The Yom Kippur Effect

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The most sacred day on the Jewish calendar is the fast of Yom Kippur. On this day of repentance, men and women are obligated to abstain from eating and drinking for 25 hours. Because of the sacrosanct nature of this day, the law is very stringent, and permission to break the fast is only approved in very dire circumstances. In its discussion about individuals fasting on Yom Kippur, the Talmud singles out pregnant women. In Tractate Yoma the Talmud states that if a pregnant woman has a craving on Yom Kippur we are allowed to give her food until she is satisfied (82a). This topic opens up a discussion about the degree of leniency granted towards pregnant women on the day of repentance. These leniencies are considered because of the possibility that fasting on Yom Kippur may induce early labor, potentially threatening the life of either the mother or the child.

Studies have been conducted to examine this hypothesis and test its validity. Soroka University Medical Center ran a study examining more than 1300 deliveries that took place both on Yom Kippur and during the corresponding day a week earlier between the years of 1988 and 2011. The study defined preterm delivery as delivery before 37 weeks of gestation. The results showed that a 25 hour fast is an independent risk factor for preterm delivery [1]. A similar study was conducted in Jerusalem on pregnant women. The delivery room records were studied according to a 15 day period subdivided into three groups: the 24-hour period immediately following the fast, the seven days before Yom Kippur, including the fast day itself, and the seven days after the fast. After the data was collected and analyzed, an increase in the delivery rate for the 24 hour period after the fast was observed. The increase in preterm deliveries was limited to the 24 hours after the completion of the fast for women who were at or near term [2].

Although there is no clear reason as to why fasting on Yom Kippur can cause spontaneous delivery, a possible factor might be due to the substantial rise in blood viscosity caused by total abstinence from food and water. This causes an increase in anti-diuretic hormone (ADH) secretion. The uterus' smooth muscle is very sensitive to ADH, and increase in the hormone is suspected to induce uterine contractions, resulting in premature labor [1]. This reason is highly plausible, especially if one examines a study done to test the effects of fasting on viscosity and the blood plasma. Blood was drawn from 29 participants just prior to the end of the fast. Results showed that there was an increase in blood cells and plasma proteins attributing to an overall elevated blood viscosity [3]. A second theory as to why fasting can cause early labor is due to the relationship between fasting and an increase in prostaglandin production due to the higher levels of free fatty acids. The prostaglandin also causes uterine contractions and results in premature labor [1].

These studies are not a basis to prohibit women from fasting; rather, women with a propensity for preterm delivery should be cautious about fasting for 25 hours. When it comes to determining if a pregnant woman should fast or not on Yom Kippur, rabbis will use these studies to help guide them in making the most appropriate determination for each individual case. Rabbi Yisrael Fisher, a member of the Bet Din of the Edah ha-Haredit, for example, permits pregnant women to eat on Yom Kippur upon experiencing "slight weakness." On the other hand, Rabbi Moshe Sternbuch, the deputy head of the Bet Din of the Edah ha-Haredit, believes that since fasting may only hasten parturition, but does not definitively present danger, pregnant women are obligated to fast. Only in extreme cases, where there is a clear and present danger, should they eat [4].

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