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## Ethical Issues in In Vitro Fertilization

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SCOPE

It has been ten years since the birth of Louise Brown, the world's first "test tube" baby, generated in England with the assistance of Drs. Patrick Steptoe and Robert Edwards. It is estimated that by the end of 1988, more than 12,000 babies will have been born worldwide using the medical technique called in vitro fertilization (IVF). The original fear that babies fertilized in vitro would be abnormal has not been substantiated by the early statistics and concerns now center on the complex philosophical, religious, legal and social issues surrounding the use of assisted reproduction.

With trends in the United States toward more women working, later marriages and delayed child bearing, more couples desiring children are discovering that they cannot conceive naturally. In 1982 the National Center for Health Statistics estimated that 8.5% of married couples of childbearing age in the United States (2.4 million) were infertile (U.S. ... INFERTILITY..., p.9). As IVF becomes more successful, more accessible, and perhaps less expensive, more couples will consider the option of initiating pregnancy through the use of this new technology.

NOTE

In the simplest case, a woman is given a course of hormone treatments to cause her ovaries to produce multiple eggs. The eggs are surgically removed just prior to ovulation, either under general anesthesia through the abdomen (laparoscopy) or under local anesthesia through the wall of the vagina (transvaginal retrieval). They are then placed in a culture dish with the father's sperm. During the next few days, the dish is periodically examined to see if fertilization has occurred.

In approximately 48 hours, when the embryos reach the eight-cell stage, those that appear healthy and that are growing normally are transferred into the uterus, where, it is hoped, some will implant and develop full term. A woman may have to undergo several treatment cycles before she becomes pregnant. (Gamete Intrafallopian Transfer (GIFT) is a variation of IVF, in which the sperm and eggs are not combined outside the body in a culture dish; in the Scope Note, we will concern ourselves only with IVF procedures where fertilization takes place *outside* the body.)

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Current success rates vary; some clinics report pregnancy rates as high as 25% per treatment cycle (American Fertility Society, p. 4), though half of the 169 IVF clinics in the United States have never had a pregnancy. A criticism leveled at some IVF providers is that the clinics are misleading infertile couples by not adequately informing patients of their chances of actually bringing a baby home from the hospital (Blackwell, p.10); others defend IVF providers by stating that the success rate in natural conception is not dramatically different from that achieved by the IVF clinics. Some of this confusion can be attributed to the fact that many clinics report their success rates in terms of pregnancies established, while patients are concerned with live, healthy babies.

In more complex permutations of in vitro fertilization, third parties (known or unknown to the couple) become involved in the reproductive process. It is now technically possible to use donated sperm, donated eggs, and donated embryos. Surrogate motherhood employs a “borrowed” uterus; one woman carries a fetus for another infertile woman and then gives the child up after birth (See Scope Note 6 in this series). In the future it may even be possible to use an artificial uterus and to bring an infant to term completely outside of the womb. While some argue that even “simple” IVF is objectionable, these variations on the simplest form of in vitro fertilization raise additional ethical questions.

At a basic level, some believe that society should not allow any of the reproductive technologies (artificial insemination, surrogate motherhood, sex preselection, in vitro fertilization, etc.) because they separate the conjugal act from the procreative act. This is seen as both unnatural and a threat to the unity of the family and the dignity of the human person (Congregation..., p.5).

Others would argue that the world is already overpopulated, and that those unfortunate couples not able to conceive naturally should adopt a child rather than struggle to conceive their own biological child. A related question is whether it is right to expend the significant economic resources required to create just one child through IVF when our health care resources are already overburdened.

As with many other new or exotic medical procedures, there are questions about the fair allocation of resources and the selection of patients for the IVF program. Most IVF programs and the professional societies dealing with the reproductive technologies approve the use of IVF services for married couples, and some accept unmarried heterosexual couples who have established lasting and stable relationships. The availability of IVF to lesbian couples and single women is much more restricted (Walters (1987), p.6). Other women may be rejected from IVF programs because they are too old, because they already have children, or because they are unable to pay for the procedure.

In vitro fertilization is an expensive process. In 1987, the total expenditure on IVF was estimated at \$66 million for the United States alone (U.S. ..., INFERTILITY..., p.9) The current price for one treatment cycle varies, but the average cost is \$5,000. It may be necessary for a woman to undergo several treatment cycles before conceiving a child, and to bear the significant expense of the treatment as well as forego any income that she might be earning were she not receiving treatment. Currently, there are only five states where a health insurance company is required to pay for infertility treatment (Arkansas, Hawaii, Maryland, Massachusetts and Texas). Though the trend is toward more insurers paying, most companies will not reimburse subscribers for IVF services because they are still considered an “experimental” procedure. Thus, at the moment, IVF is largely limited to those who are affluent enough to be able to pay for the service themselves.

