

Previous Class

- Xenotransplantation
- Cellular therapeutics
 - Biocapsules
- Tissue Engineering
- Teleomere and Telomerase
- Stem Cells
 - hESCs
 - ASCs (Adult-derived)
 - AFS (Amniotic fluid-derived)
 - iPS cells (programmed)

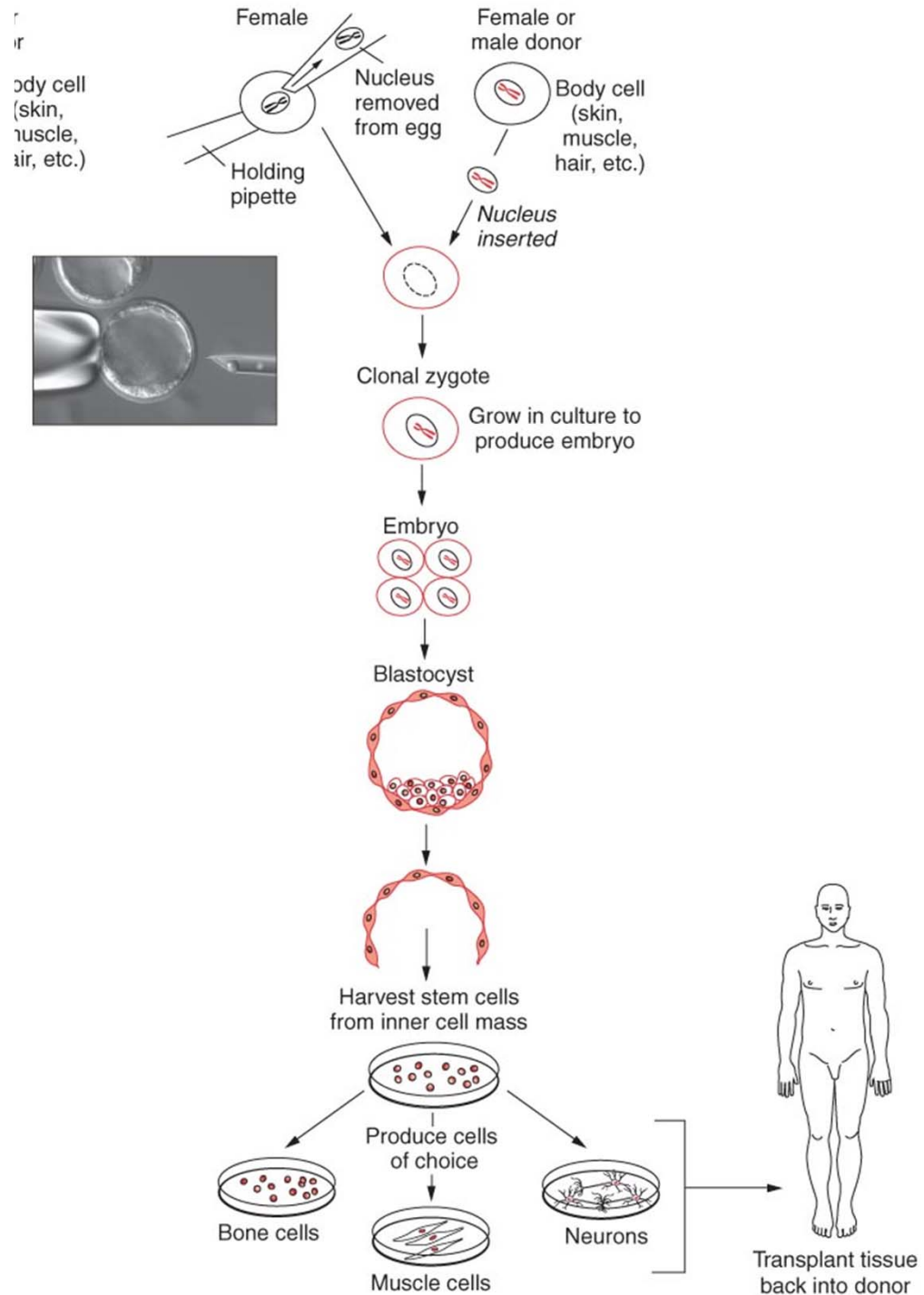
Cloning

- Refers to making a copy of something
- **Reproductive cloning** intent is to create a baby
- **Therapeutic cloning** provides stem cells that are a genetic match to a patient who requires a transplant
 - No fear of immune rejection

Therapeutic Cloning

Stem cells that are genetically identical to the cells taken from a patient are produced to provide patient-specific stem cell therapy

Scientists prefer the term **somatic cell nuclear transfer** because it truly describes the biological process taking place



- Embryonic stem cell and therapeutic cloning regulations in U.S.
 - Since August 2001 there has been a ban on using federal funds to create an embryo for the purpose of isolating embryonic stem cells
 - Bill HR810 proposed using federal funding for research on embryos created for fertility treatments or donated from IVF clinics and establishing new federal guidelines for working with stem cells
 - Vetoed by President Bush in 2006
 - Bill HR3, Stem Cell Research Enhancement Act
 - Also vetoed by President Bush in 2007