Conversion or Functional Neurological Symptom Disorder is characterized by sensory or motor symptoms that are incompatible with recognized neurological or medication conditions but cause significant distress or impairment. Examples include functional blindness or deafness, functional aphonia (inability to vocalise), functional paralysis and functional sensory loss. This group of symptoms is often also discussed in the context of dissociation, a concept that describes the sense of detachment from the world and/or one’s own body and experiences. Dissociative symptoms can occur in clusters and also include cognitive symptoms (for example dissociative amnesia) and altered states of consciousness (derealisation, depersonalization).

Neuroimaging and neurophysiology has begun to elucidate some of the putative biological mechanisms of dissociation and conversion. Dissociative amnesia, which is characterized by retrograde memory loss of variable temporal extent, has been explained by both failure to synchronise right hemispheric memory retrieval networks in the frontal and temporal lobes (Markowitsch model) and by inhibition of prefrontal executive function regions followed by decreased activity of the hippocampus (Kopelman model). In conversion disorder with motor (weakness) or sensory (loss of tactile sensation, functional blindness) symptoms, some functional imaging studies have shown evidence for reduced activation in the respective areas for motor control or sensory processing, but also increased activity in limbic areas. In this workshop we will discuss the methodological approaches to the study of the biology of functional neurological disorders (FND), which include functional and structural neuroimaging and evoked/ event-related potentials, but also biochemical studies of markers of the immune and hormonal systems. We will also discuss novel treatment approaches that could be based on such neurobiological models, including transcranial (magnetic or electric) brain stimulation and neurofeedback.

Chair: David Linden, MUMC, Maastricht University