do better include promotion, networking, and working at a higher level with other professions. Further opportunity will be provided to respond to the outcome as we move to becoming a more vital profession in the eye care field.

THE NEW AUSTRALIAN STANDARD FOR PERIPHERAL VISION AND DRIVING

Neryla Jolly

In 2012 the vision standard for driving changed to a risk-based analysis. In NSW this is being very strictly translated with recall of licenses for drivers currently driving with peripheral vision loss. The current standard and its translation were discussed. Cases were presented that demonstrate appropriate application of the revised guidelines, as well as those demonstrating an unfair application. Strategies to support drivers were discussed.

HOW DOES OCCLUSION HELP THIS PATIENT?

Neryla Jolly

A 17-year-old learner driver presented with a peripheral vision standard that did not meet the licensing requirements, until occlusion was introduced, then she did. What happened?

NOT JUST CIRCLES AND SQUARES IN FAMILY TREE DRAWING

Lisa Kearns, Alex Hewitt, Sandra Staffieri, David Mackey

Family tree information is typically obtained from the patient, parent or close family member who has attended the appointment and it is critical to use standardised symbols. Yet, clinicians should think outside the box as this information is an integral aspect of clinical care and if not considered meaningfully, information may be overlooked. Using Leber's hereditary optic neuropathy, retinitis pigmentosa and cone dystrophy case studies, the importance of enquiring beyond first degree relatives, identifying consanguineous relationships, revisiting old family trees to add additional generations and/or potentially linking families was presented.

INFLUENCE OF MODIFIABLE LIFESTYLE FACTORS ON THE RETINAL MICROVASCULATURE IN CHILDREN AND ADOLESCENTS WITH TYPE 1 DIABETES

Stuart Keel

Purpose: To examine the associations of diet, sedentary behaviours and physical activity with retinal vascular calibre in children and adolescents with type 1 diabetes.

Methods: A total of 83 participants with known type 1 diabetes, recruited from the Royal Children's Hospital, were evaluated in this cross-sectional study. Retinal vascular calibres were measured from digital retinal photographs using the semi-automated computer program. Self-reported dietary, sedentary and physical activity information was obtained using a semi-quantitative Food Frequency Questionnaire (FFQ).

Results: After controlling for age, gender and ethnicity, wider retinal venules was significantly associated with decreased physical activity level ($p=0.036$). Multivariate analysis also revealed participants who spent more time engaged in sedentary behaviours displayed narrower arteriolar calibre ($p=0.001$) and wider venular calibre ($p=0.015$). Furthermore, an increased intake of fruit/vegetables and protein-rich foods loaded significantly with narrower retinal venules on principal components analysis.

Conclusions: These findings suggest that lifestyle factors may influence microcirculation early in life. Our research proposes that exposure to modifiable risk factors may affect systemic physiology, which is reflected in microvascular structure.

EVALUATION OF AN ORTHOPTIST-LED STRABISMUS SCREENING CLINIC

Lindley Leonard

Since the initial pilot project in 2009 the strabismic screening clinic at The Children's Hospital at Westmead has seen close to 700 children. Developed as part of the triaging protocol, how this orthoptic-led clinic has served the community, the referral base and the eye clinic five years on was evaluated.

PREVALENCE OF CORNEAL ASTIGMATISM IN AUSTRALIAN CATARACT PATIENTS AND PREDICTING THE RATE OF TORIC INTRAOCULAR LENS IMPLANTATION

Jit Ale Magar

Background: Prevalence of preoperative corneal astigmatism in cataract patients is a predictor of toric intraocular lens (IOL) implantation rate. Better prediction requires consideration of incision-induced changes to the astigmatism. This study documented preoperative keratometric astigmatism prevalence, and estimated the toric IOL implantation rate for various incision positions in an Australian cohort based on estimated postoperative corneal astigmatism.

Method: Preoperative keratometry data of patients undergoing routine cataract surgery was examined in 1,790 eyes (1,454 participants). This was adjusted for surgically-induced astigmatism for various surgical incision positions to estimate postoperative astigmatism. The toric IOL implantation rate was calculated for each incision position.

