and you shall heal!

National Institute of Judaism and Medicine

and legal dilemmas engendered by 20th century scientific and medical advances

Summer 1998

Summer, 1998

Dear Friend:

Plans are already underway for our 10th Anniversary Conference on Judaism and Medicine. Scheduled for Sunday, November 1st, the full-day conference will be held at the Marriott Marquis Hotel in New York City. We hope you will be able to join us. Save the date!

As with all our past conferences, our objective is to create a forum where we will be able to study and discuss the ethical, moral and legal dilemmas engendered by 20th century scientific and medical advances. While each conference addresses new ideas, at times we revisit issues that are of continuing interest.

This is our second newsletter, excerpted from one of the most popular sessions at last year's conference, addressing the very "newsworthy" issue of reproductive technologies. Dr. Richard Grazi, the sole presenter of the session, discussed the various innovations to the field as well as the ethical implications of such procedures – practical problems that he has seen in his own practice.

We, at the National Institute of Judaism and Medicine, are dedicated to addressing the ethical and moral implications of progress, and making it available to you. Our first newsletter was met with very positive feedback and we look forward to continuing on a quarterly basis. To ensure that we provide you with the topics and issues you want to read about, please be in touch with us. Your thoughts and comments would be very much appreciated. I can be reached at makerman@msn.com or, please visit and send you comments to us at www.nijm.org.

Save the Date: The 10th Anniversary Conference on Judaism and Contemporary Medicine will be held on Sunday, November 1, 1998 at the New York Marriott Marquis Hotel.

Best wishes for good health and success,

Michael Akerman, MD
Executive Director
National Institute of Judaism and Medicine

Reinventing Reproduction:

Richard V. Grazi, M.D.

Preliminary Questions

Question #1: May we interfere with the natural reproductive process in order to enhance the chances for conception?

Question #2: How does the Halakha (traditional Jewish law) view a child who is produced in this way? Who are the halakhic parents? What if the child is created using gametes other than the husband's sperm and the wife's egg?

Question #3: Who does the Jewish community accept today as the authoritative voice for these halakhic decisions?

The answer to this last question is crucial because if we do not have consensus in our community over who speaks with authority, then we have the potential for a real split, not only in the wider Jewish community but also in the Torah -Jewish community. Let me further elucidate...

If two neighbors observe different standards of kashrut, there are no serious implications. They may not eat at each other's homes, but their relationship is otherwise unaffected. If, however, those same neighbors hold different standards with regard to reproductive technologies, there are real implications. For example, one may hold a certain reproductive procedure to be impermissible. He might even consider the procedure to be akin to an adulterous relationship, and the resultant child therefore an illegitimate child. But his neighbor may disagree and believe that the procedure in question is perfectly permissible, and that the child is kosher for all intents and purposes. What if the second neighbor now brings such a child into the world? Obviously, the first would not consider such a child marriageable within his own family. Thus, a real and practical lineage problem may arise, perhaps between neighbors who may live and pray in the very same Jewish community. It is desirable, therefore, that a consensus be reached about what is permissible and what is not permissible by the precepts of Halakha.

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A Review of Milestones in Reproductive Physiology

Dr. Michael Akerman, Executive Director of the National Institute of Judaism and Medicine, welcomes conference attendees to the Eighth International Conference on Judaism and Medicine

Before I continue, some historical perspective is in order. The nature of the reproductive process was a mystery until relatively recently. Hippocrates, who lived in the 5th Century BCE, presented the prevalent opinion at the time, stating that the fetus came from an accumulation of menstrual blood. How did people come to believe this? By observation! A couple got married and they slept together. If the wife had periods regularly, all of a sudden her period stopped and 9 months later she gave birth to a baby. Where did all the blood go for those nine months? There was only one obvious answer: to produce the fetus. And that belief was the popular concept for a very long time. The Greeks later brought up the concept of male seed, and some theorized that there may be a female seed as well. (This is a concept that is found in our Talmud.) Aristotle's concept was that only the male has seed, and that the purpose of the seed is to give the accumulating menstrual blood form. The blood was the matter and seed gave it form.

Jump start to the 17th century, when Van Leeuwenhoek invented the microscope and shortly afterwards described sperm. Interestingly, his drawings depicted a little person inside the head of each sperm, giving legitimacy to the "homonculus" theory of conception, in which the entire fetus was thought to be contained in the head of the sperm. At about the same time, DeGraaf described the ovarian follicle, leading to an opposing view, the "ovist" theory, which proposed that the female seed had such a person inside it.

