

### **Glasses vs Observation for Moderate Hyperopia in Young Children (HTS1)**

**Investigators:** Yi Pang, OD, PhD, Christine Allison, OD, Brian Caden, OD, Med, Megan Allen, OD, Kelly Yin, OD, and Angela To, OD.

This is a NIH-funded multi-center clinical study. The purpose of this study is to compare visual acuity outcomes and development of strabismus after a 3-year follow-up period in children age 12 to <72 months with moderate hyperopia (spherical equivalent +3.00D to +6.00D) who are prescribed glasses either immediately or only after confirmation of pre-specified deterioration criteria.

**Funded by:** NIH/NEI

### **Prospective Observational Study of Adult Convergence Insufficiency, Divergence Insufficiency, and Small-Angle Hypertropia (SAS1)**

**Investigators:** Yi Pang, OD, PhD, Christine Allison, OD, Brian Caden, OD, Med, Megan Allen, OD, Kelly Yin, OD, and Angela To, OD.

This is a NIH-funded multi-center clinical study. The purpose of this study is provide data on the numbers, types and clinical characteristics of adult patients with CI, DI or HT who are seen by PEDIG investigators and are receiving certain types of treatments, and on the outcomes of those treatments over one year.

**Funded by:** NIH/NEI

### **Effectiveness of Orthokeratology on Preventing Myopic Progression in Optometry Students**

**Investigators:** Stephanie Fromstein, OD, Elyse Chaglasian, OD, and Yi Pang, OD, PhD.

The purpose of this study is to determine the effectiveness of specialty rigid lenses (orthokeratology) in preventing myopia progression in optometry students in comparison to optometry students who wear spectacles and/or soft contact lenses over a period of 2 years.

**Funded by:** Illinois Society for the Prevention of Blindness and Illinois College of Optometry

### **Reducing Adenoviral Patient Infected Days (RAPID)**

**Investigators:** Mae Gordon (PI), Leonard Haertter, Julie Huecker, Mary Migneco OD, Andy Hartwick OD, Ellen Shorter OD, Izzy Goldberg, Spencer Johnson OD, Tammy Than OD, Tom Freddo OD; ICO: Jennifer Harthan OD (PI), Christina Morettin OD

The primary aim of this pilot study is to generate data needed to design a definitive trial to compare the safety and efficacy of standard care with artificial tears vs. Betadine 5% (5% povidone-iodine) for the treatment of pink eye due to adenovirus. There is currently no FDA approved treatment for pink eye, a common and highly contagious eye infection

caused by adenovirus. Standard care as recommended by the American Academy of Ophthalmology and American Optometric Association is instillation of artificial tears to relieve symptoms and possibly reduce the virus population. Betadine 5% is a commercially available, broad-spectrum antiseptic ophthalmic solution used for over 50 years to prepare the patient's eye and surrounding area for eye surgery. Because Betadine 5% kills bacteria and viruses, it may be useful in treating adenoviral conjunctivitis. Betadine 5% is inexpensive, safe, widely available, and immune to the development of bacterial/viral resistance. Betadine 5% has the potential to significantly impact the clinical management of "pink eye" worldwide.

**Funded by:** NIH R-34 RAPID Pilot Study

### **Sjogren's Syndrome Outreach Chart Review Study (QUEST)**

**Investigators:** Jennifer Harthan OD (PI, US), Melissa Barnett Erickson, OD, Barbara Caffery OD, Charles Edmonds OD, Bart Pemberton OD, Sruthi Srinivasan OD (PI, Canada), Larissa Johnson-Tong,

This study will provide a retrospective review of Sjögren's Syndrome (SS) patients as they sought clinical care at up to seven different clinical sites. The review will analyze dry eye signs and symptoms and related clinical data to determine the various ways in which SS is diagnosed in a variety of clinical settings and to describe the course of dry eye disease in SS.

All charts with a positive diagnosis of primary or secondary SS will be included in this study. Data from up to 500 patient years of SS patients from five to seven different clinical sites will be reviewed from the year 2000 onward. All relevant data will be collected as long the patients have been seen for at least 2 visits within 10-15 consecutive months. The first visit will be the one that is considered as the diagnostic visit or the one closest following the date of diagnosis. The remaining visits will be those from 10-15 months from the initial diagnostic visit.