At a more specific level, there are ethical quandaries surrounding the retrieval of the eggs, and their subsequent treatment. The doctors involved in the IVF procedure must strike a delicate balance between retrieving and fertilizing enough eggs to establish a pregnancy, but not implanting so many preembryos that they are faced with a high occurrence of multiple pregnancies; these usually result in low birth weight babies, which have a statistically higher risk of neonatal problems and death. When doctors do have too many fertilized embryos to transfer back to the mother, they must decide what to do with the “spare embryos.” There are several possible alternatives: 1) discard them; 2) donate them to a recipient who is either unable to produce eggs, or whose genetic background makes it inadvisable for her to use her own egg, 3) freeze the embryos for later transfer, should no pregnancy occur in the current cycle; or 4) donate the embryos to a research project. All of these options have stimulated the debate on the significance of the human embryo.

For some people involved in IVF, the decision to discard a spare embryo is a pragmatic one; the embryos discarded are usually those that are not developing properly in the culture dish, and thus may not be healthy enough to implant themselves

if they were transferred to the womb. The early disposal of these embryos is merely carrying out what nature would probably do herself. For others, the moral significance of the embryo is much too important to permit its disposal.

The opportunity to donate one's spare embryo to another couple is frequently attractive to couples involved with in vitro fertilization. These couples have undoubtedly undergone a great deal of difficulty and emotional stress before they ever reached the stage of having extra embryos themselves, and the chance to help similarly unfortunate couples is often welcomed. Critics of such embryo donation programs point to the difficulties experienced by adopted children and their parents. The uncertainties of the genetic backgrounds of the donors and potential custody controversies are enough to deter some who might consider accepting a donated embryo.

Freezing of "spare" embryos is attractive to patients and IVF clinicians for a number of reasons. It offers an opportunity to save embryos for subsequent transfer into the mother, should the first implantation attempt fail. This saves the mother the financial expense and the physical and emotional strain of a second laparoscopy procedure, and gives the IVF team a better chance of achieving a pregnancy. Yet the freezing of human embryos has its detractors. The effects of freezing are not known. A few children have been conceived using frozen embryos, and they appear to be normal, but to date, there are so few children that the safety of freezing is unknown. As the techniques are still in the developmental stage, it is argued that the human embryo is being subjected to a high risk procedure with unknown outcome and without being able to consent to its own treatment. It is argued that life is too precious to endanger in such a way. Some embryos do fail to develop after being thawed, but supporters of freezing believe that those embryos are probably the weakest, and would be unlikely to implant themselves even in the natural reproductive process.

The option to donate an embryo to research has some of the appeal to IVF couples of embryo donation to a third party. Donating an embryo to

research provides the hope of learning more about the reproductive process, and thus perhaps preventing future couples from remaining childless. The aim of such research is usually to improve our understanding of early human reproduction (and perhaps to improve our success rates with the reproductive technologies) or to study genetic or chromosomal problems. Donating the embryo to research provides the hope of contributing to new knowledge about the reproductive process, and thus perhaps helping couples in the future to overcome infertility.

In all of the above options, the moral status of the embryo causes concern. Some have argued that the human embryo is the moral equivalent of a human adult or child, and as such, is due the utmost respect. It should never be handled or manipulated outside the body, and should never be subjected to research. Some think that the embryo should only be manipulated if the procedure will directly benefit the embryo itself.

Others who are willing to allow IVF in some circumstances would require that all embryos that are fertilized and growing properly should be transferred into the mother; freezing and embryo donation are not morally acceptable because of their experimental status, and, for these people, disposing of spare embryos is also unacceptable. Still others argue that the very early human embryo is not morally equivalent to a human being, and that it is therefore acceptable to freeze the embryo or to perform limited research and to study the embryo until it reaches a later stage of development, perhaps 14 days after fertilization. It is argued that the value of the knowledge to be gleaned from this research, carried out in a respectful and closely monitored manner, outweighs our concerns about the moral status of the human embryo.

Legal concerns about IVF include the ownership and status of the embryo in the event of divorce or death. Some IVF clinics are now requiring potential parents to make specific decisions regarding such matters before they undergo IVF treatment. For example, parents need to decide if they would like their "orphan embryo" to be thawed and implanted in another person (perhaps a relative),

donated to research, or simply disposed of. There is one court case where a couple sued the hospital where their IVF procedure took place after a doctor allegedly disposed of an embryo he judged to be unsuitable for implantation (*Del Zio v. Presbyterian Hospital* (1978), U.S. District Court, Southern District, New York). Additional issues relate to the paternity of a child created with donated sperm, or a donated egg or embryo, and whether there is, in fact, a constitutional right to reproduce.

IVF technology has so many potential applications that the “slippery slope” argument has frequently been used as a justification to challenge its use. Most people would agree that using IVF to produce a generation of identical super warriors would be an inappropriate and undesirable application of this medical technology. Yet, if we allow IVF in its “basic” form, what other more complex permutations of the technology should be legal? Should we allow couples to implant only male preembryos and to discard female preembryos? If early embryos may be manipulated in a laboratory, and subject to experimentation, what kinds of manipulation are permissible and which are not?