In the late 1700's, Dr. John Hunter of England was the first to artificially inseminate an infertile couple. The husband had hypospadius (a condition in which semen is emitted in an abnormal direction). His own sperm was used to inseminate his wife. That technique was adopted in New York for a case described in 1866. In 1884, the first donor insemination was performed by Dr. Pancoast at Jefferson Medical College. Having diagnosed a male problem for a couple's infertility, he took — as he later described in his report — the best looking medical student from one of his classes and, unbeknownst to the husband, inseminated the wife with the sperm from this student. Fortunately, the husband — at least according to his report — was happy about the result. (While some rabbis permit donor insemination, most would agree that a woman who does this without the consent of her husband is forbidden to her husband after the event, must divorce him and forfeit the rights of her *ketubah*.)

In 1978 the first child was born from in-vitro fertilization. In 1983, the first successful freezing (cryopreservation) and thawing of a human embryo, which later developed into a child who was born, was described. In 1989, the first description of pre-implantation genetic diagnosis (PGD) was described. This technique is used with in-vitro fertilization in order to insure the health of children born to couples who are carriers for serious genetic diseases, such as Tay Sachs and Cystic Fibrosis. Once the egg is fertilized, it becomes an embryo consisting of two pronuclei, one from the male and the other from the female. This single cell then begins dividing, such that by two days post fertilization there are typically four to eight cells within the shell of the original egg, each called a blastomere. PGD is possible because each of those blastomeres is totipotent, meaning that they each possess the capacity to develop into an entire human being (because the process of cell differentiation has not taken place). In order to perform PGD, a micropipette is used to reach into the embryo and pull out one blastomere, leaving the rest undamaged and free to continue developing. Then, using a technique called the polymerase chain reaction, the genetic material of that one blastomere is amplified sufficiently (millions of copies are in fact produced) to test

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Regenesis is not production, because you are just starting the same individual over again.

whether the genetic compliment of the original embryo is male or female, genetically healthy or not. In the first cases described, researchers were dealing with X-linked inherited diseases (diseases transmitted by the female but only affecting the male offspring), so they used PGD to identify male and female embryos. The males were discarded and only the non-carrier females were implanted. All the girls born were healthy.

In 1993 the first description of embryo cloning was reported. Embryo cloning is similar to what is done in pre-implantation genetic diagnosis. The blastomere is removed and another "host" embryo is taken and emptied of its blastomeres. The blastomere that was extracted is then put inside the emptied host, resulting in a clone of the original embryo. Multiple embryos can be cloned from the original one and they will all grow up into identical fetuses. This is not a technique that has actually been used to produce liveborn humans, but it has been demonstrated to work. It was developed in the first place to enhance the chances that a woman would conceive in a situation where she has only one or two embryos.

Finally, and I think this is what everyone seems to be interested in, is the subject of cloning, which began with a lamb called Dolly. Dolly appeared on the scene in 1997 and the era of cloning, or the possibility of cloning, became a reality. Cloning is a little bit different than all of the in-vitro technologies which we use daily in the course of fertility therapy. To summarize what Dr. Ian Wilmut, who pioneered this technique, actually did: he took a differentiated cell from the mammary gland of a sheep. (Hence the name Dolly - from Dolly Parton. Even scientists have a sense of humor!) He then took an egg from that same sheep and injected into it the nucleus from the mammary cell. The egg began to differentiate, and eventually resulted in an exact copy of the sheep, the lamb he called Dolly.

This cloning technique was an incredible achievement, and it is important to understand the basis for its success. All the cells in our body have the exact same genetic information. If you analyze the chromosomes and the genes from your skin cell, they are the same as those from your liver or your spleen or your brain or your eye. They all have exactly the same genetic component. What makes your eye your eye and your spleen your spleen is the process of "differentiation." When cells mature and differentiate, some of the genes are turned on and some of the genes are turned off. What Dr. Wilmut was able to do was to cause the genetic material in the original adult mammary cell to de-differentiate, i.e. to return to its primitive, totipotential form, and then to turn on again, beginning the process of differentiation completely anew. This is an example of uni- parental reproduction, or what I have called "regenesis." It is not really reproduction in the traditional sense. In traditional reproduction you have the joining of two foreign genetic sources to form a unique individual. Regenesis is not reproduction, because you are just starting the same individual over again; you are not really creating a genetically distinct or new individual.

First Abuses of Reproductive Technologies

Predictably, there are practical problems and ethical issues related to reproductive technologies, and they are not specific to cloning. In the 1980's a doctor by the name of Cecil Jacobson (who is now spending the rest of his life in prison) inseminated scores of his patients with his own sperm. But, that's not all that Dr. Jacobson did. He would inject his patients with hCG, the human pregnancy hormone, and send them home to do a pregnancy test, which of course was always positive. After a brief time of having them believe he had worked a miracle, he would then tell them that they were miscarrying. Sometimes he would do this to the same woman three and four times, or even more. I think we would all agree that he is just where he belongs.

