

Human Life Begins with the 1-Celled Embryo Handout

By Sharon Quick, MD

High school biology gave me my first glimpse of life under a microscope. A tiny one-celled living animal, an amoeba, moved across the slide by extending one portion of its body (a pseudopod) in the direction it “wanted” to go. Every life function (respiration, growth, excretion, reproduction, metabolism, nutrition, synthesis, assimilation, transport, and regulation) is carried out by the complex workings present within the boundaries of the cell membrane defining this small creature. Its life is fragile and vulnerable. One slice through the cell membrane and the contents spill out, ending the finely tuned orchestration of molecules and subcellular machinery in a disorderly chaos of death.

Human life begins with the 1-celled embryo

Biology and embryology textbooks state that human life begins with the 1-celled embryo, or zygote, which is formed with the union of an egg and a sperm:

- “A zygote is the beginning of a new human being.”¹
- “Life began for each of us with the fusion of...a sperm and an ovum.”²

Cell biology has defined living organisms as carrying out various “life functions” such as Nutrition, Transport, Respiration, Synthesis, Assimilation, Growth, Excretion, Regulation, Reproduction, and Metabolism. All life from the simplest one-celled amoeba to complex animals carry out these life functions in various ways. **Human embryos carry out the same life functions as humans at later developmental stages, only they may do so differently.** All things in this world can be classified as either living or inanimate. Only living things grow; inanimate things like rocks do not grow. If a human embryo is not living, then how can it grow? **One cannot classify a human embryo as “not living” without also refuting basic principles of cell biology.**

One could argue that a clump of cheek cells or other specific tissue is living and can grow and multiply in a lab outside of the organism from which it was derived. How does one differentiate between living cells or tissue and a living organism?

Human embryonic stem cell (HESC) research using cloned or noncloned embryos requires taking a human life; the embryo must be destroyed to obtain these embryonic stem cells.

Worldwide medical codes such as the Nuremberg Code, developed after medical research atrocities in German concentration camps, prohibit research without the consent of the research subject, and prohibit research in which death or disabling injury occur. The embryo cannot give consent for HESC research, and is killed for the presumptuous benefit of another.

Human personhood

Most scientists and people admit that human embryos are living, but **some advocate discrimination against these tiny humans by denying them full personhood.** However, there is no standard on the continuum of life (beginning with a 1-celled embryo)

and continuing through birth and adulthood to the point of death) by which an individual on this journey can be classified as “not a person,” without the risk of compromising the rights of humans at a later stage of development.

Throughout history, people have been discriminated against because of race, religion, nationality, etc. Less than 200 years ago in our country, a group of people were assessed to be 3/5 a person based on skin color.

Is the fact that embryos carry out their life functions in a developmentally appropriate way that is different than a human at a later stage of development a reason to classify them as having less than full personhood? If it is, then infants, children, and the disabled are also not fully persons. Most people admit that a human embryo deserves some measure of respect, if not full entitlement to personhood. Even in IVF clinics, embryos are sometimes given funerals prior to being killed. How much of a person is an embryo? When does a human achieve full personhood? Are rights in proportion to how much of a person one is declared to be? What protection should be granted to a human who is assessed to be half a person? Would he or she receive half a share of the right to life? How would that be accomplished?

Answering the Arguments: Examples of “personhood” standards that are not viable:

1. Implantation--An embryo is not worthy of human rights until it is implanted in a uterus--
Implantation is merely a change of location for a living embryo; personhood should not be based on factors extrinsic to the human. Many embryos conceived within a woman die a natural death because they do not implant, but that is very different than actively killing them.
2. Abortion--Embryos and fetuses don't have rights because it is just like abortion---
The legal basis for permitting abortion was not a lack of embryo/fetal rights, but purported competing Constitutional rights of women and their unborn children. In the case of embryo research, there are not competing rights, and an embryo's right to life should not be sacrificed for the purported benefit of medical research. Unlike abortion, there is no conflict between a woman's right over her own body and the right of an embryo to life. Pro-choice people can still hold their position while opposing this research.
3. Lack of a nervous system--An embryo lacks brain activity or nervous system functioning--
The life function of coordination (regulation), involving communication and control of activities within the organism and its interaction with the environment, is carried out without any specialized system in the early embryo. Beyond 2 weeks of life, the nervous system, in part, carries out this function. Throughout life, human growth and development, as well as disease states, involve changes in the way life functions are performed. One would not expect an infant to speak in words, walk, or function independently given the child's immature nervous system. Yet, that does not mean a baby does not have intrinsic human worth and full rights. Embryos carry out life functions in a developmentally appropriate way that is different than a human at a later stage of development; classifying them as having less than full human rights is discriminatory.

4. Twinning—*An embryo is not a person during the stage at which it can form twins—*

If the fact that one human being can become two human beings means the first human being is not a person, then if a person is cloned to result in two identical twins, the original human before being cloned is not a person either! The fact that one human being can become two human beings has no bearing on the essence, nature or personhood of the original human being. Think about Siamese twins—2 persons joined into one body. Is an embryo before twinning occurs any different from an ethical standpoint?

1. Moore K. *The Developing Human: Clinically Oriented Embryology*. 4th ed. Philadelphia, PA: W.B. Saunders Company; 1988.
2. Curtis H. *Invitation to Biology*. Second ed. New York, NY: Worth Publishers; 1977.