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**Introduction:** Anorexia nervosa (AN) represents a severe mental disorder associated with cardiovascular complications leading to morbidity and mortality. Abnormal functioning of autonomic nervous system, particularly sympathetic nervous system, plays a crucial role in AN-linked psychopathology and cardiovascular diseases; however, the pathomechanisms are still unclear.

**Objectives:** Thus, we studied sympathetic arousal in response to mental stress using conventional parameters, and for the first time by spectral analysis of electrodermal activity with aim to detect non-invasive biomarkers for cardiovascular risk assessment already in adolescent AN patients.

**Methods:** Twenty-five AN girls were examined ( $14.8 \pm 0.4$  yr.) and age/gender matched controls ( $15.1 \pm 0.3$  years). Electrodermal activity (EDA) was continuously recorded at rest (5 min.) and in response to Go/NoGo test (5 min.). Evaluated parameters: skin conductance level (SCL) and spectral parameter of EDA in the sympathetic frequency band (EDASymp). EDA reactivity was calculated as percentual change (%) of SCL and EDASymp in response to stressor.

**Results:** The AN group had significantly reduced SCL and EDA-Symp compared to controls during baseline ( $p=0.041$ ,  $p=0.0001$ , respectively) and in response to Go/NoGo test ( $p=0.043$ ,  $p=0.017$ , respectively). The EDASymp index reactivity was significantly lower in AN group compared to control ( $p=0.034$ ).

**Conclusions:** Our study revealed resting sympathetic underactivity associated with lower reactivity to mental stressor indexed by EDA parameters in adolescent AN patients. This altered pattern of sympathetic arousal could play important role as a pathomechanism leading to cardiovascular complications in AN. It seems that EDA indices represent potential non-invasive biomarkers to detect AN-linked cardiovascular risk already at adolescent age.

**Conflict of interest:** This study was funded by the Slovak Scientific Grant Agency under grants VEGA 1/0044/18 and VEGA 1/0190/20 and Ministry of Health of the Slovak Republic under the project registration number 2018/20-UKMT-16.

**Keywords:** anorexia nervosa; electrodermal activity; sympathetic nervous system

## EPP0085

### The effect of vitamin C on sociability in a juvenile zebrafish pesticide-induced model of autism spectrum disorder

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**Introduction:** Autism spectrum disorder (ASD) is a multi-factorial disease characterized by impairments in social interaction, communication and repetitive behaviors. The necessity of developing an adequate treatment for ASD is essential. There is an increase in clinical studies assessing the positive effects of vitamins in ASD children. Vitamin C (vit. C) is implicated in biosynthesis of neurotransmitters and in protein metabolism.

**Objectives:** This study evaluated the possible effect of vit. C on zebrafish sociability after a single insecticide mixture administration as inductor for ASD.

**Methods:** A single dose of insecticide mixture ( $600 \mu\text{g L}^{-1}$  fipronil and  $600 \mu\text{g L}^{-1}$  pyriproxyfen) was administered to zebrafish juvenile. Vit. C ( $25 \mu\text{g L}^{-1}$ ) was daily administrated during 14 days. A control group simulated the administration of insecticide mixture and vitamin. Each animal was tested in the experimental tank designed for the social interaction test. The trials were recorded and analysed using EthoVision XT 11 (NOLDUS, Netherlands). The locomotor activity parameters and the time spent next to the group were measured. Each trial had 4 minutes duration.

**Results:** We have found no significant differences in the average levels between pre-treatment and treatment days ( $P < 0.05$  ANOVA) regarding the locomotor activity parameters. Significant changes in sociability were observed for the group exposed to insecticide mixture and for vit. C group ( $P > 0.05$  ANOVA). It was also found that 14 days vitamin administration can lead to sociability improvements after a single administration of mixture insecticide.

**Conclusions:** The results of the current study bring some positive insights for the future of ASD therapy.

**Conflict of interest:** This work was co-funded by the European Social Fund, through Operational Programme Human Capital 2014-2020, project number POCU/380/6/13/123623, project title

**Keywords:** vitamin C; pesticide; autism spectrum disorder; sociability

## EPP0086

### Prenatal attachment & socio-demographic and clinical factors

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**Introduction:** A pregnant woman's bond with her fetus and the quality of the prenatal attachment can be determined by numerous variables.

**Objectives:** Determine the socio-demographic and clinical factors' effect on prenatal attachment.

**Methods:** We conducted a transversal descriptive study in a first line clinical practice center and in an university gynecology-

obstetrics department. The Prenatal Attachment Inventory (PAI) was used to assess maternal-fetal attachment.

