

Title: Helping patients with ethical concerns about COVID-19 vaccines in light of fetal cell lines used in some COVID-19 vaccines

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Abstract

Many persons with religious convictions report hesitancy about COVID-19 vaccines, in part due to ethical concerns that fetal cell lines are used in the development of certain vaccines. The issue of abortion is contentious and, given the potential impact on COVID-19 vaccination, it is important for clinicians to be aware of this issue, whatever their personal beliefs. I provide four responses that clinicians may offer their patients: 1) Ethical analyses of moral complicity and COVID vaccines. 2) Altruism and protecting others from a virus that is often transmitted while asymptomatic or pre-symptomatic. 3) Religious texts and many religious leaders support prevention and, therefore, vaccination. 4) Administration of vaccines not developed in fetal cell lines. Although I wish for all my patients to be vaccinated, I respect their autonomy to make the choice to be or not to be vaccinated and understand that many have a deep regard for fetal life.

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Background:

Many persons with religious convictions report hesitancy about COVID-19 vaccines. A Pew Research Survey conducted in February 2021 found that 36% of Protestants and 22% of Catholics are unwilling to be vaccinated; subgroup analyses found that 45% of white evangelicals and 33% of black Protestants are unwilling¹. Although many reasons underlie this hesitancy, one area of reported concerns is that receiving such vaccines implicates the recipient with cooperation with abortion. The issue of abortion is contentious and, given the potential impact on COVID-19 vaccination, it is important for clinicians to be aware of this issue, whatever their personal beliefs.

In an article published in *Vaccine* in 2004, I reported on an analysis of ethical concerns raised on web sites about vaccines grown in human tissue cultures that were originally derived from abortions². The web sites raised a variety of concerns including lack of respect for fetal body parts, implication of material cooperation in abortion, vaccination implies agreement with abortion, profiteering from abortion, and autonomy.

Cell lines developed from past abortions are used in the testing or development of certain COVID-19 vaccines. The HEK 293 cell line was developed in Holland in the early 1970s from embryonal kidney tissue from a supposedly therapeutic abortion that was transformed by adenovirus type 5. The PER.C6 cell line was developed in 1995 from retinal tissue from an abortion in 1985 that was transformed by adenovirus type 5. The University of Oxford/AstraZeneca vaccine ChAdOX1nCoV-19 is developed in the HEK 293 cell line and the Janssen/Johnson & Johnson vaccine Adenovirus 26 vaccine is developed in the PER.C6 cell line;

however, the final products do not contain fetal cells. The mRNA vaccines are *not* manufactured in cell lines, although testing of mRNA vaccines reportedly uses cell lines.

Response #1: Ethical analyses of moral complicity and COVID vaccines

Bioethicist Robert Orr MD suggested criteria for evaluating moral complicity: (1) timing, (2) proximity, (3) certitude, (4) knowledge and (5) intent³. (1) Facilitating a future immoral act is clearly problematic whereas indirect association with a completed, past action may be unavoidable. For example, driving on a road that was originally built with slave labor may be difficult to avoid in some places. The abortions resulting in these cell lines occurred in the 1970s and 1980s are separate in time, intent and deed from vaccination today. (2) Proximity deals with the closeness of persons with the action. For instance, a school is not responsible for teaching chemistry that a graduate used in planning a bombing; it is the graduate who is responsible for such an evil action. Although the original cell that resulted in the cell line was derived from an abortion, the current cell lines have multiplied many times – it is not the original tissue. Indeed, vaccination today is remote in intent and deed from cell strain establishment and from abortion that occurred more than a quarter century ago. (3) Certitude deals with how well the facts are known. First, the facts related to cell lines are fairly well established. Second, for public health, the CDC ACIP Evidence to Recommendation Framework specifically addresses certainty of the evidence for critical outcomes⁴. and has found high certainty for prevention of symptomatic COVID-19. (4) Knowledge of the moral issue is the next criterion. Many car drivers in the southern part of the US do not know whether or not if some of the roads that they use were

originally made with slave labor a hundred and fifty years ago or more. In an analogous manner, a person who is vaccinated today would not be accountable for detailed knowledge of circumstances of a quarter or half century ago, before many of the vaccinees were even born. (5) Intent is the final criterion. The intent of the development of COVID-19 vaccines is to protect the vaccinee, protect the population and control the pandemic. For those with a prolife viewpoint, Dr. Orr notes: “It might be possible to remove any concern about moral complicity in those situations where there is a clear separation between the intention of the immoral act of person A and the intention of person B. For example, in the vaccine example, the intention of person A was to end a pregnancy, not to develop a vaccine. Development of the vaccine by person C was a noble act that happened to be possible because of the earlier immoral act of person A. Thus, use of the vaccine by person B is clearly separated from the immoral act, so that person B should bear no moral culpability”³.

