

The Ethics of *In Vitro* Fertilization

DR. J.G. LESLIE

Children are a wonderful blessing from God. They teach us much about God's love for us and our covenant relationship with Him through Jesus Christ. Psalm 127:3 says "Behold children are a gift of the Lord, the fruit of the womb is a reward."

Probably most people would say there are limits to the way a child can be obtained, that, for example, the buying and selling of children is not acceptable. Scientists have recently come up with several new techniques that offer alternative ways of obtaining children. Among these are *In Vitro* Fertilization (IVF), Artificial Insemination by Father or Donor (AIH or AID), and Surrogate Motherhood. These techniques are part of a broader class of procedures available for the manipulation of the life of man. Some of these other procedures are contraception, sterilization, abortion, infanticide, suicide, euthanasia, genetic engineering, and cloning. Is IVF an acceptable procedure for obtaining a child?

THE CONTROLLED OVULATORY CYCLE

IVF involves fertilization outside the body (*in vitro* means in glass, and hence the term "test tube" baby). With this technique, a human sperm and egg are united in the act of procreation outside the human body. After the fertilized oocyte (egg) has divided several times (now an embryo), it is placed into the womb (uterus) of a woman.

The most commonly used procedure is called the "controlled ovulatory cycle".¹ In this procedure candidates are given either clomiphene citrate or human menopausal gonadotrophin, but sometimes both. Treatment starts on day 5 after the start of menstruation and continues for about 4 days. These drugs artificially stimulate the production of follicles. Human chorionic gonadotrophin, which matures the follicles, is then injected intramuscularly on day 12, 13 or 14 and the oocytes are collected 35-36 hours later by aspiration with the aid of laparoscopy (Figure 1), or ultrasound.²

The oocytes are then incubated in media at 37°C for 5-6 hours to complete maturation. Semen, containing 10⁴-10⁵ sperm/ml, is added to the oocyte(s). Sperm penetration of the oocyte(s) occurs at about

3-6 hours after addition, and pronuclei form by 12 hours. The two nuclei fuse at about 24 hours, and the DNA mixes. The newly formed cell divides at 30 hours, whereupon the embryo reaches the blastocyst stage. Between 96 and 140 hours after addition of the semen to the oocyte(s), the embryo is implanted in the uterus. The pregnancy rate of transferred embryos is about 15-20%³, but only about 4% live beyond 20 weeks (see Table 1). This is partly due to a high spontaneous abortion rate in IVF (80%⁴, compared to normally 30%⁵) which probably reflects rejection by the body of abnormal embryos.^{4 5}

Table 1. IVF RESULTS (1982)

779	LAPAROSCOPIES
2358	EGGS OBTAINED
1621	EMBRYOS PRODUCED
<hr/>	
369	EMBRYOS DISCARDED AS ABNORMAL
1252	NORMAL EMBRYOS
1200	EMBRYOS TRANSFERRED TO WOMB
16	EMBRYOS ALLOWED TO SUCCOMB
36	EMBRYOS FROZEN IN LIQUID NITROGEN
70	PREGNANCIES DELIVERED OR GREATER THAN 20 WEEKS

"THUS 70 EMBRYOS OUT OF THE 1621 EMBRYOS PRODUCED HAVE SURVIVED, WHICH IS A LOSS RATE OF 96 PER CENT," FROM: N. TONTI-FILIPPINI (1983) HUMANITY, OCTOBER, Pg. 12.

