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## Stem Cell Research

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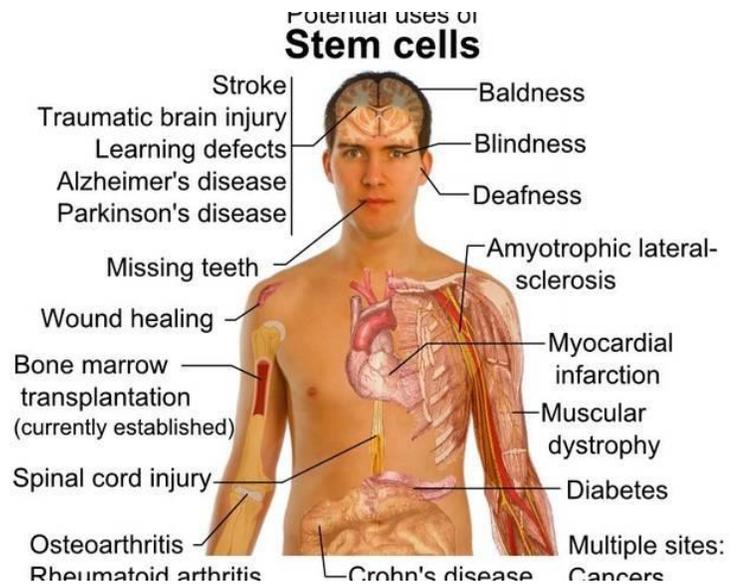
## Stem Cells Research

In modern medicine there are diseases and injuries that are currently irreversible with today's known treatments. Stem cells are viewed by the world's leading scientist to offer the best possible chance to cure not some but possibly all diseases and injuries. Even though studying these cells has shown great promise there are still some, mainly religious fanatics, which are opposed to this research. The people opposing stem cell research are the same ones preaching that the earth is only six-thousand years old. If the majority of society lets the *loonies* have their way, society will just have to pray to the gods for healing, just like they did in the dark ages.

Scientists know that stem cells are present in all multicellular organisms found on earth. There are two different types of stem cells present in humans adult and embryonic. In adult organisms, stem cells and progenitor cells act as a repair system for the body, replenishing adult tissues. Many think that stem cell research is new; but in fact it has already been used for over fifty years to treat leukemia patients. It has only recently been brought to everyone's attention because of a small but very promising area of research the embryonic stem cell. Adult stem cells have already proven to be extremely useful but they do have limitations unlike the embryonic.

The exciting thing about embryonic research is that scientist can make any cell in the human body from one embryonic stem cell. In a developing embryo, stem cells can differentiate into all the specialized cells these are called pluripotent cells, but also maintain the normal turnover of regenerative organs, such as blood, skin, or intestinal tissues. Basically the embryonic stem cell is the master key able to unlock any of the specialized cells in the human body. What also makes them special is that unlike adult stem cells, embryonic can survive indefinitely in the lab if properly maintained. If scientist perfect this technique then in the future

they could grow a genetic match to any damaged organ or tissue in the body. Because the replacement tissue is an exact match to the patient there will be no problems with the body rejecting the tissue or organ. If they could replicate any tissue or organ in the body there would be no need for people to wait years for a donor that might not come saving countless lives in the process.

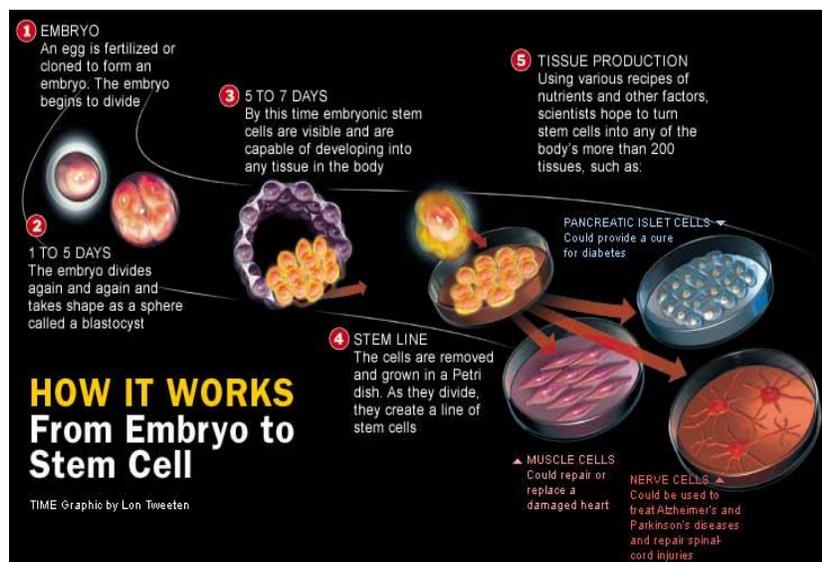


Stem cell research is the most promising research being done in bio medical science of the twenty-first century. The possibilities are endless; the 277 common diseases that affect millions around the world could one day be eradicated through stem cell technology. Through embryonic stem cell research scientist can study diseases outside the body in a controlled environment free from outside influences. Instead of using the already weak patient as a guinea pig they can test in a lab on material that is a genetic match to the patient. The scientists and doctors would be free to test all possible treatments without the threat of further harming the patient.

