**Infertility and Fertility Treatment**

**This edition revised/updated by Dr Pia Matthews**

# The Anscombe Bioethics Centre

The Anscombe Centre, formerly the Linacre Centre for Healthcare Ethics, is the only Catholic institution of its kind specialising in the field of healthcare ethics in Great Britain and Ireland. As such, it provides a unique service to the Catholic community in these islands and more particularly to Catholics working in the field of healthcare. The Centre also exists to assist the teaching authorities within the Church in addressing bioethical issues, and to communicate and defend the Church’s moral teaching in debates over public policy and legislation in the United Kingdom.

The Centre has three full-time researchers who are able to give time and thought to new and difficult issues in bioethics, and it is also able to call upon the help of a range of experts in science, medicine, law, philosophy and theology. It engages in dialogue with academics and practitioners of other traditions. It publishes reports, organises conferences, lectures and courses, and gives advice to individuals and to other organisations. The co-operation of the Centre with the Catholic Truth Society in producing the Explanations series of booklets is intended to advance the Centre’s work of providing clear Catholic teaching on bioethical issues**.**

# Acknowledgements

This booklet was first printed under the title *Infertility and Medically Assisted Conception* by Agneta Sutton in 2003. It has been revised and updated with her permission by Dr Pia Matthews.

# Contents

* IVF – why not?
* Infertility – its causes and its treatment
* Respect for the dignity of the human embryo
* Respect for procreation and the parent–child relationship
* Conclusion
* Further reading
* Contacts
* Glossary of terms associated with infertility and fertility treatment

# IVF – why not?

When a couple discover that they are not able to conceive a child as quickly as they had expected they are often directed towards IVF, *in vitro* fertilisation. IVF is perhaps the best known form of Assisted Reproductive Technology (ART), also known as Assisted Reproductive Treatment. ART refers to a number of techniques used to achieve pregnancy by fertilising a human ovum with a human sperm outside of the context of natural sexual intercourse between a man and a woman. In IVF, sperm and eggs are put together by a technician in a laboratory “experimentally” to see if they result in a viable and healthy embryo suitable for transfer to the woman’s body. Before transfer the embryo is quality tested, so screening and choosing embryos is part of the normal procedure of IVF. Embryos not chosen for transfer are, like failed experiments, destroyed or studied further. Those of sufficient “quality” may be stored for another time.

Since the purpose of ART is to create human life and human life is something good, it is tempting for people not to think too deeply about the moral issues connected to these technologies. Indeed IVF has become so commonplace that many couples who resort to IVF think in terms of the child they hope to have, not in terms of the manipulation and assembly of their embryo. Once they have started the process of IVF it is more difficult for couples to avoid being swept along with the now routine demands of the technology, from fertilising multiple eggs to create more embryos than will be transferred, to using donated eggs, sperm or embryos if deemed necessary, to “foetal reduction” (selective abortion) in some cases so the woman will carry fewer babies. Couples may also be faced with the intolerable burden of making choices about the fate of their “spare” embryos or where techniques do not work, they have to manage the physical and emotional stress of apparent failure.

Although the ethics of IVF is now rarely explored in public debate, IVF and other ART techniques do raise significant ethical questions that are not only questions for the couple involved. In particular these techniques put into question the respect that is owed to the human being, however small, and respect for the personal act that transmits life. A serious concern is the loss of many embryos during IVF procedures and the fate of embryos not transferred to the woman’s body.

## IVF questions

Yet at the same time as IVF treatment is becoming more and more commonplace and virtually the routine treatment on offer, healthcare services are recognising that IVF is not necessarily the first or even best answer to fertility problems. The UK’s biggest health website, NHS Choices, reminds people who are experiencing fertility problems that medicines and surgical procedures are treatments to consider so the first recourse need not be to ARTs like IVF.[[1]](#endnote-1) Provision of IVF through the NHS varies across the country and often depends on policy decisions made by local NHS Clinical Commissioning Groups. The reluctance on the part of many NHS trusts to provide IVF may be attributed to the cost and relatively low success rates of the procedure. Moreover, NICE, the National Institute for Health and Care Excellence, recognises that fertility problems, investigations and treatment can be stressful and physically and emotionally demanding, and that treatment may not result in a child, so NICE recommends counselling to help couples prepare for the future.[[2]](#endnote-2)

Nevertheless, the desire to have children is so strong that many people consider private treatment even if, as NHS Choices explain, it can be expensive and there is no guarantee of success.[[3]](#endnote-3) Indeed, infertility has rapidly become big business as more and more couples struggle to conceive. Despite being regulated by the Human Fertilisation and Embryology Authority, the fertility industry has been hit by a number of high profile scandals, from encouraging desperate patients to donate some of their own healthy eggs for other people’s treatment for the profit of the fertility clinic, to mixing up embryos and transferring the “wrong” embryo to the “wrong” mother, to using embryo selection to ensure the choice of a boy or a girl. Some companies offer their female employees as a perk the opportunity to freeze their eggs so that they can delay starting a family and concentrate on their careers, even though the success rate for a “take home baby”, as IVF clinics call it, after egg freezing is extremely low.

Of further concern is that, as with all medical procedures, there are risks. Although some conditions such as ovarian hyper-stimulation syndrome have been recognised, NICE accepts that currently the long-term risks associated with fertility drugs are simply not known.[[4]](#endnote-4) Moreover, the potentially serious implications of accepting risks relating to egg and embryo freezing and storage, and relating to new procedures that involve invasive techniques on sperm, eggs and embryos have yet to unfold.

However, the greatest problem with IVF and other assisted reproductive technologies is that while they create life and nurture some lives, they also destroy many more lives.

## Deeper concerns

When weighing up the merits of a medical procedure, cost, success and risk are important factors. However, the Church has deeper concerns about IVF and other assisted reproductive technologies. The Church has always recognised that the desire for children is a real, natural and legitimate desire. Couples who have difficulty conceiving do really suffer: it is a real trial.[[5]](#endnote-5) In many cases the desire to overcome infertility is not a mere selfish want but a good desire in itself. This is why the Church supports fertility care which seeks to improve diminished fertility, to treat problems affecting the function of the procreative organs, to regulate hormones and help prevent miscarriage. A useful way to look at the contrast between ART and fertility care is to see fertility care as restoring fertility or assisting the sexual act and distinguish this from ART where the “assistance” does in fact replace the sexual act.

The Church also recognises that the real suffering of infertility cannot override the dignity of every human life.[[6]](#endnote-6) There is no “right” to have a child: children are gifts.[[7]](#endnote-7)

The idea that all human beings have an intrinsic natural dignity is an idea that can be understood and accepted by all people whether religious or not. However, from the perspective of the Church all human beings have both a natural and a supernatural dimension: each human being however small has intrinsic dignity as a human being (natural dimension) and human beings are called to share in the life of the Trinity from the very beginning of their existence (supernatural dimension).[[8]](#endnote-8) Therefore unconditional respect is owed to every human being at every moment of their existence: fundamentally the dignity of a person must be recognised and respected in every human being from conception to natural death.[[9]](#endnote-9) This respect includes respect for the specific character of the personal act that transmits life.[[10]](#endnote-10)

Many medical developments are positive, particularly those that re-establish normal functioning of human procreative powers. However, developments are negative when they involve the destruction of human beings or use means that contradict the dignity of the human being.[[11]](#endnote-11) In treating infertility medical techniques must respect this dignity. That means that the origin of the human person should be the result of an act of mutual self-giving: they are to be the fruit of theirparents’ love. They cannot be desired or conceived as a product of a medical intervention, of control or dominion.[[12]](#endnote-12)

Any technique must respect three “fundamental goods”: (a) the right to life and to physical integrity of every human being from conception to natural death; (b) the unity of marriage, which means reciprocal respect for the right within marriage to become a father or mother only together with the other spouse; (c) the specifically human value of sex: it is a specific act of love between husband and wife (in co-operation with God) that brings about new life.[[13]](#endnote-13) Every child has a right to be conceived, carried in the womb, born and brought up within marriage.[[14]](#endnote-14)

