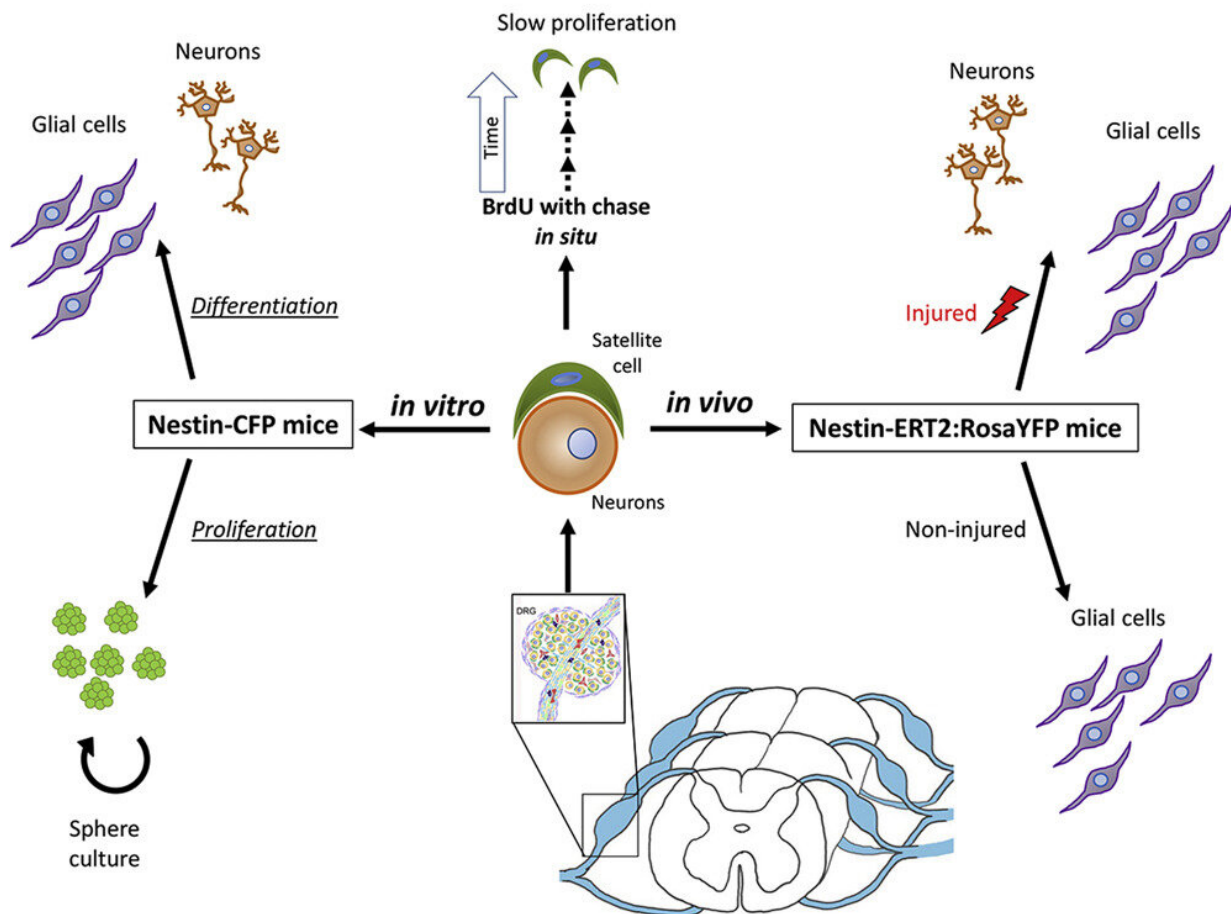


Stem cells may help replace lost sensory neurons

November 8 2022



Credit: *Stem Cell Reports* (2022). DOI: 10.1016/j.stemcr.2022.10.002

Sensory neurons of the peripheral nervous system, which sense touch, temperature, and pain, can be permanently lost during infections and trauma, in response to certain medications, and in diabetic patients with peripheral neuropathy. Current treatments reduce symptoms but cannot bring back lost sensory neurons, which are thought to have a very limited ability to regenerate after injury or disease.

A recent study in *Stem Cell Reports* shows that there are stem cells with the potential to regenerate lost neurons and glia in the sensory nervous systems of mice.

The cell bodies of [sensory neurons](#) are grouped in so-called dorsal root ganglia (DRGs), close to the spinal cord. DRGs carry sensory messages from various receptors (i.e., pain and temperature) towards the central nervous system. Apart from sensory neurons, DRGs also contain supportive cells, known as satellite glia and Schwann cells, which help the neurons to function normally.

The study in *Stem Cell Reports* demonstrated that the DRGs contained stem cells with the potential to regenerate lost neurons. Researchers Baron-Van Evercooren, Garcia-Diaz and colleagues with the Institut du Cerveau, France, found that after sensory nerve injury, dying DRG cells could be replaced by a subpopulation of stem cells among the satellite glia, which became activated and generate new glia, and to a lesser extent, neurons.

The identification of these DRG [stem cells](#) in mice demonstrates a potential source to regenerate lost neurons, but more follow-up research will be needed to know if these cells exist in humans, and if so, how they

could be harnessed to enhance sensory neuron regeneration in neuropathy patients.

More information: Madlyne Maniglier et al, Satellite glia of the adult dorsal root ganglia harbor stem cells that yield glia under physiological conditions and neurons in response to injury, *Stem Cell Reports* (2022). DOI: [10.1016/j.stemcr.2022.10.002](https://doi.org/10.1016/j.stemcr.2022.10.002)

Provided by International Society for Stem Cell Research

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