

Edexcel Biology GCSE

Topics 7.4 to 7.8 - Menstrual cycle and fertility

Flashcards

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What is the menstrual cycle?



What is the menstrual cycle?

The cycle in women (typically lasting 28 days) that involves:

- Shedding of uterus lining (menstruation)
- Repair of uterus lining
- Release of an egg (ovulation)
- Maintenance of uterus lining



Describe the stages of the menstrual cycle



Describe the stages of the menstrual cycle

- **Days 1-4:** if fertilisation and implantation do not occur the uterus lining sheds and the egg is expelled with it (menstruation)
- **Days 4-14:** uterus lining thickens and blood vessels grow in preparation for the implantation of an egg
- **Day 14:** egg released from a follicle into the oviduct (ovulation)
- **Days 14-28:** uterus lining maintained so implantation can occur



Name the hormones that control the menstrual cycle (4)



Name the hormones that control the menstrual cycle
(4)

- Follicle stimulating hormone (FSH)
- Oestrogen
- Luteinising hormone (LH)
- Progesterone



Describe the role of FSH in the
menstrual cycle (**higher**)



Describe the role of FSH in the menstrual cycle (higher)

- Secreted by the pituitary gland
- Transported in the bloodstream to the ovaries
- Triggers the development of a follicle in the ovaries which releases oestrogen



Describe the role oestrogen plays in the menstrual cycle (**higher**)



Describe the role oestrogen plays in the menstrual cycle (**higher**)

- Secreted by the ovaries
- Repairs and thickens the uterus lining
- Inhibits secretion of FSH from the pituitary gland
- Stimulates secretion of LH from the pituitary gland



Describe the role of LH in the menstrual cycle (higher)



Describe the role of LH in the menstrual cycle (higher)

- Secreted by the pituitary gland
- Transported in the bloodstream to the ovaries
- Surge in LH triggers ovulation
- Stimulates follicle remains to develop into a corpus luteum which then secretes progesterone



What is a corpus luteum? (higher)



What is a corpus luteum? (higher)

- Temporary endocrine structure
- Mass of cells that releases progesterone
- Degenerates after a few days



Describe the role of progesterone in the menstrual cycle (higher)



Describe the role of progesterone in the menstrual cycle (**higher**)

- Secreted by the corpus luteum
- Stimulates the growth of blood vessels in the uterus lining (in preparation for implantation)
- Inhibits the release of FSH and LH
- If no implantation occurs, progesterone levels decrease and the uterus lining sheds. FSH increases and the cycle starts again.



What happens to progesterone levels if fertilisation and implantation occur?
(higher)



What happens to progesterone levels if fertilisation and implantation occur? (**higher**)

The placenta produces progesterone so levels remain high. This prevents further ovulation and maintains the uterus lining.



What are contraceptives?



What are contraceptives?

A method or device utilised to prevent pregnancy



Which hormones can be taken to prevent pregnancy?



Which hormones can be taken to prevent pregnancy?

- Progesterone taken on its own
- Progesterone combined with oestrogen



How does progesterone prevent pregnancy? (3)



How does progesterone prevent pregnancy? (3)

- Sperm find it more difficult to enter the uterus as the cervical mucus is thickened
- Thins the uterine lining, reducing the likelihood of egg implantation
- Prevents ovulation in some women (but not all)



How does oestrogen prevent pregnancy?



How does oestrogen prevent pregnancy?

Oestrogen inhibits FSH, preventing ovulation.



Outline how progesterone can be administered as a contraceptive (2)



Outline how progesterone can be administered as a contraceptive (2)

- Mini-pill taken daily
- Injection



Outline how progesterone and oestrogen can be administered as a contraceptive (2)



Outline how progesterone and oestrogen can be administered as a contraceptive (2)

- Combined pill
(taken continuously for 21 days then paused for 7 days)
- Skin patch
(worn continuously for 3 weeks then without for 1 week)



What are the benefits of hormonal contraceptive methods? (3)



What are the benefits of hormonal contraceptive methods? (3)

- 99% effective when used properly
- Generally longer lasting than non-hormonal methods
- Used to treat other conditions e.g. painful/heavy periods



What are the risks of hormonal contraceptive methods? (4)



What are the risks of hormonal contraceptive methods? (4)

- Side effects e.g. mood changes, acne, bloating
- Do not protect against STIs
- May involve uncomfortable medical procedures
- Not effective if used incorrectly



Describe the barrier methods of contraception



Describe the barrier methods of contraception

Prevent the sperm and egg meeting

e.g. condoms, diaphragms (fit over cervix)



What are the benefits of barrier methods of contraception? (3)



What are the benefits of barrier methods of contraception? (3)

- Condoms are simple and quick to use
- Condoms prevent the spread of STIs
- No side effects



What is the main risk of barrier methods of contraception?



What is the main risk of barrier methods of contraception?

Less effective than hormonal methods
e.g. condom may split whilst in use.



What two methods (involving hormones)
are used to treat infertility? (higher)



What two methods (involving hormones) are used to treat infertility? (higher)

- Clomifene therapy
- IVF



Describe the role of hormones in IVF
(higher)



Describe the role of hormones in IVF (higher)

1. **FSH and LH given to a woman to stimulate egg production and ovulation**
2. Eggs retrieved from the woman's ovaries and fertilised in vitro
3. Resultant embryo transferred to the woman's uterus



Outline clomifene therapy (higher)



Outline clomifene therapy (**higher**)

- Prescription of **clomifene** drug to women who do not ovulate regularly
- Stimulates secretion of more FSH and LH which triggers egg production and ovulation

