**Chronic toluene exposure and hippocampal structure in adolescent and adult brain, Review**

**Abstract:**

Toluene and toluene containing volatile substances are the most common abused solvents with demonstrative addictive potential in human. The presentation of these substances is associated with the activation of brain areas involved in both addiction and learning. As potential substrates for both processes the regions of mesocorticolimbic system have been identified. A number of clinical and experimental studies indicate that the hippocampus is involved in toluene addiction. In particular, toluene affects learning and memory and provokes various, molecular, biochemical and structural alterations in the hippocampus of adolescents and adults. The character of these alterations depends upon the age of organism testig. In the present chapter we review immediate and persisting effect of chronic toluene exposure on the structure of the hippocampus in the organisms of different age.