Ethics committees and government agencies and commissions continue to play important roles in developing public policy and regulations regarding IVF and research on human embryos. Agencies and commissions in Great Britain, Australia, Canada and the United States have all studied the issues and made different recommendations (see section below). The Ethics Advisory Board of the U.S. Department of Health, Education and Welfare recommended in 1979 that “basic” IVF was morally acceptable, but to date, the United States government has been very slow to adopt guidelines or to generate laws or regulations. Eight years after the first Ethics Advisory Board was disbanded, a proposal has been made to establish a new Ethics Advisory Board that would provide advice to the Secretary of the Department of Health and Human Services on ethical issues in health care and biomedical research, including IVF, but at this time, it is impossible to predict the impact of such a committee.

## Committee Statements

American College of Obstetricians and Gynecologists. Committee on Ethics. **ETHICAL ISSUES IN HUMAN IN VITRO FERTILIZATION AND EMBRYO PLACEMENT. COMMITTEE STATEMENT.** July 1986. 4 p. (Available from ACOG, 409 12th Street S.W., Washington, D.C. 20024, 202-638-5577.)

ACOG approves the use of IVF and embryo placement provided that husband and wife participate and no embryos are frozen. Concerns are raised over the optimum number of eggs to be retrieved and fertilized (and the subsequent status of surplus embryos, should early IVF procedures result in a pregnancy). The statement supports insurance coverage for IVF procedures and allows single women to be considered for IVF. Provisional approval is given to freezing of embryos, embryo donation, early gender selection (to avoid sex-linked disorders) and “embryonic biopsies” as a type of prenatal diagnosis. The use of human embryos for laboratory research is advocated, provided that the research is guided by ethical standards and is subject to peer review.

American Fertility Society. Ethics Committee. **Ethical Considerations of the New Reproductive Technologies.** *Fertility and Sterility* 46(3), Suppl. 1: 1s-94s. September 1986.

The Committee finds “basic” IVF ethically acceptable. Also conditionally accepted were the use of donor sperm, donor eggs and donated preembryos. Uterine lavage, freezing of sperm, eggs and embryos and surrogacy were also discussed, but there were enough concerns about the practices that it recommends that they be pursued only as clinical experiments. A 14-day limit is recommended for human embryo research.

Australia. New South Wales. Law Reform Commission. **ARTIFICIAL CONCEPTION, REPORT 2: IN VITRO FERTILIZATION.** Sidney, Australia: The Commission, July 1988. 175 p.

In a proposal for establishing less stringent embryo research guidelines than those of neighboring Victoria, the New South Wales Law

Reform Commission recommends a 14-day limit on research on human embryos. This longer time period is supported by the Commission as a way to bolster experiments that might improve the success rates of IVF. The Commission takes the stance that embryos need not be given the full rights of a human being. The Commission also recommends banning cloning and cross-species fertilization and states that an embryo should not be used, dealt with or disposed of without the consent of the couple for whom the ovum was fertilized.

Australia. Victoria. Committee to Consider the Social, Ethical and Legal Issues Arising from In Vitro Fertilization (Chairman: Louis Waller). **REPORT ON DONOR GAMETES IN IVF** (August 1983); **REPORT ON THE DISPOSITION OF EMBRYOS PRODUCED BY IN VITRO FERTILIZATION** (August 1984). 63 and 88 p., respectively.

The Waller Commission accepts “basic” IVF for married couples and permits the freezing of embryos. A five-year limit is placed on the storage of embryos and embryo disposal is permitted. Some embryo research is condoned, within a 14-day time frame, but no embryos are to be created solely for research purposes.

Canada. Ontario Law Reform Commission. **REPORT ON HUMAN ARTIFICIAL REPRODUCTION AND RELATED MATTERS**. Ontario, Canada: The Commission, 1985. 2vols.

Artificial conception technologies, including IVF and *in vivo* fertilization followed by lavage, should continue to be made available in Ontario. Single women should receive treatment. Also covered in the report were informed consent, selection for treatment, commercial aspects of the technologies, gamete banks, legal mother and father, and confidentiality of medical records. Specifically relating to IVF were recommendations regarding the transfer of eggs, fertilized ovum research (within a 14-day limit), freezing of spare embryos and the status of orphan embryos.

Congregation for the Doctrine of the Faith. **INSTRUCTION ON RESPECT FOR HUMAN LIFE IN ITS ORIGIN AND ON THE DIG-**

**NITY OF PROCREATION: REPLIES TO CERTAIN QUESTIONS OF THE DAY**. Vatican City: The Congregation, February 22, 1987. (Reprinted in the *New York Times*, March 11, 1987: A14-A17.)