### **Scleral Lenses in Current Ophthalmic Practice: an Evaluation (SCOPE)**

**Investigators:** Principal Investigator: Muriel Schornack, OD, Consultant: Joe Barr OD, Co-Investigator for communication: Jennifer Harthan, OD, Co-Investigator for study design: Cherie Nau, OD, Co-Investigator for funding: Amy Nau, OD, Co-Investigator for communication: Ellen Shorter, OD

Our initial project was to conduct a survey of domestic and international eye care providers self-identified as fitting scleral lenses to assess current global scleral lens practice patterns. The second arm of the study is to execute a multi-center prospective study that will define patient-centered outcomes, changes in visual acuity and impact of scleral lens wear on anterior segment structures. Primary purpose or goals: To determine if patients using scleral lenses report improved vision-related quality of life, ocular comfort, and refractive quality of life and to determine visual acuity and ocular surface outcomes for patients wearing scleral lenses.

### **Family study of CTRP5 mutation, long zonules, macular degeneration and glaucoma**

**Investigators:** Daniel K. Roberts, O.D., M.S., Radha Ayyagari, Ph.D., Faye Davis, Ph.D., Jacob Wilensky, M.D.

This study seeks further understanding of the relationship of a gene (CTR5) mutation to the development of long anterior lens zonules which may serve as a surrogate marker of risk for serious eye conditions including macular degeneration and glaucoma. This study may help physicians identify early risk for serious eye disease via recognition of the LAZ phenotype.

**Funded by:** NIH/NEI and the Illinois College of Optometry Research Funds

### **Amblyopia Treatment Studies (ATS)**

**Investigators:** Yi Pang, Ph.D., O.D., Sandra Block, O.D., M. Ed, Christine Allison, O.D., Geoffrey Goodfellow, O.D., Brian Caden, O.D., M. Ed, Megan Allen, O.D.

ATS is NIH-funded multi-center clinical studies. Several studies in amblyopia treatment have been carried on and the study results become clinical guidelines. Currently, we have 2 ongoing ATS.

**Funded by:** NIH/NEI

### **A Randomized Clinical Trial of Observation versus Occlusion Therapy for Intermittent Exotropia (IXT)**

**Investigators:** Yi Pang, Ph.D., O.D., Sandra Block, O.D., M. Ed, Christine Allison, O.D., Geoffrey Goodfellow, O.D., Brian Caden, O.D., M. Ed, Megan Allen, O.D..

This is a NIH-funded multi-center clinical study. The purpose of this study is to determine the effectiveness of occlusion for the treatment of IXT and to determine the natural history of IXT among patients aged 3 to < 11 years.

**Funded by:** NIH/NEI

### **Post-synaptic Mechanisms for depression and antidepressants: Studies in model systems.**

**Investigators:** Mark M. Rasenick, PhD (P.I at UIC) and Robert J. Donati, PhD

The study continues previous work in cellular models investigating novel cellular mechanisms for antidepressant treatment. The current study will involve post-mortem human brain tissue from control and depressed subjects as well as various blood cells from patients before and after antidepressant treatment. Further studies into the cellular mechanisms of depression and

antidepressant action may lead to more specific antidepressant drugs with less side effect profiles.

**Funded by:** NIH

**A Prospective Pilot Study of Treatment Outcomes for Amblyopia Associated with Myopic Anisometropia**

**Investigators:** Yi Pang, Ph.D., O.D., Kelly Frantz, O.D., Sandra Block, O.D., M.Ed, Christine Allison, O.D., Geoffrey Goodfellow, O.D.

This study is addressing issues related to the treatment outcomes of amblyopia caused by myopic anisometropia in children 4 to 14 years old. The purpose of the study is to investigate whether macular pathology exists in association with myopic anisometropia and to determine if there is VA improvement with refractive correction alone and patching treatment in amblyopia associated with myopic anisometropia.

**Funded by:** Illinois College of Optometry (ICO) Research Funds, Illinois Society for the Prevention of Blindness, CIBA Vision.

