

Neurons show sex-dependent changes during starvation– Radiocápula CPR/RCP ^[1]

Submitted on 19 January 2009 - 3:17pm

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Calificación:



Eureka! When it comes to keeping brains alive, it seems nature has deemed that females are more valuable than males. As reported in this week's JBC, researchers found that nutrient deprivation of neurons produced sex-dependent effects. Male neurons more readily withered up and died, while female neurons did their best to conserve energy and stay alive. The idea that the sexes respond differently to nutrient deprivation is not new, and revolves around the male preferences to conserve protein and female preferences to conserve fat. However, these metabolic differences have really only been examined in nutrient-rich tissues like muscles, fat deposits, and the liver. Robert Clark and colleagues at the Children's Hospital of Pittsburgh of University of Pittsburgh Medical Center examined whether this sex-dependent response in starvation could manifest in brain cells. They grew neurons taken separately from male and female rats or mice in lab dishes and subjected them to starvation over 72 hours. After 24 hours, the male neurons experienced significantly more cell dysfunction (measured by analyzing cell respiration, which decreased by over 70% in male cells compared to 50% in female cells) and death. Visually, male neurons also displayed more abundant signs of autophagy, whereby a cell breaks down its components as a fuel source, while female neurons created more lipid droplets to store fat reserves. As with other cell culture studies, the researchers note these results may not be truly indicative of what happens in living animals during starvation, but it allows them to look at the neurons independent of external factors like circulating hormones. Corresponding Author:

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