

I. Context – Guiding Principles

A. God defines the Family

A monogamous, *heterosexual* marriage (Gen 1:28; 2:21-25)

B. We as Christians must function within this context

1Cor. 10:31 Whether, then, you eat or drink or whatever you do, do all to the glory of God.

Principle: We should not pursue children outside of a biblically ordained marriage.

Exceptions - ?

C. Life begins at conception

Principle: We should not pursue any procedure that kills embryos (**note:** *certain procedures normally destroy embryos (or harm), but do not need to be pursued in that fashion; e.g., IVF – destroy or freeze embryos, selective reduction, gene testing, etc.*)

Due to the amount of information; none to very few statistics

Websites:

American Society for Reproductive medicine - <http://asrm.org/FactSheetsandBooklets/>

Society for Assisted Reproductive Technology - <http://www.sart.org/>

Centers for Disease Control - <http://www.cdc.gov/ART/index.htm>

II. Third Party Involvement

A. Sperm Donation (donation in these cases does not mean free)

- Usually anonymous, can be “open” (usually contact is allowed when the child reaches legal age)

“In 2005 Britain passed a law that removed the right for donors to be anonymous; as a consequence fewer men have been willing to donate sperm, and the UK is experiencing a shortage of sperm donations” (Rae & Riley, 111)

- Usually donated by college students

“Sperm banks in the United States typically advertise for young males, college age to late thirties, in good health, with no significant family medical history of inheritable diseases. . . . A ‘Doctorate Donor’ category” (Rae & Riley, 112).

Ideally less than 40 years of age (*Third Party*, 9).

- “The FDA only require that anonymous sperm donors be screened for risk factors for and clinical evidence of communicable disease agents or diseases;” a comprehensive medical questionnaire; sexual history; detailed personal information (*Third Party*, 9-10).
- Sperm is collected via masturbation
- Fatherhood without responsibility
- Explaining it to the child; parental detachment (from non-genetic parent)

Cost:

Donor: \$60 - \$100

Recipient: “The costs of DI are based on the cost of paying the donor, testing the donor and the sperm, storage of the sperm (if cryopreserved, or frozen), the clinic overhead, and the profit margin required. Even so, DI remains one of the least expensive of the reproductive technologies” (Rae & Riley, 113).

B. Egg Donation

- More involved and more expensive than sperm donation

“Egg donor receive higher payments if they have had a successful pregnancy—either themselves or through a donated egg; have high SAT scores; are musically gifted or athletically accomplished; or have a variety of other characteristics, including desired physical features”
(Rae & Riley)

- Often donated to women past childbearing age or postmenopausal
- Can be a sister, relative, friend/acquaintance, anonymous or “open”
- Hormonal medication must be taken by both parties (see below)

A dangerous procedure and can have serious/severe consequences (hyperstimulation syndrome – see below)

- Motherhood without responsibility
- Explaining it to the child; parental detachment (from non-genetic parent)

Cost:

Donor: \$5,000 - \$50,000

Recipient: “The costs incurred by the recipient are dependent on the amount paid to the donor, fertility drugs to both the donor and the recipient (whose cycles must mesh for the process to take place), and the IVF process. The baseline price is usually \$20,000, but varies widely” (Rae & Riley, 114).

C. Embryo Donation/Adoption (rescue versus create)

Nightlight Christian Adoptions - *Snowflakes® Frozen Embryo Adoption & Donation Program* - <http://www.nightlight.org/default.aspx>

D. Surrogacy

- Genetic (Traditional) Surrogacy – the surrogate also contributes the egg (combined with father's or donated sperm)

Intrauterine Insemination (IUI)

- Gestational Surrogacy – The surrogate does not contribute the egg (donated egg is combined with father's or donated sperm)

IVF

- Altruistic or Commercial Surrogacy – free versus paid (thousands/\$10,000, can be as high as \$100,000 - \$150,000), plus medical expenses, sometimes reimbursement of lost wages)
- Legal Matter:
 - Couple dies or divorces
 - Visitation rights
 - Custody rights – in some/many states, a genetic surrogate has rights to the child (see *Assisted Reproductive Technologies and the Law*).

