Committee: Special Committee

Topic: Genetically Modified Fetuses

Definitions:

Molecular:
relating to or consisting of molecules.

Somatic genetic modification:

"***Somatic therapies*** *target genes in specific types of cells (lung cells, skin cells, blood cells, etc), while* ***germline modifications****, applied to embryos, sperm or eggs, alter the genes in all the resultant person's cells. Somatic cell modifications are non-inheritable, affecting only the treated individual.*" - https://theconversation.com/

Germline Genetic Modification:

"*Human germline modification" means deliberately changing the genes passed on to children and future generations – in other words, creating genetically modified people. Human germline modification has for many years been widely considered off-limits, for both safety and social reasons. It is formally prohibited in more than 40 countries.*" - https://www.geneticsandsociety.org

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What is a genetically modified Fetus?

Human specific Genetic Modification (GM) is the adjustment of the genome using **molecular** engineering techniques. Newer developed techniques of modifying genes are commonly referred to as "gene editing". GM can be administered in two different ways: **somatic genetic modification** and **germline genetic modification**.

Why would you genetically modify a foetus?
Among the benefits of editing designed to treat diseases is the enhancement of gene and cellular therapies.

At least nine areas would benefit from the advances in these fields:

- Infectiology;
- oncology;
- hematology;
- hepatology;
- neurology;
- dermatology;

- ophthalmology;
- pneumology; and
- organ transplantation

In addition: editing genes make it possible to modify animal cell lines to be used for Biomedical research. Whilst Isogenic cells have a specific genetic profile, animal cells that have been modified have similar human characteristics. As a result of this researchers have had models of control that they have been able to use that facilitate the distribution of empirical knowledge.
By genetically modifying living beings DNA, there are macro-environmental effects (systematic applications)
BY enhancing and changing human DNA, by enhancing life sciences will result in the treatment of diseases that could also could improve physical performance, cognition and life span. These techniques would then be able to be passed on to individuals.

International law surrounding Genetic modification

“While there are no international treaties of general application that directly regulate the human genome or the possibilities for its modification, there are three legal frameworks that would apply to the activities of a State engaging in genome editing given its object and potential effects. These include the protection of human rights and fundamental freedoms, the general principles of environmental law and possibly, certain aspects of the common heritage regime. It should be stressed at the outset that none of these frameworks contain an outright prohibition of genome editing but instead impose requirements on the conduct of States who might engage with it. Furthermore, international human rights law provides for special protections of the freedom of scientific research that would likely extend to genome editing.” - https://www.nuffieldbioethics.org/assets/pdfs/GEHR-report-on-regulation.pdf

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Why is there opposition for doing it?

It raises controversy over the acceptability and effects of human DNA manipulation. Debates have been established across the media and in the scientific literature problematising the scientific, ethical, and social implications of this practice. While some authors condemn gene editing, others praise it recommending caution during future experiments.
By modifying the DNA of human germ cells, producing hereditary modifications that can be incorporated into the genetic repertoire of our race, some feel is a step too far. And should not be explored.
It is usually agreed that gene editing of human somatic cells is beneficial when it is intended for the treatment of pathologies; and that basic and clinical research must be conducted to improve editing techniques. However, they have different opinions on editing human germ cells and editing (somatic and germ) for enhancement purposes.
Unesco’s refuses to edit human germ cells that implies genetic essentialism by considering DNA as the basis of the deontological concept of humanity.

Bibliography:

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