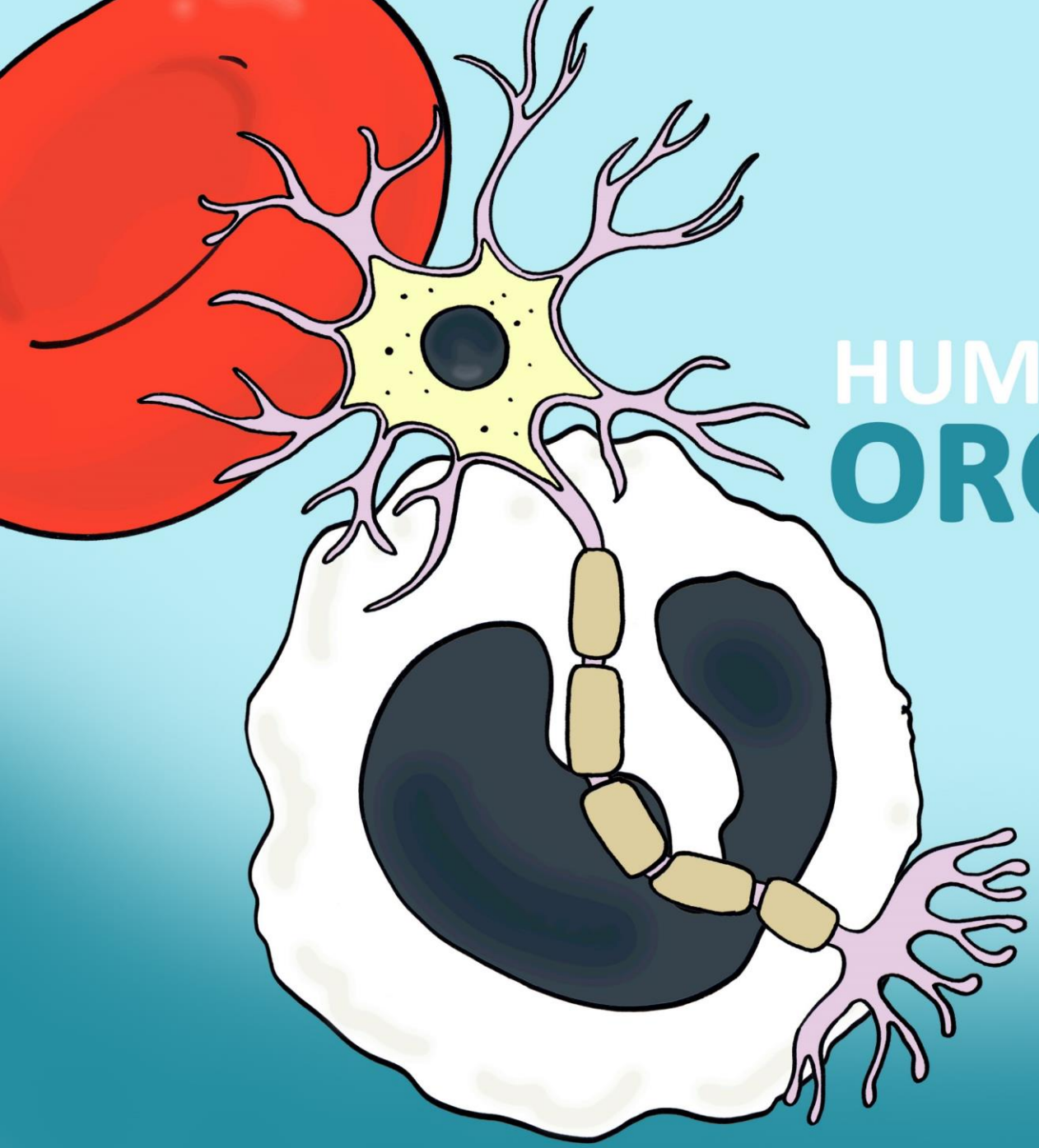