“It is widely held both morally and in the law that a *genetic/traditional surrogate*—who contributes the egg, carries the pregnancy, and gives birth to the child—is *the mother, with full material rights to her child*. But gestational surrogacy, in which the surrogate has no genetic relationship to the child she bears, is a more complicated scenario” (Rae & Riley, 173).

- Is commercial surrogacy the sale of a child?
- Does surrogacy exploit the surrogate (money is involved; low income surrogates, profit-minded surrogacy brokers, surrogates from 3rd world countries, etc.)?
- Definitions: mother, parent (gestation determines motherhood, genetics determines motherhood, “*intention to parent*”)

E. Biblical Assessment

The following situations are often used to argue for the morality of third party involvement.

Third party situations found in Scripture:

1. Surrogacy

Abram, Sarai and Hagar (Gen 16)

Jacob, Rachel and Bilhah (Gen 30:1-3)

Jacob, Leah and Zilpah (Gen 30:9)

Assessment

- No overt condemnation, merely description
- A departure from the Biblical ideal (Gen 1-2, Mat 19)
- The surrogacy was not consensual—slaves were involved
- In the case of Abram and Sarai, it was sin
- Sexual intercourse, not technology

2. Polygamy or Concubinage

Jacob, David, Solomon

Assessment

- Descriptive, not *normative*
- In the case of the king (David and Solomon) this was specifically prohibited (cf. Deut 17:14-17)

3. Levirate Marriage

Gen 38:8; Deut 25:5-10; Ruth 3-4; Mat 22:24; Mk 12:19-23; Luke 20:28

Deut. 25:5-10 “When brothers live together and one of them dies and has no son, the wife of the deceased shall not be *married* outside *the family* to a strange man. Her husband's brother shall go in to her and take her to himself as wife and perform the duty of a husband's brother to her. 6 “It shall be that the firstborn whom she bears shall assume the name of his dead brother, so that his name will not be blotted out from Israel. 7 “But if the man does not desire to take his brother's wife, then his brother's wife shall go up to the gate to the elders and say, ‘My husband's brother refuses to establish a name for his brother in Israel; he is not willing to perform the duty of a husband's brother to me.’ 8 “Then the elders of his city shall summon him and speak to him. And *if* he persists and says, ‘I do not desire to take her,’ 9 then his brother's wife shall come to him in the sight of the elders, and pull his sandal off his foot and spit in his face; and she shall declare, ‘Thus it is done to the man who does not build up his brother's house.’ 10 “In Israel his name shall be called, ‘The house of him whose sandal is removed.’

Assessment—Was the brother already married?

- The Levirate marriage was a legally binding marriage (i.e., it was not concubinage)
- Scripture doesn't specify if the brother was already married or not
- This is a departure from the ideal (as was divorce)?

Does this legitimize sperm (or egg) donation?

- Technically, no third party involved. The marriage has ended and the widow is alone.
- The brother and the widow are married and *both* have responsibility in raising the child.

4. Conclusion/Summary

- All of these situation fall outside of the Bible ideal—this doesn't mean they were all sin (especially in the Old Testament context)
- Where we have full accounts, they are riddled with negative consequences
- One cannot deduce normative teaching here (most of these are narrative; the levirate marriage is significantly different than the fertility practices of today)
- Jesus clearly brings us back to the ideal and, in fact, chides the common Hebrew interpretation of the divorce legislation (Mat 19:1-12)—in other words, they should have never departed from the Genesis ideal

“In the New Testament, an appeal to the creation ideal to mediate a controversy usually settles the issue [Divorce – Mat 19: 1-12; homosexuality – Rom 1:18-31; role of women in the church – 1 Cor 11:8-9; 1 Tim 2:11-15]” (Rae & Riley, 51).

“Therefore, the ideal set up by God's design at creation and the New Testament's appeal to its authority tilts the biblical balance against third party contributors. Thus it seems best to say that Scripture is skeptical about third party contributors to reproduction, without saying that Scripture teaches an absolute prohibition of all such arrangements” (Rae & Riley, 51).

“We also concluded that though the Bible is skeptical about reproductive technologies that involve a third party (as a genetic or gestational contributor), it does not clearly and unequivocally prohibit them” (Rae & Riley, 110).

