

Mitochondrial DNA Replacement: Moral and Halakhic Concerns

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ABSTRACT

Mitochondrial DNA (mtDNA), transmitted from mother to child, have their own genetic code that may cause debilitating genetic diseases. To prevent such unfortunate occurrences, researchers have developed a process enabling them to completely replace an ovum's mitochondria with mitochondria contributed by a donor. Children born by use of this method have genetic material from both the mitochondrial donor and the birth mother; they are "three-parent babies." Resultant medical, ethical, legal and theological problems are obvious.

Moreover, this technology may pose significant risks to neonates born of such procedures. Man certainly has no right to cause harm to a fellow human being. Although the intent is to prevent disease, the moral issue is whether, in the course of experimentation, it is ethical for man to intervene in the natural order in order to generate a life that may be burdened by physical or mental defects that would otherwise not occur.

Additionally, those procedures result in the creation of numerous fertilized ova that will never be implanted in a uterus. Many would assert that destruction of any conceptus is a form of abortion. Should surplus fertilized ova be indefinitely preserved in a state of suspended animation?

Who is deemed to be the mother, the birth mother or the genetic mother? If the latter, can a child have multiple mothers? There is talmudic support for the notion that a person may have multiple fathers. If so, it is also possible that a person may have multiple mothers. Such a conclusion gives rise to increased probability of future inadvertent incestuous relationships. It is for that reason that Jewish law regards conduct resulting in suppression of parental identity as biblically proscribed.

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