The Vatican rejects the use of IVF because “...The gift of life must be actualized in marriage through the specific and exclusive acts of husband and wife....” Thus the interference of the physician or a donor in the procreative process is morally illicit. Also rejected are using live embryos for commercial or experimental purposes, freezing embryos, artificial insemination for unmarried women, and surrogate motherhood.

Great Britain. Department of Health and Social Security. Committee of Inquiry into Human Fertilisation and Embryology. (Chair: Dame Mary Warnock). **REPORT OF THE COMMITTEE OF INQUIRY INTO HUMAN FERTILISATION AND EMBRYOLOGY**. London: Her Majesty’s Stationery Office, 1984. 103 p. (Also available in the United States as: Warnock, Mary. **A QUESTION OF LIFE: THE WARNOCK REPORT ON HUMAN FERTILISATION AND EMBRYOLOGY**. New York: Basil Blackwell, 1985. 110 p.)

The Warnock Committee was established to study issues of reproduction and embryology and to make recommendations for future British legislation. Suggestions include creating a Licensing Authority to regulate and monitor research and infertility services. Other topics include basic IVF; sperm, egg and embryo donation; informed consent of participants; disposal of embryos; and freezing sperm, eggs and embryos. A 14-day limit is suggested for study of human embryos.

U.S. Department of Health, Education and Welfare. Ethics Advisory Board. **REPORT AND CONCLUSIONS: SUPPORT OF RESEARCH INVOLVING HUMAN IN VITRO FERTILIZATION AND EMBRYO TRANSFER**; and **APPENDIX**. Washington: Department of Health, Education and Welfare, Ethics Advisory Board, 1979. 114 p. and 766 p., respectively.

The Ethics Advisory Board concluded that the conduct of research pertaining to IVF was

ethically acceptable and that a model statute should be drafted to define the rights of IVF donors, offspring, parents and professionals. This report was never accepted by any Secretary of the Department of Health, Education and Welfare, and therefore no funding has ever been granted nor any legislation drafted. This Ethics Advisory Board was disbanded in 1980; a proposal to establish a new Ethics Advisory Board appeared in the *Federal Register* on September 12, 1988 (pp. 35232-35233).

Walters, LeRoy. **Ethical Issues in Human In Vitro Fertilization and Embryo Transfer.** *In:* Milunsky, Aubrey; Annas, George J., eds. **GENETICS AND THE LAW III.** New York: Plenum Press, 1985: pp. 215-225.

Walters surveys major ethical issues in human IVF and/or embryo transfer both in the clinical and laboratory settings. Six major ethical positions taken by various government or religious committees are identified. The positions range from advocating only natural reproduction to allowing clinical IVF with any kind of embryo research.

Walters, LeRoy. **Ethics and the New Reproductive Technologies: An International Review of Committee Statements.** *Hastings Center Report* 17(3), Special Supplement: 3-9, June 1987.

This overview article summarizes the important points covered by 15 major government committees from eight countries on the topics of in vitro fertilization, surrogate motherhood and human embryo research. A detailed table includes an indication of how each committee voted on several issues relating to IVF's general acceptability, on eligibility and counseling requirements, on freezing or disposal of embryos, and on third party involvement in IVF.

## Legal Aspects

Andrews, Lori B. **Legal and Ethical Aspects of New Reproductive Technologies.** *Clinical Obstetrics and Gynecology* 29(1): 190-204, March 1986.

Attorney Andrews discusses the legal atmosphere in which we make our evaluation of IVF. She briefly outlines the arguments made by the

major committee statements and identifies the U.S. laws that regulate the technologies in 1986. She also addresses the moral issues of potential harm to participants, *i.e.*, parents, children and society as a whole, and concludes that developments in the reproductive technologies need to be carefully monitored.

Annas, George J. **Making Babies Without Sex: The Law and the Profits.** *American Journal of Public Health* 74(12): 1415-1417, December 1984.

Law professor Annas reviews scientific and societal developments in artificial reproduction in the U.S., U.K. and Australia. The author stresses the need for legislation and regulation of the services, the need to define parenthood and the need to create guidelines for clinical practice.

Eccles, Matthew R. **The Uses of In Vitro Fertilization: Is There a Right to Bear or Beget a Child By Any Available Medical Means?** *Pepperdine Law Review* 12(4): 1033-1057, 1985.

The author examines the legal question of whether there is a constitutional right to conceive and bear a child by means of the available reproductive technologies. Eccles weighs the right to have access to IVF against the societal concerns about possible abuses and inappropriate uses.

King, Patricia A. **Reproductive Technologies.** *In:* **BIOLAW**, edited by James F. Childress, et al. Volume 1, 1986. Resource Manual. Frederick, Md.: University Publications of America, 1986: 113-148.