Results: Mean preoperative corneal astigmatism of all eyes was $0.98 \text{ D} \pm 0.80 \text{ D}$. At a 1.0 D astigmatism threshold, 34.9% of eyes would require a toric IOL when no surgically-induced alteration in astigmatism is expected. Allowing for the keratometric effect of the incision, the toric implantation rate would reduce to 16.8% by positioning the incision on the steeper meridian. When the incision is placed independently of keratometry, the rate increased up to 46.2%, depending on incision location. In the sample population, an independent incision on the horizontal meridian had least impact on toric IOL implantation rate (39.2%).

Conclusion: Preoperative keratometric astigmatism among this Australian cataract cohort is comparable to reports from other countries. Strategic positioning of the surgical incision on the steeper corneal meridian has the potential to greatly reduce the rate of toric IOL requirement.

USING ADAPTIVE TECHNOLOGY IN THE WORKPLACE TO OVERCOME BARRIERS FOR PEOPLE WITH LOW VISION

Damian McMorro

This presentation demonstrated through a series of case studies, the ways in which adaptive technology can be used to overcome barriers to employment for people who are blind or have low vision. A number of specific barriers to employment experienced by Vision Australia clients, and the adaptive technology and equipment which was used to overcome these barriers were outlined.

CORRECTION OF HIGH ASTIGMATISM WITH TORIC INTRAOCULAR LENSES, AND A REFRACTIVE SURPRISE OUTCOME

Bree Moore

Focus Eye Centre has been using toric intraocular lenses (IOLs) since mid-2006 to correct corneal astigmatism at the time of surgery. The rate of toric IOL usage is around 60%, with 40% of the total being T2 and T3 IOLs. The amount of astigmatism correction in IOLs has increased over the years. Today we are able to correct from 0.75 up to 4.0 dioptres of astigmatism with a standard toric lens. This case study presented a patient who underwent cataract surgery with toric implantation in both eyes, and the refractive surprise that occurred despite all our experience and technology. Management and outcome was discussed.

BEYOND EYE DROPS: TREATMENT OF REFRACTORY UVEITIS

Tanya Pejnovic

Although intermediate, posterior and pan uveitis are relatively uncommon conditions, they are a significant cause of visual impairment. The mainstay of treatment is corticosteroids, however, there can be serious side effects from their long-term use. Other agents are utilised to allow the tapering of corticosteroids and so minimise these complications. The use and action of some of these steroid-sparing agents including the most recently developed drugs, tumour necrosis factor (TNF) inhibitors, was discussed.

OPPORTUNITIES FOR MODELS OF EYE SERVICE DELIVERY IN THE OPHTHALMOLOGY DEPARTMENT AT THE ROYAL CHILDREN'S HOSPITAL

Faten Qunqar, Connie Koklanis, Cathy Lewis, Cameron Palmer

Aim: To audit the outpatient eye clinic at the Royal Children's Hospital (RCH) in order to address the issue of increasing demand for paediatric eye services, via reviewing processes and proposing extensions in and/or innovative models of service delivery.

Methods: Service encounters scheduled to be delivered at the RCH outpatient eye clinic from December 2012 to February 2013 were retrospectively reviewed. For each occasion of service, eleven points of data were collected. Analysed data related to areas of patient demographics, appointment details and clinical documentation. Pivot tables, vlookups, chi-squared and t-tests were utilised, with statistical significance set at $p < 0.05$.

Results: 1,566 service encounters were scheduled during the study period and of these, data was available for 1,547 (98.79%) occasions. Of these, 221 (14.3%) did not attend their appointment. No significant relationship was found between attendance rate and appointment scheduling. A significant difference was found between the suggested review and scheduled review ($t(1,832) = -2.97$, $p = 0.002$), however was not considered clinically significant. Inflow was greater than outflow with 21.5% of appointments

being scheduled for new patients and 7.4% documented to be discharged. A significant number of patients (36.4%) presented with concomitant strabismus and/or amblyopia. Less than half of patients (44.4%) presented with a medical condition that complicated their care.

