15^{Δ}-25^{Δ} were included. Preoperative and postoperative sensorimotor exams were compared.
Results: Preoperatively, all patients had symptomatic esodeviation (mean, $17^{\Delta} \pm 2.83^{\Delta}$). Postoperative visits at <2 weeks resulted in an average angle of deviation at distance of $2.21^{\Delta} \pm 2.93^{\Delta}$ ($P < 0.0001$) for all patients. Postoperative visits with 13 of the 19 patients at greater than 6 months resulted in an angle at distance of $4.31^{\Delta} \pm 4.09^{\Delta}$ ($P < 0.0001$). Two patients were treated with prism glasses and one other with surgery for residual diplopia. No patients had symptoms from lateral incomitancy.
Discussion: Primary single muscle resection has not been typically performed except in divergence insufficiency. It is usually reserved for undercorrected or recurrent strabismus. Patients showed improvement in binocular function and had additional benefits of shorter anesthesia time, faster recovery, and less cost.
Conclusions: Unilateral lateral rectus resection as a primary procedure can be an effective surgical option in the management of adult patients with moderate angle esodeviation.

056 Ocular Trauma Score (OTS) versus adapted OTS in pediatric open globe injuries. Nashwa Badr Eldine, Maha M. Youssef, Ghada Gawdat, Ghada Osama
Introduction: Ocular Trauma Score (OTS) is a categorical system used for standardized assessment and visual prognosis of ocular injuries. Relative afferent pupillary defect (RAPD) is a variable that is difficult to assess in pediatric patients. An adapted OTS score was suggested excluding RAPD. In this study, we compare the prognostic value of OTS and adapted OTS in predicting the likely visual outcome of pediatric patients with open globe injuries.
Methods: A prospective observational study including children with open globe injuries. Initial and final best corrected visual acuity (BCVA) (after 3 months) were recorded as follows: (1) NLP (no light perception); (2) LP to HM (light perception to hand movement); (3) 1/200 to 19/200; (4) 20/200 to 20/50, and (5) ≥20/40. OTS and adapted OTS were calculated and compared regarding the prediction for final visual outcome.
Results: A total of 130 patients were included, ages (4-18; mean, 10.06 ± 3.94 years). The median initial visual acuity category (LP to HM) significantly improved to 20/200-20/50 ($P < 0.001$). OTS parameters analysis showed that the initial visual acuity category, retinal detachment and RAPD had a highly significant impact on final visual outcome ($P < 0.001$). The final visual acuity according to OTS and adapted OTS prediction was comparable with the achieved final visual outcome. Comparing both scores as a whole, OTS had a higher predictive value however not statistically significant ($P = 0.55$).
Discussion: Excluding RAPD would still make the OTS reliable and highly prognostic while rendering it much easier to apply.
Conclusions: Adapted OTS can be reliably used among pediatric patients.

057 Surgical outcomes for esotropia in children with high AC/A ratio. Reecha S. Bahl, Monique J. Cheng, Sabrina Dass
Introduction: To assess if high accommodative convergence/accommodation ratio (AC/A) impacts surgical outcomes in children with esotropia (ET).
Methods: A retrospective chart review identified patients who underwent primary bilateral medial rectus recessions (BMRc) for ET. High AC/A was defined as an increase of $\geq 10^{\Delta}$ deviation at near compared to distance. Outcome parameters were: (1) near and distance deviations $\leq 10^{\Delta}$ within orthophoria, and/or (2) presence of stereopsis (positive fly) postoperatively. Analysis used Yates' continuity correction, the Fischer exact test, and unpaired *t* test.
Results: Of 116 charts identified, thirty had a high AC/A preoperatively compared to 86 with normal AC/A. Mean age was 3.90 years (SD 2.71 years). Surgical success measured by postoperative alignment were 43% and 40% in the high AC/A and normal AC/A groups, respectively ($P = 0.88$). There was a statistically significant difference in postoperative stereopsis success, with 16% of patients with normal AC/A versus 44% of patients with high AC/A having positive fly on postoperative stereopsis testing ($P = 0.03$).
Discussion: In the setting of ET treated with BMRc, the presence of high AC/A does not affect surgical success as measured by postoperative alignment. However, patients with high AC/A preoperatively had a significantly improved surgical success as measured by postoperative stereopsis, compared to those with a normal AC/A. This difference is likely related to a partially accommodative etiology of misalignment when a high AC/A is present, compared to nonaccommodative esotropia with normal AC/A, with the latter having a lower probability of postoperative fusion.
Conclusions: Our findings can guide clinicians in their decisions regarding surgical treatment of patients with ET.

