



Neural Plasticity

Special Issue on  
**Neural Plasticity and Neurogenesis in Mental Disorders**

CALL FOR PAPERS

The process of neurogenesis involves the development and maturation of new neuronal populations from neural progenitor cells, which are forms of neural stem cells. Neuroplasticity is also a complex process that involves new connections and possibilities for an adult neuron to act in different ways to maintain health or lead to a mental disorder. Research data have shown that substantial neuroplasticity occurs in the lowest neocortical processing areas and that it can profoundly change the pattern of neuronal activation in response to the environment and mental process. Nowadays it is completely accepted that experience can actually change the brain's physical structure and functional organization.

Neuroscientists are currently engaged in demonstrating that the brain can change in response to hitherto unsuspected stimuli. In the adult rodent brain, neurogenesis has been observed to occur in the subgranular zone of the dentate gyrus in the hippocampus. The hippocampus is known to be one of the most important brain structures implicated in memory formation and spatial processing, and it has hence become evident that the process of hippocampal neurogenesis is of pivotal importance in the maintenance of normal cognitive function. It is now also well established that adult hippocampal neurogenesis is an important player in the regulation of both mood and anxiety, with decreased rates of neurogenesis being normally accompanied by an increase in depression- and anxiety-related behaviors, like in anxiety disorders. Importantly, it had been proposed that the cell growth patterns observed in rodent and other animal models were analogous to the degree and processes of growth displayed in human subjects. Indeed, evidence from a recent study dating hippocampal cells with nuclear bomb test-derived carbon 14 confirmed the occurrence of adult neurogenesis in the human hippocampus. Moreover, it was revealed that it occurs at rates comparable to those of middle-aged mice, supporting the strong relevance of results from animal models.

The purpose of this special issue is to publish high-quality research papers as well as review articles addressing recent advances on adaptive sensing in emerging neurogenesis and neuroplasticity associated with mental disorders, especially anxiety and mood disorders. We intend to demonstrate a translational approach from the basic research to the clinical psychiatry. Original, high quality contributions that are not yet published or that are not currently under review by other journals or peer-reviewed conferences are sought. We are interested in articles describing challenges in this area that will become critical in the next years.

Potential topics include, but are not limited to:

- ▶ Neurogenesis/neuroplasticity-basic research into structural changes and functionality
- ▶ Neurogenesis/neuroplasticity in mood and anxiety disorders
- ▶ Neurogenesis as a potential treatment link for mental and neurological disorders
- ▶ Neuroplasticity and neuroimaging
- ▶ Neurogenesis and cognitive function
- ▶ Neuroplasticity and psychopharmacological treatment
- ▶ Neurogenesis and drugs

Authors can submit their manuscripts via the Manuscript Tracking System at <http://mts.hindawi.com/submit/journals/np/npn/>.

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