But certainly, the first widespread and publicized instance of abuse of advance reproductive technology was in 1995, by Ricardo Asch, a pioneer of the GIFT procedure. GIFT stands for Gamete Intra-Fallopian Transfer and was developed by Dr. Asch as a spin-off technology of in-vitro fertilization. With GIFT, the woman is prepared in the same way as for in-vitro fertilization, meaning she is given medications to make the ovaries develop many eggs. The eggs are removed vaginally using the usual, ultrasound guided technique but, instead of being fertilized in-vitro in the laboratory, they are mixed in culture medium with sperm and injected directly into the tube using a laproscopic technique. The success rates for GIFT are actually quite high, largely because the tube is where fertilization normally takes place. Of course it presumes that the sperm are functioning normally and that the woman has functional fallopian tubes, both of which, when absent, are the main indications for in-vitro fertilization. But when patients meet these criteria and undergo GIFT, the

Rabbi Irving Breitowitz discusses the ethical issues surrounding organ transplantation at the Eighth International Conference on Judaism and Medicine held at Rockefeller University in New York City.

success rate is high. Unfortunately, Dr. Asch's clinic was shut down because there were some abuses in the laboratory. Investigators found that he used eggs from women who were not consenting donors and implanted them in other women who were not consenting recipients. Dr. Asch is now living (and working) abroad, a fugitive from the United States.

That same year, a couple in Holland underwent in-vitro fertilization and gave birth to twins, one black and one white. They lived in a rural part of Holland and nobody in the community knew that they had had fertility problems. Her community shunned her for quite some time, assuming that her twins were the result of an aberrant sexual relationship. As it turned out, another couple who was passing through from the West Indies underwent in-vitro fertilization on just the same day that she had been in the clinic. As reported, one of the pipettes that was used for both in-vitro procedures had not been washed thoroughly, explaining how a sperm from the black man ended up fertilizing the Dutch woman's egg. She ended up with one baby that belonged to her and her husband as a couple and one baby that belonged to her and this other man. Interestingly, had the other man not been black, it is unlikely that anyone would have known that this accident had occurred.

Halakhic Responses to Reproductive Technologies

Some of the early rabbinic writings on the subject indicate a vehement opposition to the use of reproductive technologies precisely because the rabbis who wrote them could not completely trust the doctors involved. And now, unfortunately, we have documented instances of intentional, systematic abuse. Today, the issue of hashgacha, of supervision in the fertility laboratory, has become more and more an item of concern because the worries articulated in those original rabbinic writings have unfortunately been realized. It is an issue that medical specialists and the patients who seek their care need to deal with on a very regular basis.

Halakha does not recognize individual reproductive rights. Something is either halakhicly permissible or it is not. The problems of reproduction and Halakha have come home to roost even in my own practice. For example, in 1987, a couple in my practice conceived quadruplets. This pregnancy clearly posed a danger not only to the mother but also to her fetuses. There was no way that this woman, who was very petite, was going to be able to carry four babies to term. The thing that I worried most about was not that she was going to miscarry the pregnancy, although that was the most likely thing to happen, but that she would deliver very prematurely and have four damaged children to care for. *She'eylot* (questions) were sent to several respected rabbis asking for opinions about whether or not we could reduce the pregnancy to twins. The answer was that this was allowable halakhicly. The basis for this decision is the concept of the *rodef*. A *rodef* is someone who is running after another person and intending to kill him. Halakha permits killing of the *rodef*. In the case at hand, each fetus was considered a *rodef* to the others, and therefore could be killed to save the others.

Simultaneously, it came to light that it is better if the reduction is performed before 40 days. Before this time, the fetus is not formed and has the halakhic status of *maya b'alma*, or mere water. Unfortunately, technology has developed in such a way that doctors who perform pregnancy reduction prefer to do it when the gestation is a little bit more advanced. This is because at the later stage they can use ultrasound to make sure that they do not kill a normal fetus and leave behind ones with anomalies. Of course, most of the time they see that the four or five fetuses are all normal, and then it becomes a random selection.

This responsum to our *she'eyla* also engendered a specific halakhic approach to human embryos. As already mentioned, the Talmud states that before 40 days the embryo is considered mere water. This does not mean that the embryo prior to implantation has no halakhic status — it must be treated with respect because it is a potential human being. But before it is implanted, it does not have the halakhic status of a true human being. It is therefore permissible to dispose of undesired embryos. Last year, in Great Britain, a public controversy developed when, according to the law of the land, thousands of unclaimed embryos were

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destroyed. Although a most unpleasant thought, this law would not be in conflict with Halakha.