The problem with IVF is clear from the outset. IVF eliminates the marriage act as the means of achieving pregnancy and instead replaces it by a laboratory procedure where the husband and wife become the sources of the raw material – egg and sperm – and this raw material is manipulated to cause the sperm to fertilise the egg. However much the embryo is wanted by its parents, in practice the embryo becomes an object: it is checked, observed, chosen for transfer to the woman or declared “less good”, “spare”. It can be frozen, left to perish or donated to others and if it is found to be defective it is eliminated or used in IVF training or research. IVF proceeds as if the human embryo were simply a mass of cells to be used, tested, selected or discarded.[[15]](#endnote-15) Moreover the easy acceptance of the high risk of failure and fatalities (vastly more so than with any other medical procedure), the discarding of “less good” embryos and the wide acceptability of genetic testing to “avoid” disability by simply disposing of embryos with even the risk of developing a disability demonstrates the presumption that the individual embryo is not deserving of full respect: it is considered in the context of a potentially competing desire for a child who must at very least be a “normal” child – a desire that must be satisfied.[[16]](#endnote-16)

This devaluing and depersonalisation of human life in the context of medically assisted conception has a bearing on the way we see ourselves and our children. It affects our understanding of what it means to be human. This is why it is important to know that there are alternatives to technologies that replace normal sexual conception. Reproductive technologies that replace the sexual act may be presented as ordinary medical care to those who seek fertility treatment. But, as is shown in this booklet, they entail a failure to appreciate and respect the personal dimension of the human subject.

The concerns and ethical difficulties raised in this booklet are relevant for all people whether they are religious or not. After all, everyone is called to ethical and social responsibility.[[17]](#endnote-17) However, the Church also has rich insights that can help in discerning the ethical issues and these insights can by understood by everyone. The aim of this booklet is to explain the different options of assisted conception and their moral and personal implications.

## Booklet outline

The ﬁrst chapter opens with an explanation of the human reproductive cycle and the main causes of infertility. The chapter explores fertility care that helps infertile couples by restoring, if only temporarily, their ability to conceive by means of natural intercourse. The chapter then describes ART approaches that replace natural sexual conception. The chapter makes reference to the explanations and guidelines published by NICE, the National Institute for Health and Care Excellence.[[18]](#endnote-18) ART approaches are contrasted with fertility care that assists couples in achieving pregnancy themselves (contact details of some organisations aiming to provide only such care are provided at the end of this booklet).

The second chapter discusses the status of the human embryo. This chapter explains and rebuts some objections to the view that the newly conceived embryo is an individual human being, a member of the human family. Then the chapter presents the Church’s teaching on respect for the human embryo.

The third chapter explains the Church’s teaching on respect for procreation and the parent–child relationship. Although this chapter refers to Church teaching, the centrality of the dignity of the human person, however small, can be understood by anyone of good will and so the Church’s explanation is open to all.

The Church believes that an “act of conjugal love” is “the only setting worthy of human procreation”,[[19]](#endnote-19) and concludes that human embryos obtained *in vitro* “are human beings and subjects with rights”.[[20]](#endnote-20) Firm commitment to the central principle of the dignity of the human being means that “although the manner in which human conception is achieved with IVF and ET (*in vitro* fertilisation and embryo transfer) cannot be approved, every child which comes into the world must in any case be accepted as a living gift of the divine Goodness and must be brought up with love.”[[21]](#endnote-21) In the final analysis God does not distinguish between any human being whether embryo, foetus, infant, child, adolescent or elderly person because God sees the reflection of his own image in each one.[[22]](#endnote-22)

# Infertility – its causes and its treatment

## The reproductive period in the life of men and women

The reproductive time of life for men as well as for women begins with puberty. However, men and women differ in the length of time for which they are fertile. The reproductive time of life ends in the case of women with menopause, whereas men may remain fertile throughout life even if their fertility declines with age. Moreover, the fertility of women is cyclical, whereas that of men is not. While women are fertile only a few days each month, men are equally fertile every day of the month.

Throughout the reproductive years of a woman’s life a mature ovum (egg) is released each month from her ovaries. This is called ovulation and it takes place mid-way between two menstrual periods or, more precisely, some 14 days before the next expected period. At ovulation the ovum is picked up by the fallopian tube. It is in the fallopian tube that fertilisation normally takes place. If the ovum is not fertilised within 12–24 hours of ovulation it perishes and a new period follows 12–14 days later. However, because the sperm survives longer than the ovum, intercourse up to four or five days before ovulation can result in fertilisation, as can intercourse one day after. Hence, in actual fact, the fertile days of the woman’s cycle number about five or six. The woman is, however, most likely to conceive around the time of ovulation.

If the ovum is fertilised the resulting embryo travels down the fallopian tube to the uterus (womb). This takes about 3–4 days. Having arrived in the uterus the embryo will begin implanting itself in the uterine wall.

## Infertility

Most couples, that is about 80%, who wish to have a child and who have regular intercourse will conceive within six months to a year. The majority of the remaining 20% will conceive within two years of trying. Usually a couple is not described as infertile unless they have been trying unsuccessfully to have a child for at least two years. About one in seven couples are infertile in the sense of experiencing difﬁculty in conceiving. Some patients are infertile because they have never been able to conceive (primary infertility), other patients may have previously conceived but may subsequently have found themselves unable to conceive again (secondary infertility). Some couples will have been deliberately sterilised: a procedure which cannot always be reversed.

There are several possible reasons why a person may have difficulty in conceiving. In the case of men the most common cause of infertility – or subfertility – is low numbers of sperm or poor sperm quality. There may also be problems with the tubes that carry sperm or problems achieving an erection or ejaculating. Some previous medical treatment such as drug treatment, radiotherapy or surgery, for instance to correct a hernia, may also result in a decline in fertility.

Women become less fertile as they get older and their fertility declines significantly after the age of thirty-five. Some life style choices can also affect fertility, for instance heavy smoking or being significantly over- or under-weight. The most common causes of impaired fertility are:

1. Damage to the fallopian tubes: the ovum may be prevented from entering the tube or the passage through the tube of either ovum or sperm may be obstructed. This is a very common cause of infertility, not least in the case of secondary infertility. About 33% of cases of infertility are caused by faulty fallopian tubes. Fallopian tubes may become damaged or blocked as a result of infections, including from a sexually transmitted disease such as Chlamydia and sometimes complications from procured abortion or miscarriage.
2. Endometriosis and fibroids: endometriosis is where pieces of the lining of the uterus grow in the wrong place and it is a relatively common cause of primary infertility. Endometriosis can block fallopian tubes and damage ovaries, and it increases the likelihood of cysts developing.
3. Ovulation problems and polycystic ovary syndrome: some problems stop an egg being released at all; others prevent an egg being released but only during some cycles. Premature ovarian failure is where a woman’s ovaries stop working before the age of forty. Thyroid problems can prevent ovulation. Irregular periods, abnormal hormone levels, including high levels of insulin, or enlarged ovaries are indications of polycystic ovary syndrome.
4. Unexplained infertility: where no reason can be found for fertility problems.

It is important to realise that many couples who think that they are infertile will ﬁnd that they spontaneously conceive even if they seek no medical assistance. Often the mere stress of trying to have a baby renders the woman temporarily infertile. There are various simple lifestyle measures that couples can take that may significantly improve fertility, including stopping smoking and drinking, and gaining or losing weight if that is required.

