Adult Stem Cells Treat Parkinson’s in Humans and Animals:

2009  Published peer-reviewed results showing autologous adult stem cells relieved Parkinson’s patient’s symptoms for almost five years. Lévesque MF et al., Therapeutic microinjection of autologous adult human neural stem cells and differentiated neurons for Parkinson’s disease: Five-year post-operative outcome, The Open Stem Cell Journal 1, 20-29, February 2009.

2008  Australian scientists turned human nasal adult stem cells into dopamine-secreting neurons that successfully treated a rat model of Parkinson’s disease. Murrell W et al., Olfactory mucosa is a potential source for autologous stem cell therapy for Parkinson’s disease, Stem Cells 26, 2183-2192, June 2008.

2006  Scientists used adult stem cells from the solid umbilical cord to treat rats with Parkinson’s, and found significant recovery in motion and behavior. Weiss ML, et al., Human umbilical cord matrix stem cells: preliminary characterization and effect of transplantation in a rodent model of parkinson’s disease, Stem Cells 24, 781-792, March 2006.

2005  British researchers performed the first ever pathology follow-up (see original study below) of one patient treated for Parkinson’s disease. The study showed that the protein stimulated sprouting of new neurons in the brain. Love S. et al., Glial cell line-derived neurotrophic factor induces neuronal sprouting in human brain, Nature Medicine 11, 703-704, July 2005.

2005  Scientists at the University of Kentucky treated ten Parkinson’s patients with a protein to stimulate the patients’ own brain stem cells and showed significant improvement in symptoms. Slevin JT, et al., Improvement of bilateral motor functions in patients with Parkinson disease through the unilateral intraputaminal infusion of glial cell line-derived neurotrophic factor, Journal of Neurosurgery 102, 216-222, February 2005.


2003  British researchers injected a natural protein into the brains of 5 Parkinson’s patients and found that it stimulated the patients’ own adult neural stem cells. This treatment provided an average 61% improvement in motor function. Gill SS et al., Direct brain infusion of glial cell line-derived neurotrophic factor in Parkinson disease, Nature Medicine 9, 589-595; May 2003.
Touted ESCR Parkinson’s Studies—Mixed Results in Animals:

2008  Colorado scientists showed improved percent production of dopamine neurons from human embryonic stem cells. Transplanted cells improved behavior of Parkinson’s rats, but even in 4 weeks time the cells overgrew as masses in the rat brains. Chiba S et al., Noggin enhances dopamine neuron production from human embryonic stem cells and improves behavioral outcome after transplantation into Parkinsonian rats, *Stem Cells* 26, 2810-2820, 2008

2006  Researchers turned embryonic stem cells into dopamine producing cells, and when injected into rats with a Parkinson’s-like condition, the rats showed improvement. However, in 100% of rats the cells began to lose their specialization and grow uncontrollably. All the animals showed indications of early tumor formation. Roy N et al., Functional engraftment of human ES cell–derived dopaminergic neurons enriched by coculture with telomerase-immortalized midbrain astrocytes, *Nature Medicine* 12, 1259-68; Nov 2006.


2005  A Japanese team turned monkey embryonic stem cells into neural stem cells. They transplanted these into monkeys with artificially induced Parkinson’s, and some cells turned into dopamine producing cells. There was mild alleviation of symptoms. Yasushi Takagi et al., Dopaminergic neurons generated from monkey embryonic stem cells function in a Parkinson primate model, *The Journal of Clinical Investigation* 115 (1): January 2005.

2004  An Israeli team turned human embryonic stem cells into neural progenitors and transplanted these into rats. Some cells made dopamine, but the cells stopped growing at 12 weeks. The rats exhibited a partial improvement in behavioral tests, but it was too early to see if tumors formed. Ben-Hur T, et al., Transplantation of human embryonic stem cell-derived neural progenitors improves behavioral deficit in Parkinsons rats, *Stem Cells* 22 (7): 1246-55, 2004.

2003  Dopaminergic neurons made from mouse embryonic stem cells were transplanted into Parkinson's mice and provided some decrease in symptoms, but 20% of mice receiving the embryonic stem cells died due to teratoma formation. F Nishimura et al., Potential use of embryonic stem cells for the treatment of mouse Parkinsonian models: improved behavior by transplantation of in vitro differentiated dopaminergic neurons from embryonic stem cells, *Stem Cells* 21, 171-180; March 2003.

2002  NIH and South Korean researchers used gene engineering to enrich mouse embryonic stem cells for dopamine neurons. The Parkinson’s rats received some benefit up to 8 weeks after injection. J-H Kim et al., Dopamine neurons derived from embryonic stem cells function in an animal model of Parkinson’s disease, *Nature* 418, 50-56; July 4, 2002.