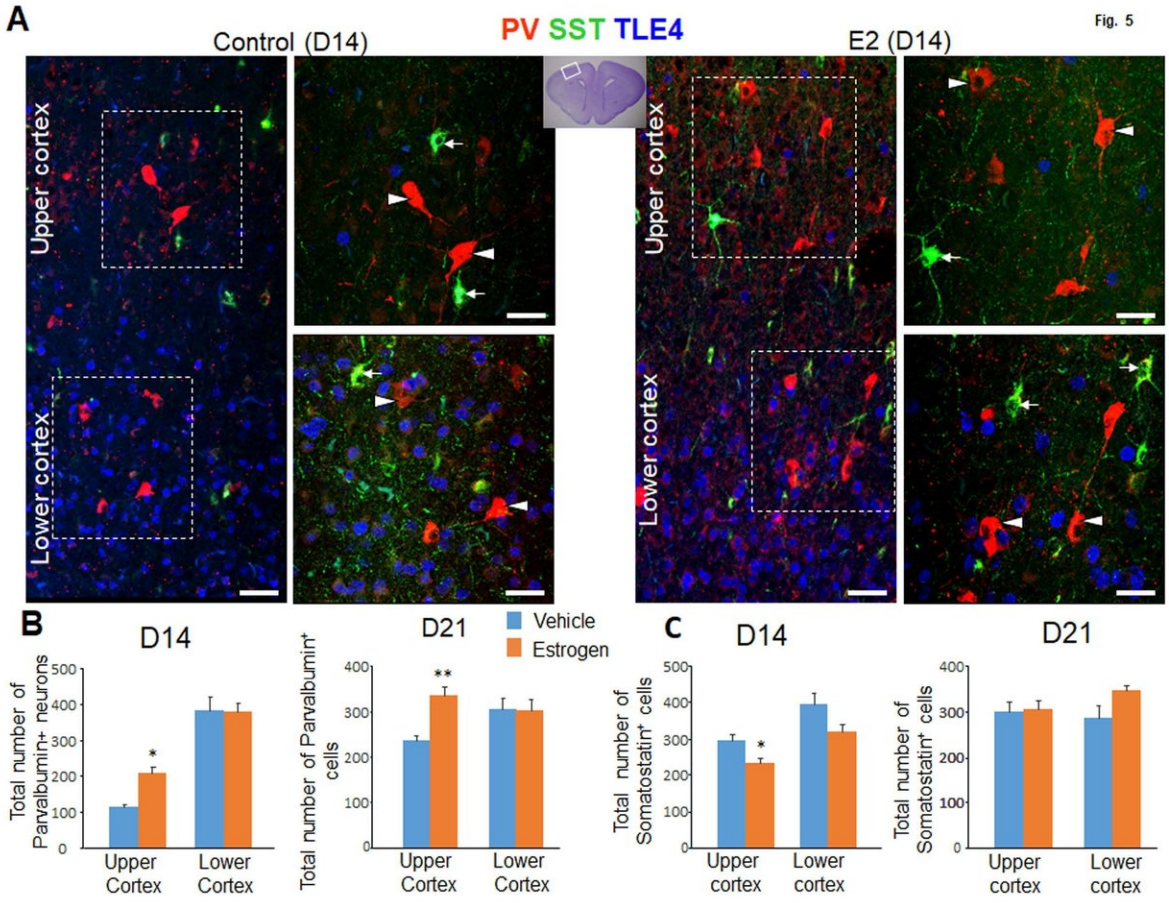
Estrogen could promote healthy development of preterm infants

July 23 2018



Premature birth alters the balance of interneurons in the cerebral cortex that can be restored with estrogen treatment, according to a study of human brain tissue and preterm rabbits published in JNeurosci. Credit: Panda et al., JNeurosci (2018)

Premature birth alters the balance of interneurons in the cerebral cortex that can be restored with estrogen treatment, according to a study of human brain tissue and preterm rabbits published in *JNeurosci*.

Infants born prior to a full-term pregnancy are at increased risk of neurobehavioral disorders linked to defects in interneurons, which continue to develop through the end of the third trimester. Prematurity is also associated with a large reduction in levels of the hormone estrogen.

Studying the development of interneurons from brain samples of deceased, premature-born human infants, Praveen Ballabh and colleagues identified abnormalities in the distribution of interneuron subtypes. The researchers further show that exposure to estrogen corrected these imbalances in prematurely delivered rabbits. This study suggests that mimicking the in utero environment, where the fetus would usually be exposed to maternal hormones, has the potential to improve developmental outcomes for preterm infants.

More information: Sanjeet Panda et al, Estrogen treatment reverses prematurity-induced disruption in cortical interneuron population, *The Journal of Neuroscience* (2018). DOI: 10.1523/JNEUROSCI.0478-18.2018

Provided by Society for Neuroscience