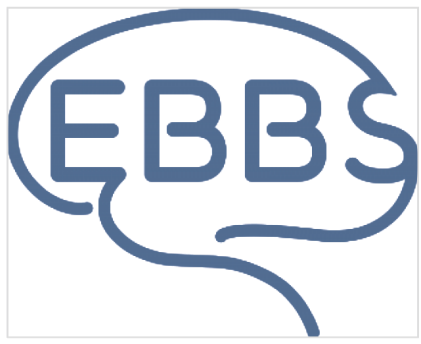


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Long-Term Stress and Concomitant Marijuana Smoke Exposure Affect Physiology, Behavior and Adult Hippocampal Neurogenesis



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**Objective:** The aim of our study was to mimic real life situations where young people smoke cannabis regularly to relax from everyday stress. Therefore, we exposed young adult male NMRI mice to daily stress and concomitant marijuana smoke for two months and investigated the consequences of this long-term treatment on various aspects of physiology, behavior and adult hippocampal neurogenesis.

**Methods:** We used a chronic stress paradigm, in which animals were restrained for 6-hours/day for 5-days a week. During the stress, mice were exposed to cannabis smoke for 2 × 30 min/day. We burned 2 “joints” (2 × 0.8g) marijuana per occasion in a whole body smoking chamber. Body weight gain was recorded daily. To investigate the effect of chronic cannabis smoke exposure on pulmonary functions, we did unrestrained, whole body plethysmography. Adult neurogenesis was quantified post mortem in the hippocampal dentate gyrus. The proliferative activity of the precursor cells was detected by the use of the exogenous marker 5-bromo-2'-deoxyuridine. Treatment effects on immature neurons were studied by the quantification of doublecortin-positive neurons.