- **Third party situation often bring pain and sadness to one of the married persons**
- Context must be considered—e.g., surrogacy in the case of left over IVF embryos; surrogacy of a sister or mother (using the genetic material from the actual mother and father).

III. Reproductive Technologies

A. Fertility Drugs

“Any of several medication that promote egg maturation and release from the ovaries; while some are oral medications, most of these are injectable. They are used in all the assisted reproductive technologies, and result in some level of ovarian hyperstimulation” (Rae & Riley, 25).

B. Intrauterine Insemination (IUI)

“Sperm, from a husband or donor, is placed in a woman’s uterus via a catheter” (Rae & Riley, 26).

- In most cases no medical complications; using the husband’s sperm, there is no real moral issue.
- With fertility drugs – introduces various dangers; long term effects of medications are unknown; morally permissible
- Third party donation (sperm, egg or both) – see above

IV. Assisted Reproductive Technologies (ART)

Although various definitions have been used for ART, the definition used by CDC is based on the 1992 Fertility Clinic Success Rate and Certification Act that requires CDC to publish the annual ART Success Rates Report. According to this definition, ART includes all fertility treatments in which both eggs and sperm are handled. In general, ART procedures involve surgically removing eggs from a woman's ovaries, combining them with sperm in the laboratory, and returning them to the woman's body or donating them to another woman. They do NOT include treatments in which only sperm are handled (i.e., intrauterine—or artificial—insemination) or procedures in which a woman takes medicine only to stimulate egg production without the intention of having eggs retrieved.

ART Cycle – “(or simply, cycle), refers to the hormonal preparation of the woman with fertility drugs, harvesting or retrieval of the mature eggs, fertilization, and transfer of the embryos into the woman's uterus. The cycle may result in a pregnancy, or something may interrupt it in any of these steps along the way” (Rae & Riley, 24).

A. Gamete Intrafallopian Transfer (GIFT)

Description:

The direct transfer of sperm and eggs into the fallopian tube. Fertilization takes place inside the tube (*ART: A Guide*, 19).

B. Zygote Intrafallopian Transfer (ZIFT)

Description:

An egg is fertilized in the laboratory and the zygote is transferred to the fallopian tube at the pronuclear stage before cell division takes place. The eggs are retrieved and fertilized on one day and the embryo is transferred the following day (*ART: A Guide, 22*).

C. In Vitro Fertilization (IVF)

Description:

A process in which an egg and sperm are combined in a laboratory dish to facilitate fertilization. If fertilized, the resulting embryo is transferred to the woman's uterus (*ART: A Guide, 20*).

IVF is a method of assisted reproduction in which a man's sperm and a woman's eggs are combined outside of the body in a laboratory dish. One or more fertilized eggs (embryos) may be transferred to the woman's uterus, where they may implant in the uterine lining and develop. Excess embryos may be cryopreserved (frozen) for future use. Initially, IVF was used to treat women with blocked, damaged, or absent fallopian tubes. Today, IVF is used to treat many causes of infertility, such as endometriosis and male factor, or when a couple's infertility is unexplained (*ART: A Guide, 4*).

Basic Steps:

1. Ovarian Stimulation

During ovarian stimulation, also known as ovulation induction, medications or "fertility drugs," are used to stimulate multiple eggs to grow in the ovaries rather than the single egg that normally develops each month. Multiple eggs are stimulated because some eggs will not fertilize or develop normally after fertilization. The maximum number of embryos transferred are based on the patient's age and other individual patient and embryo characteristics. Since each embryo has a probability of implantation and development, the number of embryos to be placed should be determined for each patient, taking into account the odds of achieving a pregnancy based on the number of embryos transferred weighed against the risk of multiple gestation (*ART: A Guide*, 4-5).

