

FACTFILE: GCSE HOME ECONOMICS: Child Development



Infertility

Learning outcomes

Students should be able to:

- Identify the causes of infertility and describe the treatments available.

What is infertility?

According to The World Health Organisation infertility is; “a disease of the reproductive system defined by the failure to achieve a clinical pregnancy after 12 months or more of regular unprotected sexual intercourse”.

www.who.int

In the UK 3.5 million couples have difficulty conceiving; this can be due to fertility problems in either the male, female or in both partners.

Male Infertility

- Low sperm count
- Sperm tube blocked
- Testicular cancer
- Vasectomy
- Failure to ejaculate
- Cancer treatment
- Alcohol, smoking and drugs
- Stress

CAUSES OF INFERTILITY



Causes of infertility

Males and females can both be affected by infertility, however there are many different causes. Figure 1 displays some of the most common causes of infertility in males and females.

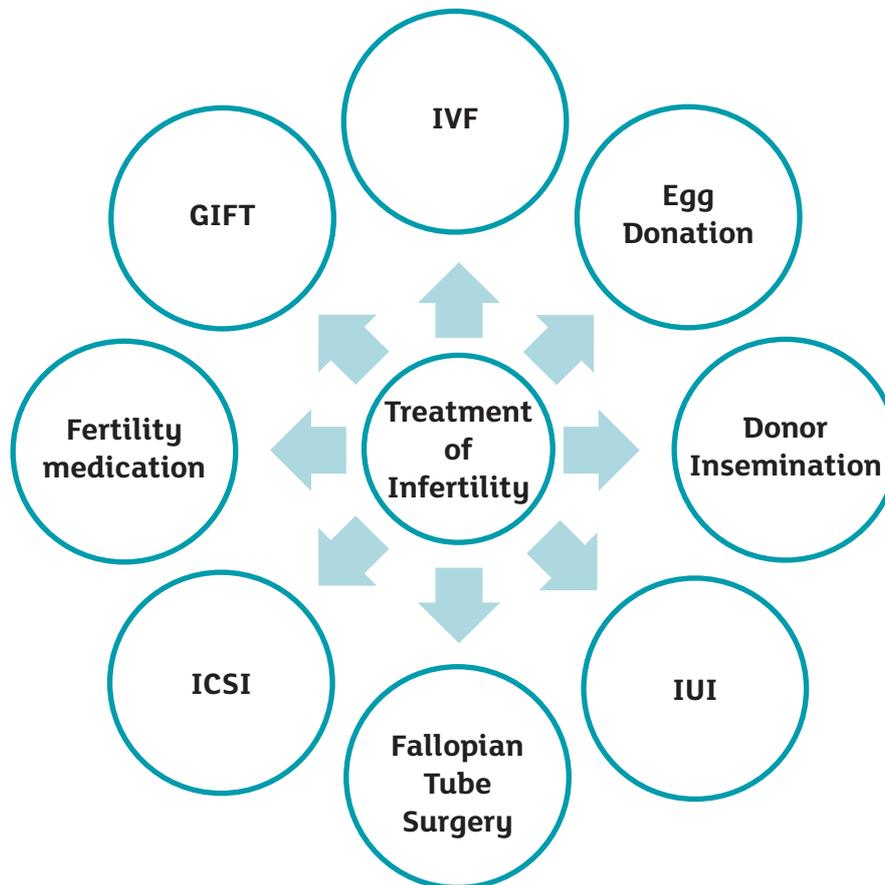
Female Infertility

- Blocked fallopian tube
- Ovarian cancer
- Increasing age/ menopause
- Failure to ovulate
- Female sterilisation
- Hysterectomy
- Cancer treatment
- Fibroids
- Endometriosis
- Cervical mucus defect
- STIs
- Alcohol, smoking and drugs
- PCOS Polycystic ovary syndrome
- Stress
- Being overweight/ underweight
- Hormone imbalance

Figure: 1 Causes of Infertility
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Treatment of Infertility

With advances in medicine has come an increase in the treatments available for infertility. The treatment an individual will receive will be dependent upon the cause of infertility. Fertility treatments are available for males and females. Some fertility treatments can be surgically invasive whilst others can be medicines to boost fertility.