An overview of the reproductive technologies in general and specifically IVF, this article provides a discussion of the legal cases and laws relating to IVF as well as an extensive bibliography. Law professor King highlights the legal climate for the reproductive technologies in Great Britain, Canada, Australia and the U.S.

Quigley, Martin M. and Andrews, Lou B. **Human In Vitro Fertilization and the Law.** *Fertility and Sterility* 42(3): 348-355, September 1984.

A guide to the laws regulating IVF, intended for physicians undertaking the procedure. The

article identifies the legislation that relates to in vitro fertilization and the artificial insemination, paternity, adoption, fetal research, abortion, human experimentation regulations that are also relevant to IVF.

Robertson, John A. **Embryos, Families and Procreative Liberty: The Legal Structure of the New Reproduction.** *Southern California Law Review* 59(5): 942-1041, July 1986.

This article studies the legal rights of persons hoping to have a child by employing one or more of the reproductive technologies. Robertson evaluates the rights of the embryo, the offspring, participants in collaborative reproduction and their families. Concerns are also raised about the commercial aspects of the reproductive technologies and necessary regulation.

Robertson, John A. **Ethical and Legal Issues in Cryopreservation of Human Embryos.** *Fertility and Sterility* 47(3): 371-381, March 1987.

Although still experimental, the freeze-thawing of embryos is likely to prove effective and economical, and will likely be incorporated into the routine IVF procedure. Legal, ethical and policy issues that arise for society, physicians and patients are examined.

Singer, Peter. **Making Laws on Making Babies.** *Hastings Center Report* 15(4): 5-6, August 1985.

A summary of the Infertility (Medical Procedures) Act passed in Victoria, Australia in 1984. Based on the Waller Commission recommendations, the legislation deals with the legality of IVF, experimentation on embryos and surrogacy.

Smith, George P. **Australia's Frozen 'Orphan' Embryos: A Medical, Legal and Ethical Dilemma.** *Journal of Family Law* 24(1): 27-41, 1985-86.

The case of the American couple, Mario and Elsa Rios (who undertook a course of IVF treatment in Australia and were subsequently killed in a plane crash, leaving two unimplanted "orphan" embryos), is examined. Smith outlines the legal setting in which a decision had to be made regarding the disposition of embryos left

without parents or guardians, and without a will to direct the IVF clinic.

## Philosophical Aspects

Brown, Jeremy. **Research on Human Embryos— A Justification.** *Journal of Medical Ethics* 12(4): 201-205, December 1986.

The author provides some common arguments against embryo experimentation and concludes that they are unconvincing arguments. Brown states that the intentional creation of embryos for research is only wrong if one can also conclude that current laws on abortion are also wrong. The author also critiques the Warnock Report and encourages the embryo research debate to broaden its scope and audience.

Caplan, Arthur L. **The Ethics of In Vitro Fertilization.** *Primary Care* 13(2): 241-253, June 1986.

In an overview of the ethical issues surrounding IVF, ethicist Caplan urges more subdued enthusiasm for the procedure and recommends careful oversight and regulation. In particular, the author examines the concept of infertility as a disease, resource allocation and IVF, and the moral status of the embryo.

Gerber, Rona. **In Vitro Fertilization, AID and Embryo Experimentation: Some Moral Considerations.** *Journal of Applied Philosophy* 3(1): 103-109, March 1986.

Gerber addresses the issue of the rights of human embryos created as a by-product of IVF and concludes that their potential to become human beings does not justify our granting them rights equivalent to those of human beings. She also discounts objections to IVF based on the unnaturalness of the procedure.

Grobstein, Clifford; Flower, Michael; and Mendeloff, John. **Frozen Embryos: Policy Issues.** *New England Journal of Medicine* 312(24): 1584-1588, 13 June 1985.

Issues associated with the freezing of embryos are examined, and approaches for resolving them are suggested. Among the issues considered are the risk of inducing abnormalities in the embryo, the social and ethical implications of freezing, and public policy options ranging

from active promotion to stringent government regulation at the federal and/or state levels.

Grobstein, Clifford. **The Moral Uses of 'Spare' Embryos.** *Hastings Center Report* 12(3): 5-6, June 1982.

Biologist Grobstein contends that freezing spare human embryos is not morally different from undertaking IVF itself. At least scientifically, a person, or a multicellular individual does not exist until it reaches the eight-cell stage of division. Thus it is morally licit to freeze an embryo at the two-cell or four-cell stages because they do not bear the moral status of a person.

Ozar, David T. **The Case Against Thawing Unused Frozen Embryos.** *Hastings Center Report* 15(4): 7-12, August 1985.

Studying the case of the American millionaires, the Rioses, who died leaving behind two frozen embryos, Ozar examines the rights of embryos and fetuses, moral obligations owed them, and the value of life. It is concluded that, whether or not one believes that embryos have moral rights, frozen embryos ought to be preserved until they can be implanted or until they are no longer able to survive.

