

S2 Biology - My Body and Reproduction

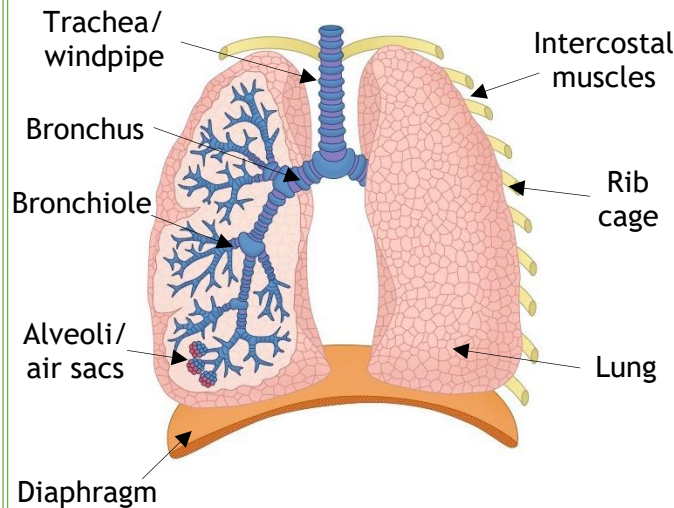


Key Word	Definition
Anus	Exit hole for excess food that can't be digested.
Artery	Blood vessel that carries blood away from the heart
Capillary	Blood vessel that carries blood through tissues.
Cells	Makes up all living things.
Deoxygenated	Blood that does not contain oxygen
Enzyme	Protein that speeds up chemical reactions, such as digestion.
Joint	Area of the body where bones meet.
Large intestine	Absorbs water from digested food.
Ligament	Connects bone to bone and are elastic and stretchy.
Liver	Makes bile to breakdown fat.
Mouth	Breaks up food and mixes it with saliva.
Organism	A group of systems.
Organs	A group of tissues.
Oxygenated	Blood that contains oxygen
Pancreas	Adds additional enzymes to food.
Rectum	Stores excess food that cannot be digested.
Salivary gland	Produces saliva and enzymes.
Small intestine	Absorbs broken down food into the bloodstream.
Stomach	Muscular bag to churn food and contains acid.
Systems	A group of organs.
Tendon	Connects bone to muscle and are not elastic or stretchy.
Tissue	A group of cells.
Vein	Blood vessel that carries blood back into the heart

Respiratory System:

The lungs exchange gases with the air around us. Oxygen moves from the air into the lungs and then our bloodstream, whereas, carbon dioxide moves from the bloodstream to the lungs then the air.

Muscles between the ribs and the diaphragm draw air in or push air out.



The air sacs are good at exchanging gases because they are thin and have a large surface area, good blood supply and are moist.

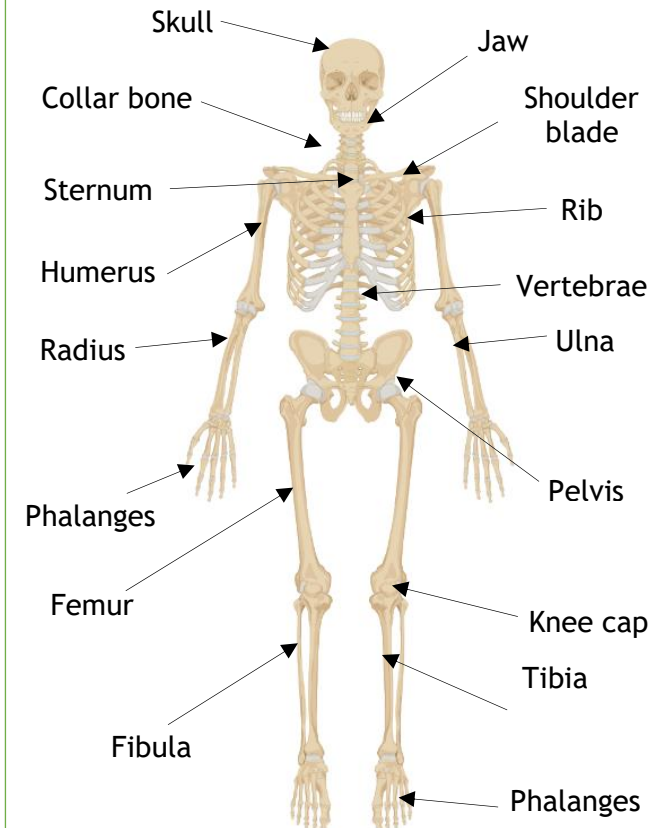
Lung strength is measured by your peak flow. The taller you are, the higher the peak flow. The older you are, the lower the peak flow. Females have a lower peak flow than men.

