

Understanding how fetal tissue is medically used

Thanks to a series of heavily [edited videos](#) allegedly showing Planned Parenthood officials making deals for aborted fetal tissue that have spread on the Internet faster than Kim Kardashian's anatomy, fetal tissue research is back in the public eye.

The videos ignited debate especially on the political right, from websites to the [GOP Presidential debates](#). A number of states also have begun to circulate legislation banning the use of fetal tissue in research, and some members of Congress have expressed a wish to turn the issue into a reason to shut down funding for the U.S. Government.

The videos and their backlash have also illustrated both the scientific value of fetal tissue in biomedical research, as well as the somewhat murky but legal business of procuring fetal tissue for this research. No matter whether one opposes abortion or wishes that the procedure remain legal, there's definitely been a strong "ew" factor.

What does fetal tissue do?

Tissue from a human fetus (defined as between eight weeks post-conception until just before birth) has special properties. And, as Alta Charo, a medical ethicist and law professor at the University of Wisconsin [wrote in](#) the New England Journal of Medicine, "Any discussion of the ethics of fetal tissue research must begin with its unimpeachable claim to have saved the lives and health of millions of people."

Fetal tissue's benefits include:

- The sole source of human embryonic stem cells, which have been valuable for showing how human cells begin the differentiation process. These cells can rapidly grow, divide and specialize in ways that aren't seen in adult cells. This research has been nothing short of groundbreaking for providing understanding of how a basic cell develops.
- Developing regenerative medical treatments (at least in the experimental stages) for a number of degenerative diseases such as Parkinson's. The ability of stem cells to adapt to new environments and resist rejection by the host body make them uniquely suited to create these new treatments.
- Starting almost a century ago, they've been used in the research and development of vaccines, including those for hepatitis A, chickenpox, polio and rubella (German measles). [Cell lines](#) used to grow these vaccines were grown from tissues obtained by abortions performed in the 1960s in Europe. The Ebola ZMapp vaccine also was derived from a cell line derived from fetal tissue.
- Discovery of genes that could result in diseases later in life may be activated in the fetal stage of development. This could provide better understanding of how Alzheimer's disease, Type I and Type II diabetes and some cancers arise.

The National Institutes of Health in 2014 gave \$76 million in research grants for research using fetal tissue, a tiny proportion of the NIH budget but a valuable resource for scientists.

Where does fetal tissue come from?

The tissue comes from fetuses, of course, which may have died on their own, or were aborted. Some of the tissue comes from abortion providers (like Planned Parenthood, or smaller, private providers), hospitals and clinics that run their own tissue banks, the NIH's own tissue bank, or even [in vitro fertilization](#) clinics, which with the parent's consent select which embryos will continue to grow and which will be removed. NIH has run a national stem cell registry since 2009, and nonprofits like [WiCell](#), associated with the University of Wisconsin, have provided human and animal stem cells for research and clinical use. Whatever the source, all legal procurement of fetal tissue or stem cell lines derived from these tissues is done by medical researchers. Recipients of fetal tissue for decades have included researchers at virtually every major university and academic medical center in the United States and Europe.

And the exchange of money to cover the costs of preparing fetal tissue is legal. Only making a profit from the acquisition of fetal tissue is illegal. This is where things get a little murky, and this is where opponents to abortion (and certain candidates for office) have exploited public ignorance to their political ends.

Under the law, only the costs of processing tissue material can be covered. This tissue can be cells in culture, to actual parts, such as eyes, liver or other organs. These [costs can range](#) from modest (such as the videotaped quote of \$30 or \$100 to acquire fetal tissue), to quite high (\$24,000 for a vial of T cells, and thousands of dollars for international shipments of frozen samples). Managers of tissue suppliers point to the difficulties in isolating fetal tissue cells and laborious processes in handling, storing, freezing and shipping tissue as the reason for higher costs.

The "trade" is similar to organs that are taken from homicide or accident victims, or from cadavers that have been donated to medical schools or other scientific facilities. The same laws about costs of processing organs and tissues have applied equally to adults and fetuses.

However, while the law is clear that only costs can be recovered, there is no federal (and very little state) oversight over what constitutes a cost, and no real standardization of what constitutes a fair cost, except for what researchers have been accustomed to paying. Managers of tissue suppliers, however, have been quoted in media stories after the Planned Parenthood video releases as saying the prices cited were reasonable. In addition, the American Society for Cell Biology stated that while there may have been individual attempts to gouge a profit from this trade, there seemed to be no widespread illegal trade in these tissues. Further, a 1997 General Accounting Office found no violations in pricing, trade and handling of fetal tissue, and no complaints registered with the NIH.

The videos showcasing Planned Parenthood were taped and distributed by two groups known for their opposition to abortion, and much of the public rhetoric has arisen from politicians and groups who also oppose abortion. But some groups known for their opposition to abortion, including divisions of the Roman Catholic Church, have tempered their responses to medicines derived from fetal tissue and to its use in research. A committee of the National Conference of Catholic Bishops [wrote in 1991](#) that, while still in opposition to abortion, “It may not be wrong in principle for someone unconnected with an abortion to make use of a fetal organ from an unborn child who died as the result of an abortion.”

Facts notwithstanding, it’s made a great election-time story.

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