## Different forms of treatment

### Treatment restoring function and allowing conception by means of intercourse

There is no objection to the use of technology that improves natural functioning in an ethical manner without replacing the couple’s own part in causing the conception of their child. ART is artificial procreation but it is not wrong because it is artificial. Rather it is wrong because it contradicts the dignity of the human person from theirvery beginning: it separates procreation from the personal act of husband and wife, and it leads to the destruction of many embryos deemed unwanted.[[23]](#endnote-23)

Permissible treatments and technologies can be evaluated as ethically acceptable by reference to the dignity of the human person. Such treatments and technologies witness to the possibilities of the “art of medicine”.[[24]](#endnote-24) In many cases infertility may be overcome by means of drugs or surgery in a way that restores reproductive function and allows conception by means of intercourse. These kinds of treatment do not depersonalise conception. They do not make it a purely medical or technical undertaking. For in this situation the egg and sperm are not seen as raw material to be manipulated to form an embryo, and the embryo is not simply a bunch of cells or mere tissue. The human embryo is conceived in the act of love between a man and a woman.[[25]](#endnote-25) As Pope Francis says, quoting the *Catechism* (2378) and *Donum vitae,* (II.8), “a child deserves to be born of that love [of husband and wife], and not by any other means, for ‘he or she is not something owed to one, but is a gift’, which is ‘the fruit of the specific act of the conjugal love of the parents’”.[[26]](#endnote-26) Treatments that fall into this category include:

* Surgery: in women surgery and techniques such as “tube flushing” may correct blocked or defective fallopian tubes. In men surgery may correct obstructions to sperm outflow or reduce testicular temperature. Surgical removal of endometriosis tissue or fibroids can improve chances of having a successful pregnancy.[[27]](#endnote-27)

Surgery can also be used for some conditions associated with polycystic ovary syndrome. Successful surgery assists in the restoration of function and allows conception by sexual intercourse.

* Hormone treatment: some ovulation problems respond to hormone treatment or medication and this may also be appropriate in the event of immune disorders.[[28]](#endnote-28)
* Tracking of natural reproductive rhythms: tracking and correcting imbalances can enhance the chances of achieving pregnancy and avoiding miscarriage.
* Low Tubal Ovum Transfer: eggs are repositioned in the fallopian tube or uterus prior to or following normal sexual intercourse (controversies can however arise if the sperm is mechanically placed with the eggs – see the discussion of GIFT below).
* Assisting the movement of sperm: this follows a normal act of intercourse.
* Ovarian tissue banking for cancer patients with the aim of restoring fertility with the woman’s own tissue (this assumes the tissue is not used in IVF as is often the case but simply transplanted back into the woman).

As the teaching of *Dignitas personae* points out, treatments and techniques that remove obstacles to natural fertilisation are “authentic treatments”. This is because they resolve the problem causing infertility and the couple is then able to engage in conjugal acts resulting in procreation.[[29]](#endnote-29)

### NaProTechnology (natural procreative technology)

NaProTechnology is one example of an approach to conception that co-operates completely with the patient’s reproductive system. It was developed in the USA in the 1990s at the Pope Paul VI Institute for the Study of Human Reproduction and the National Centre for Women’s Health.[[30]](#endnote-30) NaProTechnology uses a fertility care system to monitor the occurrence of various hormonal events during the menstrual cycle. Whereas IVF bypasses normal sexual intercourse and so allows the problem of infertility to remain, NaProTechnology identifies and seeks to treat underlying causes of infertility. It also helps to diagnose and treat a range of other gynaecological problems.

### ARTs – treatments that bypass sexual intercourse

Although ART refers to technology and treatments that assist reproduction, as the UK National Institute for Health and Care Excellence explains, “assisted reproduction” is the name given to treatments that bypass and replace sexual intercourse.[[31]](#endnote-31) In the UK certain forms of ART are regulated by law and their use is controlled by the Human Fertilisation and Embryology Authority (HFEA). The HFEA licenses fertility clinics and centres carrying out IVF and other assisted conception procedures (that aim to produce a pregnancy without sexual intercourse), including treatments involving donated gametes (eggs and sperm) and embryo donation. The HFEA also regulates human embryo research and the storage of gametes and embryos.

The treatments described below along with risks and success rates are taken from information provided by NICE and by the HFEA.[[32]](#endnote-32) The fact that the HFEA places fertility treatment options alongside “storage options” for sperm, eggs and embryos indicates that with these procedures there is no real distinction made between embryos and gametes. Indeed gametes and embryos are both simply treated as raw material to be used or stored, imported or exported, or destroyed. In this section we have kept to the language used by the HFEA of quality control, selection, and choice of “best embryos”.

Although the HFEA discusses the use of donor gametes and embryos as part of its description of each technique, because of the particular moral issue this presents, we will discuss donation separately.

As with all medical treatments, medically assisted conception carries some risks including reactions to fertility drugs such as ovarian hyper-stimulation syndrome and a greater risk of ectopic pregnancy (when the embryo implants outside the uterus). There are other risks, some of which are not fully understood, relating to children born as a result of the treatment.[[33]](#endnote-33)

Some methods of medically assisted conception that bypass sexual intercourse include:

1. Intrauterine insemination (IUI)
2. *In vitro* fertilisation (IVF)
3. IVF with intracytoplasmic sperm injection (ICSI)
4. Use of donor sperm (donor insemination or DI) or eggs (egg donation)
5. Zygote intra-fallopian transfer (ZIFT)
6. Gamete intra-fallopian transfer (GIFT)

### Intrauterine insemination, IUI

IUI is a type of artificial insemination in which sperm is quality checked and the best quality sperm placed inside the womb or at the cervix. Sperm can be from the patient’s partner or from a donor. IUI is offered to a patient

* who finds it difficult to have sexual intercourse, or
* who has a condition such as a viral infection that can be sexually transmitted, or
* who is in a same-sex relationship.

Usually, no drugs are given to stimulate ovulation and instead insemination is timed around ovulation. Sperm is usually obtained by masturbation. Fast moving sperm are separated from slower or non-moving sperm in a laboratory procedure. The procedure is usually painless but if fertility drugs are used there may be accompanying risks. If pregnancy is not achieved after six cycles of IUI, the couple is offered fertility tests. If the test results are normal the couple are offered another six cycles of IUI before other medically assisted conception procedures are considered.

Success rates are difficult to assess since success depends on the cause of infertility. These causes often remain since the technology bypasses normal functioning. In some cases fertility drugs are offered. The latest success rates given by the HFEA are from 2008:

* 15.8% (237/1497) for women aged under 35
* 11% (154/1394) for women aged 35–39
* 4.7% (23/492) for women aged 40–42
* 1.2% (2/172) for women aged 42–44

Figures given in brackets are (IUI cycles resulting in a live birth/IUI cycles started).

Because IUI has not been found to increase the chances of couples with certain conditions becoming pregnant, IUI is not usually offered to patients with

* unexplained infertility, or
* low sperm count or poor quality sperm, or
* mild endometriosis.

### In vitro fertilisation, IVF

IVF involves fertilisation of an egg in a dish in a laboratory and so outside of the woman’s body. IVF treatment begins with stimulation of the ovaries so that eggs can be harvested. Sperm is obtained usually by masturbation. Eggs are fertilised outside of the woman’s body in the laboratory and then one or two embryos are placed in the woman’s womb. Any remaining “good quality” embryos are frozen for use later. This is one cycle of IVF and any frozen embryos used later are considered to be part of the same cycle.

The chance of successful pregnancy depends partly on age, with older women being less likely to achieve pregnancy. The likelihood of pregnancy also reduces with the number of unsuccessful cycles of IVF. IVF is offered to a patient

* who has been diagnosed with unexplained infertility
* who has blocked fallopian tubes
* when other techniques have not been successful
* whose male partner has fertility problems
* who is using frozen sperm
* who is using donated eggs or frozen eggs
* who is using embryo testing to avoid passing on a genetic condition

Although there are some variations to IVF treatment as explained below, the general procedure is as follows: in the first stage of the procedure, drugs are given to suppress the woman’s natural cycle. Then a daily hormone injection is given to boost the egg supply. Further hormone injections help the eggs to mature. Eggs are collected using a hollow needle while the woman is sedated. After egg collection the woman is given medication to prepare the womb lining for the embryo transfer. The eggs are mixed with (quality-controlled) sperm in a laboratory and checked. Where there are signs of fertilisation, the embryos, as they are now called, are grown in the laboratory incubator for up to six days. An embryologist monitors the development of the new embryos and chooses “the best” for transfer. An embryo can be transferred after two to three days or alternatively before transfer embryos can be grown for up to five or six days to the blastocyst stage when it is easier for the embryologist to select the “best quality” one. Remaining embryos can be frozen for future use. Usually only one or two embryos are transferred.