058 Music therapy may decrease apnea associated with retinopathy of prematurity exams. Susan M. Bakouros, John Evered, Kristin Rarey
Introduction: Many premature newborns need to be screened for retinopathy of prematurity (ROP). During and after ROP screening exams, newborns are at high risk for apnea, bradycardia and desaturation (ABD). NICU music therapy (NICU MT), has been shown to improve physiologic stability, including heart rate and oxygen saturations.
Methods: A NICU music therapist provided procedural support during ROP screening exams (n = 46) done with digital retinal imaging (DRI), to determine if NICU MT might help decrease screening-related ABD.
Results: For all 46 DRI exams, the mean number of ABD events in the 24 hour period before the DRI exams was 0.54, and in the 24 hour period following the exam, the mean number of ABD events was 0.41 ($P = 0.35$, 95% confidence interval, −0.15 to 0.41). Following ROP screening with NICU-MT, no infants had escalation of respiratory support, serious infection, or feeding interruption.
Discussion: This is the first study to evaluate the ability of NICU MT to decrease procedure-related ABD events in premature infants. It is also the first study of NICU MT during ROP screening. We found no increase, and a trend toward decrease, in post-procedure ABD when NICU MT was used during the ROP exam.
Conclusions: Our findings suggest that NICU MT during ROP screening exams using DRI is safe and may be associated with a decrease in post-procedure ABD events, consistent with other findings in the literature showing that NICU MT may decrease pain and improve physiologic stability in preterm infants.

059 Does the newer anti-vegf therapy impact neurodevelopmental outcomes more than conventional laser therapy in infants treated for retinopathy of prematurity? L. Daphna Y. Barbeau, Swati Agarwal
Introduction: To compare the neurodevelopmental outcomes in infants who have and who have not received bevacizumab injections (anti-VEGF) and or laser therapy for Retinopathy of Prematurity (ROP) treatment. We hypothesize that the neurodevelopmental outcomes may be similar by group, or that differences in outcomes might

better be explained by other complications of prematurity, rather than the ROP therapy treatments.

Methods: Data is being collected both retrospective and prospectively via chart review of 100 preterm neonates. Information evaluated includes gestational age, birth weight, complications of prematurity that are known to increase risk for ROP and Bayley III scores through 2 years as available.

Results: Preliminary data includes untreated control group (n = 16) and therapy group (n = 22). Of the therapy group, 15 infants had bevacizumab monotherapy and 7 had laser plus bevacizumab. The results show that while those infants treated with therapy are younger (25.40 $\pm$ 4.36 therapy group vs 27.49 $\pm$ 3.15 control group, $P = 0.010$) and smaller (0.71 $\pm$ 0.28, therapy group vs 0.87 $\pm$ 0.32 control group, $P = 0.049$) as compared to the untreated control group, the groups were not significantly different in incidence of chronic lung disease, intraventricular hemorrhage or the need for postnatal steroids. There were no significant differences in Bayley III subcategories over time, between the two groups. Trends in data indicate that there may be more significant ($P = 0.007$) delays in language in infants who receive laser and bevacizumab therapy, as compared to bevacizumab therapy alone. In addition, there was a significant ($P = 0.002$) trend that infants who received both laser and bevacizumab therapy has lower language and motor categories on the Bayley III as compared to those infants who did not require treatment.

Discussion: Infants who are more likely to require ROP treatment tend to have more independent risk factors for neurodevelopmental delays. In this pilot study, which is the first to compare ROP therapy to controls who do not receive therapy, there does not appear to be differences in short term neurodevelopmental outcomes associated with bevacizumab monotherapy treatment. Anti-VEGF therapy seems to be safe in the short-term, however, a longitudinal study is necessary to ensure the long-term neurodevelopmental outcomes.

Conclusions: In this pilot study, which is the first to compare ROP therapy to controls who do not receive therapy, there does not appear to be differences in short term neurodevelopmental outcomes associated with bevacizumab monotherapy treatment.

060 FLEX-module optical coherence tomography (OCT)—expanding the reach of OCT in evaluating childhood glaucoma. Navajyoti R. Barman, Michelle S. Go, Michael P. Kelly, Robert J. House, Jill C. Rotruck, Mays A. El-Dairi, Sharon F. Freedman

Introduction: Objective evaluation of glaucomatous optic neuropathy with OCT can be limited by very young age, inability to cooperate, or technical challenges. The HRA+OCT Spectralis with Flex module (FLEX-OCT, Heidelberg, Germany) allows supine imaging under anesthesia. This is the first study to describe its use and feasibility in imaging childhood glaucoma.