Medications for Ovarian Stimulation: clomiphene citrate (Clomid®, Serophene®), letrozole (Femara), follicle stimulating hormone (FSH) (Follistim™, Gonal-F®, Bravelle™), human menopausal gonadotropins (hMG) (Humegon™, Repronex™, Menopur®), luteinizing hormone (LH) (Luveris®)

Medications for Oocyte Maturation: human chorionic gonadotropin (hCG) (Profasin®, APL®, Pregnyl®, Novarel™, Ovidrel®)

Medications to Prevent Premature Ovulation: GnRH agonists (Lupron® and Synarel®), GnRH antagonists (Antagon®, Ganarelix® and Cetrotide®) (*ART: A Guide*, 4-5)

2. Egg Retrieval (7 to 10 or more eggs: \$10,000 - \$12,000)

Egg retrieval is usually accomplished by transvaginal ultrasound aspiration, a minor surgical procedure that can be performed in the physician's office or an outpatient center. Some form of analgesia is generally administered. An ultrasound probe is inserted into the vagina to identify the follicles, and a needle is guided through the vagina and into the follicles. The eggs are aspi-

rated (removed) from the follicles through the needle connected to a suction device. Removal of multiple eggs can usually be completed in less than 30 minutes (*ART: A Guide*, 5-6).

3. Fertilization

After the eggs are retrieved, they are examined in the laboratory for maturity and quality. Mature eggs are placed in an IVF culture medium and transferred to an incubator to await fertilization by the sperm. Sperm is separated from semen usually obtained by ejaculation or in a special condom used during intercourse. Alternatively, sperm may be obtained from the testicle or vas deferens from men whose semen is void of sperm either due to an obstruction or lack of production.

Fertilization may be accomplished by insemination, where motile sperm are placed together with the oocytes and incubated overnight or by Intracytoplasmic sperm injection (ICSI), where a single sperm is directly injected into each mature egg (*ART: A Guide*, 7).

Intracytoplasmic Sperm Injection (ICSI) – A micromanipulation procedure in which a single sperm is injected directly into an egg to attempt fertilization, used with male infertility or couples with prior IVF fertilization failure (*ART: A Guide*, 20).

“Medical science has all but solved the problem of infertility in men” (Mundy, 66).

Doctors can now “go fishing” for sperm (using a very fine needle . . .). “In the past twenty years, extraordinary advances have taken place in two areas: finding sperm, and using the sperm that’s found” (Mundy, 73)—Microsurgical Sperm Removal.

“Much of this retrieved sperm is problematic in some way. It may be deformed, or immature. It may be energyless. It may be scarce (Mundy, 74)— Intracytoplasmic Sperm Injection (ICSI)

Problem – “Scientists immediately suspected that genetic problems in a father—problems that might be responsible for the infertility—might now start showing up in the sons” (Mundy, 77-78).

“The ultimate impact remains unknown. They could be minor; they could be dramatic. Sherman Silber and colleagues published a paper showing that, thanks to ICSI [Intracytoplasmic Sperm Injection], in 10,000 years every human male could be infertile. If 1 percent of men are genetically infertile in every generation, and every one of those men were to reproduce through ICSI, then 1.1 percent of the next generation would be infertile: the ICSI babies, plus the new 1 percent of infertile males that arise spontaneously” (Mundy 79-80).

4. Embryo Culture

Visualization of two pronuclei the following day confirms fertilization of the egg. One pronuclei is derived from the egg and one from the sperm. Approximately 40% to 70% of the mature eggs will fertilize after insemination or ICSI.

Embryos may be transferred to the uterus at any time between one to six days after the egg retrieval (*ART: A Guide*, 8).

Preimplantation genetic diagnosis (PGD) is performed at some centers to screen for inherited diseases. In PGD, one or two cells are removed from the developing embryo and tested for a specific genetic disease. Embryos that do not have the gene associated with the disease are selected for transfer to the uterus. These procedures require specialized equipment and experience and IVF in a couple who may not need IVF to conceive (*ART: A Guide*, 9).

5. Embryo Transfer (\$1,000)

The next step in the IVF process is the embryo transfer. No anesthesia is necessary, although some women may wish to have a mild sedative. The physician identifies the cervix using a vaginal speculum. One or more embryos suspended in a drop of culture medium are drawn into a transfer catheter, a long, thin sterile tube with a syringe on one end. The physician gently guides the tip of the transfer catheter through the cervix and places the fluid containing the embryos into the uterine cavity. The procedure is usually painless, although some women experience mild cramping.

ASRM issues guidelines regarding determination of how many embryos should be considered for transfer (*ART: A Guide*, 9).