USES FOR IVF

Uses for IVF include both medical and research aims.^{6 7} Among the medical aims are

- treatment for male infertility,
- tubal blockage in the female,
- donation of oocytes or sperm or even embryos (4-32 cell stage) to couples lacking these, and

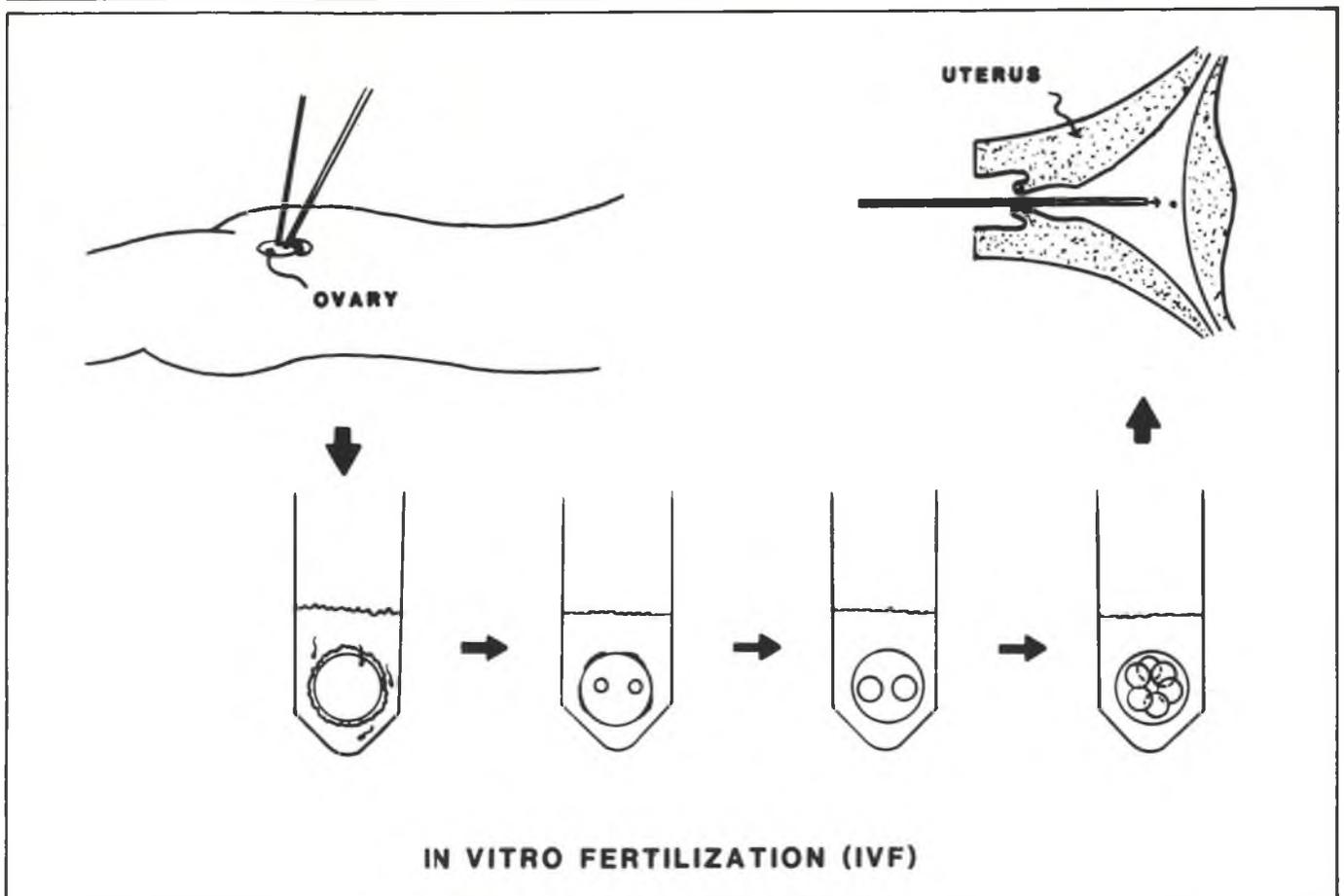


Figure 1. IVF procedure: oocytes (eggs) are removed from the ovary by laparoscopy. They are incubated in vitro (a test tube) until the fertilized oocyte (now an embryo) has divided in the 4-32 cell stage. They are transferred to the uterus using a catheter.

(d) surrogate mothers to bear children for women who cannot themselves bear children.