Scarlett, B.F.; Singer, Peter; and Kuhse, Helga. **The Moral Status of Embryos.** *Journal of Medical Ethics* 10(2): 79-81, June 1984.

Scarlett challenges the argument that it is legitimate to destroy excess embryos produced by IVF. There is a difference in potential between an embryo and the gametes (eggs or sperm) that can create an embryo. Even though it is moral to destroy sperm and eggs while they are separate, the embryo should be protected from destruction as soon as it has been created.

Singer, Peter and Dawson, Karen. **IVF Technology and the Argument from Potential.** *Philosophy and Public Affairs* 17(2): 87-104, Spring 1988.

The anti-abortion argument, that the human embryo deserves protection because it has the potential to become a human being, is challenged as an argument against human embryo research.

## Public Policy Aspects

Abramowitz, Susan. **A Stalemate on Test-Tube Baby Research.** *Hastings Center Report* 14(1): 5-9, February 1984.

Although the now-defunct HEW Ethics Advisory Board concluded in 1979 that research on IVF with embryo transfer was ethically acceptable, federal approval and funding was not forthcoming. Arguments over the moral status of the embryo, the danger of abnormal fetuses, and the possibility of undesirable applications of research are the major reasons for delay.

Bonnicksen, Andrea. **Feminist Dimensions of In Vitro Fertilization.** *In: BIOLAW*, Volume II, 1986. Edited by James F. Childress and Ruth Gaare. Frederick, Md.: University Publications of America, November 1986, pp. S31-S36.

Bonnicksen views IVF not only as a medical issue, but as a significant political issue for women as well. She raises the critics' concerns surrounding the physical and emotional costs of IVF, fears of gender selection abuse, and the high-tech nature of IVF and its impact on the natural childbirth movement and on women's liability to produce healthy babies.

Corea, Gena. **THE MOTHER MACHINE: REPRODUCTIVE TECHNOLOGIES FROM ARTIFICIAL INSEMINATION TO ARTIFICIAL WOMBS.** New York: Harper & Row, 1985. 374 p.

Feminist Corea writes of IVF from the viewpoint that many developments in the new reproductive technologies stem from the male-dominated medical establishment's interest in controlling reproduction, and thus, the female body. Part III on IVF provides a history of the progress in the technology, emphasizing the role that women played and their frequent lack of consent to various procedures.

Golombok, Susan and Rust, John. **The Warnock Report and Single Women: What About the Children?** *Journal of Medical Ethics* 12(4): 182-186, December 1986.

Psychologists Golombok and Rust examine the development of children's psycho-sexual identity and the impact this would have on a lesbian

or single woman who wished to use IVF or artificial insemination to conceive a child. They conclude that the Warnock Committee's rationale for rejecting such women from IVF programs is based on irrational fear, rather than on rational thought. The authors do not foresee any special problems for children brought up by single or lesbian mothers.

Gorovitz, Samuel. **Engineering Human Reproduction: A Challenge to Public Policy.** *Journal of Medicine and Philosophy* 10(3): 267-274, August 1985.

New prospects for assisted reproduction require the development of public policy concerning the limits to reproductive autonomy and to research on human embryos. U.S. efforts to clarify policy on such matters have been limited; Gorovitz recommends Congressional action to stimulate debate and policy formation.

Grobstein, Clifford. **SCIENCE AND THE UNBORN.** New York: Basic Books, 1988. 207 p.

Although this book is broader in scope than just the reproductive technologies, Grobstein examines the status of the embryo, and comments on IVF's implications for the fetus. The author combines scientific, ethical and public policy theory to discuss the controversy of the status and treatment of the unborn.

Singer, Peter and Wells, Deane. **MAKING BABIES: THE NEW SCIENCE AND ETHICS OF CONCEPTION.** New York: Charles Scribner & Sons, 1985. 245 p.

After describing the techniques and applications of some of the new reproductive technologies, the authors raise concerns regarding the rights of the embryo, the risks involved in IVF, and issues of resource allocation and access to the new technologies. One appendix includes a survey of IVF patients and their attitudes to ethical issues.

Uniacke, Suzanne. **In Vitro Fertilization and the Right to Reproduce.** *Bioethics* 1(3): 241-254, July 1987.

The assumption that people have a right to have children is considered in relation to the question of whether society has an obligation to allocate

resources to make clinical IVF available, at least to married couples where the woman is infertile and the couple provides the sperm and the egg.

United States. Congress. House. Committee on Science and Technology. Subcommittee on Investigations and Oversight. **HUMAN EMBRYO TRANSFER.** Washington: U.S. Government Printing Office, 1985. (Hearings held August 8, 9, 1984.) 371 p.

In testimony before a Congressional subcommittee, a number of doctors, lawyers, theologians, philosophers and patients provide their perspectives of the ethical dilemmas surrounding IVF and other reproductive technologies, specifically focusing on legal and public policy concerns.

