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Fetal cells and vaccines: Common questions answered

Fetal cells used in vaccines were isolated from two elective abortions performed in the 1960s. This article addresses some of the most common questions and misconceptions related to how and why some vaccines are made using these cells.

Which vaccines are made using fetal cells?

The vaccines made using fetal cells include:

- Rubella (the “R” in MMR vaccine)
- Chickenpox, also called varicella
- Hepatitis A
- Rabies — one version, called Imovax®

Do vaccines contain parts of fetuses or fetal cells?

In order to grow viruses in the lab, cells need to be made into single cell suspensions, meaning they can no longer be grouped together in the form of tissues or organs. As such, vaccines do not contain “parts of fetuses.”

Vaccines also do not contain fetal cells. Once the vaccine viruses are grown in the cells, the next step in the manufacturing process is to purify the vaccine viruses away from the cells and substances used to help cells grow. If you have ever picked blueberries, you can think of this part of the process as similar. While you are picking, you might get some of the blueberry plant — stems, leaves and even branches — in your berry bucket, but to use the berries, you remove all of those things, so your pie contains only the blueberries (and any other ingredients you choose to add).

This purification part of the process is important for two reasons. The first, and perhaps most obvious, is the manufacturing reason. From a manufacturer’s perspective, an efficient process that results in the purest possible product makes the final product easier to characterize. However, as consumers, the second, and more important, reason matters more. A pure product will not introduce unnecessary components that could trigger immune responses or affect us in other ways.

Why are fetal cells used to make some vaccines?

Viruses reproduce in cells, so to grow viruses for a vaccine, one of the necessary “tools” is a type of cell in which the virus will grow. Viruses will not grow in just any cell type, so one of the first things a scientist needs to do is to figure out what cells the virus will infect in the lab. Because viruses infect people, human cells are a good place to start checking.

The most important benefit offered by using fetal cells was that they were isolated from the sterile environment of the womb. This meant the cells would not be infected with other viruses, and the vaccine produced in these cells would not inadvertently introduce any other viruses.



Trivia Corner

Which religious groups prohibit the use of vaccines made using fetal tissue?

- A. Jewish
- B. Catholics
- C. Muslims
- D. None of these

Find out more about the decision in this video and story:

<https://hillemanfilm.com/stanley-plotkin>

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Trivia Answer:

The correct answer is D.: None of these. Jewish, Catholic and Muslim religions do not prohibit the use of vaccines that are made using fetal tissue because they can save lives by preventing life-threatening infections. Some people question whether Catholics are able to use these vaccines, but the Vatican Council declared that parents who give their children vaccines are not committing an immoral act.

Fetal cells and vaccines: Common questions answered [continued]

How can cells from the 1960s still be used today?

Cells grown in a laboratory setting are provided with an environment conducive to growth. As the cells reproduce and fill the container in which they are grown, researchers care for them by putting them in new containers and giving them additional nutrients to enable continued growth. As a result, the cells are able to replicate exponentially. Periodically, a portion of the cells will be frozen in liquid nitrogen for long-term storage. The extremely cold temperatures of liquid nitrogen freezers, around -200° C, cause biological activity to cease without killing the cells. Decades later, the cells, if thawed and provided with the appropriate nutrients and environment, will begin to grow again. As the cells grow, the newly produced cells can also be frozen, and the process extended again.

Do more abortions need to be done?

No. Because the cells isolated in the 1960s have been cared for as described above, vaccine manufacturers do not need to seek new cell sources.

If I don't want to get these vaccines, are alternatives available?

An alternative version of rabies vaccine is available; however, that is not the case for the rubella, chickenpox and hepatitis A vaccines.

Religious leaders from the major religions, including Catholicism, have evaluated the use of these cells in making vaccines and determined that it is not sinful to accept vaccines made in this manner.

Find out more about religion and vaccines:

<http://www.immunize.org/talking-about-vaccines/religious-concerns.asp>

News and Notes

What vaccines do you need?

The Centers for Disease Control and Prevention (CDC) offers a quick, 10-question quiz to help adults determine whether they need any vaccines. Information is not stored, and once completed, a list of potentially needed vaccines will be generated, so that you can discuss your needs with your healthcare provider.

Take the quiz: <https://www2a.cdc.gov/nip/adultimmsched/>

Children's book about measles — Free and available in several languages

Paul Has Measles is a children's story about how diseases can spread and how we can protect ourselves. The book was written by three virologists from Mexico, Susana López, Martha Yocupicio and Selene Zárate, and illustrated by Eva Lobatón. It can be freely downloaded in nine languages or purchased through Amazon. The Spanish version is also available in video format on YouTube.

Check out the book: <http://www.virology.ws/2018/11/20/paul-has-measles/>

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