

LETTER TO THE EDITOR

# Can neurogenesis be considered as a new treatment for addiction?

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Neurogenesis is considered as the generation of new neurons in certain brain regions such as dentate gyrus of the hippocampus and subventricular zone (Ming & Song 2011). Recently, other brain areas have been known to have the capacity of generation of new neurons also (Ernst et al. 2014; Zhao et al. 2003). Neurogenesis is considered also as potential brain defence against stress (Mirescu & Gould 2006) as well as protective against conditions that potentiate high-risk behaviours as well (Famitafreshi & Karimian 2018; Famitafreshi et al. 2016a).

Neurogenesis can alleviate comorbid conditions that occur in addiction period (Famitafreshi & Karimian 2018; Famitafreshi et al. 2016a) and also withdrawal period (Famitafreshi et al. 2015). Also withdrawal syndrome is great problem that neurogenesis is necessary for alleviation of such symptoms (Nixon 2006). These studies suggest the importance of neurogenesis in helping addicts to stop addiction. Furthermore, improving neurogenesis increases food

intake that is necessary for addiction period (Famitafreshi et al. 2016c) and withdrawal period (Famitafreshi et al. 2016b) for better tolerance of addition (Islam et al. 2002). Neurogenesis can also help proper function of reward center. Reduced neurogenesis may impair reward center function that may predispose individual to more abusing drugs (Famitafreshi et al. 2016d).

Different studies have suggested that neurogenesis is reduced as the consequence of drug abuse (Eisch et al. 2000). It is known that some drugs increase the neurogenesis in the brain. Fluoxetine is famous in this regard (Encinas et al. 2006). However, the application of such drugs for the treatment of addiction has to be proven. Applications of drugs increasing neurogenesis for helping addicted people have not been used in clinical studies. Increasing neurogenesis for the alleviation of addiction is a useful treatment option for this purpose. So, the need to validate the efficacy of such treatment for addicted patients is needed.

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