Different IVF treatment options are available. If a woman is already producing eggs then no fertility drugs may be needed or there may be just mild stimulation to encourage egg production. In some cases immature eggs are collected and matured in the laboratory before being fertilised (*in vitro* maturation); however, there is not enough evidence to ensure the safety of this procedure. Research is being conducted into “assisted hatching”: this is where a hole is made into the outer layer of the embryo or the layer is thinned in order to make it easier for the embryo to attach to the wall of the womb. Assisted hatching does not increase the quality of the embryo, nor does it seem to improve pregnancy rates. Furthermore, little is known about the effects it may have on children born as a result of the procedure.

The latest success rates for IVF given by the HFEA are from 2010:

* 32.2% for women under 35
* 27.7% for women aged between 35–37
* 20.8% for women aged between 38–39
* 13.6% for women aged between 40–42
* 5.0% for women aged between 43–44
* 1.9% for women aged over 45

### IVF with intracytoplasmic sperm injection, ICSI

In ICSI the embryologist selects a single sperm and injects it directly into an egg. This is unlike conventional IVF where many sperm are placed in a dish alongside an egg. The procedure follows the same pattern as conventional IVF apart from selection and injection of a single sperm. ICSI is used

* where the man’s sperm count is low
* where sperm have abnormal shapes or poor mobility
* where there has been previous failure in fertilisation during IVF
* where sperm has to be surgically collected; for example, because the man has had a vasectomy
* where frozen sperm of poorer quality is used
* when embryos are being tested

The HFEA does not list success rates separately since they are much the same as for conventional IVF. The HFEA points out that ICSI is a relatively new procedure which means that the long term consequences for children born from this procedure are not as yet known.

### Zygote intra-fallopian transfer, ZIFT

ZIFT follows the same procedure as IVF. However, once the egg has been fertilised the resulting “zygote” or single cell embryo is transferred to the woman’s fallopian tube through an invasive surgical procedure. NICE guidelines suggest that there is insufficient evidence to recommend ZIFT in preference to IVF.

### Gamete intra-fallopian transfer, GIFT

In GIFT, the eggs are prepared and their growth monitored in the same way as in IVF. However, instead of the eggs being fertilised *in vitro* in the laboratory the healthiest eggs and sperm are placed together in the woman’s fallopian tube so that fertilisation happens inside the woman’s body. This requires that the woman’s fallopian tube is not blocked or damaged. Selected eggs and prepared sperm are mixed in a catheter (a fine, flexible tube) and the catheter is inserted into the fallopian tube where the mixture is deposited. NICE guidelines suggest that there is insufficient evidence to recommend GIFT in preference to conventional IVF.

Some theologians have argued that a modified GIFT method can be accepted whereby the semen is collected not by masturbation but by sex using a perforated condom holding back some semen for later laboratory insertion. However, the acceptability of GIFT in Church teaching has not been expressed in either *Donum vitae* or *Dignitas personae.* Catholic experts are divided on the issue of deliberately withholding semen from the marital act (either for fertility treatment, or for some tests of male fertility) and on whether a child so conceived can really be said to be the fruit of marital self-giving.

### e-SET (elective single embryo transfer), DET (double embryo transfer) and storage options

Eggs and sperm may be frozen in liquid nitrogen and stored normally for up to ten years. They can then be thawed and used in IVF. Eggs are more fragile than embryos and even with the development of fast freezing techniques eggs are less likely to survive the freeze-thaw process.[[34]](#endnote-34) When it comes to embryos, HFEA regulations require fertility clinics to limit the number of embryos transferred in order to reduce the chance of a multiple birth: multiple births are regarded as a significant risk of IVF.[[35]](#endnote-35) Women are encouraged to choose to have only one embryo transferred (e-SET, elective single embryo transfer) as opposed to DET, double embryo transfer. This means that during fertility treatment normally a number of unused embryos remain. Embryos can be frozen and used later in treatment or in research or can be donated to other couples.

### Using donated sperm, eggs or embryos

The use of a donor of sperm, eggs or embryos may be offered

* if the woman does not produce any eggs of her own
* if the man does not produce any sperm of his own
* if sperm or eggs are unlikely to result in conception
* if there is a risk of passing on an inherited disease
* if the couple is in a same-sex relationship
* if the patient is single

Egg and sperm donors are screened for sexually transmitted diseases and for some genetic disorders. After screening the egg donor is given hormone injections to help develop and mature the eggs in her ovaries. When the eggs are mature the donor is sedated and her eggs are collected by a needle inserted into her ovaries through her vagina. Embryos can also be donated and they are routinely frozen before use. Donors of sperm, eggs and embryos can withdraw consent up to the moment of insemination or embryo transfer to the future use of their frozen sperm, eggs or embryos.

Some fertility clinics offer compensation over and above “expenses” for donations of sperm, eggs and embryos. They may operate a “sharing” arrangement whereby another man or woman undergoing fertility treatment donates some of their sperm or eggs in return for benefits such as discounted treatment, reduced costs of storage or decreased waiting times.

In the UK under parenthood law enacted in 2009 family relationships have been redefined and in an ART context depend more on consent than on biology. The donor has no legal rights or responsibility for any child resulting from ART if donation has been through a HFEA licensed clinic. In donation outside of a licensed clinic other parental rights may apply.

The woman giving birth to the child is always the legal mother when the child is born. Where the couple is married or in a civil partnership the husband is automatically recognised as the legal father of a child born through donor treatment. A lesbian couple who have a child through donor conception can now both be recognised as the child’s legal mothers or one woman as a “second parent”. Only if a husband or civil partner explicitly refuses consent to the treatment will he or she not be the legal father or second parent. A woman receiving treatment with donor sperm or with an embryo created with donor sperm can consent to any man or woman being the father or second parent as long as the person is not within certain prohibited degrees of relationship.

The HFEA recognises that it is natural for people to want to know about their genetic origins and the HFEA encourages parents of donor-conceived children to talk to their child about the child’s origins. UK sperm, egg and embryo donors now have to provide identifying information which will be given to any child born from their donation when the person reaches eighteen if they wishto know about their biological parent. However, many people who use sperm donation do not tell their child, although the child may intuit that there is some secret in the family.

### Surrogacy

Surrogacy is where a child is deliberately conceived and gestated for the benefit of a commissioning couple. This may involve artificial insemination by the male party of the couple. In this case the woman carrying the baby is the baby’s genetic mother. Alternatively surrogacy may involve IVF and transfer to the surrogate of the embryo of the commissioning couple (gestational surrogacy). In this case the woman carrying the baby is not genetically related to the baby.

Strictly speaking surrogacy is not a form of fertility treatment and even if no money changes hands it is more akin to a trade in babies. Although surrogacy is legal in the UK surrogacy arrangements are not legally enforceable and the surrogate mother cannot be paid more than “reasonable” expenses. Under current UK legislation the woman who gives birth is the legal mother. The “intended parents” must make an application to the family courts to become the child’s legal parents, and the surrogate mother may change her mind and keep the baby if she wishes.

# Respect for the dignity of the human embryo

Many of the ART procedures described above proceed rather as if the human embryo were simply a mass of cells that can be subjected to quality control and either selected and used or discarded or destroyed. The numbers of embryos sacrificed in the process is extremely high and the losses accepted as merely part of the procedure. Embryos are categorised as good or less good or called “spare”, and defective embryos are discarded.

Since multiple births are seen as a significant health risk, the HFEA imposes restrictions on the number of embryos that can be transferred in IVF and foetal “reduction” (selective abortion) may sometimes occur in the case of multiple pregnancy.

