



Hôpital général juif  
Jewish General Hospital



McGill

Institut Lady Davis de recherches médicales | Lady Davis Institute for Medical Research

## PAPER OF THE MONTH • MARCH 2019



### **Ayda Tavitian, PhD Candidate**

Integrated Program in Neuroscience,  
Department of Neurology & Neurosurgery, McGill University



### **Hyman Schipper, MD, PhD, FRCPC**

Senior Investigator, Lady Davis Institute

Professor, Departments of Neurology & Neurosurgery and Medicine,  
McGill University



## The Neuroscientist

### **Dentate Gyrus Immaturity in Schizophrenia**

Ayda Tavitian, Wei Song, Hyman M. Schipper

Close examination of the hippocampus in human and mouse brains revealed that the dentate gyrus is noticeably underdeveloped in individuals with schizophrenia, providing the first clear anatomical signature for the condition. This paper hypothesizes that the retention of immature properties in this region of the brain into adulthood could be responsible for the disease, which doesn't usually present in males until they are in their twenties or in females in their twenties or thirties. The research shows remarkable consistency between a visibly immature dentate gyrus and the emergence of schizophrenia symptoms. The abnormality may account for many cardinal symptoms of schizophrenia because the dentate gyrus is associated with the brain's capacity to separate and process sensory stimulation and to distinguish the real from the delusional. Arrested maturation of the dentate gyrus could prove to be a valid physical biomarker for diagnosing schizophrenia.

<https://doi.org/10.1177/1073858418824072>