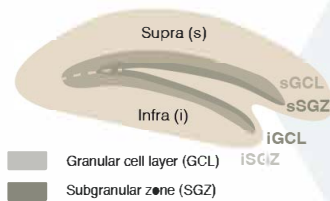


Females vs Males in Depression: why we should start treating them differently

1 Why study both sexes?

Depression is affecting around 25% of the people in the world, and around two thirds of the patients are women. However, most studies are conducted in males and current therapies are not working.

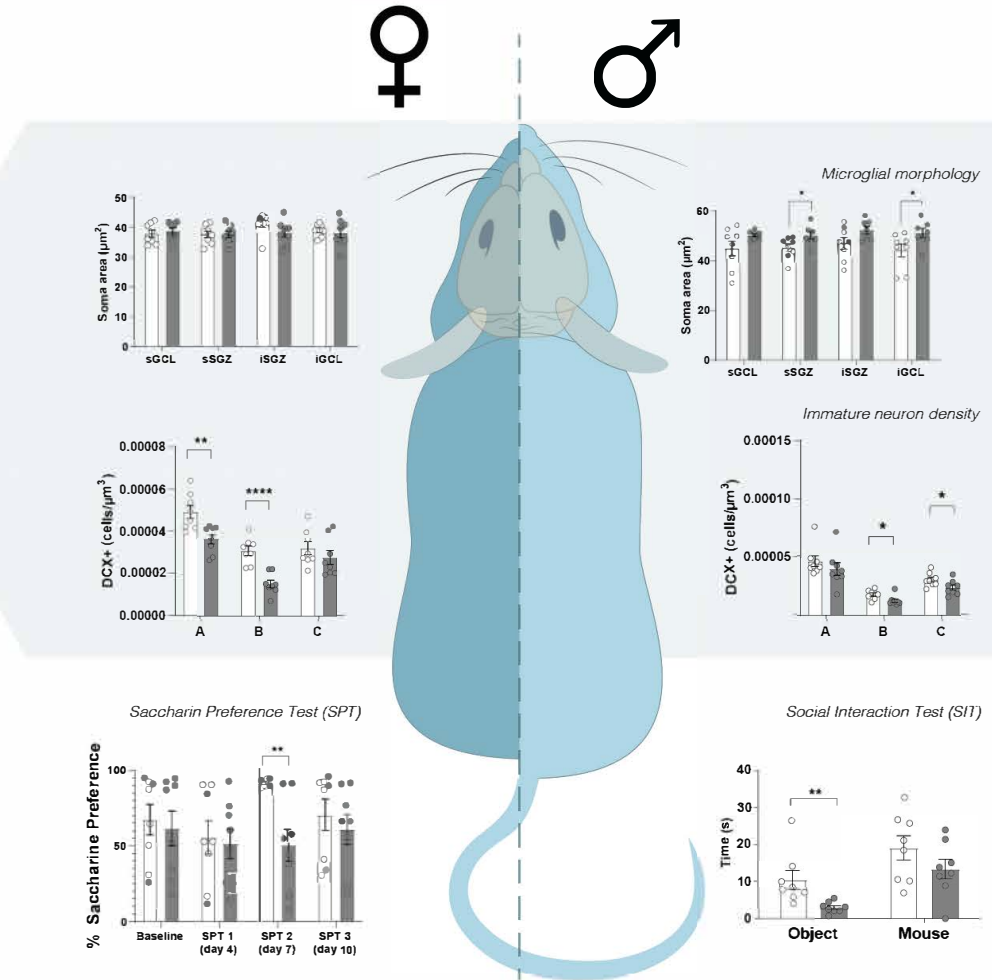
2 Hippocampus and stress



The hippocampus is affected by stress, the main cause for depression. Particularly, the dentate gyrus (DG; above), where important processes like neurogenesis occur, is very affected. Here we study the effects of social defeat stress (SDS) for 10 days.

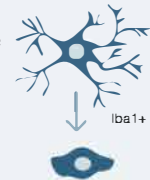
5 Different behavioral symptoms

Females show a more anhedonic profile, with less preference for saccharin in SPT. In males, alterations in the three-chamber SIT were observed, meaning they have their social and exploratory behavior altered.



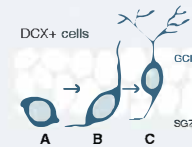
3 Microglia reacts in male mice

Microglial morphology is affected after SDS only in male mice, with a larger and more ellipsoid soma, compatible with an amoeboid shape. This enables mobility and, thus, a higher cell density.



4 Neurogenesis loss in Supra

Immature neurons (DCX+) development is especially decreased in females. In females, earlier stages of maturation are affected, while later stages are altered in males.



T-test * $p < 0.05$, ** $p < 0.005$, **** $p < 0.00005$

6 Changes in depression approach

As seen in this study, males and females respond differently to SDS. In males, microglial changes mediate neurogenic loss, but they do not in females. These changes in neural and behavioral parameters support the need to change the current paradigm of treating depression equally for both sexes.

Authors

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Funding

This study was funded with: the projects PID2020-117464RB-I00/AEI/10.13039/501100011033, UMA20-FEDERJA-112 and P20_00460, as well as FPU19/03629, FPU21/01318 and FPU16/05308 fellowships

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