

Schizophrenia is a severe psychiatric disorder which affects approximately 1% of the population worldwide. It is characterized by two types of symptoms – positive (delusions and hallucinations) and negative (decrease or disappearance of behaviours observed in healthy people). Patients with schizophrenia experience many difficulties in the social domain in their daily life. Genetic vulnerability together with environmental factors (stressors) are underlying the onset of schizophrenia. Patients with schizophrenia show a stronger response to social than non-social stressors in comparison to healthy people. In schizophrenia, the response to stress may be related to such factors as: childhood traumas (e.g. psychological or sexual violence), social adversity (e.g. low education and / or parental income, difficult housing conditions, single-parent household) and cognitive biases (selective information processing, e.g. increased targeting of threatening stimuli).

Research shows that exposure to childhood trauma and social adversity contributes to an increased risk of developing psychosis. Social stress can mediate this relationship due to its association with both the onset and relapse of psychosis. The response to stressors can be assessed using subjective measures, in which participants describe the level of their stress, as well as the organism's response measured using physiological markers. In addition, the development of new technologies such as virtual reality (VR) gives the opportunity to create experimental methods that are characterized by a high level of psychological and situational realism, which allow to control all variables in the experimental environment and permit measuring variables in real time without leaving the virtual environment. The aim of this project is to explore factors related to the response to social and non-social stressors, on both declarative and physiological level.

The project will consist of two parts - Experiment 1 and Experiment 2. In both experiments, participants will take a virtual journey by underground, during which they will be exposed to social stressors (avatars of other passengers) and non-social (noise and flickering light). Sixty-five healthy people will participate in Experiment 1. Its results will be used to determine the optimal intensity of stressors for the main part of the project - Experiment 2. Forty patients diagnosed with schizophrenia and 40 healthy controls will be recruited for Experiment 2. In both experiments, participants' declared response to stressors, as well as the physiological response of the body will be measured. Additionally, in Experiment 2 the assessment of childhood trauma, social adversity and cognitive biases will be performed in order to search for a link between stress response and other factors.

Completion of the project, will allow to assess which factors influence patients' response to social and non-social stressors. Impairment in the response to environmental stressors contributes to the increased risk of developing psychosis in individuals with genetic vulnerability, therefore, it is important to study the processes that underlie it.