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**Stem Cell Therapy**

In order to understand stem cell therapy, one must first understand what a stem cell is. Stem cells are special compared to normal cells because they have the ability to renew themselves through mitotic cell division and differentiate into a wide range of specialized cell types. There are two different types of stem cells, embryonic stem cells and adult stem cells. In a developing embryo, stem cells can be found because those are the cells that differentiate into all of the different specialized embryonic tissues. In adults, stem cells just act as a repair system for the body.

There is much controversy over the use of embryonic stem cells, mostly from people that advocate pro-life. The main argument is that harvesting embryonic stem cells ends up destroying the fertilized embryo, meaning that a child cannot be formed from it. There are many ethical questions regarding this, and it is constantly up for debate. One strong and very valid argument against the use of embryonic stem cells is that there is the alternative of using adult stem cells instead. Adult stem cells can be harvested from things such as umbilical cord blood, which is a purely positive harvest. The umbilical cord blood would have no other use, so getting stem cells from it is a great idea that is supported by both sides of the embryonic stem cell ethics controversy (<http://www.christianitytoday.com/ct/2005/october/24.71.html>). However, it is unfortunate that when most people hear "stem cell research" they automatically associate it with killing unborn babies, when in reality it is far from that. There is the ethical debate on harvesting fertilized embryos, but adult stem cell research is very valid, but has been slowed down by anti-stem cell research activists.

One of the most interesting cases for stem cell research is its application to the eyes. From abc.com, "a new study suggests that many who suffer corneal damage by chemical burn may successfully restore their sight with transplants from their own eye stem cells." (<http://abcnews.go.com/Health/EyeHealth/stem-cell-cornea-transplant-patients-cells-restore-eyesight/story?id=10994585&page=1>). Stem cells are excellent at creating healthy cells where they are needed, so when stem cell therapy is performed on damaged eyes the results can be spectacular. So spectacular, in fact, that "By removing a small sample of these cells it was possible to culture a new cornea and graft it on to the damaged eye. The team showed that of 240 patients who were operated on in this way, the cornea regenerated successfully in 70% of cases." (<http://www.sciencedaily.com/releases/2007/10/071022120233.htm>). These stem cell therapies can even allow blind people to see when they have never been able to see before. A stem cell treatment offered in China allowed Dakota Clarke to see for the first time since she was born, which is an incredible achievement (<http://www.findingdulcinea.com/news/science/2009/march/China-s-Controversial-Stem-Cell-Treatment-Helps-Blind-Girl-See.html>). Being able to essentially give someone a sense that they would have otherwise been without is absolutely amazing. That is by far the strongest reason to support stem cell research.

Other Sources:

<http://www.esf.org/publications.html>

<http://www.webmd.com/eye-health/news/20100623/stem-cell-treatment-restores-vision>