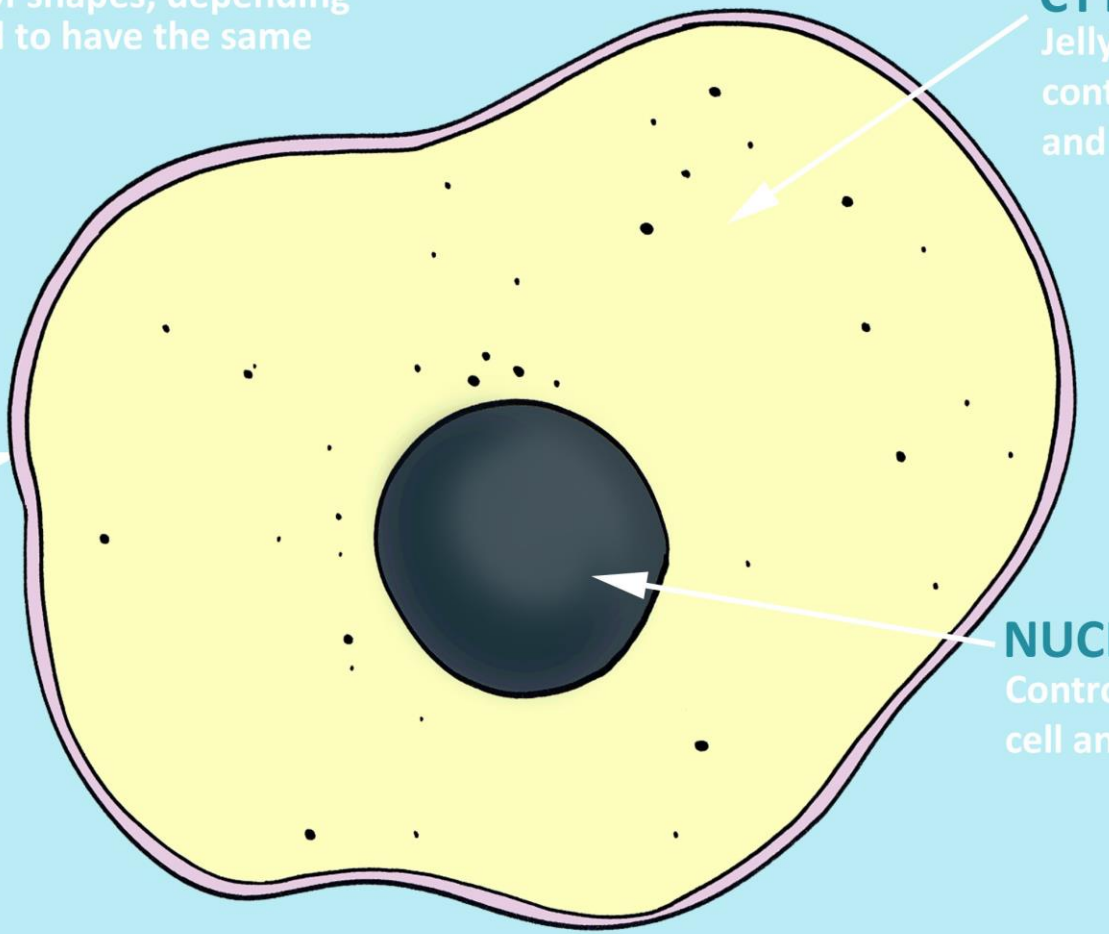


