

# Sniffing out a new source of stem cells

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A team of researchers, led by Emmanuel Nivet, now at the Salk Institute for Biological Studies, La Jolla, has generated data in mice that suggest that adult stem cells from immune system tissue in the smell-sensing region of the human nose (human olfactory ecto–mesenchymal stem cells [OE-MSCs]) could provide a source of cells to treat brain disorders in which nerve cells are lost or irreparably damaged.

Stem [cells](#) are considered by many to be promising candidate sources of cells for the regeneration and repair of tissues damaged by various brain disorders (including traumatic brain injury).

There are two types of stem cell usually considered in this therapeutic context: embryonic stem (ES) cells, which are derived from early embryos; and induced pluripotent stem (iPS) cells, which are derived by reprogramming cells of the body such that they have the ability to generate any cell type. Ethical and technical issues have so far limited clinical development of therapeutic approaches using ES and iPS cells, respectively, meaning that researchers are seeking alternative stem cell sources.

Nivet and colleagues found that upon transplantation into [mice](#) with damage to the hippocampal region of their brain (a region important for learning and memory) OE-MSCs moved toward the site of damage, where they developed into nerve cells and also stimulated endogenous nerve cell generation. Importantly, the treated mice showed improvement in learning and memory. These data suggest OE-MSCs might be of tremendous utility in the clinic.

**More information:** [www.jci.org/articles/view/4448 ...  
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