United States. Congress. Office of Technology Assessment. **INFERTILITY: MEDICAL AND SOCIAL CHOICES.** Washington: U.S. Government Printing Office, May 1988. 402 p.

A compilation of facts, figures and perspectives on infertility and infertility services in the United States. Includes information on the demography, prevention, diagnosis and treatment of infertility, as well as details on expense and insurance coverage of infertility services. Appendices include pertinent fetal research laws, international developments, and religious perspectives.

## Religious Aspects

Cahill, Lisa Sowle and McCormick, Richard A. **The Vatican Document on Bioethics.** *America* 156(12): 246-248, 28 March 1987.

While questioning the morality of the reproductive technologies that employ third parties, Cahill challenges the Vatican's refusal to permit married couples to use IVF to overcome infertility. McCormick sees flaws in the Vatican document, centering around the condemnation of reproduction without intercourse and on the "dominance of technology over the origin and destiny of the human person." He suggests that the Instruction be seen as a source of dialog within the Catholic Church.

Johnstone, Brian V. **In Vitro Fertilization and Ethical Dualism.** *Linacre Quarterly* 53(1): 66-79, February 1986.

The author analyzes moral objections to IVF on the grounds that the procedure separates the “love union” (sexual intercourse) from procreation. Using the framework of ethical dualism, Johnstone challenges those who argue that the “ends justify the means” and rejects IVF for its separation of the rational from the spiritual aspects of humanity.

May, William E. **‘Begotten, Not Made’: Further Reflections on the Laboratory Generation of Human Life.** *International Review of Natural Family Planning* 10(1): 1-22, Spring 1986.

Theologian May argues that any act of generating human life that is non-marital is irresponsible and violates the respect due to human life in its generation.

McCormick, Richard A. **Therapy or Tampering? The Ethics of Reproductive Technology.** *America* 53(17): 396-403, 7 December 1985.

Responding to official Catholic doctrine, theologian McCormick argues that not everything that is artificial is unnatural. The author sees IVF “not as a substitute for sexual intimacy, but as a prolongation of it”, and not necessarily a separation of the conjugal and procreative acts.

McDowell, Janet Dickey. **Ethical Considerations of In Vitro Fertilization.** *Christian Century* 100(30): 936-938, 19 October 1983.

The author challenges the Roman Catholic church on its stand against IVF in all forms, but raises concerns that IVF encourages an “obsessive concern with having one’s own child.” McDowell also discusses embryo transfer and embryo and egg banking as outgrowths of standard IVF that pose definite problems for Christians. Embryo transfer makes surrogate motherhood possible, a practice that McDowell rejects because the kinds of relationships necessary to make surrogacy work are not consistent with Christian values. McDowell condemns embryo banking because it purposefully creates a life not desired by

either genetic parent; a couple’s desire to experience pregnancy and birth does not outweigh the likely trauma to the child.

O’Donovan, Oliver. **BEGOTTEN OR MADE?** Oxford: Clarendon Press, 1979. 88 p.

Theologian Donovan discusses IVF in the context of Christianity and advancing medical technologies. The author analyzes the use of donor gametes and IVF to assist infertility and the changing concept of the human person in relation to the debate over human embryo research.

Rosner, Fred. **In Vitro Fertilization and Surrogate Motherhood: The Jewish View.** *Journal of Religion and Health* 22(2): 139-160, Summer 1983.

Rosner discusses IVF in the context of the two Jewish principles that life is of infinite value and that human beings are holy and must be treated with dignity and respect in life and death. While Jewish laws do not prohibit IVF, they do require careful attention be paid to potential benefits and risks of “tampering with the very essence of life.”

Schenker, Joseph G. **Jewish and Moslem Aspects on In Vitro Fertilization and Embryo Transfer.** *Annals of the New York Academy of Sciences* 442: 601-607, 28 May 1985.

An overview of Jewish and Moslem views of IVF, artificial insemination, surrogate motherhood and embryo and oocyte donation. The author outlines the religious laws governing both faiths and the grounds for either rejecting or supporting reproductive technologies.

Tiefel, Hans O. **Human In Vitro Fertilization: A Conservative View.** *Journal of the American Medical Association* 247(23): 3235-3242, 18 June 1982.

Tiefel contends that the unknown risks and uncertainties associated with IVF, and the infant’s inability to grant informed consent to its own creation make the procedure immoral. Every child is owed a fair chance at physical and mental health, which requires that parents should not take chances with the health of their child- to-be. Also included is the relationship

between abortion and IVF, freezing of embryos, non-therapeutic research on embryos and public policy regarding the use of federal funds for IVF research.

## Additional Readings

American Fertility Society. Ethics Committee. **Ethical Considerations of the New Reproductive Technologies in the Light of the Instruction on Respect for Human Life in Its Origin and on the Dignity of Procreation Issued by the Congregation for the Doctrine of the Faith.** *Fertility and Sterility* 49(2), Supplement 1, February 1988. 7 p.