HUMAN BODY:
ORGANISATION

HUMAN BODY: ORGANISATION

BASIC ANIMAL CELL

Animal cells come in a variety of shapes, depending on their function, but they tend to have the same basic structure...



CYTOPLASM

Jelly-like substance that can contain a variety of chemicals and smaller structures

CELL MEMBRANE

A layer surrounds the cell. In some cases it can control sustances entering or leaving the cell.

NUCLEUS

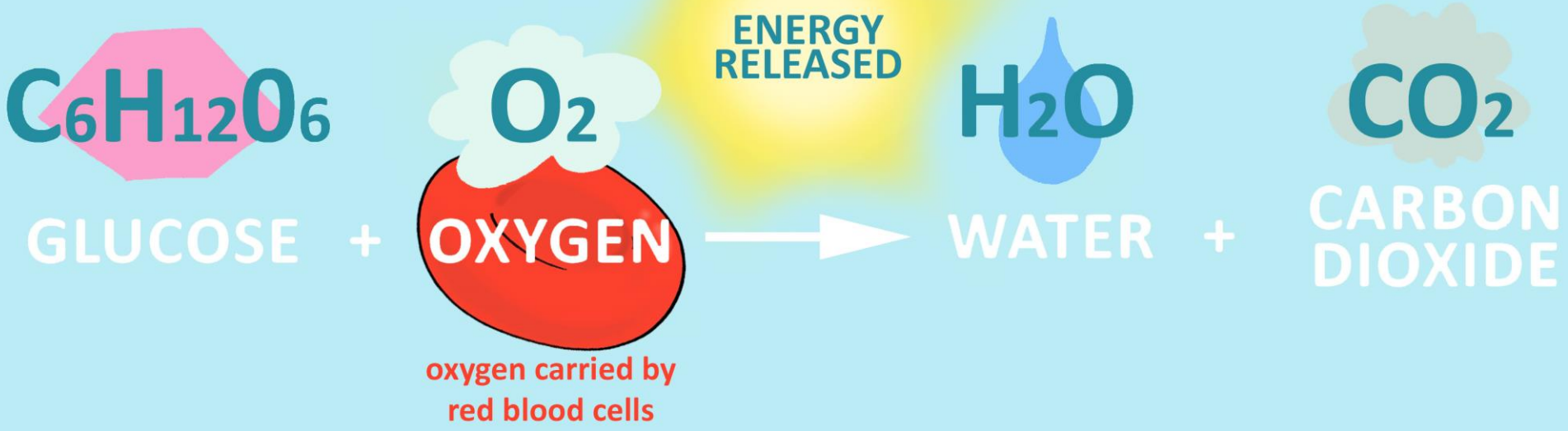
Controls actvity within the cell and contains DNA.

LIVING WORLD EDUCATION

HUMAN BODY: CELLS

RESPIRATION

Within our cells, energy is created as sugar (glucose) reacts with oxygen. This reaction is known as RESPIRATION and forms products in the form of water and carbon dioxide...



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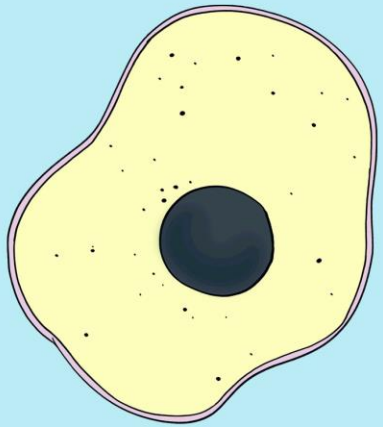
HUMAN BODY: CELLS

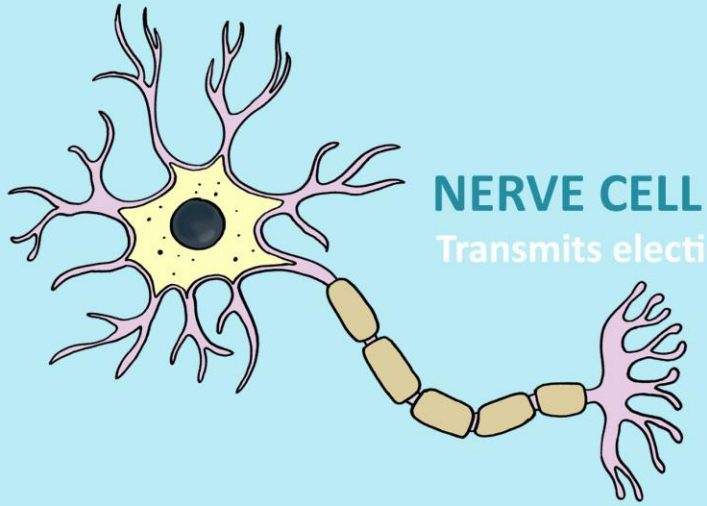
SPECIALISED CELLS

There are many cells that have specialised roles to perform and therefore may have a very different appearance...



