Introducción: Children born with hydrocephalus do also with severe neurological alterations. In order to develop a new therapy for hydrocephalic children we are grafting subcommissural organ cells (SCO) in the cerebrospinal fluid (CSF). Why SCO cells? SCO release neurotrophic compounds. Goal of this research was to dilucidate if grafting of SCO cells diminish neurological deficits, by grafting SCO cells in the brain of hydrocephalic HTx rats. Ventriculomegaly was studied by computed tomography and histology. The neurological and cognitive condition was evaluated by the Object Recognition and Spontaneous Alternation in T Maze, at postnatal day 30. Results and conclusions. Grafting of SCO-cells significantly improved neurological and cognitive condition in the hydrocephalic animals. Recovery was not associated to a reduction of ventriculomegaly. Histological studies of brains showed SCO cells integrated in the wall of the lateral ventricles. They were strongly reactive with antibodies against SCO-spondin and transthyretin, supporting that effects reported on neurological and cognitive conditions were mediated by SCO secretory compounds. New experiments are in progress to go “from the bench to the bedside”. Fondef 14I10236 (MG).