Blackwell, Richard E. **Are We Exploiting the Infertile Couple?** *Fertility and Sterility* 48(5): 735-739, November 1987.

Brahams, Diana. **Warnock Report on Human Fertilisation and Embryology.** *LANCET* 2(8396): 238-238, 28 July 1984.

Brandes, Joseph M., *et al.* **Reduction in the Number of Embryos in a Multiple Pregnancy Quintuplet to Triplet.** *Fertility and Sterility* 48(2): 326-327, August 1987.

Brown, John and Brown, Lesley. **OUR MIRACLE CALLED LOUISE: A PARENTS' STORY.** New York: Paddington Press, 1979. 188 p.

Fertility Society of Australia. National Perinatal Statistics Unit. **IVF AND GIFT PREGNANCIES: AUSTRALIA AND NEW ZEALAND, 1986.** Sidney, Australia: The Society, November 1987.

Flynn, Eileen P. **HUMAN FERTILIZATION IN VITRO: A CATHOLIC MORAL PERSPECTIVE.** Lanham, Md.: University Press of America, 1984. 189 p.

Greenfield, Dorothy and Haseltine, Florence. **Candidate Selection and Psychosocial Considerations of In Vitro Fertilization Procedures.** *Clinics in Obstetrics and Gynecology* 29(1): 119-126, March 1986.

Grobstein, Clifford. **FROM CHANCE TO PURPOSE: AN APPRAISAL OF EXTERNAL HUMAN FERTILIZATION.** Reading, Mass.: Addison-Wesley, 1981. 207 p.

Harris, John. **In Vitro Fertilization: The Ethical Issues.** *Philosophical Quarterly* 33(132): 217-237, July 1983.

Henahan, John F. **Fertilization, Embryo Transfer Procedures Raise Many Questions.** *Journal of the American Medical Association* 252(7): 877-879, 882, 17 August 1984.

Iglesias, Teresa. **In Vitro Fertilisation: The Major Issues.** *Journal of Medical Ethics* 10(1): 32-37, March 1984.

**In Vitro Fertilization/Embryo Transfer in the United States: 1985 and 1986 Results from the National IVF/ET Registry.** *Fertility and Sterility* 49(2): 212-215, February 1988.

Jones, Howard W., *et al.* **IN VITRO FERTILIZATION: NORFOLK.** Baltimore: Williams and Wilkins, 1986. 319 p.

Lejeune, Jerome; Ramsey, Paul; and Wright, Gerard. **THE QUESTION OF IN VITRO FERTILIZATION: STUDIES IN MEDICINE, LAW AND ETHICS.** London: Society for the Protection of Unborn Children (SPUC) Educational Trust, 1984. 88 p.

McCarthy, Jeremiah J. **In Vitro Technology: A Threat to the Covenant.** *HEALTH PROGRESS* 68(2): 44-48, March 1987.

McCormick, Richard A. **Ethics of Reproductive Technology AFS Recommendations, Dissent.** *Health Progress* 68(2): 33-37, March 1987.

Mitchell, G.D. and Singer, Peter. **In Vitro Fertilisation: The Major Issues.** *Journal of Medical Ethics* 9(4): 196-199, December 1983.

Robertson, John A. **Embryo Research.** *University of Western Ontario Law Review* 24(1): 15-37, 1986.

Singer, Peter and Wells, Deane. **In Vitro Fertilisation: The Major Issues.** *Journal of Medical Ethics* 9(4): 192-195, December 1983.

Soules, Michael R. **The In Vitro Fertilization Rate: Let's Be Honest With One Another.** Editorial. *Fertility and Sterility* 43(4): 511-513, April 1985.

Stack, Mary F. **Who Should Pay For Infertility?** *Hastings Center Report* 17(6): 3-4, December 1987.

Tendler, Moshe D. **In Vitro Fertilization and Extrauterine Pregnancy ('Test Tube Baby'): Rabbinic Comment.** *Mount Sinai Journal of Medicine* 51(1): 7-11, January-February 1984.

Van de Weghe, Bart. **Waller, Warnock and Roe v. Wade: Variations on the Status of the Orphan Embryo Comment.** *Journal of Contemporary Health Law and Policy* 2: 231-254, Spring 1986.

Walters, LeRoy. **Human In Vitro Fertilization: A Review of the Literature.** *Hastings Center*

*Report* 9(4): 23-43, August 1979.

Zaner, Richard M. **A Criticism of Moral Conservatism's View of In Vitro Fertilization and Embryo Transfer.** *Perspectives in Biology and Medicine* 27(2): 200-212, Winter 1984.

*SCOPE NOTE 10* was prepared by Mary Carrington Coutts, who is a reference librarian at the National Reference Center for Bioethics Literature. Please feel free to contact the National Reference Center for additional information.

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