**Results:** For the 125 pregnant women that participated in our study, 99,2% were married with consanguinity for 14,4%. The mean marriage duration was 4 years and 3 months. Women were illiterate in 3,2% and more than the half (54,4 %) were unemployed. On average, the current pregnancy was their second one. Pregnancy was spontaneous in 85,6%, unplanned in 71,2% and not desired in 29,6%. Sex of the fetus was not desired by the mother in 40,8%. Dysgravidia complicated 32% of the pregnancies with hospitalization in 25,6%. Fetal health problems were detected in 7,2%. A psychiatric trouble has been reported by 4% of the pregnancies. The total score of PAI ranged from 27 to 82 in our sample. We found a statistically significant negative correlation between PAI and duration of marriage ( $p=0,012$ ); PAI and gestation number ( $p=0,039$ ); and a correlation between PAI and the planning of the pregnancy ( $p=0,030$ ).

**Conclusions:** Socio-demographic and clinical factors should be taken in consideration while evaluating pregnant women at risk of perinatal psychological difficulties.

**Conflict of interest:** No significant relationships.

## EPP0088

### Conditions of negation formation in children of early age with down syndrome

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**Introduction:** According to Vygotsky, children with special needs follow the same trajectory of development as normally developing children, although some of the skills can be observed in a later period. This statement can be implemented to the children with Down syndrome. The number of such children in Russia is around 25 thousand. **Objectives:** The aim is to study the conditions of negation formation in children with Down syndrome.

**Methods:** The sample consisted of 22 dyads of children with Down syndrome of 24-36 months old and their mothers. The research methods included: parents' questionnaire; analysis of problematic situations; Tkacheva's inventory Parent's Psychological Type; Varga & Stolin Inventory of Parental Attitude; Toronto Alexithymia Scale, Bass-Darkey Hostility Questionnaire, Leonhard-Schmieschek Test, Spielberger's Test Anxiety Inventory.

**Results:** Firstly, we have studied how a child expresses his or her negative reaction: whether he or she uses a gesture or a sound for "no" or reacts with the whole body. According to those results we have divided the sample into two groups and then have compared them. The research shows the connection between mother's aggressiveness and formation of the child's negation reaction (gesture/sound or the whole body) as well as differences in the level of alexithymia and anxiety: all the characteristics are lower in the first group.

**Conclusions:** Mothers of the children with Down syndrome demonstrate a high and a medium level of anxiety. However, the mothers of the children who expresses negation with a gesture/

sound show a lower anxiety level comparing with the mothers whose children react with the whole body.

**Keywords:** Down syndrome; parent-child relations; negation; children with special needs

## EPP0089

### Productivity of tasks performance in children and adolescents with different level of media multitasking

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**Introduction:** Media multitasking (MMT) begins to play an increasingly important role in terms of the digitalization of everyday life. At the same time, the effect of MMT on efficiency is still poorly highlighted, especially among the younger generation (May, Elder, 2018; Patterson, 2017; Peifer, Zipp, 2019).

**Objectives:** The aim is to identify types of MMT in children and compare them by productivity and time of task performance.

**Methods:** Quasi-experimental research, which included the performance of tasks on a computer and a smartphone, was conducted among children in three groups aged 7-10 years, 11-13 years, 14-16 years (N=154).

**Results:** Based on a number of criteria, several types of behavior are identified in the MMT environment: two subgroups of "single-taskers" (23%), "light" (19%), "medium" (54%) and "heavy" (4%) MMT. Comparative analysis ( $p=0.027$ ) reveals high scores for proper task performance of the subgroup "single-taskers1", as well as "heavy" and "light" MMT. The other subgroup "single-taskers2" and "medium" MMT show, on the contrary, low productivity results. MMT groups also differ in terms of task performance time ( $p=0.006$ ). The "light" and "heavy" MMT cope the fastest. The second place by the speed of task performance is held by "medium" MMTs and "single-taskers1", and the slowest are "single-taskers2". **Conclusions:** The results show that both linear and nonlinear behavioral strategies can lead to a certain level of performance. Most children try to operate in the MMT mode and it is becoming the dominant and ubiquitous modus vivendi for the younger generation. The reported study was funded by RFBR, project No. 19-29-14181.

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**Keywords:** media multitasking; productivity; Children; adolescents

## EPP0090

### Early premorbid of children with ASD

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**Introduction:** According to numerous studies, the origins of most endogenous mental diseases, in particular, autism, lie in early childhood. This concept is based on the classical theories of diathesis.