

Uncontrolled growth of embryonic stem cells can produce tumours. The use of stem cells from adults, placentas or umbilical cords may therefore not only be an ethical alternative, but also a safer and more successful one.

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www.spuc.org.uk

# Stem Cell Research

What you need  
to know



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## What are stem cells?

Stem cells are the body's universal cells; which have the potential to develop into more specialised cells or body tissue.

## Where do we find stem cells?

Stem cells are found in the placenta and umbilical cord of a newborn baby and in children's milk teeth. They are also found in sites within the adult body – such as fat, bone marrow, blood, skin and muscle. Removal of stem cells from these sources does not necessarily involve any harm.

Stem cells are also obtained from human embryos created in the laboratory (as well as from the ovaries of aborted infants). Removing them from the embryo always involves harm, that is, the destruction of the embryo.

## Why are stem cells useful?

Stem cells from umbilical cord and placental blood have been used successfully to treat leukaemia and anaemia patients. Adult stem

cells have also been used successfully in trials to treat patients with severe heart failure.

In the future stem cells could be used to replace cells or tissues destroyed by for instance:

- Parkinson's disease
- Heart disease
- Spinal cord injury
- Diabetes
- Alzheimer's disease.

## Stem cell research: What is ethical and what is not?

Embryonic stem cell research involves the destruction of the human embryo. It does not respect the dignity or right to life of the human embryo and instead treats him/her as resource material to be used for the treatment of others. It is therefore completely unethical.

So-called therapeutic cloning is being promoted as a refinement of stem cell research to avoid the problem of rejection. Rejection due to tissue incompatibility is a problem in bone marrow, organ and other tissue transplants. But by creating a cloned embryo using the patient's DNA, and using the cloned embryo's stem cells,

it is hoped that compatible tissues and perhaps organs could be created for transplantation. However cloning does not always create an exact genetic copy and so the possibility of rejection remains. For technical reasons, stem cells obtained from cloned embryos may carry risks for the person in whom they are used. Besides these drawbacks, it is clear that because of the great expense involved, stem cells from cloned embryos are never likely to become available to other than the very wealthy.

Cloning human embryos to provide transplants is entirely unethical as it involves the creation of human life in order to destroy it through the extraction of stem cells from the cloned embryo.

Using our own adult stem cells and storing stem cells from our children's umbilical cords and placentas for future use, avoids the ethical problems involved in the creation and destruction of human life.

## Which stem cell research is best?

To date, embryonic stem cells have not been used successfully to treat any illness. Yet the use of adult stem cells and stem cells from umbilical cords and placentas continues to prove effective in treating disease.