

Increased reliance on assisted reproductive technology has raised many issues regarding the establishment of parenthood. Determining both maternity and paternity is of prime importance in Judaism since it has multiple implications for the status of the child. A child is only considered Jewish if his or her mother is Jewish, and a person's status within the Jewish people is determined by his or her father. For example, the tribe which an individual identifies with is based on that of the father, and whether a man is a *Kohen*, a member of the priestly class, also depends on the father. Therefore, it is essential for each individual to know his or her parents' identities. However, in the age of surrogacy and sperm donations, this information may not be readily available or clear.

The matter of establishing paternity is discussed in a variety of Jewish sources, which conclude that the man who donates genetic material to the child is considered the father. The Talmud (Megillah 13a), in a discussion of Esther's birth, explains that although Esther's father died before her birth, he is still considered her father. This teaches that paternity is established by conception, and not by birth. Furthermore, there is a discussion in another tractate (Chagigah 15a) about a pregnancy that lacks intimacy. There is a case brought up in the midrash of a child resulting from such a pregnancy, Ben Sira, who was

considered to be the son of Jeremiah, despite his mother never having intercourse with the prophet. Jeremiah's sperm entered Ben Sira's mother when she immersed in the bathhouse. This case emphasizes that whichever man donates the genetic material is considered the father, regardless of whether or not there was intercourse. This directly relates to sperm donations today. Most modern poskim, including Rav Ovadia Yosef, Rav Yitzchak Weiss, and Rav Zalman Nechemya Goldberg, conclude that the man who contributes sperm for fertilization is considered the halakhic father, even if he will not be involved in raising the child. Because of this, and other issues related to sperm donation, Rav Moshe Feinstein recommended that any sperm donor other than the father be non-Jewish to avoid uncertainties of the child's status within the Jewish nation. Since the child will have a Jewish mother, the child will be Jewish, and would not need conversion [1].

Every man has a responsibility of *pru urevu*, to be fruitful and multiply, in other words, to have children. There is debate about whether a man fulfills his obligation of *pru urevu* through artificial means. For example, there is a question if a man fulfills this obligation by providing sperm for in vitro fertilization. The Rabbis mentioned above, having concurred that the man which contributed genetic material is considered the halakhic father, argue that sperm donation is sufficient in fulfilling the obligation of having children. Others argue that a man can only fulfill the commandment of having children through conception in a natural manner [1].

The issue of maternity is far more complicated than that of paternity. In the case of intrauterine insemination, a woman's egg is fertilized outside the body, and inserted into the uterus. In this case, maternity is clear, because the genetic mother and gestational mother are the same person. Since the woman has no obligation in *pru urevu*, the debate of whether the commandment is fulfilled in the atypical matter is not a factor here.

Nevertheless, in a case where a surrogate mother is employed to carry the egg, maternity is quite unclear. According to Jewish law, is the mother the woman who contributed the genetic material (i.e., the egg donor), the woman in whom the fetus developed, or

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both? In order to answer this question, one must explore the timing of motherhood determination. If maternity, like paternity, begins with conception, then the genetic mother alone would be considered the mother. However, if motherhood is determined at birth, then it would seem that the gestational mother could be considered the mother.

The Talmud (Yevamot 42a) seems to support the idea that the genetic mother is the sole mother of the child. It describes that when a married couple converts to Judaism, they must separate for 3 months to verify that the wife had not become pregnant prior to conversion. This implies that the status of the mother at the time of conception is important in determining the identity of the child, not the mother's status at birth of the child. If a woman is pregnant before her conversion, the religious status of the child would be put into question, suggesting that motherhood is determined by conception. This is similar to a situation described by the Rambam in which a Kohen marries a divorcee, an act which is prohibited by the Torah. Any child from this union is considered a chahal. However, if the woman is pregnant before marrying the Kohen, the child is not considered a chahal. This implies again that the child's status depends on the status of the mother at conception, not at the birth of the child, proving the importance of the initial genetic contribution of the mother.

On the other hand, there are many circumstances written in the Talmud in which the halacha seems to imply the opposite, that pregnancy and birth determine maternity. A different situation described in Yevamot (97b) explores a case in which a woman is pregnant with twins and converts while she is pregnant. The children are not considered paternal siblings since paternity is established at conception. But they are considered maternal siblings, which implies that maternity is established by birth. Once again, the discussion of Esther's birth provides insight on the topic. The pasuk describes that Esther was an orphan and that she "had neither father nor mother." The Talmud (Megillah 13b) notes that Esther did not have a mother since her mother died during childbirth. This indicates that maternity is established by birth. Rashi comments that the pasuk means that she had no father from the time in which paternity was established, ie., at conception. Rashi explains that Esther had no mother because her mother died before the time in which maternity was established, ie., at birth [2]. This view is supported by Rav Aaron

Soloveitchik, who agrees that a child born from an egg implanted in a surrogate adopts the religious status of the mother at birth [3]. Because of the presence of seemingly contradictory sources, Rav Shlomo Zalman Auerbach favors the stringent side, that both mothers, the egg donor and the surrogate, are considered in maternity. Therefore, a child born through a non-Jewish surrogate must convert.

The discussion surrounding the use of a Jewish woman as a surrogate is complicated as well, and while Rav Zalman Nehamia Goldberg allows it, many Rabbanim disagree. They believe that implanting an egg in a woman with sperm from a man that is not her husband falls under the category of ervah, or improper behavior. Another issue is the prohibition from the Torah against self-harm. It is unclear whether surrogacy falls under this commandment, but it is a consideration. Finally, although unlikely, inappropriate behavior between the husband and surrogate has been a documented occurrence, leading many to strongly discourage or forbid the use of Jewish surrogates [2].

This matter of maternity is complicated by the concepts of bidirectional fetal-maternal cell exchange and epigenetics, which imply that a gestational mother's role is more than just an incubator. Bidirectional fetal-maternal cell exchange, or microchimerism, is when cells of the gestational mother travel across the placenta into the fetus. This means that there are cells in the child with DNA material from the gestational mother in addition to that of the genetic mother [4]. This process also works in reverse; cells with fetal DNA can be transmitted to the woman carrying the baby. The exchange occurs regardless if the woman carrying the child is the genetic mother or a surrogate. These stem cells are particularly identifiable when cells containing a Y chromosome are found in a woman, since Y chromosomes are found only in males [5]. Additionally, recent information about epigenetics establishes a connection between the gestational mother and fetus. The lifestyle of a gestational mother can affect the child, in addition to increasing the potential of autoimmune diseases. It has even been recorded that tumor cells from the gestational mother can enter the unborn fetus, resulting in an infant born with a tumor. These concepts of microchimerism and epigenetics complicate the issue of surrogacy since it becomes clear that the gestational mother has a far greater role in pregnancy than previously thought [4].

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## Acknowledgements

I would like to thank my parents for constantly motivating me to achieve my dreams and helping me reach them. I want to thank Dr. Babich for encouraging me to write this article and for assisting me with it, and Rav Apfel for his insights on the topic.

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