Conclusion: There is opportunity to extend current services and/or implement new, innovative models of care. Although introducing new models can address the issue of increasing demand for services, further research must be undertaken to ensure their efficiency and safety.

'THE ANSWER IS DUCTIONS ... WHAT IS THE QUESTION?'

Kristen Saba, Ross Fitzsimmons

Many orthoptists, independent of their level of experience, find the assessment and recording of ocular movements challenging. Inter-observer reliability for this clinical test is low. We have looked at the ocular motility recordings of a random group of orthoptists, ophthalmologists and eye registrars. All subjects were asked to record ocular movements for the same patients. There is considerable variation in the results. Why is it so varied and how could we make it more consistent? Perhaps, we are asking the wrong question in the first place...

DO INDICATORS GROUNDED IN CLINICAL RESULTS FAIRLY REPRESENT THE SEVERITY OF CHILDHOOD VISION IMPAIRMENT?

Sue Silveira

The National Disability Insurance Scheme (NDIS) has been heralded as 'a new way of providing community linking and individualised support for people with permanent and significant disability, their families and carers'. To date the scheme has had limited roll-out across Australia, with several trial sites being launched. Individuals seeking support under the NDIS negotiate individualised plans with assessors from the National Disability Insurance Agency. However there is growing concern over the cost of these plans, both short and long term, with the average cost of pre-launch projections being exceeded. In examining this cost blowout it has been acknowledged that a lack of alignment exists between the severity of the disability and the support planning. This has the potential for inequitable and unaffordable resource allocation.

This presentation reported a project that has aimed to initially identify severity indicators for childhood vision impairment, using the clinical results of visual acuity for both near and distance and visual fields. These severity indicators are based on the World Health Organization International Classification of Disease, Version 10. The limitations of these severity indicators and an approach to include indicators that reflect the functional impact of childhood vision impairment will be presented. The current approaches by the NDIS to support childhood vision impairment were also discussed.

THE GLAUCOMA INITIAL TREATMENT STUDY (GITS): METHODOLOGY

Sutha Sanmugasundram, Marios Constantinou, Jonathan Crowston, Brian Ang, Jessica Brennan, Ecosse Lamoureux

Glaucoma is the leading cause of irreversible blindness in the world, the most common type of glaucoma being open-angle glaucoma (OAG). Currently treatment for OAG is to lower intraocular pressure by treating with topical medical therapy, however eye drops can have both ocular and systemic side-effects resulting in reduced quality of life and can also be costly. Selective laser trabeculoplasty (SLT) has been shown in randomised clinical trials to be as effective in lowering intraocular pressure as eye drops, however despite this demonstrated equivalence in clinical efficacy

and reduced long-term side-effects, SLT is still not commonly used as a first-line treatment for OAG.

The Glaucoma Initial Treatment Study (GITS) is a multicentre (both national and international), randomised controlled trial, comparing SLT with topical medical therapy for the initial treatment of OAG. This trial aims to determine the most appropriate initial treatment for OAG, based not only on clinical efficacy and safety outcomes, but also on patient reported outcomes (including quality of life) and cost-effectiveness. The primary outcomes of this trial are the comparison between groups of patient-reported outcomes and also the cost-effectiveness of the two treatments. Other secondary outcomes include intraocular pressure reduction, predictors of success for the two treatments, incidence or progression of ocular surface disease, and adverse event rates.

DIFFERENTIAL DIAGNOSIS OF UPGAZE DISORDERS

Pyrawy Sivrajah, Rhiannon Bellotti

Working in a busy ophthalmic practice, orthoptists are often exposed to many complex and unique cases of strabismus. The orthoptist's role is primarily in helping to differentiate and diagnose these anomalies. Up gaze palsies usually result from mid brain lesions, tumours and infarcts. This presentation focused on a selection of up gaze palsies and the orthoptic tests required in the differential diagnosis of these conditions.