Embryos can be imported, exported, frozen, stored and experimented upon. The use of embryos in this way raises serious questions about the status of embryos and the extent to which the embryo deserves to be respected and protected. In order to answer these questions we need to consider the question: when does human life begin?

## When does human life begin?

Ironically, one thing that IVF procedures have shown us is that human life begins not when the baby is born or when the embryo implants in their mother’s womb or when a woman confirms that she is pregnant. Pregnancy weeks are calculated from the first day of the woman’s last menstrual period, and the age of the foetus is calculated as two weeks less than the pregnancy week, because the exact date of conception is not known. This is already a strong indication from clinical practice that human life begins at conception. With IVF, the age of the embryo is calculated exactly in the number of days since fertilisation.

Definitions from the HFEA are a useful starting point for establishing when human life begins.[[36]](#endnote-36) The HFEA defines fertilisation as “the penetration of an egg by a sperm and the formation of an embryo from this. Natural fertilisation occurs in the woman’s body (*in vivo*) but it can also occur in the laboratory (*in vitro*)”. The embryo is “a fertilised egg that has the potential to develop into a foetus” and the foetus is “the term used for an embryo after the eighth week of development until birth”.

From fertilisation a new being has come into existence that is quite unlike the egg or the sperm, and the rest of this new adventure of human life is a continuous process of development, growth and maturity. Of course, if the embryo does not implant in a woman’s womb it will not be able to grow and develop into a foetus and then a baby, but this does not mean that it is not a human life.

The human life that begins at fertilisation is not the life of the mother nor that of the father. Rather, it is the life of a new human being with that human being’s own growth.[[37]](#endnote-37) The embryo clearly is a living, individual human being that is a complete “whole” in the process of developing.

However, there are those who suggest that while the embryo is human life, it is not an individual human being. This is often the reason given for supporting research on embryos and for accepting the high numbers of embryos lost or deliberately destroyed during some ART procedures. Four main arguments are put forward against the view that the embryo is a human being: the “natural wastage” argument, the “placenta” argument, the “twinning” argument and the “appearance” argument.

1. The “natural wastage” argument.

It would seem that a high proportion of early embryos perish naturally early on in the developmental process. From this it has been argued that early embryos are not real human beings and have lesser moral worth. However, this is a weak argument and is tantamount to saying that because in previous centuries many infants did not survive to adulthood, infants are or were not real human beings with the same moral status as anyone else.

1. The “placenta” argument.

Some of the cells of the early embryo develop to become the placenta and other tissues that support the growing foetus. From this it has been argued that the embryo is not an individual human being. This argument suggests that the foetus may be identified only with those cells that later develop into the “foetus proper” and that other cells destined to become placenta and other supportive tissue should be regarded as something separate from the foetus.

However, this is a faulty argument because the placenta is an integral part of the foetal organism. Foetus “proper” and placenta develop in unison in a jointly goal-directed manner: they are a functional unity. That placental tissue is discarded after birth does not change this. Like the milk teeth, the placenta is discarded when it is no longer needed.

1. The “twinning” argument.

Little is known about the process of twinning, but in a small number of cases the early embryo divides, resulting in two individuals. This process takes place within the first fourteen days or so after fertilisation and before the emergence of the “primitive streak” (the first sign of what will become the spinal cord). From twinning it has been argued that until the embryo is observably one it cannot be regarded as an individual being.

However, this argument is also faulty. Although human beings do not generally multiply by dividing in two, or through one individual budding off from another who already exists, other living things do multiply in this way. Yet we do not deny that a starfish counts as one even if it may break into two starfish or that a plant counts as one even if several cuttings may be taken to produce more plants. In the laboratory, scientists count embryos as individuals (e.g., for the purpose of screening or transfer or freezing) even though each of these embryos could generate twins.

1. The “appearance” argument.

Finally, there are some people who agree that human life begins at fertilisation but also argue that the moral status of the embryo is not the same as that of a child or an adult and that the embryo does not deserve the same respect. For some, the very fact that the embryo does not “look like us” suggests it is somehow subhuman or sub-personal. They may say that the embryo is simply a potential human being or potential “person”, morally speaking.

However, we were all once embryos and a human being at fertilisation or at a few days gestation *does* actually look like a human being at that stage. Just because the embryo does not look like us as we are now does not mean that the embryo is not one of us. Changes in structure and in appearance are a part of natural development and these changes in fact continue into adult life.

## A human being with potential

The embryo is not a *potential* human being in the sense that one day the embryo *will develop into* a human being. Rather the embryo *is* a human being *with potential.* The embryo has active potential – a potential to act – because the embryo brings about developmental changes in itself, while remaining throughout the same human being.

Ironically, research on IVF embryos in the first fourteen days has shown that early embryos are able to grow normally without any maternal input. The human embryo is a genuine whole whose being is both *simultaneous;* that is, given all at once, and also *successive;* that is, it unfolds over time.

## Respect for the human embryo

Currently in the UK the embryo has “special status” and this is demonstrated by the rules and regulations that surround its treatment. However, this notion of “special status” does not seem to carry with it a notion of real respect. After all, embryos can be processed, frozen, stored, packaged, transported, labelled, used in research and discarded in much the same way as human tissue. When it comes to “terminating the development” of the embryo and “disposing of the remaining material” this is to be done with sensitivity, but sensitivity towards the providers or potential users of the embryo.[[38]](#endnote-38) The “special status” of the embryo does not seem to warrant any sensitivity towards the embryo in itself.

In contrast, Church teaching explains that “the body of a human being, from the very first stages of its existence, can never be reduced merely to a group of cells”.[[39]](#endnote-39) From the first moment of its existence the zygote “demands the unconditional respect that is morally due to the human being in his bodily and spiritual totality. The human being is to be respected and treated as a person from the moment of conception”.[[40]](#endnote-40)

Moreover, respect for the dignity of the human person entails that “the origin of human life has its authentic context in marriage and in the family, where it is generated through an act which expresses the reciprocal love between a man and a woman”.[[41]](#endnote-41) Since all human beings, and this includes the human embryo, are more than just a collection of cells, any intervention on the body of a human being affects not just the tissue or organs or functioning of that human being, but it also involves the person themself.[[42]](#endnote-42)

Certainly the Church sees as positive some scientific developments concerning the understanding of human life at its very beginning and the re-establishment of normal functioning in procreation. However, science and technology must be “at the service” of the human person and his or her true and integral good.[[43]](#endnote-43) This is why Church teaching cannot support developments that involve the destruction of human beings, however small, or developments that contradict the dignity of the human person.[[44]](#endnote-44)

## Respect and the frozen embryo

As we have seen, embryos are treated as both a precious commodity worth preserving and as entirely dispensable, depending solely on the wishes and demands of other people. We have also seen that fertility clinics are required to limit the number of embryos transferred in order to reduce the chance of a multiple birth.[[45]](#endnote-45)

This means that during fertility treatment a number of unused embryos may remain. As part of the standard quality assurance process “good quality” embryos can be frozen and used later in treatment.

 Church teaching recognises that the freezing of embryos is not compatible with the respect owed to human embryos on a number of grounds.[[46]](#endnote-46) To begin with, this form of storage presupposes that embryos are produced *in vitro.* Then the freezing process exposes embryos to serious risk of death or physical harm since a high percentage of frozen embryos do not survive the process of freezing and thawing. Given that many embryos do not survive the process many clinics advise that more embryos be thawed than will be transferred, leading to the potential loss of now unwanted embryos. The fact that embryos are kept suspended in a frozen storage facility means that they are deprived of being received into their mother and they are placed in a situation where they may be susceptible to further manipulation. Often the parents cannot decide what to do with them or they are simply abandoned.

