Abstract

Neocortex forms an important and the most developed part of the mammalian brain. Its medial part consists of parts, which also include cortex of cingulate gyrus and its subregions. These subregions also contain anterior cingulate cortex and retrosplenial cortex, whose role in brain functions and diseases will be introduced more closely. We know only very little about a brain and is functioning and that’s why it is constantly being researched.

We separate the anterior cingulate cortex into two parts based on their functions- the cognitive (dorsal part) and the emotional (ventral part). They differ in functions and also in the connections with other parts. One of its layers contains a special type of neuronal cells- spindle cells. The most researched part in brain functioning is error detection, conflict monitoring, registration of pain and it also includes functions in motor skills and emotions. Moreover, we can find functional and anatomical changes there, which are connected to brain diseases- schizophrenia, cingulate epilepsy or akinetic mutism.

The retrosplenial cortex occupies dorsal part of cingulate cortex. Architecturally, it is characterized with its distribution to granular and agranular part. Functionally, it can be classified to paths which modulate and process emotions, it has an important role in spatial memory and we can also find its activations connected with amnesia or memory recovery. Like in the anterior cingulate cortex, we can find changes there connected to diseases- in this case it is schizophrenia and Alzheimer’s disease.