EPITHELIAL CELL

e.g. Lining of skins or blood vessels

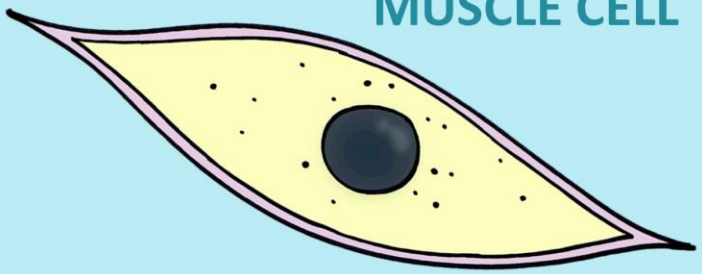


NERVE CELL (NEURONE)

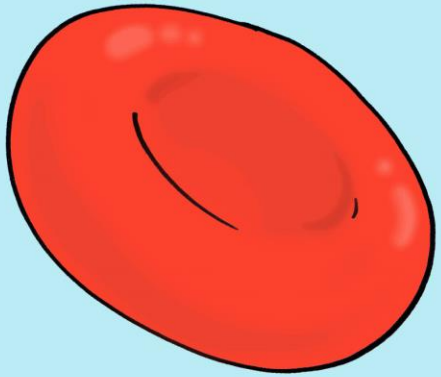
Transmits electical signals.

WHITE BLOOD CELL

Helps the body fight infections (immunity)



MUSCLE CELL



RED BLOOD CELL

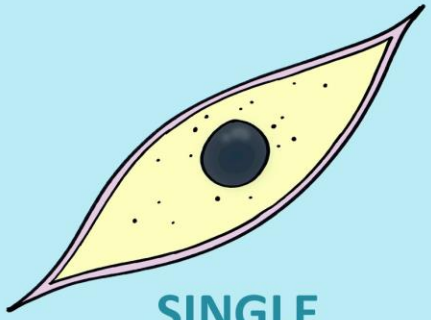
Carries oxygen from the lungs to tissues throughout the body. It has a dimpled centre and lacks a nucleus.

LIVING WORLD EDUCATION

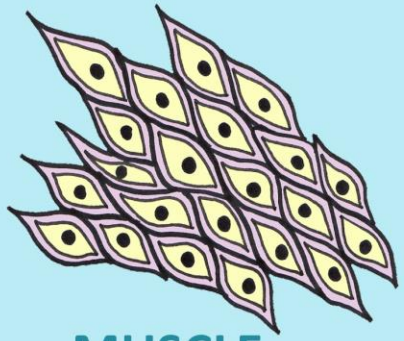
HUMAN BODY: CELLS

CELLULAR ORGANISATION

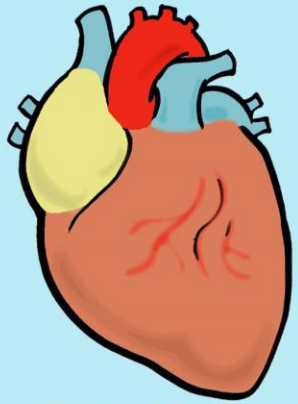
Complex life on Earth has organisms that are built up in levels from single cells to increasingly complex, multicellular, structures...



SINGLE MUSCLE CELL

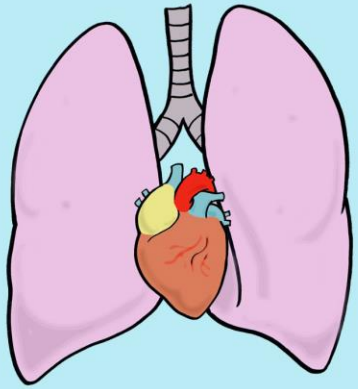


MUSCLE TISSUE

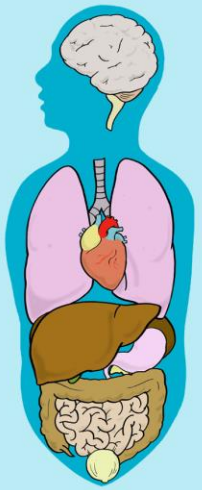


ORGAN
(e.g. heart)

