

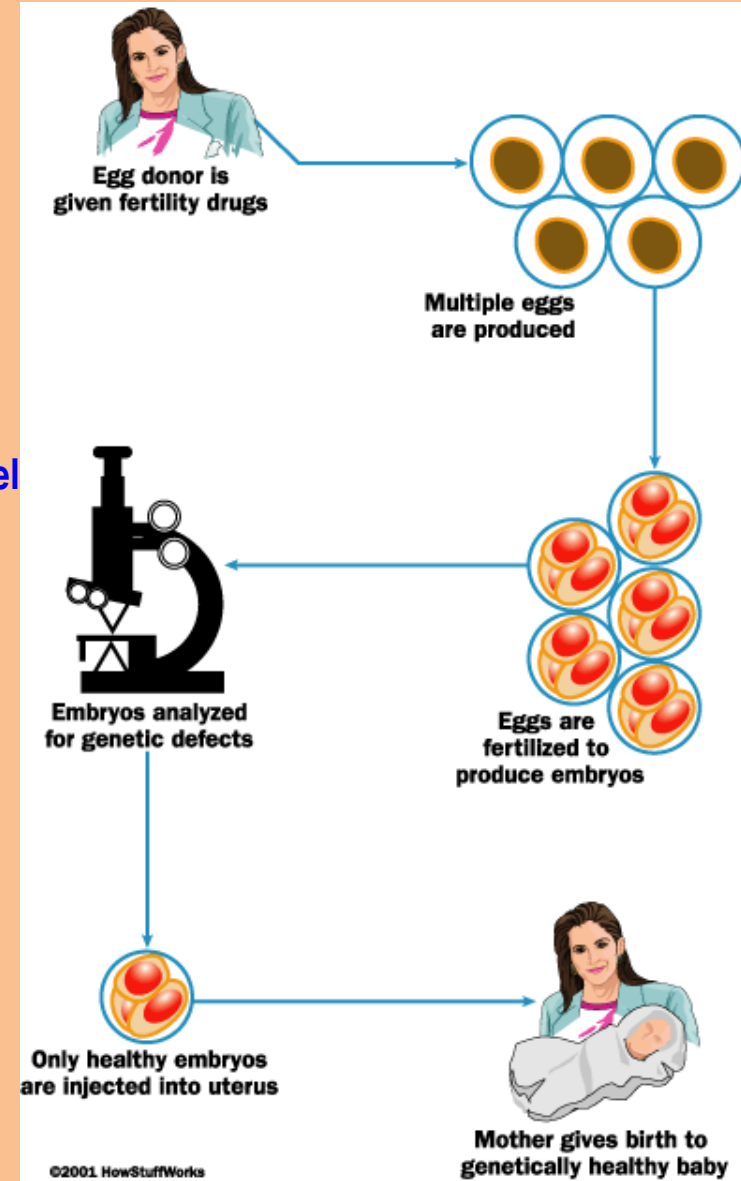
The Ethical Implications of Pre-implantation Genetic Diagnosis

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BIOC 118Q Final Project



What is Pre-implantation Genetic Diagnosis-PGD?

- Step 1-create embryos through in vitro fertilization
- Step 2-remove 1-2 cells after a few days
- Step 3-amplify DNA through PCR and analyze to see which embryos have genetic defects
- Step 4-only healthy embryos injected into uterus
- Step 5-healthy baby!
- <http://www.youtube.com/watch?v=LjL2XoNIO54&feature=rel>



Ethical Issues

I. Destruction of pre-natal life

II. Who pays?

III. Uses of PGD

-Disease Prevention: limiting use of PGD depending on condition?