The use of donors to initiate a pregnancy is a controversial halakhic issue. With regard to donor sperm, the limits of the discussion are defined by the late Torah giant, Rabbi Moshe Feinstein, and the late Satmar Rebbe, Rabbi Moshe Teitelbaum. Rav Moshe had been presented with a woman who was overwhelmed with her infertility. At the time, there were no options for this woman to conceive other than by using donor sperm. He allowed the involved couple to use donor sperm, provided that the donor was a non-Jew. If this procedure is performed, the sperm donor is the actual biological father but he is not the halakhic father because a non-Jew cannot have that status. Since the baby's mother is Jewish, the baby is Jewish for all intents and purposes.

The use of donors to initiate a pregnancy is a ntroversial halakhic issue

On the other end of the spectrum, Rabbi Teitelbaum held that not only was donor insemination impermissible, but that if it was performed, whether the donor was a Jew or a non-Jew, the child was considered illegitimate. According to his opinion, physical contact by the woman with sperm that is not from her husband constitutes an illicit relationship, and the woman is therefore guilty of adultery.

Dr. Richard Grazi discusses the advances and ethical problems of infertility treatment and cloning in his session Reinventing Reproduction

Even according to those who permit the use of a sperm donor, the birth of such a child does not fulfill the biblical requirement of the husband to have children. The Halakha only recognizes that a man's offspring from his seed can be his halakhic child. Even if his wife bears 10 children using a donor, he does not fulfill the Commandment of *P'ru U'revu* (be fruitful and multiply). He does, of course, fulfill a certain act of chesed (loving kindness) by bringing up the child and by adopting the child into his family.

The other side of the issue is egg donation. Egg donation is a little bit different than sperm donation, in that providing sperm is the only act that the man performs in reproduction. There is no separation between the sexual part and being the father. For the woman, however, there is an act that goes beyond providing the egg, which is gestating and then giving birth to the child. The predominant view seems to be that the birth mother is the halakhic mother. However, there are some dissenting opinions. There is the suspicion that perhaps the egg donor is also the halakhic mother and that there can be a dual halakhic maternal status. Rabbi Elyashiv, a leading Torah sage living in Israel, does not permit it. Nevertheless, people do come in with permissible rulings from their local *posek*, or rabbinical authority. And, when they do, the question is whether to use a Jewish donor or a non-Jewish donor. I have again heard opinions on both sides. The reason for using a non-Jewish donor is because, by doing so, one virtually excludes the possibility of incest in future generations. There is no concern about conversion because the woman giving birth to the baby is herself Jewish. On the other hand there is the discomfort with the concern that the egg donor might be the halakhic mother. Therefore, some authorities feel that if this technique is used, the baby needs to undergo conversion.

Curiously, if one holds that the gestational mother is the only halakhic mother, then it is irrelevant whether the egg donor is a Jew or a non-Jew. It doesn't matter since there is no halakhic relationship with the donor. Therefore, even if the donor had a child who married the genetic child, it would not be considered incestuous because all of the halakhic bonds have been severed. An extreme view would even hold that a sister could therefore be used as the egg donor.

For those rabbis who reject the use of third party donors, perhaps the use of cloning is the answer. The man who has no sperm at all would be an example of someone needing to make use of cloning. Instead of using a donor, he would be able to have himself cloned. To do so, the doctor would take a cell from any part of the sterile man's body and put the DNA from that cell into his wife's egg. They can then have a baby without using a donor. Conversely, a woman with no egg could use the genetic material from one of her own cells in conjunction with an enucleated egg from a donor, host egg.[1]

While human cloning may eventually pose a halakhic solution for some people, it does not, as I see it, fall into the category of reproduction. It falls into the category of "regenesis". From what I have

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[1] *For an interesting discussion of cloning, see Broyde, M., Cloning People: A Jewish Law Analysis of the Issue, Connecticut Law review, Vol. 30, No. 2, 1998*

10TH ANNIVERSARY CONFERENCE

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learned from dealing with infertile couples for the last 15 years, regenesis is not what they want. They do not want a xerox copy of themselves. They want to see the product of their union, a new creature formed from two people — a child who is an expression of their love. So, regardless of whether cloning may or not be halakhicly permissible, it does not seem to me to be a viable reproductive option for the vast majority of infertile couples.

Summary

In summary, some Jewish opinions consider third party sperm donation to be actual adultery. Both third party sperm donation and egg donation raise questions of Jewish legal parenthood and therefore of the lineage of the resulting child. For the worldwide Jewish community, third party egg or sperm donations pose very serious problems for marriage and community life. It would be useful for a consensus to develop within the halakhic community regarding the use of these and other developing reproductive technologies.

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