Methods: Childhood glaucoma patients undergoing examination under anesthesia and/or surgical intervention were included in this ongoing prospective study. FLEX-OCT imaging of the posterior pole was performed. Images were analyzed for peripapillary retinal nerve fiber layer (pRNFL), Bruch membrane opening (BMO), and macular pathology.

Results: FLEX-OCT successfully imaged 60 affected eyes in 41 of 47 (87.2%) enrolled patients (mean age, 5.0 $\pm$ 5.0; range, 0.06-22.5 years). Imaging failure (8 eyes [11.8%]) was attributed to imager-learning, media opacity, and technical factors. We evaluated the pRNFL global thickness, BMO, and macular appearance for 60, 40, and 51 affected eyes, respectively (mean image quality, 23.3 dB). Results were directly comparable to similarly-aged controls (mean pRFNL global thickness, 83.4 $\pm$ 33.1 μm vs 107.6 $\pm$ 10.3 μm, $P < 0.001$; mean BMO, 1602 $\pm$ 349 μm vs 1525 $\pm$ 212 μm; $P = 0.55$ for affected vs control eyes, resp.). Macular pathology, present in 14 of 51 macular scans (27.5%), included abnormal foveal pit, epiretinal membrane, localized schisis, and paracentral acute middle maculopathy.

Discussion: FLEX-OCT allowed high-quality image acquisition and analysis comparable to tabletop OCT in patients who otherwise could not be imaged.

Conclusions: The future clinical application of FLEX-OCT is broad. Further studies may improve clinical management and understanding of childhood glaucoma-related pathophysiology.

061 A comparison of respiratory outcomes after treatment for retinopathy of prematurity (ROP) with pan-retinal photocoagulation (PRP) or bevacizumab. Gerard Barry, Kate Tauber, Farzana Afroze, Elizabeth Finuncane, Scott H. Greenberg, Helena Oechsner, Gil Binenbaum, Paul Feustel

Introduction: There are limited data detailing respiratory outcomes following treatment for ROP. We aimed to compare respiratory outcomes after treatment with PRP under general anesthesia to bevacizumab using bedside sedation.

Methods: Data on 139 consecutive patients treated for ROP from 2010 to 2018 at one institution were examined. The primary outcome measure was complete return to respiratory baseline 48 hours after treatment. Multivariable regression analysis was performed.

Results: 119 patients initially treated with PRP were less likely to return to their respiratory baseline by 48 hours compared to 19 patients initially treated with bevacizumab, odds ratio 0.18 (CI 0.05-0.67), when controlling for birth weight, gender and pre-procedure respiratory support or intubation. For patients treated with laser, a return to respiratory baseline occurred in 47 (39%), 62 (52%), and 93 (78%) at 24 hours, 48 hours and 7 days respectively, compared to 14 (73%), 15 (79%) and 19 (100%) at the same intervals for the patients treated with bevacizumab. Univariate analysis of patients treated with laser showed a significant correlation between not returning to respiratory baseline at 48 hours and lower birth weight, lower gestational age, lower postmenstral age at treatment, and pre-procedure respiratory support, but no correlation with gender or multiple procedures.

Discussion: Infants in both groups were at risk of not returning to their pre-procedure respiratory baseline 48 hours after treatment.

Conclusions: Infants treated with bevacizumab using bedside sedation are more likely to return to pre-procedure respiratory baseline by 48 hours than infants treated with PRP under general anesthesia.

062 Adult strabismus surgery outcomes with adjustable and nonadjustable sutures. Siddharth Bhargava, David Shieh, Dan Liu, Jitka Zobal-Ratner, John W. Simon

Introduction: Previous series suggest adjustable sutures (AS) in adult strabismus surgery yield improved ocular alignment, better success rates, and fewer reoperations compared to nonadjustable sutures (NAS). We questioned whether this difference is clinically significant and whether it justifies the added time and discomfort required for AS.

Methods: We reviewed all available records of adults undergoing horizontal strabismus surgery by the last two authors between 2000 and 2014. Independently, the two surgeons developed a preference for NAS midway through the study period, permitting a comparison between the two treatment groups. The primary outcome was alignment in primary position two days after surgery and at last follow-up. The secondary outcome was success rate, defined as $<10^{\Delta}$ residual or consecutive deviation at last follow-up. Reoperations were deemed failures.