Another promising aspect of stem cell technology is the development of better drugs designed for each individual person since the majority of people don't have the same chemistry. Once again scientist could study in a lab to see the effects of the drug or drugs on each particular person before prescribing the drugs. This means more precise dosages for the patient with less repeat doctor visits. In other words they could get the dosage right the first time before the patient even consumes a single drug. This could help improve or even save the lives of many around the world.

There are two types of stem cell research adult and embryonic; all the controversy lies with the embryonic research. Because scientist must destroy the embryo in the process; the *loonies* would like everyone believe that anyone who does embryonic research is a murderer. This is absurd because the embryo being destroyed is only a five to seven days old and is nothing more than ball of divided cells no bigger than the period at the end of this sentence. At this time there is only a collection of 150 cells arranged in a ball called the inner cellular mass surrounded by an outer cell wall called the blastocysts. One hundred and fifty cells may seem like a lot but know this there are over a hundred thousand cells in the brain of a house fly.

The same people would also like everyone to believe that life begins at conception. At conception the fertilized egg is still in the fallopian tube, and still needs to travel three to four days to the uterus were it will need to imbed itself to the uterus wall. In humans a pregnancy does not initiate until the embryo is imbedded into the uterus wall. Not all fertilized embryos will successfully attach themselves to the uterus wall those that fail will be discarded with the women's monthly cycle. Because the embryo did not embed itself the women will never even know or feel that she discard a fertilized egg. So by the religious fanatics standards every woman



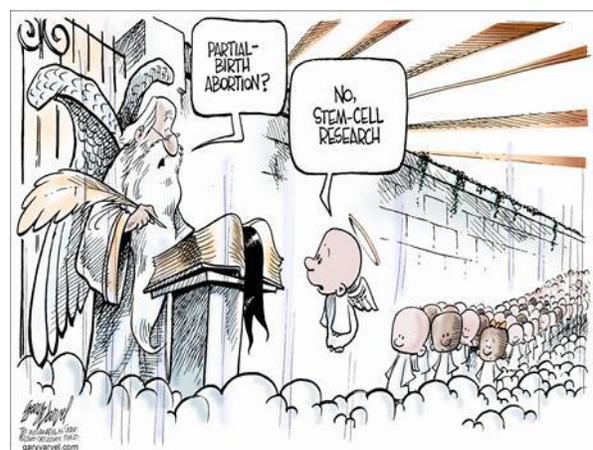
that is sexually active is guilty of murder some more than others. This is normal and common knowledge for those who paid attention in high school biology or health class. Nature is tough and for good reason this is one of the ways

of weeding out the weak so to protect the future of the species.

Some other folks have been preaching to society that the scientists want to clone humans so they could have a bank of test subjects to grow organs for patients. Once again it is a lack of understanding that drives these people. Cloning the entire human body for parts would take too long, too much money, and would be too wasteful. It is far easier and possible now for a scientist grow a specific part that is genetically matched to the patient in a petrel dish. Currently in the lab scientist can successfully grow heart muscles, and nerve cells from a single cloned embryonic stem cell. The beauty of this is that all scientist have to do is take a sample from the patient implant it into the cloned stem cell then new a heart, liver, muscles, eye, whatever can be grown to match the individual.

The most appalling argument was presented by Wendy Wright comparing embryonic research to Nazi experiments done in world war two. This once again has no bases on fact this is pure fabrication. In no way shape of form is destroying a group of 150 cells remotely compare to the atrocities committed by the Nazi regime. Nazi experiments were performed primarily on Jewish holocaust prisoners in grotesque was. The horrible experiments performed by the Nazi will turn the stomach of even the toughest people.

The last and final argument by the religious is the destruction of the soul which has no scientific facts to back it up. Their argument is that every fertilized embryo has the potential of becoming a human being, and by destroying that destroys a soul. One cannot argue the question of another's faith because faith is not



based on any scientific fact. Just know this with current medical science any cell on one's body can have the potential of becoming a full human being if manipulated in the proper way. So every time Bill O'Reilly scratches himself he is destroying thousands of souls in a single scratch.



In order to have an educated discussion there must be two reasonable sides to debate the topic. No

person can reason of these bible thumping fanatics no amount of facts could ever change their views. The only thing these people can use to defend their points are purely based on faith not science fact. Every time these people stop scientific progress with their religious rhetoric all there doing is preventing scientist from helping the sick or wounded. Society needs to stop these



people from forcing the beliefs of the minority on the majority. It is a person choice to receive treatment derived from stem cell research if they don't want it don't take it. Stem cell research has the potential of solving over 277 ailments as long as the loonies stay out the way.