 It is clear then why the Church views the freezing of embryos as a “grave injustice”:[[47]](#endnote-47) no one really knows what to do with them if the mother cannot or will not gestate them and eventually under UK law when the storage period ends they are left to perish. Research on these embryos treats them as mere biological material. Allowing them to be used by other infertile couples or to be “adopted” prenatally may seem to legitimise the procedure that created the problem in the first place. More importantly, the unrelated woman who becomes pregnant with the embryos thereby becomes a biological mother not via a marital act as befits human dignity but by purely technical means. In this, “embryo adoption” resembles IVF itself, although the embryo already exists before the second woman’s motherhood begins. We­ can see why the situation of frozen and spare embryos is a “situation of injustice which in fact cannot be resolved”.[[48]](#endnote-48)

# Respect for procreation and the parent–child relationship

The coming into being of every new human life is always a gift and a blessing. While every human being has an intrinsic dignity and this dignity is independent of the practical circumstances in which their life began, the personal human action whereby the wife becomes a mother through sexual union with her husband and the husband becomes a father through sexual union with his wife is the context that is worthy for the coming into being of a new human life.[[49]](#endnote-49) As Pope Francis says, “a child deserves to be born of that love, and not by any other means, for he or she is not something owed to one, but is a gift”, the fruit of the specific act of conjugal love of the parents.[[50]](#endnote-50)

 Procreation, where husband and wife become parents through the total gift of themselves also suggests co-creation and co-operation with the creative involvement of God. In contrast reproduction suggests that the new human being is the product of human action alone and solely the result of a human project. In reproduction through ARTs like IVF the coming to be of the new human life depends in a large measure on the technical actions of third parties entirely separated from the couple who have provided the egg and sperm. Where donated eggs, sperm or embryos are used there is an even further distance placed between the couple and the new human being.

If we liken IVF to laboratory experiments to see if sperm and egg do result in a viable embryo who can be transferred to a woman’s body then it is clear that the techniques involved depersonalise not only the child but also the very process that brings a new human life into being. However, even if couples do not see IVF as an experiment the standard observation, quality control and selection reduces the new life to a being “made” by others rather than begotten by the parents. When techniques that bypass sexual intercourse are supplemented with the use of donated gametes (sperm, eggs) then the commodification of the child is taken a step further, especially when this takes place as a transaction to reduce the high costs of the procedure.

## Techniques using donated gametes (heterologous artificial fertilisation or procreation)

ARTs have made it possible to redefine family relationships through the use of donor gametes. Definitions of “mother” and “father” have been thrown into confusion; indeed children can now have several mothers and fathers characterised as genetic, gestational or social. The gestational mother can be the commissioning mother or a surrogate, genetically related or otherwise. It seems that parenthood has been fragmented into different functions some of which are not even recognised as parental, in the absence of any choice to be a parent.

In contrast Pope Francis reminds us that weakening the family as that natural society founded on marriage cannot be beneficial to society as a whole.[[51]](#endnote-51) Rather, “the welfare of the family is decisive for the future of the world and that of the Church”.[[52]](#endnote-52) Pope Francis and Pope John Paul II offer profound reflections on the relationship of parents and their children that can have resonance with all. Pope Francis tells us that the gift of a new child entrusted by God to their father and mother allows us to appreciate the “utterly gratuitous dimension of love, which never ceases to amaze us”.[[53]](#endnote-53) Pope John Paul II explains that the child should be seen as completing marriage and as the “crowning” of married love.[[54]](#endnote-54) He says that the child springing from the intimate personal and physical communion of husband and wife enriches and deepens their relationship at the personal level and serves to strengthen the bond of love between them.[[55]](#endnote-55) In this way the child born as a result of the union of the flesh of husband and wife is “a living reflection of their love…a permanent sign of conjugal unity and a living and inseparable synthesis of their being a father and a mother”.[[56]](#endnote-56)

On a natural level then we can understand why a child deserves to be brought into existence through the conjugal acts that bring about new life and why these fruitful acts are significant in the life and love of the couple. The supernatural level allows us to understand better how this fruitful love is a reflection of Trinitarian love: “God, who is love and life, has inscribed in man and woman the vocation to share in a special way in his mystery of personal communion and in his work as Creator and Father”.[[57]](#endnote-57) In the tradition of the Church “the couple that loves and begets life is a true, living icon…capable of revealing God the Creator and Saviour. For this reason, fruitful love becomes a symbol of God’s inner life”.[[58]](#endnote-58)

## Gamete donation and the rights of the child

Gamete donation affects not only the relationship of the parents but also the identity of the child. Even the law and the HFEA recognise that people want to find out about their genetic origins and so at eighteen years old donor offspring now have the right to information about their genetic parents. The HFEA also acknowledge that finding out about the donor and possible genetic siblings is an emotionally fraught process. The failure to tell a child that he or she is donor conceived may appear a betrayal once the truth is known; the fact that money or compensation may have changed hands commercialises the person. Some donor conceived people are genuinely concerned that they may become attracted to people to whom they are unknowingly related. Donor conception can produce a crisis of identity. It can also produce disappointment on the part of social parents, who consider themselves the sole parents of the young person who is seeking their donor parent, and on the part of the young person who may discover that the donor rejects them once again, if their request to meet the donor and/or to establish a relationship with them is refused.

Church teaching explains that “the child has the right to be conceived, carried in the womb, brought into the world and brought up within marriage: it is through the secure and recognised relationship to his own parents that the child can discover his own identity and achieve his own proper human development”.[[59]](#endnote-59) The use of donor gametes deprives the child of their relationship with the parent of origin. Unlike a child who is adopted after birth, the child born as a result of donation is subject to grave injustice because that child is conceived in order to be given away. Understandably then the Church rules out donor insemination as well as IVF, ZIFT and GIFT involving egg or sperm donation or both.

In the same way as the use of donor gametes is an injustice to the child, the use of a surrogate, where the child is conceived and gestated in order to be given away, is also a grave injustice. Every child has the right to have true parents and surrogacy introduces another mother, thus confusing the familial relationship. Moreover, the mother carrying the baby solely with the intention of giving it away has failed to meet the obligations of maternal love and responsible parenthood.[[60]](#endnote-60) Surrogacy creates the illusion that bonds are not formed during pregnancy, and that a woman can be exploited as merely a body that grows the baby.

## Techniques using the gametes of the two spouses joined in marriage (homologous artificial fertilisation or procreation)

We have seen that human procreation as opposed to the mere reproduction of the human species must be understood in terms of the personal dignity of the parents and the child. We have also seen that the use of donor gametes is contrary to this personal dignity. The reasoning we have offered can be understood by all, whether religious or not.

However, ARTs such as intrauterine insemination (IUI), *in vitro* fertilisation (IVF), intracytoplasmic sperm injection (ICSI), and zygote or gamete intra-fallopian transfer (ZIFT and GIFT) need not involve donor gametes. We have also seen that fertility care that restores fertility or assists the sexual act is morally acceptable. So the remaining question surrounds ARTs where the “assistance” does in fact replace the sexual act.

## What is wrong with techniques that replace the marriage act?

To speak of the “marriage act” makes the act of sexual intercourse seem rather mechanical. But this is very far from the truth. In his teaching on human persons, sexuality, marriage and relationships entitled *The Theology of the Body: Human Love in the Divine Plan* Pope John Paul II talks about each human person being alone before God, created unique and irreplaceable, yet also called to relationship with others. In particular the divine call to relationship is found in marriage where a woman and a man come together in a “communion of persons”, where they exist as a person beside another person, and where through bodily union, when the two become one flesh, they co-operate with God to produce new life as the fruit of their love.

Pope John Paul II explains this connection between the unity of husband and wife and procreation as the “language of the body”. The body is made for communion and openness to the gift of life. Husband and wife communicate their personal love through this “language of the body”, and the fruit of this communication is a child. The generation of this new life remains beyond the direct control of the couple since the child is not a product. This beautiful insight into the sexual relationship between a man and a woman, a personal relationship, can be understood and appreciated by people who are not religious as well as people who are religious.

In the marriage act, there is, then, a close and intimate connection between the unity of the couple and procreation and this connection cannot be broken.[[61]](#endnote-61) The very personal and intimate act of sexual intercourse both strengthens the bond between the woman and the man and is designed to lead to new life, all being well. The very nature of marriage involves the connection of the three great goods of marriage: faithfulness, the unity of the spouses, and their fruitfulness in children.