Fertility Medication

This is a non-invasive form of treatment for infertility in females. There is a range of medication available depending on the cause of infertility. Females may be given a fertility drug to stimulate the production of eggs (ovulation) however this can increase the chance of multiple eggs being fertilised resulting in twins or triplets. Females with polycystic ovary syndrome (PCOS) may also be treated with metformin to improve the chance of conceiving with the condition.



In Vitro Fertilisation (IVF)

IVF takes place outside of the body in a laboratory. A daily hormone injection is given to the female to stimulate egg production; once these eggs have matured they are then removed from the body in a process known as harvesting. Harvesting is done using a fine hollow needle and an ultrasound to access the ovary. The laboratory will also require the man to produce a sperm sample. The most mobile sperm will be chosen to increase the chances of success. The female's eggs are then fertilised with the sperm in a petri dish. This petri dish will be incubated and the eggs checked to see if fertilisation was successful. A fertilised egg will then become an embryo. These embryos will be planted back in the female's uterus in the hope that one of them will embed and develop. IVF can be a very expensive process and may require multiple cycles before it is successful. IVF can be a stressful experience on a couple especially if they have experienced unsuccessful cycles before. Couples may also face financial pressures due to the high cost of treatment.

**Donor Insemination**

Males can donate their sperm for use. This sperm can be used to fertilise eggs through the same process as IVF or through intrauterine insemination. As with egg donation a child created with the sperm from a donor has the right to find out the identity of the donor upon their 18th birthday.

Intrauterine Insemination (IUI)

IUI involves the female being given a hormone injection to stimulate the production of eggs (ovulation). This will increase the chances of an egg being fertilised. A sample of the male sperm will be collected, analysed, and the fastest moving sperm selected for insemination. This sperm will be injected directly into the uterus through the cervix during ovulation (when eggs are released) as this will also increase the chances of fertilisation. This

method is often used whenever a couple is using a sperm donor or are unable to have intercourse due to a physical disability.

Fallopian Tube Surgery

This may be an option if a female's fallopian tubes are blocked or have scar tissue due to PCOS which can prevent eggs passing through them to be fertilised. Therefore breaking down this scar tissue will allow eggs to move through the fallopian tube for fertilisation.

Intra Cytoplasmic Sperm Injection (ICSI)

ICSI may be used to treat male infertility. ICSI can be used in cases where there is a low sperm count, poor sperm motility and if sperm is struggling to penetrate the egg. ICSI is another treatment carried out in the lab. ICSI works by a single high quality sperm being selected and injected directly into the single egg. The fertilised egg will then be placed into the uterus.

**Gamete Intra-Fallopian Transfer (GIFT)**

GIFT is very similar to IVF however fertilisation occurs in the fallopian tube rather than in a petri dish. The female is given a hormone injection to stimulate egg production, these eggs will be harvested and analysed. The male is required to produce sperm, which will then be placed with the eggs in the fallopian tube in the hope that fertilisation will occur.

Additional Information

Additional information can be obtained from the following sources:

www.nhs.uk/conditions/infertility/Pages/Introduction.aspx

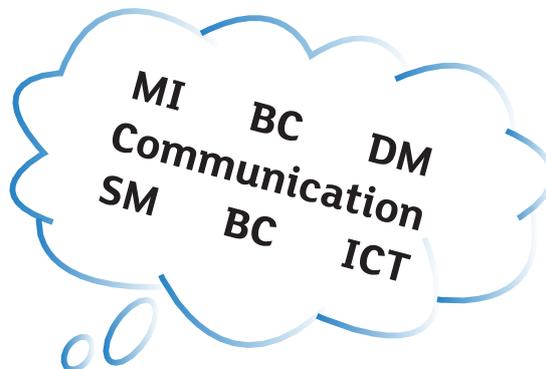
Bibliography

World Health Organisation. *Infertility definitions and terminology*. Available: <http://www.who.int/reproductivehealth/topics/infertility/definitions/en>

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Activity 2

Produce a leaflet that will inform a couple of the fertility treatments that are available to them.



Learning Activities

Activity 1

Role play
Emma and John have had problems conceiving a child for a number of years. They have come to you as a fertility specialist to discuss what treatment options are available to them.



