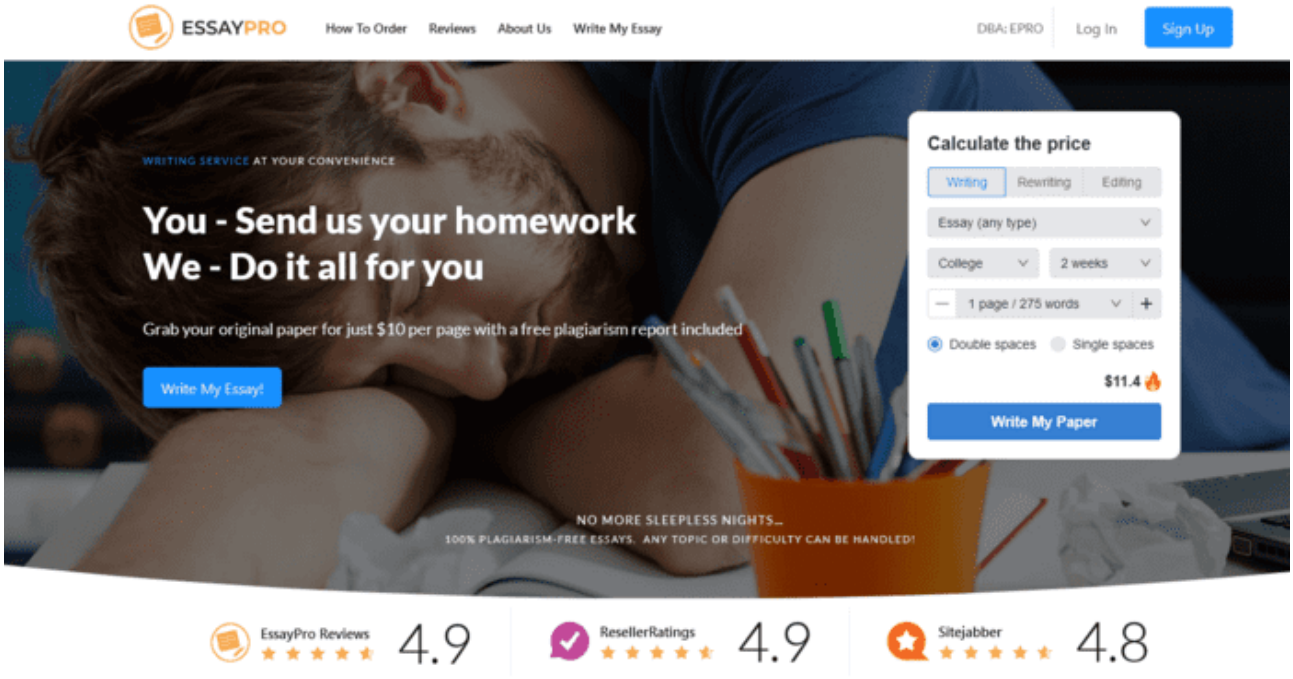
Parkinson's Disease and Tissue Transplants



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For nearly 100 years neural tissue has been transplanted in animals. Transplantation of neural tissue into humans, however, began only a few years ago (1). It has been found in animals, that fetal brain grafts in damaged adult host brains reduce some of the functional deficits caused by brain lesions. Even though some neurons from the transplanted tissue survive and develop reciprocal connections with host brain tissue, this is not enough to completely replace damaged fibers and support behavioral recovery Usually the grafts will not develop a normal morphological appearance, but some metabolic activity can be found within the transplant. Release and diffusion of trophic substances from the transplant and the damaged host brain may partially restore neuronal and behavioral functions. It is hypothesized that this combination of fetal brain transplants and trophic substances may provide a better opportunity for recovery than either treatment given by itself. While this paper focuses on fetal brain grafts as a means to treat Parkinsonism, research is also being conducted in conjunction with Alzheimer's Disease, visual, frontal, and motor cortex lesions, hippocampal lesions, and many others (2,3)

There are two current approaches to neural transplantation regarding Parkinson s; adrenal medullary and fetal brain grafts. Both methods suffer from limitations in tissue availability, cellular uniformity, and general applicability. The success of neural transplantation in

animal models of Parkinson’s syndrome led to its clinical application in human patients with the syndrome. Each of the two methods mentioned has advantages and disadvantages. Transplantation of adrenal medullary tissue has the advantage of ready availability of human le...

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