GOOGLING DR GOOGLE: LEUKOCORIA, RETINOBLASTOMA AND THE WORLD WIDE WEB

Sandra Staffieri, Alex Hewitt, Lisa Kearns, David Mackey

Retinoblastoma (RB) is the most commonly occurring intraocular tumour in children. With leukocoria being the most common presenting sign, it is often seen in photographs, all too often retrospectively. A web-based questionnaire was developed to determine the public perception of leukocoria as seen in photographs, as well as examine the free text search words people would use to seek more information. The most commonly used search terms, websites visited and on-line search behaviours were identified. The use of social media as a method of obtaining data for health research is a growing area that health care providers need to interact with and utilise. Such data can be used to inform awareness campaign strategies about childhood eye diseases.

HERE'S ONE FOR THE STUDENTS ...

Kirsty Somerville McAlester

A case presentation of patient with a plethora of motility issues following surgery for insertion of a Baerveldt device, including possible inferior rectus toxicity following anaesthesia.

A GOOD GLASSES CASE

Sally Steenbeck

Protective eyewear is not worn as frequently as it should be and injuries can be devastating in numerous ways. A good case for wearing protective eyewear was presented.

ENGAGING CONTEMPORARY METHODS TO IMPROVE TEACHING AND ASSESSMENT OF ORTHOPTICS

Meri Vukicevic, Connie Koklanis, Leigh Blackall

La Trobe University has been developing a range of skills and methods in their teaching and assessment work, aimed at improving flexibility for people studying subjects in the degree program. Many of the methods are internet and media based, and seek to engage professional and consumer communities online. Major web-sites such as Wikipedia, YouTube, Yahoo Answers and Google+, are sites that offer a gateway to information for professionals and consumers alike – certainly for students and some academics. It is these sites around which it is aimed to develop appropriate teaching and assessment methods.

This presentation outlined a range of methods tested so far, discussed issues from teacher, student and institution perspectives, and asked questions overall about the possible relationship between sites of formal and informal learning, and the prospects for orthoptics and other health professions.

WHY NO DIPLOPIA?

Pamela Walton

The case of a 60-year-old man who presented to Sydney Eye Hospital Emergency Department on the advice of his optometrist was presented. The patient was a vague historian and his main complaint seemed to be that of the uncosmetic appearance of his worsening left exotropia. The patient denied any diplopia. The resultant orthoptic assessment, diagnosis and follow-up were discussed.

ASSESSING A CHILD WITH CEREBRAL VISUAL IMPAIRMENT IN A CLINICAL SETTING

Rosa Wright

Cerebral vision impairment (CVI) is the most common cause of vision impairment in children in developed countries. As a consequence, orthoptists may need to assess a child with neurological vision loss at some point in time. By definition, CVI is caused by damage to the posterior visual pathways and/or the occipital lobes, and affects the processing and perception of what is seen. The health of the eyes may still be normal. There are various characteristics specific to CVI that are not seen in children without damage to the visual areas of the brain. With this in mind, some simple considerations and strategies can be implemented into the orthoptic workup in a clinical setting to optimise the child's ability to respond, and to offer the parents a bigger picture of how their child may be using their vision.

THE APPLICATION OF GENOME-WIDE ASSOCIATION STUDIES TO OPHTHALMIC DISEASE: INSIGHTS FROM THE RAINE STUDY

Seyhan Yazar

Genome-wide association studies (GWAS) are powerful tools for identifying genes associated with disease and disease-related quantitative traits. Detailed ocular phenotypic data has been collected during the 20-year Raine Study follow-up which includes over 300 variables. This has provided the unique opportunity to study multiple outcomes. This work has shown that studying disease-associated continuous traits in healthy individuals through genome-wide approaches enables new insights into the understanding of many ophthalmic diseases. In this presentation, some of the GWAS publications on refractive error, astigmatism and keratoconus were reviewed and applications of this method to other ophthalmic diseases including strabismus and other ocular movement disorders were discussed.