Study of structural and functional neural correlates of the newly discovered implicit motor learning impairments in schizophrenia and bipolar disorder patients

Implicit motor learning relies on improving a sequence of motor acts through their repetition without conscious awareness of the exposure to the task. This type of learning plays a critical role in the structuring of our skills, perceptions and behavior. In our studies we have identified yet unrecognized disruptions of this cognitive functions in schizophrenia and bipolar disorder patients. In the following project, with the use of complex neuroimaging techniques, we aim to evaluate structural and functional brain changes associated with those impairments.

Proper understanding of neural correlates responsible for impairment of this important cognitive function will broaden our knowledge about pathophysiology of cognitive disorders in those clinical groups. Understanding of the biological basis of the implicit motor learning may help to develop new methods of treatment and rehabilitation of these disorders.