

## Effects of chronic stress on hippocampal microglia and neurogenesis of mice under social defeat stress.

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**Introduction:** Chronic stress is the main environmental factor in the aetiology of depression and it is known that this type of stress may cause alterations in brain regions such as the hippocampus. Nevertheless, changes in a cellular basis are still a subject of study. **Objective:** The analysis of microglial cells and immature neurons in the dentate gyrus (DG) of stressed mice. **Methods:** C57BL/6J mice were subjected to Social Defeat Stress model (SDS), consisting of 6 days of social isolation prior to 10 days of stressor. The DG was analysed using immunohistochemistry techniques against Iba1 (microglia) and DCX (immature neurons) following image analysis (ImageJ) to obtain morphological and distribution data of microglial somas. Furthermore, hippocampal neurogenesis was assessed through stereological quantification of DCX+ cells (Visiopharm). **Results:** An increase in soma size under chronic stress conditions was shown, as well as a less circular and more ameboid soma. These changes were observed mainly in the infrapyramidal blade of the DG. According to microglial cells distribution parameters, the granular cell layer (GCL) was the region which presented the highest microglial density under SDS. Regarding hippocampal neurogenesis, a decrease in the number of DCX+ Type 2-3 cells was observed in the whole DG. **Conclusion:** All these results offer a more profound insight of stress changes at a cellular level and could contribute to a better understanding of neurobiological basis in pathologies such as depression. **Projects:** PSI2017-83408-P (MINECO) and P20 00460 (Consejería de Conocimiento, Investigación y Universidades, Junta de Andalucía). **University of Málaga.**

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