At the moment IVF is practised in Australia only with married or defacto couples, although a related common procedure, AID, allows the sperm from an unknown donor to be artificially implanted in a woman. Surrogate motherhood has been practised in the United States and other countries as well.

Among the research aims are the use of embryonic and fetal tissue for transplantation. From the time of fertilization to 8 weeks of age, *in utero*, the child is considered an embryo. After 8 weeks of age, *in utero*, it is considered a fetus until birth. Embryonic tissues are thought by some to be less antigenic than adult tissues.⁸ Therefore, it is argued, if an embryo was allowed to develop *in vitro*, it might be possible to transplant parts of embryonic organs like the pancreas into adults having lost the function of the pancreas. Tissues from aborted fetuses are presently being used for this purpose. Further studies using IVF embryos have been proposed to investigate cell differentiation. This simply means that the embryo is allowed to grow to various stages dur-

ing which manipulations, dissections, and experimentation would be done on it, these being similar to studies presently done on animals.⁹ The Waller Report to the Victorian Government¹⁰ has suggested that research be allowed on embryos up to 14 days old. On the other hand, the Australian National Health and Medical Research Council has suggested that it is ethical to experiment on embryos or fetuses under 20 weeks of age and 400 grams of weight.¹¹

To the Christian the uses of IVF should cause immediate concern. This concern can be logically identified in four distinct areas of social reform, namely, scientific, medical, legal and ethical difficulties.

THE MAJOR SCIENTIFIC DIFFICULTY

The major scientific difficulty is that no matter how many animal studies are done using IVF technology, there still has to come the time when the "guinea pigs" are the children born by IVF procedures.

Human experimentation is very difficult to control. As Dr Alan Trounson, a member of an IVF team, has said, "until such time as more data are available

to compare with the rate of abnormalities in spontaneous abortions and natural births, no one can say whether *in vitro* fertilization leads to any increase in abnormal fetuses".⁶ Grobstein, a developmental biologist, in 1983 stated, "In the matter of induced congenital abnormality, there are likewise no certain conclusions. The number of IVF conceptions and births is as yet insufficient to detect statistically a small increment of abnormality above the natural rate."¹² And yet, already over 100 children had been born by the IVF technique. Also, Dr Ruth Hubbard of Harvard has said, "The guinea pigs are the children who are produced, for none of them can we have adequate animal models. . . we cannot know what hazards their production entails until a large enough number of them will have lived out their medical histories".¹³ There is simply no way of really controlling human IVF experimentation except to apply known techniques from animal studies, and then to see what happens. Therefore, does the "end justify the means?"

A second point to be made is that very little is known about the regulation of cell differentiation. The question could be asked, "Do the *in vitro* culture conditions 'mimic' the *in vivo* (within the body) conditions?" The answer is that obviously they do somewhat, because babies have been born. However, they cannot 'mimic' them exactly. It is well known that *in vitro* cell culture systems do not behave exactly the same as the *in vivo* organ tissues. This is important because alterations in the rate of development, known from studies of older animal embryos, can have dramatic effects on the further formation of the embryo. These effects can also be harmful. Even though some of the IVF produced children are now 5-6 years old, subtle neurological defects would still not be apparent.¹²

THE MEDICAL PROBLEMS OF IVF AND THERAPEUTIC ABORTION

There are medical difficulties as well, but these are mainly ethical. Although IVF appears to be a relatively safe operation, it is however, contrary to the function of medicine. The Oath of Hippocrates says, "I will use this treatment to help the sick according to my ability and judgment, but never with a view to injury and wrongdoing."¹⁴ Also, Rule 3 of the Nuremberg Code says, "The experiment should be so designed and based on the results of animal experimentation and a knowledge of the natural history of the disease or other problem under study that the anticipated results will justify the performance of the experiment."¹⁵ Therefore, the question must be asked again, "Does the end justify the means?" Is it so important that a couple have a child that the safe-

ty of the child can be put aside? IVF is not particularly healthy to the child when it has a 96% loss rate!