Note – Guidelines are voluntary

Under 35 years	35-37 years	38-40 years	41-42 years
1 or 2	2 or 3	2 to 4	3 to 5

6. Cryopreservation

Extra embryos remaining after the embryo transfer may be cryopreserved (frozen) for future transfer. Cryopreservation makes future ART cycles simpler, less expensive, and less invasive than the initial IVF cycle, since the woman does not require ovarian stimulation or egg retrieval. Once frozen, embryos may be stored for several years. However, not all embryos survive the freezing and thawing process, and the live birth rate is lower with cryopreserved embryo transfer. Couples should decide if they are going to cryopreserve extra embryos before undergoing IVF (*ART: A Guide*, 9).

7. Risks of ART (*ART: A Guide*, 12-14)

The medical risks of ART depend upon each specific step of the procedure. The following are some of the primary risks of ART procedures.

- Ovarian stimulation carries with it a risk of hyperstimulation, where the ovaries become swollen and painful. Fluid may accumulate in the abdominal cavity and chest, and the patient may feel bloated, nauseated, and experience vomiting or lack of appetite. Up to 30% of patients undergoing ovarian stimulation have a mild case of ovarian hyperstimulation syndrome (OHSS). . . . Up to 2% of patients develop severe OHSS characterized by excessive weight gain, fluid accumulation in the abdomen and chest, electrolyte abnormalities, over-concentration of the blood, and rarely the development of blood clots, kidney failure or death.
- Although initial reports suggested that women who use fertility drugs have an increased risk for ovarian cancer, numerous recent studies support the conclusion that fertility drugs are not linked to ovarian cancer. Nevertheless, there is still uncertainty whether a risk exists and research continues to address this question.
- There are risks related to the egg retrieval procedure. Laparoscopy carries with it the risks of any surgery that requires anesthesia. Removing eggs through an aspirating needle entails a slight risk of bleeding, infection, and damage to the bowel, bladder, or a blood vessel.
- The chance of multiple pregnancy is increased in all assisted reproductive technologies when more than one embryo is transferred. Although some would consider twins a happy result, there are many problems associated with multiple births; and problems become progressively more severe and common with triplets and each additional fetus thereafter. . . . Some couples may consider *multifetal pregnancy reduction* to decrease the risks due to multiple pregnancy, but this is likely to be a difficult decision.
- Miscarriage or ectopic pregnancy.
- Most studies do not show an increased risk of birth defects, but several studies do.

Moral Assessment:

- Dangers just mentioned (all involving the woman)
- Number of eggs fertilized**
 - Passing on genetic disorders (infertility)
 - *Preimplantation Genetic Diagnosis (PGD)* – eliminating embryos
 - Leftover Embryos
- Cryopreservation**
- Selective Reduction - *Multifetal Pregnancy Reduction***
- Sperm Retrieval – Masturbation can be avoided, husband and wife can do this together in a variety of ways
- Danger to the Embryo
- Expense - \$\$\$ (\$7,000 to \$50,000+)*

V. Suggested Reading

Assisted Reproductive Technologies: A Guide for Patients. (2008). American Society for Reproductive Medicine. Retrieved August 5, 2011, from http://www.sart.org/uploadedFiles/ASRM_Content/Resources/Patient_Resources/Fact_Sheets_and_Info_Booklets/ART.pdf.

Davis, John Jefferson. (1993). *Evangelical Ethics: Issues Facing the Church Today.* (2nd Ed.). Phillipsburg, NJ: Presbyterian and Reformed Publishing.

Mundy, Liza. (2007). *Everything Conceivable: How Assisted Reproduction is Changing Men, Women, and the World.* NY: Alfred A. Knopf.

Rae, Scott B. & Riley, Joy D. (2011). *Outside the Womb: Moral Guidance for Assisted Reproduction.* Chicago, IL: Moody Publishers.

Third Party Reproduction (Sperm, egg, and embryo donation and surrogacy): A Guide for Patients. (2006). American Society for Reproductive Medicine. Retrieved August 8, 2011, from http://asrm.org/uploadedFiles/ASRM_Content/Resources/Patient_Resources/Fact_Sheets_and_Info_Booklets/thirdparty.pdf