Unit 2 NAR Revision

Higher Human

Menstrual Cycle

- Menstrual cycle lasts approx 28days
- **Pituitary Gland** releases **FSH** and **LH**
- **LH** stimulates **ovulation**
- Ovarian Hormones include **Oestrogen** and **Progesterone**.
- **Progesterone** is produced by the **corpus luteum** and stimulates the **thickening of the endometrium** and inhibits the pituitary from releasing FSH and LH.
- **Decrease** in Progesterone will bring about **menstruation.**

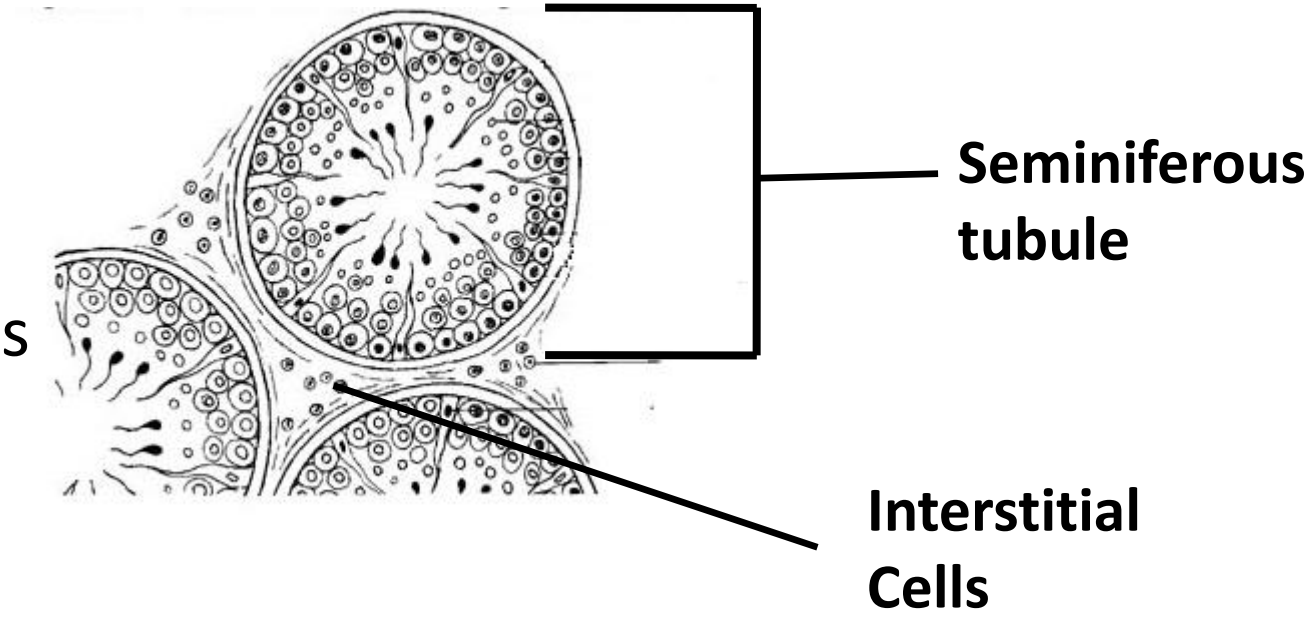
Fertility Treatments

- **Artificial Insemination** – sperm is inserted directly into the female reproductive tract. Donor sperm can be used for sterile men.
- **IVF** – eggs and sperm are removed and fertilised in a culture dish before being **implanted** into the **uterus.**
- Pre-Implantation Genetic Diagnosis **(PGD)** is used to detect genetic disorders and chromosome abnormalities and can be used in conjunction with **IVF.**

Testis

Sperm cells are produced in the **seminiferous tubules**

Interstitial cells produce **Testosterone** which stimulates sperm production.