Air breathed out has a higher concentration of carbon dioxide than air breathed in.

Skeletal System:

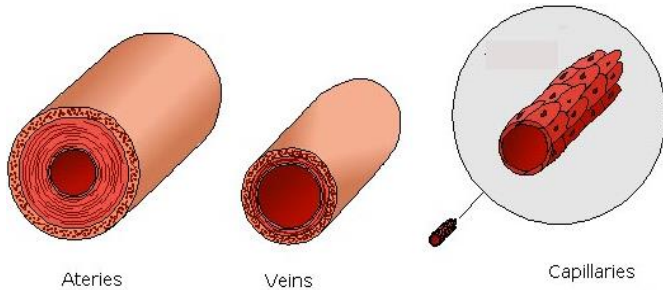
The skeleton and bones in the body have the following functions:

- Support muscles and organs.
- Shape - gives us shape and determines our size.
- Muscle attachment allows us to move.
- Protection of delicate parts of the body.
- Production of blood cells



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Circulatory System - Blood Vessels:



Veins carry blood to the heart and arteries carry blood away from the heart.

Capillaries carry blood through the tissues.

Veins have valves to prevent the backflow of blood and arteries do not.

The wall of an artery is thick as blood travels at a much higher pressure than veins, which have thin muscular wall.

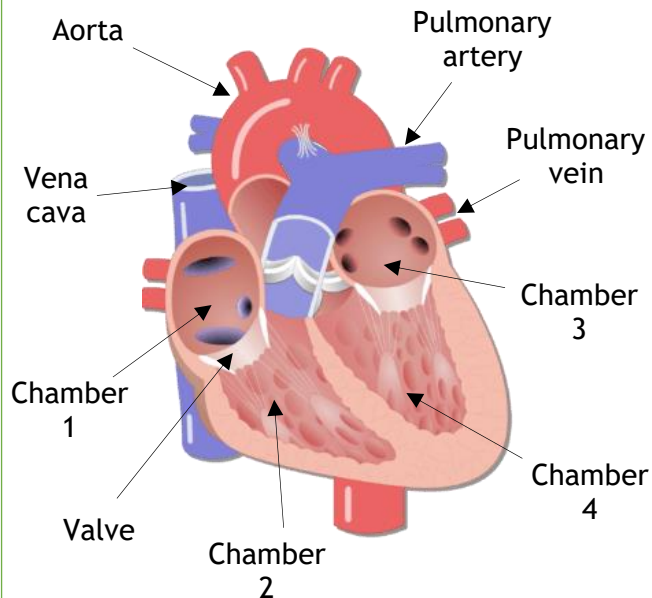
Capillaries are only one cell thick, which means substances, such as oxygen and carbon dioxide, can enter and exit quickly.

Further Reading:



Circulatory System - The Heart:

The heart is mainly made of muscle and pumps blood around the body. The blood carries oxygen from the lungs and food/nutrients from the intestines to all cells in the body.

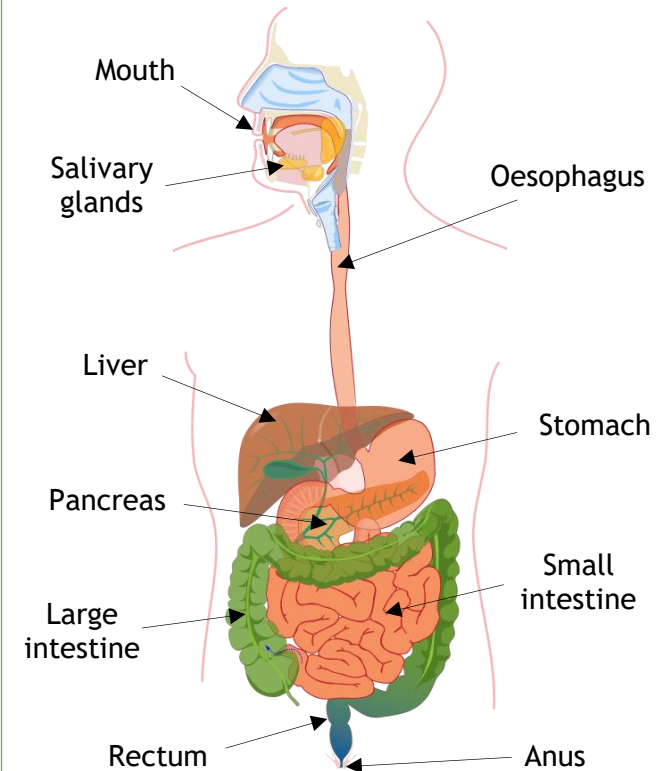


There are valves between the chambers.

