Morphological brain changes and CC size were evaluated using standard MRI sequences. The MRI evaluators were not informed about the results of visual examinations.

**Results** Impaired visual acuity was detected in 9/12 cases with abnormal CC (75%) and in 10% of children with normal CC (p < 0.01). There was a significant correlation between the CC size and Frostig test results (abnormal CC group vs. normal CC group: 91 vs. 80.7 points; p = 0.03 adjusted for history of ROP). Absence of stereoscopic vision was more frequent in the group of abnormal CC (7/12 vs. 2/20; p = 0.03). The frequency of abnormal VEP was similar in the both groups.

**Conclusion** A strong correlation between vision impairment and CC size was observed. This suggests that CC plays important function in integration of visual perception.

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**PO-0416** 2ND TRIMESTER HEAD SIZE IN FETUSES WITH CONGENITAL HEART DISEASE: A COHORT STUDY

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**Background and aims** Congenital heart disease (CHD) is associated with neuro-developmental disorder. The influence of CHD on the brain is believed to begin during pregnancy. The aim of this study is to describe a 2-year cohort of fetuses with major and minor CHD and to investigate if and when during pregnancy cerebral growth is impaired as early as 2nd trimester.

**Method** Pregnant women in Denmark (more than 95%) attend two publicly funded ultrasound scans; at 12 weeks gestational age (GA) and at 19–20 weeks GA. Fetal biometrics and abnormal ultrasound findings are registered. Fetuses in Western Denmark (2.9 million inhabitants) screened between January 1st 2012 and December 31st 2013, diagnosed with any structural, non-syndromic CHD either during pregnancy or up to six months after birth, are included in the study.

**Results** 129 fetuses with CHD were identified prenatally. Ninety-eight (76%) were genetically screened, primarily by chromosomal micro-array analysis (n = 72). Nineteen pregnant women (15%) declined invasive testing. Twenty-three fetuses (18%) were excluded due to genetic syndromes, mainly aneuploidies (n = 14) and seven (5%) were excluded due to extra-cardiac malformations. Ninety-nine fetuses (77%) with presumed non-syndromic CHD were included. Head circumference in week 19–20 was significantly smaller than average with a mean z score of -0.4 (95% CI: -0.7, -0.2) (p < 0.01). Analyses are undergoing and results will be presented at the meeting.

**Conclusions** Preliminary unadjusted results suggest that fetal cerebral growth in children with CHD may be disrupted as early as 2nd trimester.

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**PO-0417** WITHDRAWN
cerebral oximeter index (COx), to estimate adequacy of autoregulation. The lowest mean arterial pressure at which the COx was found.

**Results** Incidence of cerebral desaturations across the patient population was 30.3% (n = 10). Very premature neonates with severe haemodynamic instabilities undergoing surgery presented greater depressions in SatO2. Additionally they showed evidence of impaired autoregulation compared to hemodynamically stable neonates. Incidence of loss of CA according to COx was 33% (n = 11) in this patient group.

**Discussion** Results obtained demonstrate that sick neonates are more prone to decreased SatO2. Further research, with a bigger patient population is needed to determine the incidence more accurately, and its significance and consequences for outcome of these findings.

**REFERENCES**

**PO-0421**
CRANIAL ULTRASOUND FINDINGS IN ASYMPTOMATIC FULL TERM INFANTS

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Background
There has been no study assessing cranial ultrasound (CUS) scans in well newborn infants in Armenia. Our study objective was to assess the CUS scans of asymptomatic term newborns in postnatal ward and identify CUS abnormalities by using high quality ultrasound.

Methods
Cohort of otherwise healthy term newborns born between 20 March 2013 and 26 April 2013 in RCMCHP, Yerevan, Armenia, were scanned by single investigator (PM) according to the standard protocol using zone ultra Convertible Ultrasound System machine with a 7.5 frequency microconvex tightly curved array transducer.

Results
Data from 121 infants scanned at a median age of 2.5 postnatal days were analysed. Mean birth weight was 3357 g (± 369.1) in SGA neonates with mean gestational age 31.6 ± 2.2w and to comparable AGA ones. Recorded parameters in SGA neonates during first postnatal week with the use of colour Doppler sonography. Patients/methods Transcranial Doppler sonography from the temporal acoustic window was performed bilaterally with CX50 PHILIPS device using S8–3 transducer in the first, third and seventh day of life of SGA neonates with mean gestational age 31.6 ± 2.2w and to comparable AGA ones. Recorded parameters were Peak Systolic Velocity (PSV), End Diastolic Velocity (EDV), Mean Velocity (MV), Pulsatility Index (PI) and Resistance Index (RI) in middle cerebral artery MCA.

Results
26 SGA and 26 matched for GA control AGA neonates were prospectively enrolled with statistically significant difference in birth weight (1.201, 9 ± 369.1 vs 1.805, 3 ± 431.7, p < 0.0001), in head circumference (27.4 ± 2.8 vs 30.0 ± 2.4, p = 0.01) and haemoglobin in first postnatal day (17.7 ± 1.7 vs 15.9 ± 1.6, p < 0.0001). Fetal Doppler were pathological in 6 SGA neonates. Doppler study showed a gradual increase in PSV and MV during the first week bilaterally in both groups with statistically significant difference between them in MV in the third day of life (Right p = 0.017, Left p = 0.05). EDV in right MCA was also found higher in SGA neonates in the second measurement (p = 0.04). No statistically significant differences were found in the resume parameters.

Conclusion
Increased brain metabolism in the first postnatal days is responsible for the observed augmentation of cerebral perfusion in order to maintain the balance between oxygen...