Because the results of IVF are still uncertain, and of questionable reproducibility, there has to be a safeguard or escape mechanism. To those involved in this field it is called "therapeutic abortion". If a mistake is made, then abort it. This is clearly being advocated, even for couples who have an abnormal fetus in a pregnancy by natural means.¹⁶ The point is, IVF and abortion are hand-in-glove techniques; they go together. This is important to recognize and will be dealt with below.

It can therefore be concluded as Paul Ramsey has said, "I must judge that *in vitro* fertilization constitutes unethical medical experimentation on **possible future beings**. . . It is not the proper goal of medicine to enable women to have children and marriages to be fertile by any means which may bring hazard from the procedure, and any additional hazard upon the child not yet conceived".¹⁵

LEGAL IMPLICATIONS OF IVF

There are difficult legal implications of IVF. It may be said that the very fact that IVF and some associated experiments have deviated far from present laws and statues is wrong. Be this as it may, the problem still remains. Australian Law Reform Commissioner Mr Justice Kirby has stated, "Let it not be the epitaph of our generation that we proved ourselves brilliant in the dazzling field of scientific endeavor but so morally bankrupt and legally incompetent that we just could not bother to sort out the consequences for our society and for the human species".¹⁵

Some of the difficult questions that the legal community and society at large must deal with are:

- (1) What is the legal status of an IVF child, especially if conceived with sperm, oocyte, or both from donors?
- (2) If an IVF child is born abnormal due to improper treatment, can the doctor be sued?
- (3) Does an IVF embryo/fetal child have a right to be protected from further manipulations?
- (4) If a surrogate mother is used, who does the child belong to? The problem here is the laws involving the buying and selling of children, for most surrogate mothering has and probably would be done for a fee.
- (5) Should this procedure be allowed for use by anyone — unmarried, homosexual, young or old?

Justice Kirby has also said, "Modern medical techniques imposed unreasonable burdens on doctors, and the law had a duty to make clearer the responsibilities of doctors. It should not be left to hospital

committees to muddle along".¹⁵ It can also be added that ultimately the responsibility rests on the individuals in the society at large.

THE ETHICS OF IVF: HUMANIST OR CHRISTIAN?

The ethics of IVF are at present a hotly debated issue. Webster's dictionary defines ethics as "a set of moral principles or values. . .the principles of conduct governing an individual or group".

Helga Kuhse has remarked, "Ethics is entirely independent of religious dogma or theology. It is essentially a matter of reason, or rational argument and debate."¹⁷ Therefore, the issue of ethics has been divided into basically two schools of thought by some people:

- (1) religious dogma, and
- (2) rational and reasoned debate.

However, it can be stated that really both positions are religious, because religion can mean that which a person puts faith in or leans upon. All people rely upon certain principles to guide their lives.

The debate is not between religious dogma and rational, reasoned argument because there are intelligent qualified people representing both sides of the issue. The facts of the debate are the same, for the facts are built upon observable, reproducible experimentation. What is different is the interpretation of the facts. The interpretation is the framework or philosophy (religion) into which the facts are put.

Therefore, the two predominant ethical positions could be better clarified as

- (1) theistic (Christian), and
- (2) humanistic.

Both are religious in nature and both have associated dogmas.

HUMANISM AND IVF

Humanism is a religion without God. "Humanism is the belief that man shapes his own destiny. It is a constructive philosophy, a non-theistic religion, a way of life. . ."¹⁸

A natural by-law of the religion of humanism is faith in the philosophy of evolution. Sir Julian Huxley is quoted as saying, "I use the word 'humanist' to mean someone who believes man is just as much a natural phenomenon as an animal or plant: that his body, mind and soul were not supernaturally created but are the products of evolution. . ."¹⁸

There are serious results that flow forth from this type of religion. Firstly, man is considered like other

animals. Thus it is easy for experimental procedures and techniques undertaken on animals and humans to blend together. Dr Leon Kass, Professor of Liberal Arts of Human Biology, University of Chicago, has written: "And clearly, if we come to see ourselves as meat, then meat we shall become".¹⁹

This sort of thinking poses a problem to the humanist. That is the question: when is a developing embryo considered to be a human being? Many humanists accept that there are two states for man:

- (1) humanhood, and
- (2) personhood (Figure 2).

