



FSH and LH are used as 'fertility drugs' to help someone become pregnant in the normal way

In Vitro Fertilisation (IVF) treatment.

Involves giving a mother FSH and LH to stimulate the maturation of several eggs

The eggs are collected from the mother and fertilised by sperm from the father in a laboratory.

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The fertilised eggs develop into embryos.

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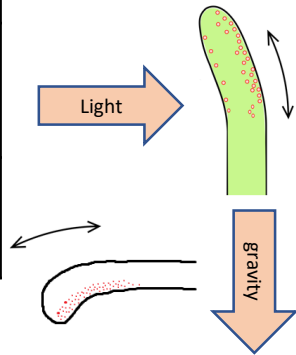
At the stage when they are tiny balls of cells, one or two embryos are inserted into the mother's uterus (womb).

Hormones are used in modern reproductive technologies to treat infertility

Plants produce hormones to coordinate and control growth

Plant responses using hormones (auxins)

Light (phototropism)	Light breaks down auxins and they become unequally distributed in the shoot. The side with the highest concentration of auxins has the highest growth rate and the shoot grows toward the light.
Gravity (geotropism or gravitropism)	Gravity causes an unequal distribution of auxins. In roots the side with the lowest concentration has the highest growth rate and the root grows in the direction of gravity.
	In new shoots from a seedling the unequal distribution of auxins causes the shoot to grow away from gravity.



(HT only) Gibberellins are important in initiating seed germination.

(HT only) Ethene controls cell division and ripening of fruits.

The use of hormone to treat infertility (HT only)

Plant hormones

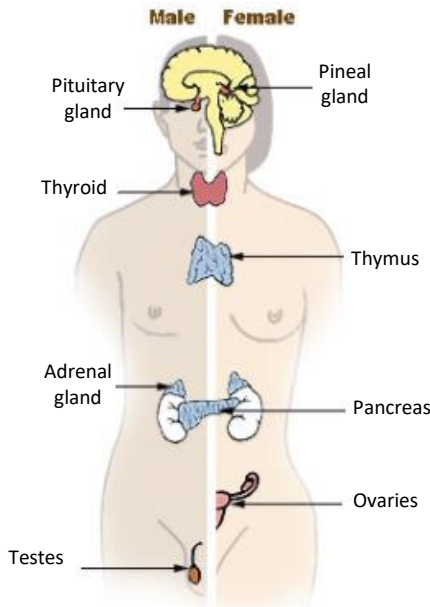
Use of plant hormones (HT only)

Plant growth hormones are used in agriculture and horticulture

Auxins	Weed killers, rooting powders, promoting growth in tissue culture.
Ethene	Control ripening of fruit during storage and transport.
Gibberellins	End seed dormancy, promote flowering, increase fruit size.

AQA GCSE HOMEOSTASIS AND RESPONSE PART 3

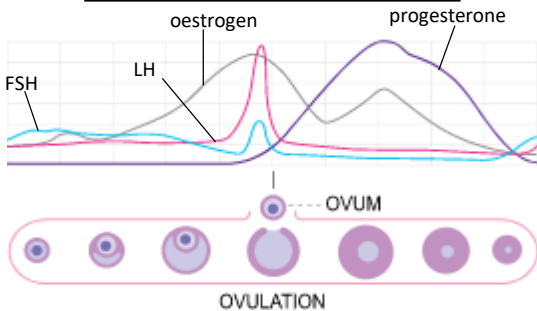
Hormones in human reproduction



During puberty reproductive hormones cause secondary sexual characteristics to develop

Oestrogen (main female reproductive hormone)	Testosterone (main male reproductive hormone)
Produced in the ovaries. At puberty eggs begin to mature releasing one every 28 days – ovulation .	Produced in the testes stimulating sperm production.

(HT only) a graph of hormone levels over time



Menstrual cycle	Follicle stimulating hormone (FSH)	Causes maturation of an egg in the ovary.	(HT) FSH stimulates ovaries to produce oestrogen.
	Luteinising hormone (LH)	Stimulates release of an egg.	(HT) Oestrogen stops FSH production and stimulates LH production in pituitary gland.
	Oestrogen and progesterone	Maintain uterus lining.	

Potential disadvantages of IVF	Emotional and physical stress.
	Success rates are not high.
	Multiple births risk to mother and babies.

Fertility can be controlled by hormonal and non hormonal methods	Oral contraceptives	Contain hormones to inhibit FSH production so that no eggs mature.
	Injection, implant, skin patch	For slow release of progesterone to inhibit the maturation and release of eggs for months or years.
	Barrier methods	Condoms or diaphragms which prevent sperm reaching the egg.
	Intrauterine devices	Prevent implantation of an embryo or release a hormone.
	Spermicidal agents	Kill or disable sperm.
	Abstaining	Avoiding intercourse when an egg may be in the oviduct.
	Surgery	Male or female sterilisation.