-Gender Selection

-Designer Babies: Germ Line Gene Therapy and Genetic enhancement



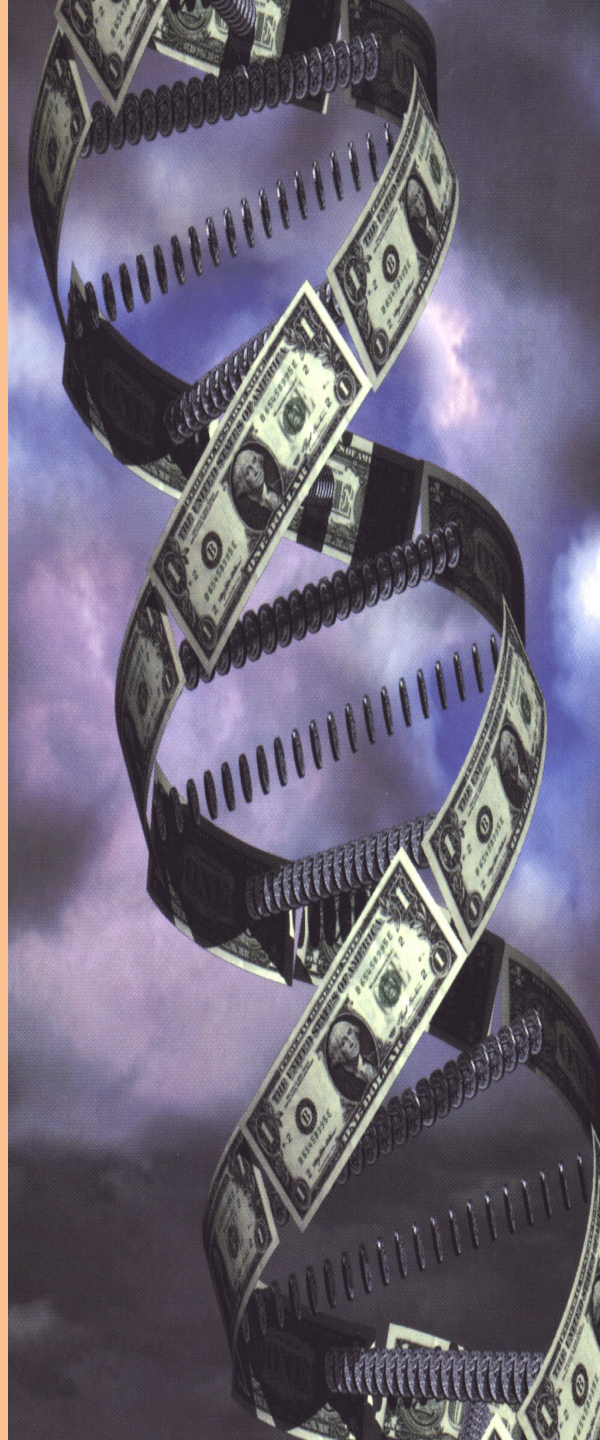
I. Destruction of Pre-natal Life

- **The Catholic View-** “the body of a human being, from the very first stages of its existence, can never be reduced merely to a group of cells.”
- **Counter-**
-moral status conferred by
cognitive traits
- PGD may reduce incidence of
Abortion-Lesser of Two evils?



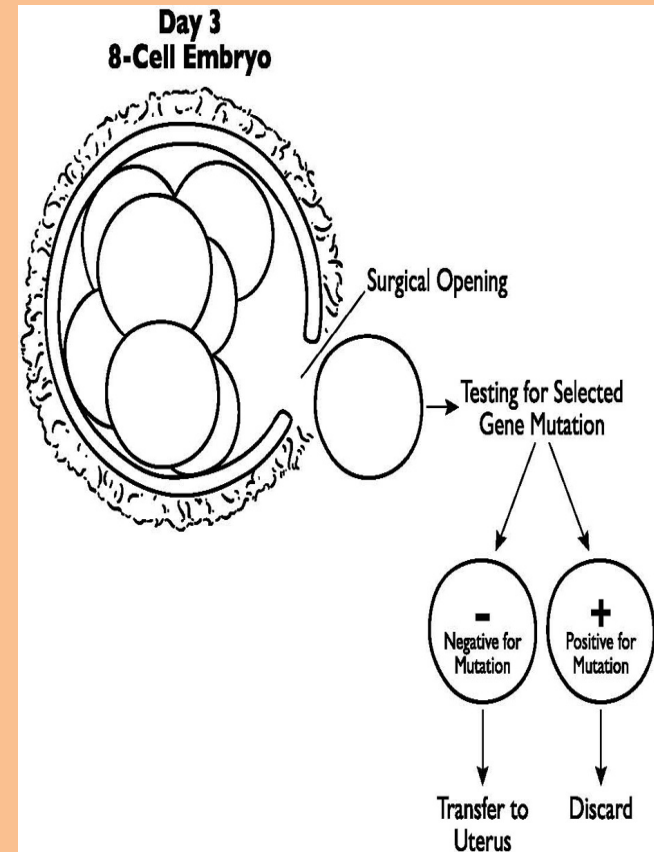
II. Who Pays?

- The Government?
- Individuals?
- Will PGD become a luxury of the rich? What would it mean to have equality of genetic diagnosis?