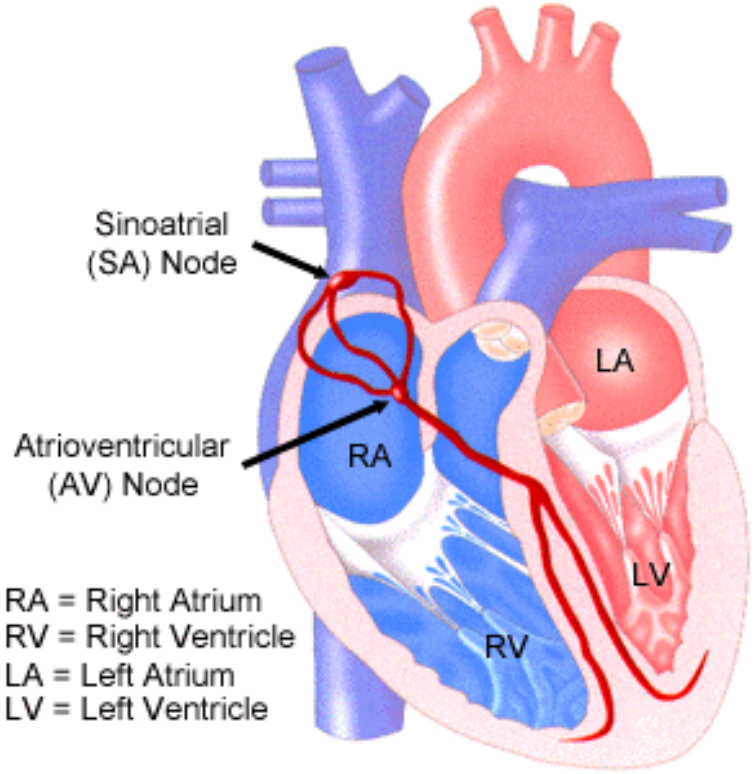
Dating Scan

- A **dating scan** is usually carried out between **weeks 8 -14** and is used to determine the **stage of pregnancy** and therefore the **due date.**

Heart and Cardiac Cycle

- **SAN** controls the **rate** of contractions and is located in the wall of the **right atrium**.

- During ventricular systole the blood flows into the **aorta** and **pulmonary** arteries through the **Semi-Lunar Valve.** AV valves close at this point to prevent the backflow of blood into the atrium.



Lymphatic system

- **Lymphatic Vessels** absorb excess **tissue fluid**.
- Tissue fluid is the **plasma** from the blood that has been pushed out the blood vessel into the surrounding tissues.
- Tissue fluid contains **glucose, oxygen and amino acids** that are useful for the cells.
- Plasma is slightly different from tissue fluid as it contains **PLASMA PROTEINS**.

Cardio Vascular Disease

Blood clots are formed when

- The enzyme **Thrombin** converts **Fibrinogen** to **Fibrin**.

- **Strokes** are caused by a blood clot blocking an artery to the brain which results in cell death due to **lack of oxygen**.

Blood Glucose Control and Diabetes

- Receptors in the **pancreas** detect changes in the blood glucose concentration.

- A **drop in blood glucose** concentration would result in the pancreas producing **GLUCAGON** which will stimulate the liver to convert glycogen to glucose.

- Type 1 – treated with insulin
- Type 2 – treated with controlled diet and exercise

Inheritance

- Sex linked genes are carried on the X chromosome.

•Sex Linked **genotypes** are expressed using the **X and Y chromosomes.**

e.g. - **Female** X^RX^r

- **Male** X^RY

REMEMBER

•Males receive X chromosomes from <u>only</u> their mother

•Females receive X chromosomes from Father and mother.

Actual ratios maybe different from expected because **fertilisation is a random process**.

Problem Solving

- Be sure to know how to work out **percentages**
- Take the time when drawing/reading **graphs**.
- **Range** means the biggest number and the lowest number. What is the age **range** of your class??

You will need to have with you

- **Pencil (for drawing a graph)**
- **Rubber (for mistakes in your graph)**
- **Ruler (for straight lines in your graph)**
- **Calculator (to calculate percentages etc)**
- **Pens (to write your answers with)**