Deoxygenated blood is pumped from the heart to the lungs, receives oxygen and is pumped back to the heart.

The oxygenated blood is pumped to the rest of the body, oxygen leaves the blood and goes back to the heart.

Digestive System:



During digestion, food molecules are changed from large insoluble to small soluble particles that can be absorbed into the blood stream and carried to cells around the body.

Muscular contractions of the oesophagus allow food to be pushed downwards. This process is called peristalsis.

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Key Word	Definition
Amniotic fluid	Liquid inside the amniotic sac
Amniotic sac	Fluid-filled bag to protect the baby during pregnancy
Cervix	Holds the baby in place during pregnancy
Egg	Female sex cell produced in the ovaries every 28 days
Fertilisation	The fusing of the egg nucleus and sperm nucleus to produce a zygote
Impanated	To be inserted or fixed
Ovaries	Release an egg every month
Oviduct	Place where fertilisation takes place
Penis	Deposits sperm into the vagina
Placenta	Allows the mother's blood to exchange food, oxygen and waste with the baby
Prostate	Gland which produces a fluid that keeps sperm warm
Scrotum	Support the testes outside the body to keep them warm
Sex cells	Sperm and eggs to start of new life.
Sperm	Male sex cell produced in the testes
Sperm duct	Carries sperm from the testes to the penis
Testes	Produces sperm cells.
Umbilical cord	Connects the baby to the mother
Urethra	Carries sperm and urine to the outside of the body
Uterus	Place where the baby develops.
Vagina	Accepts sperm from the penis
Zygote	A fertilised egg following fertilisation

Senses:

The senses are part of the nervous system.

The five main senses are:

- Touch
- Taste
- Sight
- Hearing
- Smell

Touch:

Some areas of the body are more sensitive to touch than others.

Taste:

The five main tastes are:

- Sweet
- Salty
- Sour
- Bitter
- Umami (meaty)

Smell and Flavour:

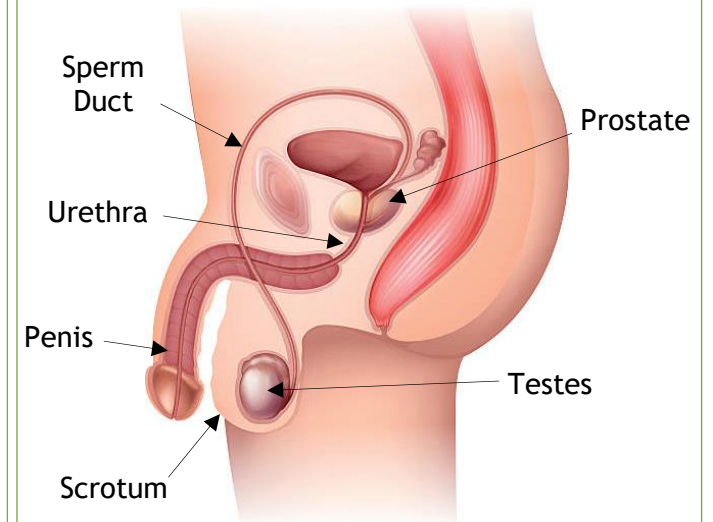
Flavour is the senses of smell and taste working together. Without smell, food loses its flavour.

Sight:

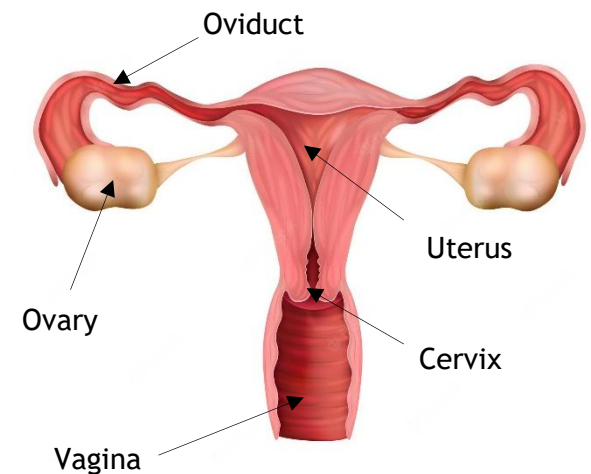
The main organ of sight is the eyes. Sometimes signals into the eye result in it being difficult for a person to tell the difference between colours (colour blindness) or sometimes the signals are changed into the wrong image (optical illusions).