Humanhood is stated as the biological fact of an embryo originating from a human oocyte and sperm. Personhood is that arbitrary state of development in which a human embryo (now a fetus) is granted recognition as a person, and along with this certain rights of personhood. Grobstein has stated, "The major point is that at least until eight weeks the human embryo can be safely considered to still lack the two essential aspects of personhood: affective recognizability by other persons and internal conscious awareness. The Edwards-Steptoe procedure manipulates not persons but human cells. . ."⁷ Thus personhood is dependent on several factors, among which are affective recognizability (looks like a baby) and internal conscious awareness (certain brain function capabilities).

These criteria are entirely arbitrary and open to different interpretations. The granting of certain protective rights as an individual to an embryo, fetus or young developing child becomes dictated to by the particular desires of the current predominant philosophy.

At present, experimentation on human embryos or fetal children under 20 weeks of age is justified by the National Health and Medical Research Council because they are not considered to have the qualities of personhood. For the same reason some fetal children of all ages are aborted, 97% for purely social reasons (See Table 2).

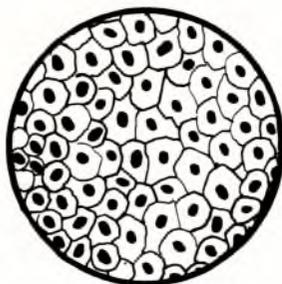
This is in contrast to what Christianity teaches.

CHRISTIANITY AND IVF

The corollaries that follow from a faith in God, and specifically Jesus Christ, are virtually the opposite of the corollaries espoused by humanism. The first is that man is created in the image of God; he is spirit, soul, and body (2 Thessalonians 5:23). This means he is not just flesh.

When is man worthy of the rights of personhood (for few disagree on the fact of humanhood occurring at the time of fertilization)? Dr S.J. Santamaria, Director of the Department of Community Medicine,

THE EMBRYONIC AND FETAL CHILD



1 WEEK
0.1 MM



7 WEEK
18 MM



13 WEEK
100 MM

Figure 2. Various aged embryonic and fetal children: Up until 8-20 weeks of age embryos or fetuses would not be considered by some to have developed enough for the rights of personhood. Virtually any experimentation done on animals would be "scientifically" acceptable on these children. Fetal children of all ages are regularly aborted. Some consider it ethical to experiment on and utilize fetal tissues even from older fetal children. (Redrawn from Grobstein, *Sci. Am.*, 1979; wk = weeks of age: 1,7,13; mm = length in millimeters: 0.1, 18, 100).

Table 2. ACTS OF ABORTION

NO./YEAR	REASON FOR:	%	NO./1000
*25,000 (Aus) 1970	Medical	10.4	
	Fetal Abnormal	4.9	
	Rape	0.8	8/1000
	Social	83.9	839/1000
*80,000 (Aus) 1980	Medical	0.98	
	Fetal Abnormal	1.64	
	Rape	0.07	7/10,000
	Social	97.30	9,730/10,000

From: Rev. J. Flemming, *New Life*, Dec. 1982.

* Estimated from various sources

St. Vincent's Hospital, Melbourne has said, "I do not deny that these features (i.e. self-awareness etc.) are useful in describing a human person, especially when drawing distinctions between human and other forms of life. But to insist that they are the criteria for determining the moral status of a human individual is to set up a group of attributes that would exclude many human beings who we consider worthy

of moral status. . . A human person is thus a human being who has essential features of personhood or possesses those features in a form that will progressively emerge."²⁰

