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groups \((n = 10)\), 0.08 among triplet groups \((n = 2)\), 0.5 in the quadruplets. Overall, there was no difference in treatment rate among twins or triplets by gender, but among a group of quadruplets, all 3 males were treated. Among twins where both twins were treated \((n = 3)\), the males were treated on average 4 weeks earlier.

**Conclusion/Relevance:** Among multiple gestation premature infants, males overall developed worse ROP stage and required ROP treatment more often. Among twins, males tended to be treated earlier than their female counterpart. Further larger studies are warranted.

### 175 Refractive changes in children in the Chicagoland area during the COVID-19 pandemic
Eugene Kim, Magdalena Stec, Noreen Shaikh, Jonathan Huang, Hanta Ralay Ranaivo, Rebecca Mets-Halgrimson

**Introduction:** The increasing prevalence of myopia is a global epidemic predicted to worsen. The COVID-19 pandemic has led to increased near work and decreased time spent outdoors, which are associated with myopic progression. In this study we aim to investigate the association between recent behavioral changes and myopic shift in a racially diverse pediatric population in Chicagoland.

**Methods:** All patients (ages 2-19) seen at a single tertiary children’s hospital with a cycloplegic refraction in January-March in the years 2019, 2020, or 2021 were retrospectively reviewed. Patients with aphakia, pseudophakia, and connective tissue diseases (eg, Marfan syndrome, Stickler syndrome) were excluded.

**Results:** 2,063 patients were included in this study. The overall mean spherical equivalent \((SE)\) was 0.12 \(\pm\) 3.70 \(D\) in 2019, \(-0.07 \pm 3.95 D\) in 2020, and \(-0.49 \pm 3.85 D\) in 2021. The 6-9 year old age group displayed the greatest increase in myopia prevalence from 0.29 to 0.39 between 2020-2021, respectively. 109 patients returned in 2019, 2020, and 2021. Mean SE in return patients was 0.66 \(\pm\) 3.40 \(D\) in 2019, 0.51 \(\pm\) 3.58 \(D\) in 2020, and 0.22 \(\pm\) 3.72 \(D\) in 2021. Repeated measures ANOVA demonstrated significant difference in myopic shift between years \((F\text{-ratio} = 14.4; P < 0.00001)\), and post hoc testing with Bonferroni correction demonstrated significant decrease from 2020-2021 \((P = 0.00008)\), but not 2019-2020.

**Conclusion/Relevance:** These results demonstrate an increase in myopic progression in a pediatric population during COVID-19. The mean myopic shift in cycloplegic SE was significantly greater in 2020-2021 compared to 2019-2020. This may be explained by the behavioral changes during the COVID-19 pandemic.

### 176 The epidemiology of strabismus and cataracts within a pediatric population in Saint Vincent and the grenadines: an analysis of 201 consecutive cases
Virang Kumar, Donna Brown, Natario L. Couser

**Introduction:** Childhood cataracts and strabismus are among the most common causes of visual impairment in children worldwide and can lead to amblyopia, thus requiring prompt diagnosis and correction. In certain regions, such as the Eastern Caribbean, access to adequate treatment can be limited and epidemiological data can be scarce. This study aims to analyze the epidemiological data of pediatric strabismus and cataract cases in St. Vincent and the Grenadines from a population receiving care from a nonprofit volunteer organization.

**Methods:** A retrospective study of 201 consecutive cases of pediatric strabismus and cataracts over an 18-year period (2002-2020) was performed. Factors analyzed include patient age, sex, geographical location, and type of cataract, strabismus, and surgical intervention. The findings were compared to publicly available demographic information to determine the annual cumulative incidence.

**Results:** The cases were divided into groups: cataract \((n = 51)\), strabismus \((n = 134)\), and both strabismus and cataract \((n = 16)\). Mean ages (years) were 5.96, 5.54, and 4.50, respectively. The most frequent type of cataract and strabismus were congenital cataracts \((n = 35)\) and esotropia \((n = 95)\), respectively. The highest annual cumulative incidence based on the estimated national pediatric population were 3 and 5 cases per 10,000 people for cataracts and strabismus, respectively.

**Conclusion/Relevance:** This study provides regional epidemiological data on pediatric strabismus and cataracts, including cumulative incidence and common disease presentations. The results in this study offer a basis for further epidemiological studies can be performed. Ultimately, these findings can help guide public health efforts to prevent visual impairment in St. Vincent and the Grenadines.

### 177 Comparison between the time required to take nine-direction ocular photographs using conventional method and a novel convenient application
Keiko Kunimi, Toshiaki Goseki, Naoko Shioya, Yuka Iijima, Manami Sebe, Kyo Fukaya, Karin Hosoya

**Introduction:** We aimed to compare the time required to produce nine-direction ocular photographs using the conventional method and the novel application named 9Gaze.

**Methods:** Twenty healthy adults were included in this study. All participants underwent ocular photography using the three devices: digital camera with PowerPoint 2010, iPad and iPod touch with 9Gaze. We measured the time required to combine the nine photographs into a single image. We also compared the usage time based on the years of experience of the five orthoptists. The participants were divided into two groups; those examined by orthoptists with >1 year of experience and by those with <1 year of experience.

**Results:** The participants were 26.7 \(\pm\) 4.7 (mean \(\pm\) SD) years old. The required time for the three devices was statistically significant \((P < 0.05)\). The digital camera’s required time was 515.5 \(\pm\) 187.0 sec, iPad was 117.4 \(\pm\) 17.8 sec, and iPod touch was 76.3 \(\pm\) 14.1 sec. A significant difference between the years of experience of the examiners was observed for the digital camera \((P = 0.02)\), but not for the iPad and iPod touch. The required time was significantly longer with the digital camera than with the iPod touch in both groups \((P < 0.001)\) based on the years of experience of examiners.

**Conclusion/Relevance:** The nine-direction ocular photographs using 9Gaze shortened the time required for measurement. Furthermore, 9Gaze can be recorded without regard for the years of experience of the examiner.

### 178 Superior rectus recession for vertical strabismus with limitation of depression in abduction
Michael Langue, Sean P. Donahue

**Introduction:** Ocular misalignment can occur from a tight vertical rectus muscle, as is seen with thyroid eye disease. Hypertropia from a tight superior rectus is less common, but would show an increase in vertical deviation in the field of action opposite the involved muscle. We report outcomes of superior rectus recession for hypertropia increasing in downgaze.

**Methods:** Retrospective chart review of superior rectus recession for hypertropia increasing in downgaze with limitation in depression in abduction. Postoperative data were collected up to two months.