The Principle of Double Effect is used to evaluate moral conflicts when an action could produce both good and bad effects. These criteria include: (1) the action itself must be morally indifferent or good, (2) the bad effect must not be the means by which the good effect is achieved, (3) the motive must be the achievement of the good effect only, and (4) the good effect must be at least equivalent in importance to the bad effect⁵. To apply these criteria to COVID 19 vaccination: (1) the act of vaccination is good as it prevents disease in the recipient and contributes to herd immunity. (2) The aforementioned abortions were independent events performed decades ago for purposes other than vaccination; the disease was not known to exist then. (3) The motive for vaccination is protection of the vaccinee and, secondarily, protection of their contacts and the community by herd immunity; thus, the motives are good. (4) The good effect, saving of

hundreds of thousands of lives in this circumstance, is clearly greater than the bad effect. For reference, greater than 559,000 persons have died due to COVID-19 in the US.

Response #2: Altruism and protecting others from a virus that is often transmitted while asymptomatic or pre-symptomatic

Vaccination is a priority because it reduces viral transmission⁶, thereby protecting others. COVID-19 is highly transmissible person-to-person, including asymptomatic, pre-symptomatic, and symptomatic persons⁷. Indeed, 44% of secondary cases are infected during the pre-symptomatic stage⁸, before a primary case would know to isolate to protect others. Furthermore, at least a third of cases are from asymptomatic spread, in which case no extra isolation measures could be planned⁷. Thus, given that asymptomatic and pre-symptomatic transmission reduces the potential for symptomatic-based prevention measures such as isolation, another strategy is needed out of concern for others. Vaccination reduces not only symptomatic infection, but asymptomatic infection and transmission as well.

Herd immunity can protect more vulnerable persons, such as those with immunocompromising conditions or the very aged, who may not respond to vaccination or persons with allergic conditions that preclude vaccination. To achieve herd immunity, contacts of the vulnerable in particular and the general population at large need to be vaccinated. Israel, the first country to see high vaccination rates against COVID-19, has seen a drop in cases that can be attributed to herd immunity⁹. Vaccination with the purpose to achieve herd immunity and protect others is altruistic.

Response #3: Religious texts and many religious leaders support prevention and vaccination

Religious texts support prevention and altruism. In the context of the ancient Middle East, during which time people spent time on their roof, it is written “When you build a new house, be sure to put a railing around the edge of the roof. Then you will not be responsible if someone falls off and is killed” (Deuteronomy 22:8, Good News Translation (GNT)). Physical protection, even with human-made instruments, is seen as a blessing: “May his towns be protected with iron gates” (Deuteronomy 33:25, GNT). The “Love one another” passages in the New Testament support caring for another, with direct attention to caring for physical needs: “...our love should not be just words ... shows itself in action.” (1 John 3:18 GNT). Being vaccinated dramatically reduces the risk that one will transmit virus to others.

A number of religious leaders from a variety of faiths have spoken in favor of vaccination – see Table 1.

Response #4: Administration of vaccines not developed in fetal cell lines.

For those patients who refuse a vaccine that is developed in a cell line that was derived from an abortion, alternatives exist: for instance, mRNA vaccines as a class are not designed, developed or produced in fetal cell lines¹⁰. In addition to the mRNA vaccines, other classes are in development with products not designed or produced in fetal cell lines.

As a note to manufacturers, vaccine designers and policy officials, development of vaccines in cell lines that are not derived from abortion is feasible, eliminates this controversy, may increase vaccination rates and may result in higher sales. For these reasons, I recommend use of uncontroversial cell lines.

In conclusion, I have provided four different responses that a clinician can use with those patients who have ethical concerns about certain COVID-19 vaccines that were developed in fetal cell lines. Although I wish for all my patients to be vaccinated, I respect their autonomy to make the choice to be or not to be vaccinated and understand that many have a deep regard for fetal life.

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Table 1. Sampling of quotes or notes by religious leaders promoting COVID-19 vaccination

Judaism	<p>Three of the most senior rabbis in ultra-Orthodox Judaism -- Chaim Kanievsky, Gershon Edelstein, and Shalom Cohen -- recommended recently that “anyone who has the option of getting the vaccine should get it.”</p>	<p>https://www.webmd.com/vaccines/covid-19-vaccine/news/20210126/faith-leaders-spread-the-word-get-vaccinated</p>
Protestant Christianity	<p>Several national evangelical leaders also are speaking out in support of vaccination, including the Rev. Franklin Graham, son of the late Rev. Billy Graham. Graham's charity, Samaritan's Purse, set up several field hospitals to treat COVID-19 patients around the world. "We have seen firsthand — at least I have — what coronavirus can do to a person," Graham told NPR. "It's frightening, and you don't want it.</p>	<p>https://www.npr.org/2021/04/05/984322992/love-your-neighbor-and-get-the-shot-white-evangelical-leaders-push-covid-vaccine</p>
Catholic Christianity	<p>“It is morally acceptable to receive Covid-19 vaccines that have used cell lines from aborted fetuses in their research and production process. Due to the situation of the ongoing pandemic, “all vaccinations recognized as clinically safe and effective can be used in good conscience with the certain knowledge that the use of such vaccines does not constitute formal cooperation with the abortion from which the cells used in production of the vaccines derive.”</p> <p>The Vatican’s Congregation for the Doctrine of the Faith</p>	<p>https://www.vaticannews.va/en/vatican-city/news/2020-12/vatican-cdf-note-covid-vaccine-morality-abortion.html</p>
Islam	<p>So on March 18, Hassan and 15 other imams from around Minnesota gathered at a local health care clinic in Minneapolis. Not only did they get vaccinated against a virus that wracked their community; they did so on camera,</p>	<p>https://sahanjournal.com/coronavirus/minnesota-imams-vaccination-event/</p>

