



“As to diseases ,make a habit of two things —
to help, or at least *do no harm.*”

— Hippocrates, *The Epidemics* —

THE “POLITICAL SCIENCE” OF STEM CELLS LESSON 10: YOU CAN’T ADVANCE SCIENCE BY DENYING SCIENCE

*The Senate may vote soon on whether to divert taxpayer dollars toward stem cell re-
search that requires destroying live human embryos. In the campaign to promote such
funding, political hype has often substituted for the scientific facts. This series will help
members of the Senate distinguish mere politics from science.*

POLITICAL:

Said on the Senate floor regarding the human embryo: “If in fact it is a human life -- it is
not, by the way...” - Senator Richard Durbin (D-IL), July 29, 2005

SCIENCE:

The early embryo is not only “alive” in the sense that all human cells are, but is *a* human
life, the first stage in the development of any human being. To deny this, in order to jus-
tify destroying human embryos for research, is to deny science to advance an ideology.

“Zygote. This cell results from the union of an oocyte and a sperm during fertilization. A
zygote is the beginning of a new human being (i.e., an embryo).” Moore, Keith L. and
Persaud, T.V.N. *The Developing Human: Clinically Oriented Embryology*. 7th edition.
Philadelphia: Saunders 2003, p. 2.

“At the moment the sperm cell of the human male meets the ovum of the female and the
union results in a fertilized ovum (zygote), a new life has begun.” Considine, Douglas
(ed.). *Van Nostrand's Scientific Encyclopedia*. 5th edition. New York: Van Nostrand
Reinhold Company, 1976, p. 943.

“The development of a human begins with fertilization, a process by which the
spermatozoon from the male and the oocyte from the female unite to give rise to a new
organism, the *zygote*.” Sadler, T.W. *Langman's Medical Embryology*. 7th edition.
Baltimore: Williams & Wilkins 1995, p. 3.

“Fertilization is a sequence of events that begins with the contact of a *sperm*
(spermatozoon) with a *secondary oocyte* (ovum) and ends with the fusion of their
pronuclei (the haploid nuclei of the sperm and ovum) and the mingling of their
chromosomes to form a new cell. This fertilized ovum, known as a *zygote*, is a
large diploid cell that is the beginning, or *primordium*, of a human being.”
Moore, Keith L. *Essentials of Human Embryology*. Toronto: B.C. Decker Inc,
1988, p.2.

“Almost all higher animals start their lives from a single cell, the fertilized ovum
(zygote)... The time of fertilization represents the starting point in the life history, or
ontogeny, of the individual.” Carlson, Bruce M. *Patten's Foundations of Embryology*.
6th edition. New York: McGraw-Hill, 1996, p. 3.

For more information to help distinguish politics from science on stem cell research, see
our web site at www.stemcellresearch.org.

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