known that sleep disturbances cause behavioral, affective and cognitive mental health problems. In this study we investigate the effect of structured physical activity on sleep and mental health in severe autistic children.

Methods Thirty-six children who have severe autistic disorder according to Children's Autism Rating Scale participated the study. Structured physical exercise applied 6 months one by one all these children. Before beginning the physical exercise programme and after the programme we evaluated autistic children with Aberrant Behavior Checklist (ABC), The Children's Sleep Habits Questionnaire (CSHQ). SPSS 18.0 was used for statistical analyses.

Results The children with ASD were between 7–17 years old and the mean age was 12.5 ± 2.1 years old. There was significant difference in total scores of ABC before and after structured physical activity ($p=0.05$, $z=-1.918$). The mean scores of Hyperactivity-Non compliance subscale were declined significantly after physical activity ($p=0.045$, $z=-2.000$).

The rate of clinically significant sleep problems was 80.6% before activity and the rate was 66.7% after activity. There were statistically significant differences in total CSHQ scores before and after structured physical activity ($p=0.01$, $z=-3.470$). The mean scores of Bedtime Resistance ($p=0.01$, $z=-3.128$) and parasomnias subscale ($p=0.29$, $z=-2.187$) were declined statistically significant after physical activity.

Discussion In this study the rate of sleep problems is very high about 80% among severe autistic children as similar to literature (Cortesi F et al, 2010). We found that sleep resistance and parasomnias were declined after physical activity. Also the hyperactivity behaviors get better after activity. Tatsumi et al (2015) found associations between physical activity and the quality of sleep were different depending on when the PA occurred. High levels of morning and afternoon activity were associated with early sleep onset among ASD children. High-level morning and afternoon activity should be encouraged to improve the sleep quality of children with ASD. Identifying and treating sleep disorders may result not only in improved sleep, but also impact favorably on daytime behavior and family functioning (Cortesi F et al, 2010).

Future studies are needed have larger groups and control subjects must be done to clarify the positive effect of activity on sleep and behavior.

GP214

INCREASED MARKER OF ENDOTHELIAL CELL DYSFUNCTION sVCAM-1 IN UMBILICAL CORD BLOOD IN NEONATES BORN TO OBESE WOMEN

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Introduction Increased level of angiogenic and adhesion molecules released from adipose tissue in pregnant women with obesity may affect the process of angiogenesis, metabolic state and inflammatory potential in both mother and her offspring.

Objectives To determine the effect of maternal obesity on the level of sVCAM-1 and VEGF-A in mothers and their newborn babies.

Methods We conducted a prospective, observational study with the inclusion of 42 mothers and their newborn babies. Main

group included 21 mothers with obesity and their newborn babies. Control group consisted of 22 women with normal body mass index (BMI) before and during pregnancies and their newborn babies. We analyzed serum concentrations of vascular cell adhesion molecule 1 (sVCAM-1) and vascular endothelial growth factor A (VEGF-A) in maternal cord blood and in venous blood of newborn babies in 2 day after birth. The normal level of sVCAM-1 for adults is 400.6–1340.8 ng/ml; VEGF-A (for adults) - 0–42.6 pg/ml. Data was analyzed using the statistical package Statistica 10.0 for Windows-10. The significance of the differences was determined at P value < 0.05 .

Results The level of markers of endothelial dysfunction in cord blood exceeded normal values in all examined women. Concentration of sVCAM-1 in maternal cord blood was significantly higher in women with obesity compare to women with normal BMI (4926.19 ± 1158.63 ng/ml vs 3294.66 ± 1338.23 ng/ml, $p < 0.0001$). Concentration of VEGF-A in maternal cord blood in both groups (224.74 ± 57.41 pg/ml and 197.29 ± 180.44 pg/ml; $p > 0.05$), concentration of sVCAM-1 in newborns serum in both groups (4019.32 ± 1024.45 ng/ml and 4300.35 ± 948.08 ng/ml, $p > 0.05$) and concentration of VEGF-A in newborns serum in both groups (208.42 ± 141.72 pg/ml and 170.53 ± 152.64 pg/ml; $p > 0.05$) had no significant differences. The level of sVCAM-1 in cord blood was higher than in newborns serum in main group (4926.19 ± 1158.63 and 4019.32 ± 1024.45 , $p < 0.05$), but lower than in the control group (3294.66 ± 1338.23 vs 4300.35 ± 948.08 , $p < 0.05$). We did not reveal any significant differences in level of VEGF-A in cord blood and in newborns serum in both groups.

Conclusions Pregnancy in obese women associated with chronic endothelial activation secondary to increased production of vascular cell adhesion molecule 1 (sVCAM-1). The level of markers of endothelial cell dysfunction in infants may be associated with a different course of the adaptation period. Pregestational or pregnancy associated disorders, can have a different impact on endothelial function in pregnant women. The dynamics of the endothelial dysfunction markers in umbilical cord blood and serum of infants requires additional study.

GP215

GROWTH AND NUTRITIONAL STATUS IN CHILDREN WITH PRADER WILLI SYNDROME

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Objective To explore growth and nutritional status in children with Prader Willi Syndrome (PWS)

Methods All children with a genetically confirmed diagnosis of PWS, attending the National Children's Hospital Tallaght were invited to participate ($n=44$). Anthropometry, height/length, weight and body mass index (BMI) were measured were appropriate. Body composition was evaluated using bioelectrical impedance analysis. Parents completed a feeding questionnaire to identify early feeding issues in PWS. Parents received training on recording dietary intake before completing 3 Day