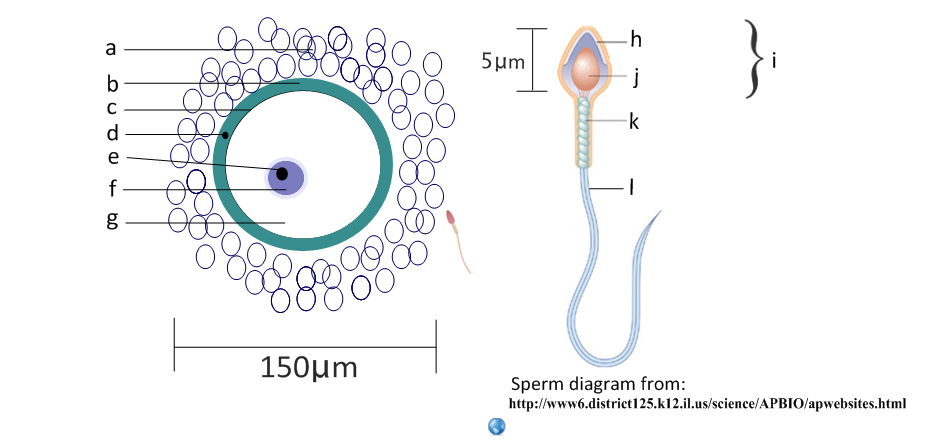
Blog resource: <http://tinyurl.com/2fr4zh8> Click4Biology: <http://tinyurl.com/26okfxo>

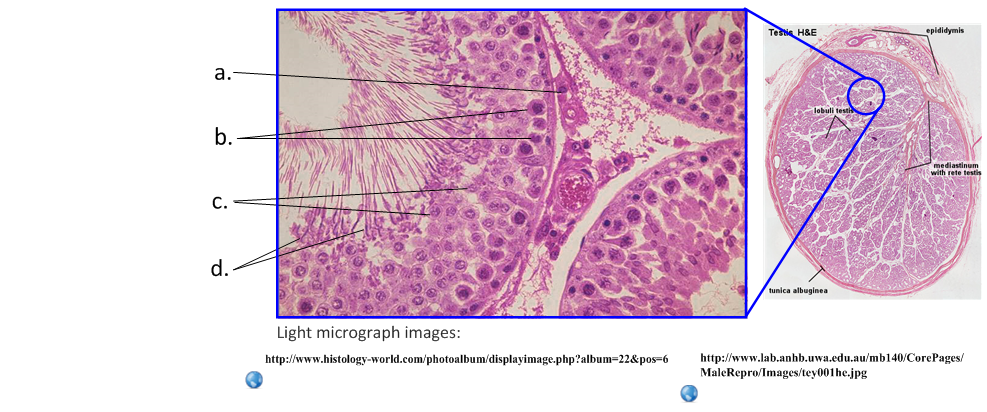
1. Define the following:

|  |  |
| --- | --- |
| Gamete | *Haploid sex cell, which fuses with another gamete in fertilization. Sperm and eggs.*(1) |
| Oogenesis |  |
| Spermatogenesis |  |
| Fertilisation |  |
| Gestation |  |

1. Label the structures of the mature sperm and egg and calculate the magnification of each image.

|  |  |  |  |
| --- | --- | --- | --- |
| a | follicle cells | h |  |
| b |  | i | head |
| c |  | j |  |
| d |  | k |  |
| e |  | l |  |
| f |  | Magnification: | |
| g |  |
| Magnification: | |

1. Annotate this light micrograph of testis tissue.



|  |  |
| --- | --- |
| **a** | **interstitial cells** |
| produce testosterone. | |
| **b** |  |
|  | |
| **c** |  |
|  | |
| **d** |  |
|  | |

State the roles of the following hormones in spermatogenesis.

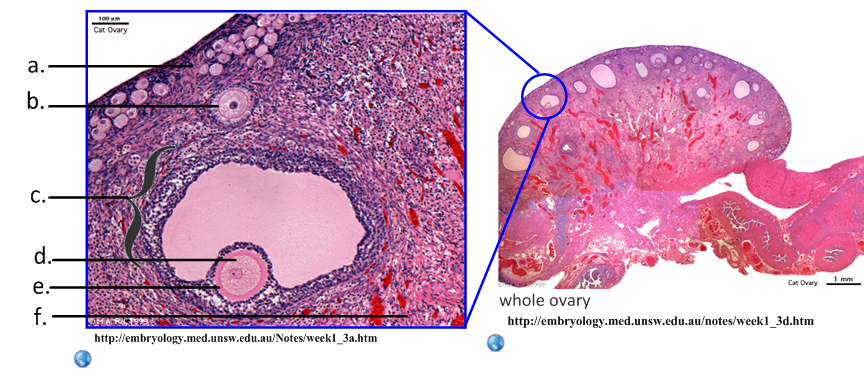
|  |  |
| --- | --- |
| Luteinizing hormone (LH) |  |
| Testosterone |  |
| Follicle stimulating hormone (FSH) |  |

Compare spermatogenesis and oogenesis.

|  |  |  |
| --- | --- | --- |
|  | **Spermatogenesis** | **Oogenesis** |
| Number of gametes produced per primary cell |  |  |
| Formation of gametes | Constant after puberty |  |
| Number of meiotic divisions |  |  |
| Method of release of gametes |  | Ovulation, controlled by LH |

Outline the process of spermatogenesis in the testes.

1. Label and annotate these structures of the ovary.



|  |  |
| --- | --- |
| **a** | **germinal epithelium** |
| Constant mitosis produces primary follicles. | |
| **b** |  |
|  | |
| **c** |  |
|  | |
| **d** |  |
|  | |
| **e** |  |
|  | |
| **f** |  |
|  | |

1. Outline oogenesis.

|  |  |
| --- | --- |
|  |  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |

1. State the role of these two hormones in the female reproductive system.

HCG:

Oxytocin:

1. HCG is released early in the pregnancy if a blastocyst implants on the endometrium.
2. State the origin of HCG.
3. Outline two functions of HCG in early pregnancy.

|  |  |  |
| --- | --- | --- |
| Function | | Advantage |
| Inhibits… | FSH and LH |  |
| Maintains… |  |  |

1. HCG can be detected in the urine. Identify the type of immune system molecule used to detect HCG in pregnancy kits.
2. State the method used to produce these molecules for the test kits.
3. Early embryonic development.
4. State the method of cell division used in embryonic development.
5. The developing fetus is protected and served by the placenta, amniotic sac and umbilical cord.

|  |  |
| --- | --- |
| State the function of the amniotic sac and fluid. |  |
|  |
| Identify the hormones released by the placenta. |
|  |
| List the materials exchanged between the fetal and maternal blood. |
| *Mother to fetus:*  *Fetus to mother:* |

1. Explain how the following structures of the placenta aid its function.

|  |  |
| --- | --- |
| Umbilical cord |  |
| Villi |  |
| Inter-villus spaces |  |
| Blood supply |  |
| Membrane |  |
| Rough endoplasmic reticulum in cells |  |

Birth is controlled by positive feedback mechanisms in the body, which is in contrast to the negative feedback mechanisms of homeostasis. State the name of the ‘birth hormone’.

1. Explain why regulation of this hormone is classed as positive feedback control.