A person should have the rights of personhood, including the right to live, from the time of conception. Why? Because every single human being is precious to God, and is worth more than all the

animals and physical wealth to be found in this world. For Jesus said, "What does it profit a man if he gains the whole world, and loses or forfeits himself" (Luke 9:25). The Bible also states that God "knew" Jeremiah (Jeremiah 1:5), David (Psalm 139:13-16), and John the Baptist (Luke 1:13-17) within the womb. It is interesting to note that John the Baptist was filled with the Holy Spirit while still in his mother's womb, and leapt in her for joy when Mary, pregnant with Jesus, came to visit Elizabeth (Luke 1:15,41). Also, "the Bible makes little distinction between an infant and a fetus. The same word for 'infant' is used in 1 Samuel 15:3 and Job 3:16, even though the latter passage refers to an unborn child."¹³

Thus to the Christian the developing embryo/fetal child is precious to God, and must disagree with procedures that would harm a child at any stage of its development, and/or any procedures that disrupt the integrity of the family.

There are various options open to infertile couples desiring a family. Some medical procedures are available to couples who have certain kinds of problems. For example, there is tuboplasty (repair of fallopian tubes), drug treatment (to stimulate ovulation), and low tubal ovum transfer (for blocked fallopian tubes). For others where no medical treatment (except IVF) is available, there is prayer for healing (James 5:14-15), remaining childless, or adoption, the latter often being difficult because abortions have diminished the number of children available for adoption.

In conclusion, it is unwise to continue IVF because it violates the 'right to protection of life' for the child from conception onward.

REFERENCES

1. A. Trounson and A. Conti (1982) *Brit. Med. J.* 285: 245-248.
2. *Monash Review*, December 1983, Melbourne.
3. J. Leeton, A. Trounson, D. Jessup and C. Wood (1982) *Fert. Steril.* 38: 156-161.
4. R.R. Angell, R.J. Aitken, P.F.A. van Look, M.A. Lunsden, and A.A. Templeton (1983) *Nature* 303:
5. A. Schinzel (1984) *Catalogue of Unbalanced Chromosome Aberrations in Man*, Walter de Gruyter, Berlin, p. 281. (Normal spontaneous abortion rate estimated from the estimated incidence of chromosomal aberrations at conception.)
6. A. Trounson (1982) in: *Proceedings of the Conference In Vitro Fertilization: Problems and Possibilities*, M.N. Brumby (ed.), Monash Centre for Human Bioethics, Melbourne.
7. C. Grobstein (1979) *Sci. Am.* 240: 33-43.
8. T. Mandel (1983) in: *Life in Our Power*, J.N. Santamaria (ed.), St. Vincent's Bioethics Centre, Melbourne.
9. R.G. Edwards (1982) in: *Human Conception In Vitro*, R.G. Edwards and J.M. Purdy (eds.), Academic Press, London, p.371-387.
10. The Committee to Consider the Social, Ethical, and Legal Issues Arising From In Vitro Fertilization (1984) *Report on the Deposition of Embryos Produced by In Vitro Fertilization*, Government of Victoria, p. 47.
11. NHMRC Guidelines on Fetal Tissue Experimentation (1983) from: *The Australian*, October 27, 1983.
12. C. Grobstein, M. Flower, J. Mendeloff (1983) *Science* 222: 127-133.
13. J.K. Anderson (1982) in: *Genetic Engineering*, Zondervan, Grand Rapids, Michigan.
14. M.J. Gorman (1982) in: *Abortion and the Early Church*, InterVarsity Press, Downers Grove, Illinois.
15. D.C.H. Overduin and J.I. Fleming (1982) in: *Life in a Test-tube*, Lutheran Publishing House, Adelaide.
16. G.A. Grabowsk and R.A. Desnick (1982) in: *Methods in Cell Biology*, Vol. 26(5), S.A. Latt and G.J. Darlington (eds.), Academic Press, New York.
17. H. Kuhse (1982) *ibid.* reference 6.
18. A quote cited in H. Morris (1974) *Scientific Creationism*, Creation-Life Publishers, San Diego, California.
19. L.R. Kass, quoted in J. Powell (1982) *Abortion: The Silent Holocaust*, Argus Communication, Allen, Texas.
20. S.J. Santamaria (1982) *Pro Life News* 1: 2.