ETHICAL ISSUES

Religious issues

- Some people believe that cloning is similar to playing God. They believe that God should be the creator of all living and natural things.

- It is believed that a human has the right for the full human development in a natural environment and that the human embryo should be left alone after the 14th day of fertilization.

- Some religious people believe that if you clone a human being it has no soul.

- People believe human cloning takes away from an Individual being unique and stresses Psychological and social development.

Medical issues

➢Technically, human gene grows older with age. It's feared that the cloned individual would retain the age of the donor's genes.

➢Cloning animals through somatic cell nuclear transfer is simply inefficient. The success rate ranges from 0.1 percent to 3 percent, which means that for every 1000 tries, only one to 30 clones are made. Some reasons include

- The enucleated egg and the transferred nucleus may not be compatible
- An egg with a newly transferred nucleus may not begin to divide or develop properly
- Implantation of the embryo into the surrogate mother might fail
- The pregnancy itself might fail

➢Problems during later development

- Cloned animals that do survive tend to be much bigger at birth than their natural counterparts. Clones with LOS(Large Offspring Syndrome)have abnormally large organs. This can lead to breathing, blood flow and other problems.

➢ Abnormal gene expression patterns

- one challenge is to re-program the transferred nucleus to behave as though it belongs in a very early embryonic cell. This mimics natural development, which starts when a sperm fertilizes an egg.
- In a naturally-created embryo, the DNA is programmed to express a certain set of genes. Later on, as the embryonic cells begin to differentiate, the program changes.
- In cloning, the transferred nucleus doesn't have the same program as a natural embryo. It is up to the scientist to reprogram the nucleus Complete reprogramming is needed for normal or near-normal development. Incomplete programming will cause the embryo to develop abnormally or fail.

➢ Telomeric differences

- As cells divide, their chromosomes get shorter. The telomere lengths of cloned animals, found no clear answers. Chromosomes from cloned cattle or mice had longer telomeres than normal. These cells showed other signs of youth and seemed to have an extended lifespan compared with cells from a naturally conceived cow

Pros	Cons
Defective genes could be eliminated	There is a possibility of faster aging.
Faster recovery from traumatic injury	There is a reduced sense of individuality.
Infertility could be eliminated.	It may reduce the overall value of human life.
Cloned body parts can serve as backup systems for humans	Weaken diversity and ability of adaptation.
Combat genetic diseases	Production of undesirable traits.
Replicate animals for research purposes & also alterations of plants & animals	Invites malpractices into society.
Produce people with desirable traits.	Humans acting as God

World views

Australia

Australia has prohibited human cloning, therapeutic cloning is now legal in some parts of Australia.

Canada

Canadian law prohibits the following: cloning humans, cloning stem cells, growing human embryos for research purposes, and buying or selling of embryos, sperm, eggs or other human reproductive material.

India

India does not have specific law regarding cloning but has guidelines prohibiting whole human cloning or reproductive cloning. India allows therapeutic cloning and the use of embryonic stem cells for research proposes

Argentina

Prohibits:: "experiments concerning cloning of human cells in order to generate human beings ."