Reproductive System - Organs:

Male Reproductive System:



Female Reproductive System:

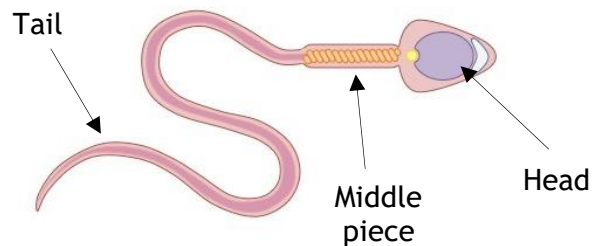


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Reproductive System - Sex Cells:

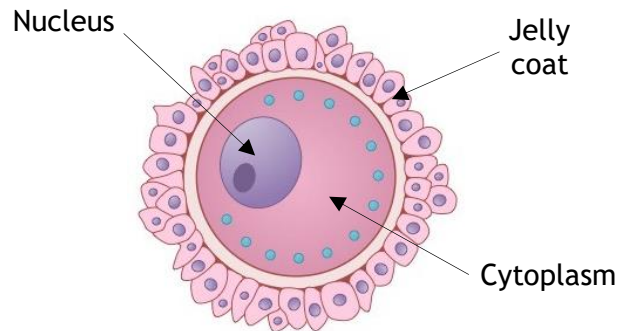
Male:

Male sex cells are sperm and they are produced in millions in the testes.



The head of the sperm contains a nucleus with the genetic information and the middle piece produces energy for the tail to swim.

Female:



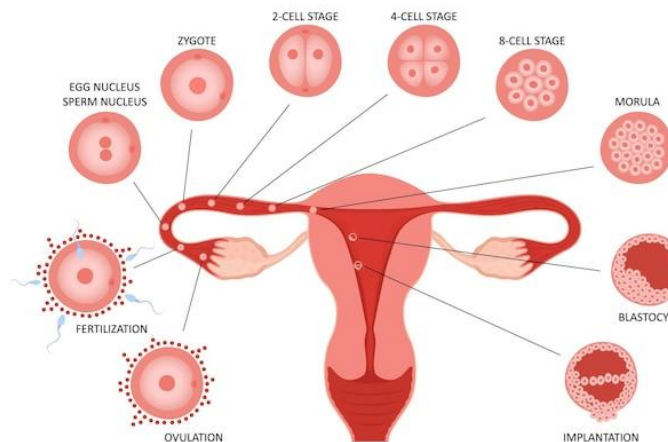
The jelly coat protects the egg and the cytoplasm has large nutrient reserves. The nucleus contains genetic information.

Fertilisation:

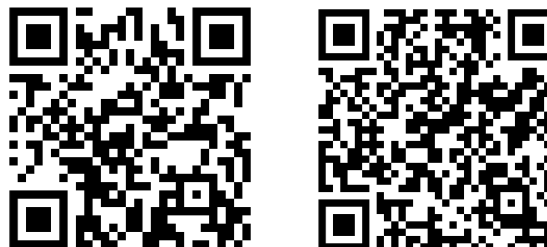
Every 28 days the ovary releases an egg called ovulation. Following sexual intercourse, sperm cells deposited swim towards the egg.

Fertilisation is the process of an egg's nucleus fusing (joining) together with a sperm's nucleus to produce a zygote.

Once a zygote is produced, it travels down the oviduct towards the uterus, where it will finally implant onto the wall of the uterus.

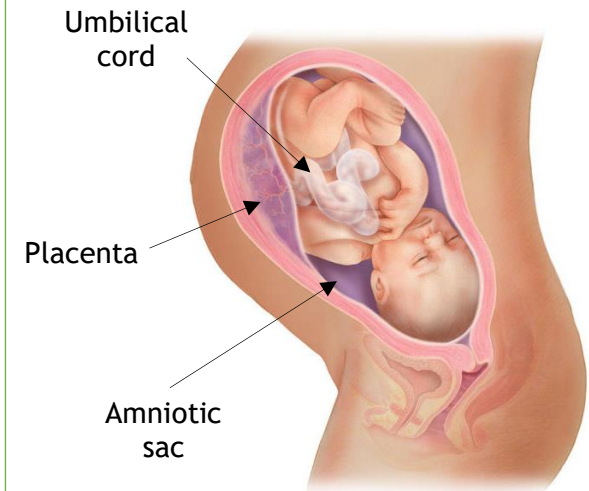


Further Reading:



Developing Baby:

Once implanted, the developing embryo will get its nutrition through the mother's blood stream.



Pregnancy in humans takes around 40 weeks for full development.

During this time the mother must make sure not to do anything to risk the baby, such as:

- Take alcohol
- Take drugs
- Smoke