In ART techniques that replace the marriage act the generation of the child is no longer part of the language of the body and the child is no longer conceived from a personal, intimate act. Instead – if indeed the procedure is a success – new life is produced by the calculated decisions of the parents and technicians who select and manipulate what now appear to be mere components of new life. The goods of marriage are separated out and new life becomes the subject of control and dominion such that the origin of the new human person is no longer the result of an act of interpersonal self-giving.[[62]](#endnote-62)

We have already seen that ARTs like IVF routinely involve the destruction of embryos and this is clearly the most serious moral aspect of such technologies. However, some have argued that the high loss of embryos is due to imperfections in the techniques used, with the implication that as techniques improve so will losses decrease. While this may be true to some extent, it cannot be argued that the current loss of embryos is unintentional or merely a side effect of the process: embryos produced *in vitro* who are judged to have defects, “spare” embryos, and other embryos of the “wrong” type are deliberately discarded.[[63]](#endnote-63)

Even if precautions are taken to avoid the destruction of any human embryos in the ART process, it is impossible to avoid the fact that the origin and destiny of the new human person lies under the domination of technology and the competencies of the technicians involved. Humanly speaking, the embryo is the product of a manufacturing process. The power of the doctors and technicians and the choices they make rule both the life and the identity of the embryo: “such a relationship of domination is in itself contrary to the dignity and equality that must be common to parents and children”.[[64]](#endnote-64)

# Conclusion

The Second Vatican Council document *Gaudium et Spes* identified the “modern dilemma”: that we human beings are becoming more and more aware of the forces that we have unleashed through technology while it is up to us to control them or be enslaved by them.[[65]](#endnote-65) The real and natural desire for children and the promise of new life sometimes cause people to think that what can be done through technology should be done. However, Church teaching offers clear moral criteria for evaluating medical interventions in procreation and these criteria make sense both from a religious and from a non-religious perspective. We derive these criteria from the dignity of human persons, their sexuality and their origin.[[66]](#endnote-66) Human history shows real progress in understanding and recognising the value and dignity of every human person and in decrying unjust discrimination and harm to human dignity.[[67]](#endnote-67)

When medicine is at the service of human beings it respects the dignity of the human person whether embryo, child or parent. This dignity is respected when fertility care restores fertility or assists the sexual act and this is why ethically acceptable research into fertility care should be promoted (see the end of this booklet for some contacts in this area). Human dignity is not respected when technology replaces the sexual act and above all when the smallest and most vulnerable of human beings, the embryo, is depersonalised and treated as raw material to be manipulated according to the desires of others.

The Church alerts us to a duty to speak clearly and explicitly about the dignity of every human being, particularly those who have no voice and those “in the initial stages of their existence”: “the fulfilment of this duty implies courageous opposition to all those practices which result in grave and unjust discrimination against unborn human beings, who have the dignity of a person, created like others in the image of God. Behind every ‘no’ in the difficult task of discerning between good and evil, there shines a great ‘yes’ to the recognition of the dignity and inalienable value of every single and unique human being called into existence.”.[[68]](#endnote-68)

# Further reading

These documents are all available from CTS.

Sacred Congregation for the Doctrine of the Faith, *Declaration on Procured Abortion,* 1974.

John Paul II, *Familiaris Consortio,* 1981. (S 357)

Congregation for the Doctrine of the Faith, *Donum Vitae,* 1987 (published by CTS as *The Gift of Life*) Congregation for the Doctrine of the Faith, *Dignitas Personae*, 2008.

John Paul II, *Letter to Families,* 1994. (S 434)

John Paul II, Encyclical Letter *Evangelium Vitae* (*The Gospel of Life*), 1995. (Do 633)

Pope Francis, *Amoris Laetitia*,2016

# Contacts

Anscombe Bioethics Centre, tel: 01865 610212; email: *admin@bioethics.org.uk* website: www.bioethics.org.uk Provides moral advice on fertility tests and treatments.

Life Fertility Care, tel: 01926 834654; website: *www.lifefertilitycare.co.uk*.

In Ireland, contact *www.fccirl.ie*, *www.naprobaby.ie* or *www.neofertility.ie*.

Other centres offering Naprotechnology are listed at

www.naprotechnology.comand www.fertilitycare.co.uk

# Glossary of terms associated with infertility and fertility treatment

**Abortifacient:** something (e.g., a drug) that has the effect of producing an abortion

**Abortion:** the killing of an unborn child

**Amniotic fluid:** ﬂuid surrounding the foetus within the amniotic sac in the uterus (womb)

**Amniotic sac:** sac of ﬂuid surrounding the unborn child during pregnancy

**AID:** artiﬁcial insemination by husband

**DI:** artiﬁcial insemination with donor semen

**Anaesthesia:** procedure or medication that produces a loss of sensation

**Artificial insemination:** injection of semen into a woman’s vagina

**Cervical mucus:** mucus secreted by the cervix, or neck of the womb

**Conception:** the union of the ovum (egg) and sperm (also called fertilisation)

**Conceptus:** unborn child

**Ectopic pregnancy:** a medical condition in which the embryo starts growing outside the uterus (womb), usually in the fallopian tube

**Embryo:** unborn child from the time of fertilisation to some two months later

**Embryo biopsy:** removal of one or more cells from the embryo for examination (also called pre-implantation diagnosis)

**Embryogenesis:** embryo development

**Endocrine glands:** hormone-secreting glands

**Endometriosis:** a condition involving misplaced endometrial tissue (lining of the womb) in the pelvic area

**Endometrium:** lining of the uterus (womb)

**Extra-corporeal fertilisation:** fertilisation outside the body

**Foetus:** unborn child from the end of the second month until birth

**Fertilisation:** the union of ovum (egg) and sperm (also called conception)

**Fibroids:** benign tumours in the uterus (womb)

**Follicle:** see ovarian follicle

**Gamete:** sperm or ovum

**Gestation:** the period of the development of the unborn child in the uterus (womb)

**GIFT:** gamete intra-fallopian transfer, a surgical procedure involving the transfer of ova (eggs) and sperm to the fallopian tube

**Gynaecology:** the branch of medicine concerned with disorders of the female reproductive system

**Hormone:** a chemical substance secreted into the blood by the endocrine glands in order to control bodily processes or stimulate other glands

**Immune system:** the body’s defence system against invading organisms such as bacteria and viruses

***In vitro* fertilisation (IVF):** the creation of an embryo outside the maternal body

**Laparoscope:** a long narrow telescope, which can be passed through the abdominal wall to inspect internal organs

**Laparoscopy:** visualisation of internal organs by means of a laparoscope

**Menopause:** the permanent cessation of menstrual periods

**Menstrual cycle:** the regular monthly changes in the woman’s body which control ovulation and menstruation

**Menstruation:** the woman’s monthly loss of blood

**Multiple pregnancy:** a pregnancy with more than one child

**Non-therapeutic:** non-healing

**Non-therapeutic research:** research that is not aimed at beneﬁting the research subject

**Obstetrics:** the branch of medicine concerned with the pregnant woman and her unborn child

**Oestrogen:** a major female hormone

**Ovarian follicle:** a minute sac within the ovary from which the ovum (egg) is released

**Ovarian stimulation:** hormone treatment to induce ovulation, sometimes with a view to producing several ripe ova (eggs) in one cycle

**Ovary:** female reproductive organ producing the ova (eggs). The woman has two ovaries: one on each side of the uterus

**Ovum (plural ova):** female reproductive cell or egg, which may be fertilised to create an embryo

**Pelvic inflammatory disease:** infection of the ovaries and fallopian tubes

**Pelvis:** the body basin containing the pelvic organs, e.g. the reproductive organs and the bladder

**Placenta:** the organ (of foetal origin) in the uterus (womb) from which the foetus gets its nourishment from the maternal blood via the umbilical cord