**A Prospective Study on Diagnosing Optic Nerve Hypoplasia and Treatment of Associated Amblyopia**

**Investigators:** Yi Pang, Ph.D., O.D., Kelly Frantz, O.D.

In this study, HRT will be utilized to measure the size of the optic disc and the thickness of the RNFL in the eyes with optic nerve hypoplasia. We will determine if HRT can assist the diagnosis of ONH by comparing to the standard test, the ratio of the distance between the center of the optic disc and the center of the macula and the mean optic disc diameter.

**Funded by:** Illinois Society for the Prevention of Blindness

**The Interrelationship of Five Oculomotor Diagnostic Tests and their Associated Binocular Vision Correlates".**

**Investigators:** Darrell Schlange, O.D., D.O.S., Dominick Maino, O.D., M.Ed., Brian Caden, O.D., M.A., Angela Rodriguez

The purpose of this study is to determine the value of several oculomotor (eye-movement) tests for accurately and appropriately recording the ability and efficiency of eye-movements necessary for reading, near vision and classroom work. This study may help pediatric optometrist determine which tests are most helpful for patients of different ages and abilities.

**Funded by:** ICO Research Funds and Private Research Funds.

## **Spatial Perception of Amblyopes**

**Investigators:** Susan A. Kelly, Ph.D. Yi Pang, O.D.,Ph.D.

Accurate perception of the spatial location of objects in our visual environment depends upon the accurate perception of near distances which can then be used as a template to extend accurate spatial localization to further distances. If both the angular declination of an object and the slope of the surface supporting the object can be correctly detected then observers can accurately localize the egocentric distance and height of objects up to 20 m. Amblyopes have been reported to have difficulty both estimating near distances and sampling visual space, and thus may not accurately localize objects. Our results thus far indicate that strabismic amblyopes do indeed have difficulty with object localization while anisometropic amblyopes perform similarly to visual normals.

**Funded by:** ICO Research Funds

## **Yellow-tinted Lenses and Pupil Size**

**Investigators:** Frederick Collison, B.S., My Huyn, B.S., Susan Kelly, Ph.D.

Yellow –tinted lenses have been known to increase perceived brightness in visually normal observers. It has been hypothesized that this may be due, in part, to their short-wavelength filtering characteristics. The reduction in short-wavelength light would cause less pupillary constriction, as the intrinsically-photosensitive ganglion cells of the retina, which have peak absorption at 480 nm and contribute to pupillary light reflex, would not be stimulated. We are investigating this possibility by measuring both perceived brightness as well as pupillary size in the same observer.

**Funded by:** ICO Research Funds

## **The Dually Diagnosed: Oculo-visual Anomalies of those with Intellectual Disability and Mental Illness**

**Investigators:** Dominick M. Maino, OD, MEd, Robert Donati, PhD

This study is investigating the oculo-visual anomalies of adults diagnosed as having both an intellectual disability and a psychiatric illness. A recent literature review has noted only one other study in this area. It is hoped that this study will aid the primary care optometrist and ophthalmologist when these patients are being examined.

## **Vision Therapy as an Additive/Alternative Treatment for Attention Deficit / Hyperactivity Disorder - Phase II**

**Investigator:** Darrell Schlange, O.D., D.O.S.

The purpose of this study is to determine the effectiveness of Vision Therapy as an alternative and/or additive treatment for attention and hyperactivity problems. Some binocular vision problems are often associated with attention disorders. Therefore we will treat the vision problem and test the subsequent changes in attention. The Test of Variables of Attention (TOVA) will be used pre and post-therapy to evaluate attention, impulsivity, reaction time and variability. We believe this information will be helpful in providing information on alternative and additive procedures for attention problems, not using medication.

## **An Investigation of Eye Movement Skills and their Relationship to Birth Order**

**Investigators:** Christine Allison, O.D., Darrell Schlange, O.D.

The purpose of this study is to investigate the relationship between birth order and eye movement skills, as well as to investigate the relationship between various types of play activities and eye movement skills. We would expect that children without siblings, and/or oldest children may have better eye movement skills due to the types of play activities that they perform, and the increased time that they may spend reading with their parents versus children with multiple siblings.