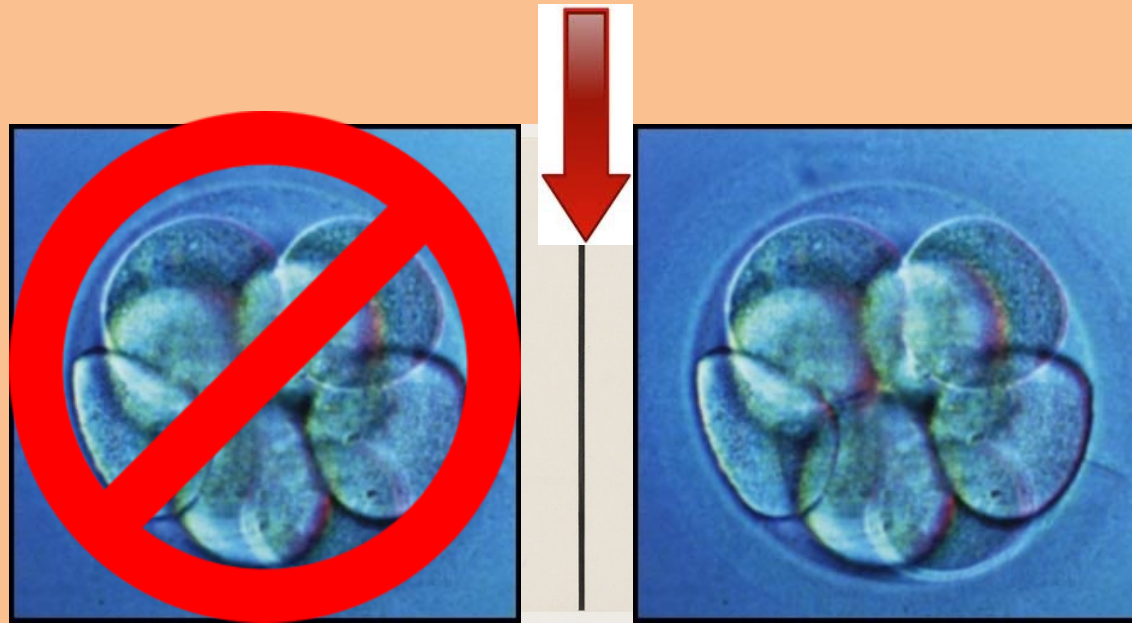
III. Uses of PGD: Disease Prevention

- Mendelian Diseases: Tay Sachs, Muscular dystrophy, CF, Sickle cell
- Susceptibility Conditions-BRCA1-2
- Late Onset Diseases-Alzheimer's Disease, Huntington Disease



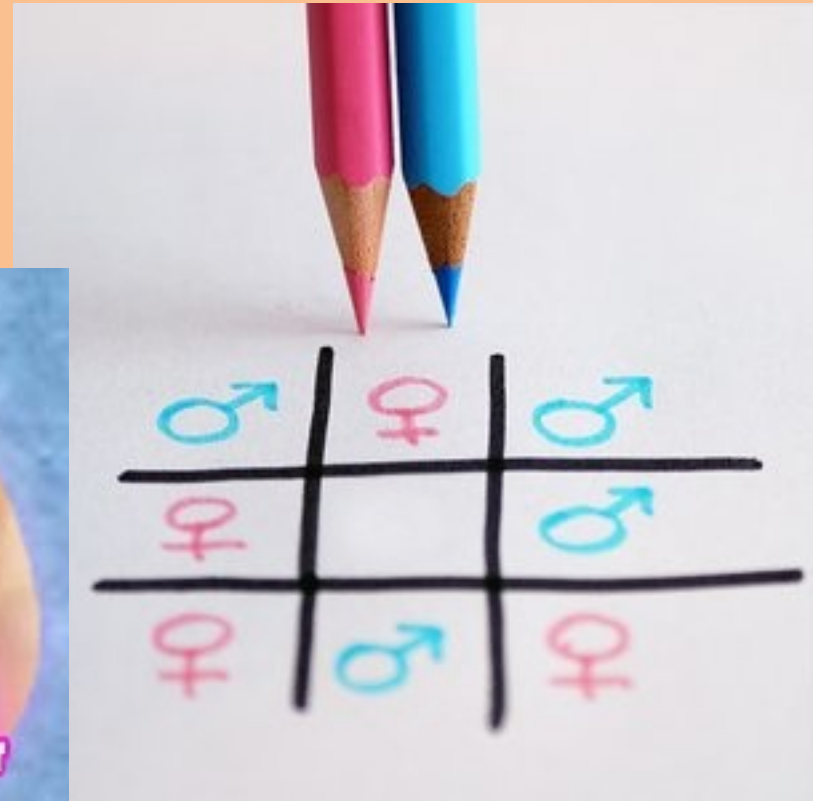
Limiting Prevention-Where to Draw the Line

- Option 1) Procreative liberty with no limitations
- Option 2) Minor/susceptibility/late onset conditions do not justify testing:
 - future medical advancement, importance of particular mutations unknown
 - detrimental to disabled falling below line-intolerance



Gender Selection

- Two Groups: First Born Child Selection, Already have child of one gender and want other
- Controversies:
 - -Disparity in sex ratio of population
 - -Sexism



Germ Line Gene-Therapy and Genetic Enhancement

- Germ Line Gene Therapy-insert new genetic material in place of mutated gene
- PGD used prior/after to identify suitable embryo

Used to eliminate disease instead of PGD if:

- couple opposed to discarding embryos
 - both parents homozygous recessive
-
- Also used to genetically enhance offspring



Thank you!



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