## References

You tube: (BBC) (2009). *Stem cell research, ethics and religion*

<http://www.youtube.com/watch?v=5i7Ts5VQc14>

NBC news: (Fox, m) (2012). *Court rules controversial stem cell research legal*

[http://vitals.nbcnews.com/\\_news/2012/08/24/13458821-court-rules-controversial-stem-cell-research-is-legal?lite](http://vitals.nbcnews.com/_news/2012/08/24/13458821-court-rules-controversial-stem-cell-research-is-legal?lite)

BBC: (Briggs) (2011). *European court ruling 'threatens stem cell work'*

<http://www.bbc.co.uk/news/health-15350723>

Genetic Science Learning Center (2013, January 24) *The Stem Cell Debate: Is It Over?.*

*Learn.Genetics.* Retrieved February 28, 2013, from

<http://learn.genetics.utah.edu/content/tech/stemcells/scissues/>

Nova: (Green, r) (2001). *Stem cell debate*

<http://www.pbs.org/wgbh/nova/miracle/stemcells.html>

You tube: (The Alyona show) (2011). *U.S. falling behind in stem cells?*

<http://www.youtube.com/watch?v=VhhaVekOTtc>

You tube: (BBC) (2009). *Wendy wright on the bbc*

[http://www.youtube.com/watch?feature=endscreen&v=TM9r\\_jnjJuY&NR=1](http://www.youtube.com/watch?feature=endscreen&v=TM9r_jnjJuY&NR=1)

You tube: (The Alyona show) (2010). *Debate: is egg donation Moral?*

<http://www.youthhttp://www.youtube.com/watch?v=SO3IuMLaBgube.com/watch?v=BI Mw0f8ypGY>

You tube: (KQED) (2012). *Interview with nobel prize winner shinya yamanaka*

<http://www.youtube.com/watch?v=rcFibJmKZrU>

You tube: (no author) (2008). *Human embryonic stem cell research*

<http://www.youtube.com/watch?v=slh88WmR8QA>

You tube: (Big think) (2012). *Ending the stem cell debate forever*

<http://www.youtube.com/watch?v=5FInHdzPoZg>

The New York Times: (no author) (2013). *Embryonic stem cell research gets a reprieve*

[http://www.nytimes.com/2013/01/21/opinion/embryonic-stem-cell-research-gets-a-reprieve.html?\\_r=0](http://www.nytimes.com/2013/01/21/opinion/embryonic-stem-cell-research-gets-a-reprieve.html?_r=0)

You tube: (AlJazeera english) (2009). *U.S. divided over stem cell research reversal*

<http://www.youtube.com/watch?v=fKj3AnSKBTK>

You tube: (BBC ) (2011). *Stem cell debate under obama's watch*

<http://www.youtube.com/watch?v=ay43omoxHDwatch?v=pEIoZOmaLu0>

You tube: (John Hopkins medicine) (2012). *The ethical questions of stem cell research*

<http://www.youtube.com/watch?v=f5d0ieWfKII>

You tube: (no author) (2013). *Conversations: ethics, science, stem cells*

<http://www.youtube.com/watch?v=qLPyrbCu0wc>

You tube: (no author) (2012). *Science Friction: Stem Cell Research*

<http://www.youtube.com/watch?v=mPy7NFkJ-TQ>

You tube: (no author) (2013). *Stem Cells Research: Cures & Treatments -*

*WWW.OLOSCIENCE.COM*

<http://www.youtube.com/watch?v=1rTvweYdYrQ>

You tube: (no author) (2011). *A Stem Cell Story*

<http://www.youtube.com/watch?v=2-3J6JGN-Y>

You tube: (UC tv) (2011). *Stem Cells: Growing New Parts*

[http://www.youtube.com/watch?v=d6bhNQ\\_BV3E](http://www.youtube.com/watch?v=d6bhNQ_BV3E)

You tube: (UC tv) (2010). *Stem Cells: The Hope The Hype and the Science*

<http://www.youtube.com/watch?v=Kn4LOBhUr8I>

The Atlantic: (Abrams, l) (2012). *Year of the Stem Cell*

[www.theatlantic.com/health/archive/2012/12/2013-year-of-the-stem-cell/266574/](http://www.theatlantic.com/health/archive/2012/12/2013-year-of-the-stem-cell/266574/)

Wikipedia: (no author) (2012). *Stem cell*

[http://en.wikipedia.org/wiki/Stem\\_cell](http://en.wikipedia.org/wiki/Stem_cell)

You tube: (Fox news) (2011). *Ethical Stem Cell Research on Fox*

<https://www.youtube.com/watch?v=5-0ksbfcXhk>

You tube: (no author) (2009). *Ethics of Embryonic Stem Cell Research*

<https://www.youtube.com/watch?v=f30QqYrBtNk>

You tube: (Research channel) (2009). *Understanding Embryonic Stem Cells*

<https://www.youtube.com/watch?v=nYNBNZJ8Xck>

You tube: (no author) (2007). *Sam Harris on stem cell research*

<https://www.youtube.com/watch?v=vKWYENPxNtM>

You tube: (no author) (2010). *Richard Dawkins Interviews Creationist Wendy Wright (Part 2/7)*

<https://www.youtube.com/watch?v=Ggwu5sWU0Mo&list=PL27090E3480CFAC56>