**Post-coital:** after intercourse

**Premature birth:** birth before the 37th week of pregnancy

**Prenatal diagnosis:** diagnosis of a medical condition in the foetus

**Pre-implantation diagnosis:** diagnosis of a medical condition in the embryo created by IVF (See embryo biopsy)

**Primary infertility:** infertility in a couple – or a woman – with no previous child

**Primitive streak:** longitudal axis in the developing embryo, which appears around the 14th day after fertilisation

**Procured abortion:** deliberate abortion

**Progesterone:** a major female hormone

**Secondary infertility:** infertility in a couple – or a woman – with a previous child

**Semen:** ﬂuid (normally containing millions of sperms) emitted from a man’s penis at orgasm

**Seminal fluid:** see semen

**Sperm:** the male reproductive cell, which may fertilise the ovum (egg) to produce an embryo

**Subfertility:** impaired fertility

**Super-ovulation:** hormone stimulation to encourage production of a number of ova (eggs) in the same menstrual cycle

**Testis (plural testes):** male reproductive organ that produces sperm

**Testosterone:** the main male sex hormone

**Therapeutic:** healing

**Therapeutic research:** research aimed at beneﬁting the subject

**Ultrasound scan:** a non-invasive test involving visualisation of the foetus on a screen

**Zygote:** the single cell embryo

1. *http://www.nhs.uk/Conditions/Infertility/Pages/Treatment.aspx* [↑](#endnote-ref-1)
2. *https://www.nice.org.uk/guidance/cg156/ifp/chapter/What-you-can-expect-from-your-care* [↑](#endnote-ref-2)
3. *http://www.nhs.uk/Conditions/Infertility/Pages/Treatment.aspx#Going-private* [↑](#endnote-ref-3)
4. *https://www.nice.org.uk/guidance/cg156/ifp/chapter/Treatments-for-women* [↑](#endnote-ref-4)
5. Congregation for the Doctrine of the Faith, *Donum vitae* (*The Gift of Life*), 1987, 8 [↑](#endnote-ref-5)
6. Congregation for the Doctrine of the Faith, *Dignitas personae* (*The Dignity of the Person*) 2008, 16 [↑](#endnote-ref-6)
7. *Donum vitae*, 1987, 8 [↑](#endnote-ref-7)
8. *Dignitas personae*, 2008, 9 [↑](#endnote-ref-8)
9. *Dignitas personae*, 2008, 1 [↑](#endnote-ref-9)
10. *Dignitas personae*, 2008, 10 [↑](#endnote-ref-10)
11. *Dignitas personae*, 2008, 2 [↑](#endnote-ref-11)
12. *Donum vitae*, 1987, B. 4(c) [↑](#endnote-ref-12)
13. *Dignitas personae*, 2008, 12 [↑](#endnote-ref-13)
14. *Donum vitae*, 1987, A.1 [↑](#endnote-ref-14)
15. *Dignitas personae*, 2008, 14 [↑](#endnote-ref-15)
16. *Dignitas personae*, 2008, 15, 16 [↑](#endnote-ref-16)
17. *Dignitas personae*, 10 [↑](#endnote-ref-17)
18. *https://www.nice.org.uk/guidance/cg156/ifp/chapter/Fertility-problems* [↑](#endnote-ref-18)
19. *Donum vitae*, 1987, B.5 [↑](#endnote-ref-19)
20. *Donum vitae*, 1987, B.5 [↑](#endnote-ref-20)
21. *Donum vitae*, 1987, B.5 [↑](#endnote-ref-21)
22. *Dignitas personae*, 2008, 16 [↑](#endnote-ref-22)
23. *Dignitas personae*, 4, 12 [↑](#endnote-ref-23)
24. *Donum vitae*, 3 [↑](#endnote-ref-24)
25. *Dignitas personae*, 13 [↑](#endnote-ref-25)
26. Pope Francis, *Amoris Laetitia*, 2016, 81 [↑](#endnote-ref-26)
27. *http://www.nhs.uk/conditions/Endometriosis/Pages/Introduction.aspx* [↑](#endnote-ref-27)
28. *http://www.nhs.uk/conditions/Polycystic-ovarian-syndrome/Pages/Introduction.aspx* [↑](#endnote-ref-28)
29. *Dignitas personae*, 13 [↑](#endnote-ref-29)
30. *http://www.naprotechnology.com/* [↑](#endnote-ref-30)
31. *www.nice.org.uk/guidance/cg156/ifp/chapter/Assisted-reproduction* [↑](#endnote-ref-31)
32. *www.hfea.gov.uk* [↑](#endnote-ref-32)
33. *http://www.hfea.gov.uk/fertility-treatment-risks.html* [↑](#endnote-ref-33)
34. *http://www.hfea.gov.uk/docs/HFEA\_Fertility\_treatment\_Trends\_and\_figures\_2014.pdf* [↑](#endnote-ref-34)
35. *http://www.hfea.gov.uk/docs/HFEA\_Fertility\_treatment\_Trends\_and\_figures\_2014.pdf* [↑](#endnote-ref-35)
36. *http://www.hfea.gov.uk/glossary.html* [↑](#endnote-ref-36)
37. Pope John Paul II, *Evangelium vitae*, 1995, 60; CDF Declaration on Procured Abortion, 1974, 12 [↑](#endnote-ref-37)
38. Human Fertilisation and Embryology Authority, Code of Practice 15; Human Fertilisation and Embryology Act 1990, 11 [↑](#endnote-ref-38)
39. *Dignitas personae*, 4 [↑](#endnote-ref-39)
40. *Dignitas personae*, 4 quoting *Donum vitae*, I.1 [↑](#endnote-ref-40)
41. *Dignitas personae*, 6 [↑](#endnote-ref-41)
42. *Donum vitae*, 3 [↑](#endnote-ref-42)
43. *Donum vitae*, 2; *Dignitas personae*, 4 [↑](#endnote-ref-43)
44. *Dignitas personae*, 4 [↑](#endnote-ref-44)
45. *http://www.hfea.gov.uk/docs/HFEA\_Fertility\_treatment\_Trends\_and\_figures\_2014.pdf* [↑](#endnote-ref-45)
46. *Dignitas personae*, 18 [↑](#endnote-ref-46)
47. *Dignitas personae*, 19 [↑](#endnote-ref-47)
48. *Dignitas personae*, 19 [↑](#endnote-ref-48)
49. Pope John Paul II, Address to the Participants in the Plenary Assembly of the Pontifical Academy for Life, 21 February 2004, n. 2 [↑](#endnote-ref-49)
50. *Amoris Laetitia*, 81 [↑](#endnote-ref-50)
51. *Amoris Laetitia*, 52 [↑](#endnote-ref-51)
52. *Amoris Laetitia*, 31 [↑](#endnote-ref-52)
53. *Amoris Laetitia*, 166 [↑](#endnote-ref-53)
54. Pope John Paul II, Letter to Families 1994, 9 [↑](#endnote-ref-54)
55. Letter to Families, 7 [↑](#endnote-ref-55)
56. Letter to Families, 14 [↑](#endnote-ref-56)
57. *Dignitas personae*, 9; *Donum vitae*, Introduction 3 [↑](#endnote-ref-57)
58. Pope Francis, *Amoris Laetitia*, 11; Pope John Paul II, Letter to Families, 6 [↑](#endnote-ref-58)
59. *Donum vitae*, 2.1 [↑](#endnote-ref-59)
60. *Donum vitae*, 3 [↑](#endnote-ref-60)
61. *Donum vitae*, B.4.a [↑](#endnote-ref-61)
62. *Donum vitae*, B.4.b, c [↑](#endnote-ref-62)
63. *Dignitas personae*, 15 [↑](#endnote-ref-63)
64. *Donum vitae*, B.5 [↑](#endnote-ref-64)
65. Second Vatican Council, *Gaudium et Spes*, 1965, 9 [↑](#endnote-ref-65)
66. *Donum vitae*, B.7 [↑](#endnote-ref-66)
67. *Dignitas personae*, 36 [↑](#endnote-ref-67)
68. *Dignitas personae*, 37 [↑](#endnote-ref-68)