Your notes

GCSE Biology: revision notes

Hormones in reproduction and contraception

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Hormones at puberty

- During puberty, reproductive hormones cause secondary sex characteristics to develop.
- **Oestrogen** is the main female reproductive hormone, made in the ovaries. At puberty, eggs begin to mature; about every 28 days an egg is released (**ovulation**).
- **Testosterone** is the main male reproductive hormone, made in the testes. It stimulates sperm production.

The menstrual cycle

- FSH (from the pituitary) causes an egg to mature in the ovary.
- LH (from the pituitary) stimulates the release of the egg (**ovulation**).
- **Oestrogen** and **progesterone** (from the ovaries) are involved in maintaining the lining of the uterus.
- (Higher) FSH stimulates the ovaries to make **oestrogen**. **Oestrogen** inhibits FSH and stimulates LH. LH triggers **ovulation**. Progesterone maintains the uterus lining and inhibits FSH and LH.

Contraception

- Hormonal methods: the oral contraceptive pill contains hormones that inhibit FSH so no eggs mature; injections, implants and skin patches release **progesterone** slowly to stop eggs maturing and being released for months or years.
- **Barrier methods**, such as condoms and diaphragms, stop sperm reaching the egg. Spermicides kill or disable sperm.
- Intrauterine devices (IUDs) stop an embryo implanting, or release hormones.

- Other methods: avoiding sex around the time of **ovulation**, and surgical sterilisation.

Treating infertility (Higher)

- FSH and LH can be given in a 'fertility drug' to women whose FSH level is too low.
- In IVF, the mother is given FSH and LH to mature several eggs. The eggs are collected and fertilised by sperm in a laboratory. The fertilised eggs grow into embryos, and one or two are put into the uterus.
- IVF can be emotionally and physically stressful, success rates are not high, and it can lead to multiple births, which are a risk to mother and babies.

Key terms

Oestrogen	The main female reproductive hormone, made in the ovaries.
Testosterone	The main male reproductive hormone, made in the testes.
Ovulation	The release of an egg from an ovary, about every 28 days.
FSH	Follicle-stimulating hormone: causes an egg to mature in the ovary.
LH	Luteinising hormone: stimulates the release of an egg.
Progesterone	A hormone that maintains the lining of the uterus.
Contraception	Methods used to prevent pregnancy.
IVF	In vitro fertilisation: eggs are fertilised by sperm outside the body.
Barrier method	A contraceptive, such as a condom, that stops sperm reaching an egg.

Quick questions

Cover the answers and test yourself: remembering is what makes it stick.

1. Where is oestrogen made?
2. What does testosterone stimulate?
3. Which hormone causes an egg to mature?
4. Which hormone stimulates ovulation?
5. What does progesterone do?
6. How does the combined contraceptive pill work?
7. How often is an egg usually released?
8. What type of contraception is a condom?

Answers

1. Ovaries
2. Sperm production

Your notes

3. FSH
4. LH
5. Maintains the lining of the uterus
6. Hormones inhibit FSH so no eggs mature
7. About every 28 days
8. Barrier method

What to do next

Practise 14 questions on this topic

Try 7 exam questions, with mark schemes

Read the lesson, one step at a time

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