

## PW01-157 - MESOLIMBIC DYSFUNCTION DURING NOVELTY DETECTION IN SCHIZOPHRENIA

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**Introduction:** Schizophrenia is characterized by marked disturbances of cognitive functions. One core finding is a memory dysfunction. Recently, this has been attributed to impaired hippocampus function that is crucial in comparing new to known information. Hippocampal novelty detection triggers activity of neurons in the ventral tegmental area (VTA) to which it is reciprocally connected.

**Aims:** Here, we examined whether neuronal activation during the detection of novel information is impaired in these structures.

**Methods:** We investigated novelty detection using an fMRI oddball face paradigm with repeated novel oddballs (1-4 repetitions) in 25 patients (12 female, mean age 26 years) suffering from paranoid-hallucinatory schizophrenia and 25 healthy controls (12 female, mean age 25 years).

**Results:** Schizophrenia patients, relative to control subjects, showed impaired patterns of activation in mediotemporal areas, including the hippocampus, as well as in VTA/ Substantia Nigra during novelty detection. Furthermore, the activity related to detection of previously novel but repeatedly presented stimuli shows an altered adaptation in the patients.

**Conclusions:** In schizophrenia, the Hippocampus-VTA-loop displays a dysregulated activity pattern during novelty detection that is crucial for encoding into long-term memory. As this loop is mainly governed by dopaminergic neurotransmission these results underline the pivotal pathophysiological role of mesolimbic dopaminergic dysregulation in the pathophysiology of memory dysfunction in schizophrenia.