	<p>in front of multiple Somali-language media outlets to make their message loud and clear. Imam Hassan Ali Mohamud thought of a passage from the Qur'an. Saving one person's life is equal to saving all of humanity, according to the often cited passage. Which means it's fairly easy to argue that receiving the vaccine is a religious duty, Hassan said.</p>	
<p>Evangelical Christianity</p>	<p>Evangelicals who get vaccinated against COVID-19 demonstrate their love of neighbors, care for the most vulnerable, and protect their own bodies.</p> <p>However, a recent study shows that white Evangelicals are less likely to get vaccinated than most other groups in the United States. In response, we launched the Evangelicals for COVID-19 Vaccines campaign on Change.org to encourage and equip Evangelicals to get vaccinated themselves and help their neighbors do so as well.</p>	<p>https://www.change.org/p/christian-s-evangelicals-for-covid-19-vaccines?utm_content=cl_sharecopy_28248590_en-US%3A4&recruiter=1191488171&utm_source=share_petition&utm_medium=copylink&utm_campaign=share_petition</p>
<p>Hindu</p>	<p>In January, Swayamprakash Swami,... a senior monk affiliated with BAPS, a mainstream Hindu denomination, gave his blessing to the Covid-19 shots. The ancient Hindu principle of ahimsa, an exhortation to do no harm and revere life, is being used to encourage Hindus in North America to embrace the vaccine, said Dr. Kashyap Patel, a cardiologist in Atlanta who is a medical adviser to BAPS.</p>	<p>https://www.nytimes.com/2021/03/14/health/clergy-covid-vaccine.html</p>

Literature Cited

1. Funk C, Gramlich J. 10 facts about Americans and coronavirus vaccines. Pew Research Center. Updated 03/23/2021. Accessed 04/21/2021, <https://pewrsr.ch/393DxfV>.
2. Zimmerman RK. Ethical analyses of vaccines grown in human cell strains derived from abortion: arguments and Internet search. *Vaccine*. Oct 22 2004;22(31-32):4238-44. doi:10.1016/j.vaccine.2004.04.034
3. Orr RD. Addressing Issues of Moral Complicity: When? Where? Why? and Other Questions. *Dignity*. 2003; 9(2): The Center for BioEthics & Human Dignity, Trinity International University; 2003. Accessed 5/5/2021 [Addressing Issues of Moral Complicity: When? Where? Why? and Other Questions | The Center for Bioethics & Human Dignity \(cbhd.org\)](https://www.cbhd.org/addressing-issues-of-moral-complicity-when-where-why-and-other-questions).
4. Centers for Disease Control and Prevention (CDC). Evidence to Recommendations Frameworks. Centers for Disease Control and Prevention (CDC),. Updated 04/26/2021. Accessed 05/04/2021, <https://www.cdc.gov/vaccines/acip/recs/grade/etr.html>
5. Munson R. *Intervention and Reflection: Basic Issues in Bioethics*. 6th ed. The Wadsworth Series in Social Philosophy. Wadsworth, Inc; 2000:791.
6. Lipsitch M, Kahn R. Interpreting vaccine efficacy trial results for infection and transmission. Updated 2/28/21. Accessed 04/30/2021, doi:<https://doi.org/10.1101/2021.02.25.21252415>
7. Greenhalgh T, Jimenez JL, Prather KA, Tufekci Z, Fisman D, Schooley R. Ten scientific reasons in support of airborne transmission of SARS-CoV-2. *Lancet*. May 1 2021;397(10285):1603-1605. doi:10.1016/S0140-6736(21)00869-2

8. He X, Lau EHY, Wu P, et al. Temporal dynamics in viral shedding and transmissibility of COVID-19. *Nat Med*. May 2020;26(5):672-675. doi:10.1038/s41591-020-0869-5
9. De-Leon H, Calderon-Margalit R, Pederiva F, Ashkenazy Y, Gazit D. First indication of the effect of COVID-19 vaccinations on the course of the outbreak in Israel. *medRxiv*. 2021:2021.02.02.21250630. doi:10.1101/2021.02.02.21250630
10. Prentice D. Update: COVID-19 Vaccine Candidates and Abortion-Derived Cell Lines. Charlotte Lozier Institute. Updated 09/30/2020. Accessed 04/30/2021, <https://lozierinstitute.org/update-covid-19-vaccine-candidates-and-abortion-derived-cell-lines/>

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