



Vaccine Ingredients – Fetal Tissues

Varicella (chickenpox), rubella (the “R” in the MMR vaccine), hepatitis A, one version of the shingles vaccine, and one preparation of rabies vaccine are all made by growing the viruses in fetal embryo fibroblast cells. Fibroblast cells are the cells needed to hold skin and other connective tissue together. The fetal embryo fibroblast cells used to grow vaccine viruses were first obtained from elective termination of two pregnancies in the early 1960s. These same embryonic cells obtained from the early 1960s have continued to grow in the laboratory and are used to make vaccines today. No further sources of fetal cells are needed to make these vaccines.

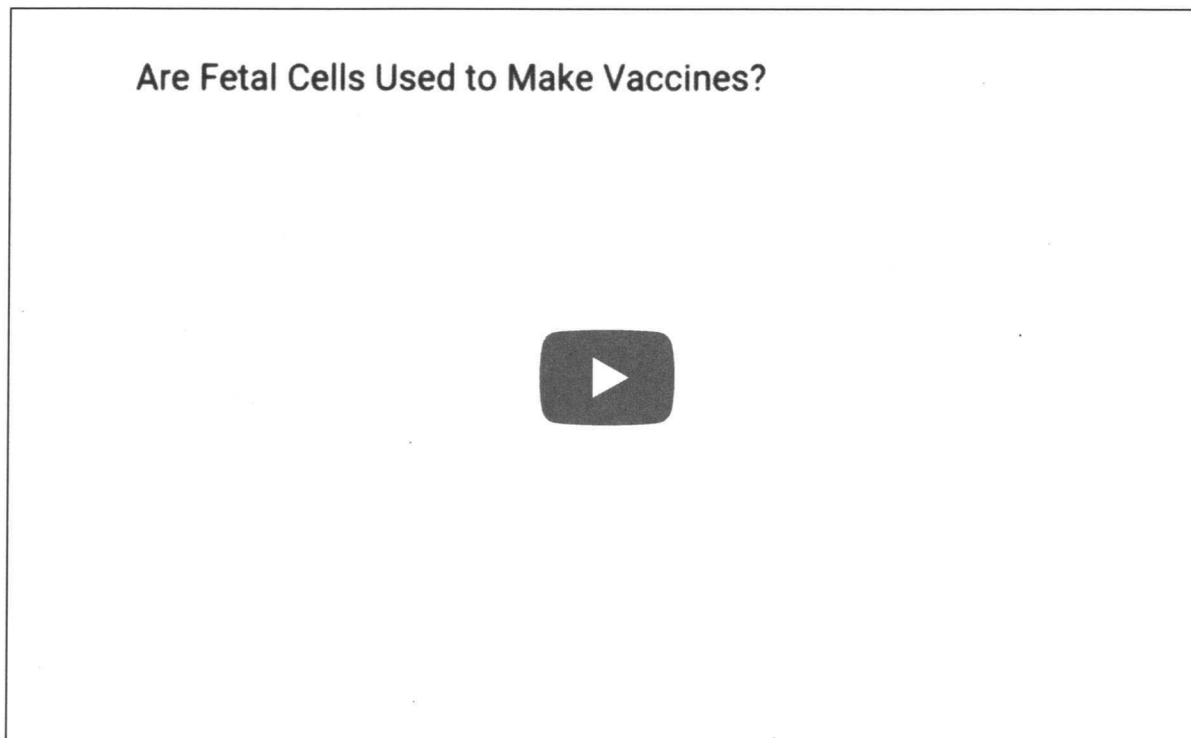
The reasons that fetal cells were originally used included:

- Viruses need cells to grow and tend to grow better in cells from humans than animals (because they infect humans).
- Almost all cells die after they have divided a certain number of times; scientifically, this number is known as the Hayflick limit, and for most cell lines it is around 50 divisions; however, fetal cells can go through many more divisions before dying.

As scientists studied these viruses in the lab, they found that the best cells to use were the fetal cells mentioned above. When it was time to make a vaccine, they continued growing the viruses in the cells that worked best during these earlier studies.

Learn more about fetal tissues used in vaccines by watching this short video, part of the *Talking about Vaccines with Dr. Paul Offit* video series.

Editor's note: Discussion in this video is relevant only to the Zostavax® shingles vaccine. For information on the Shingrix® shingles vaccine, visit our shingles vaccine webpage.



View this video with a transcript

For a more detailed description of the history related to the use of fetal cells, please read our article about the book, *The Vaccine Race*, by Meredith Wadman from the April 2017 Vaccine Update.

Reference

Offit PA and Moser CA. *Vaccines and Your Child: Separating Fact from Fiction*. 2011. Columbia University Press.

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