An organ may contain many types of tissue



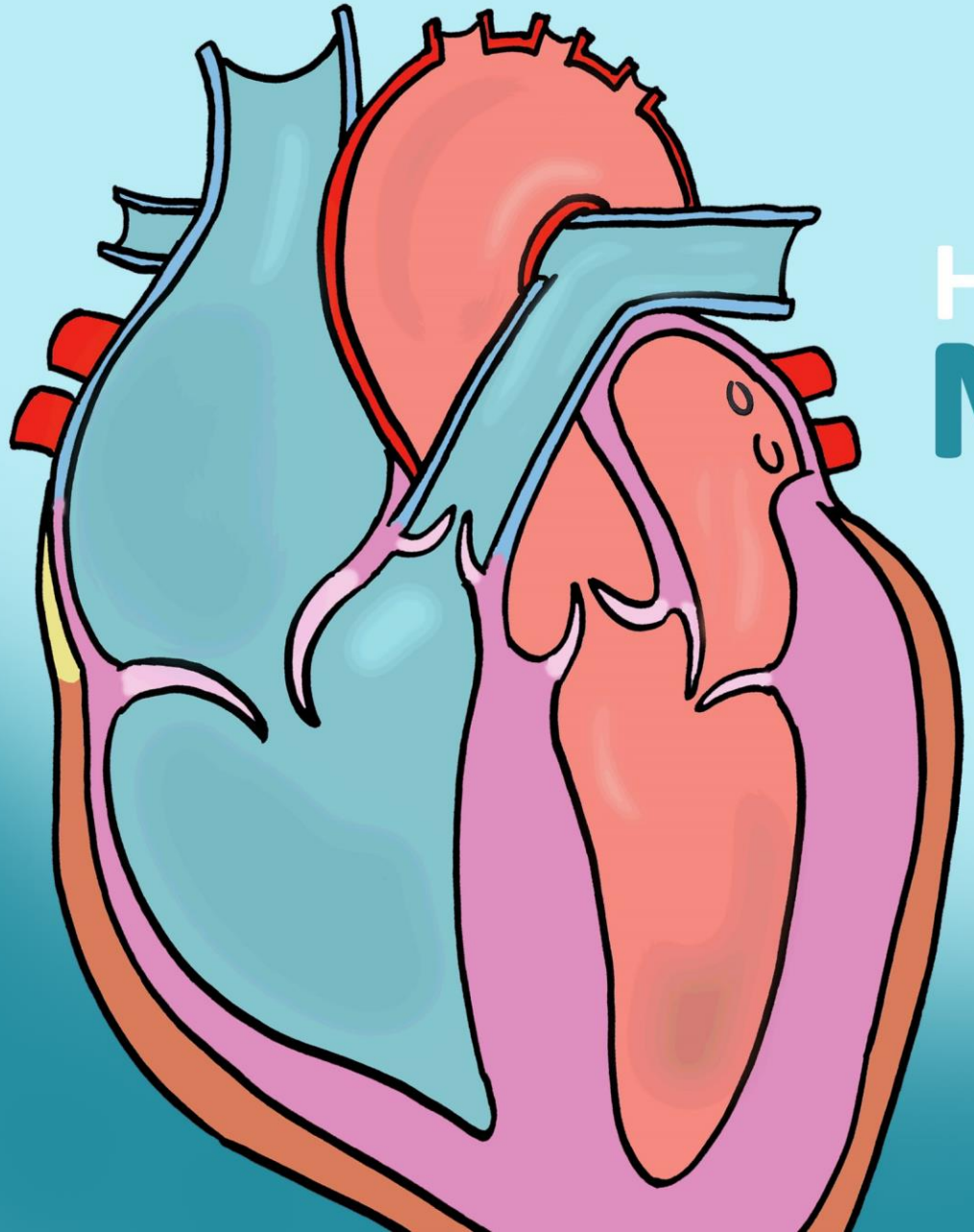
ORGAN SYSTEM
(e.g. circulatory)



ORGANISM

INCREASING COMPLEXITY

LIVING WORLD EDUCATION

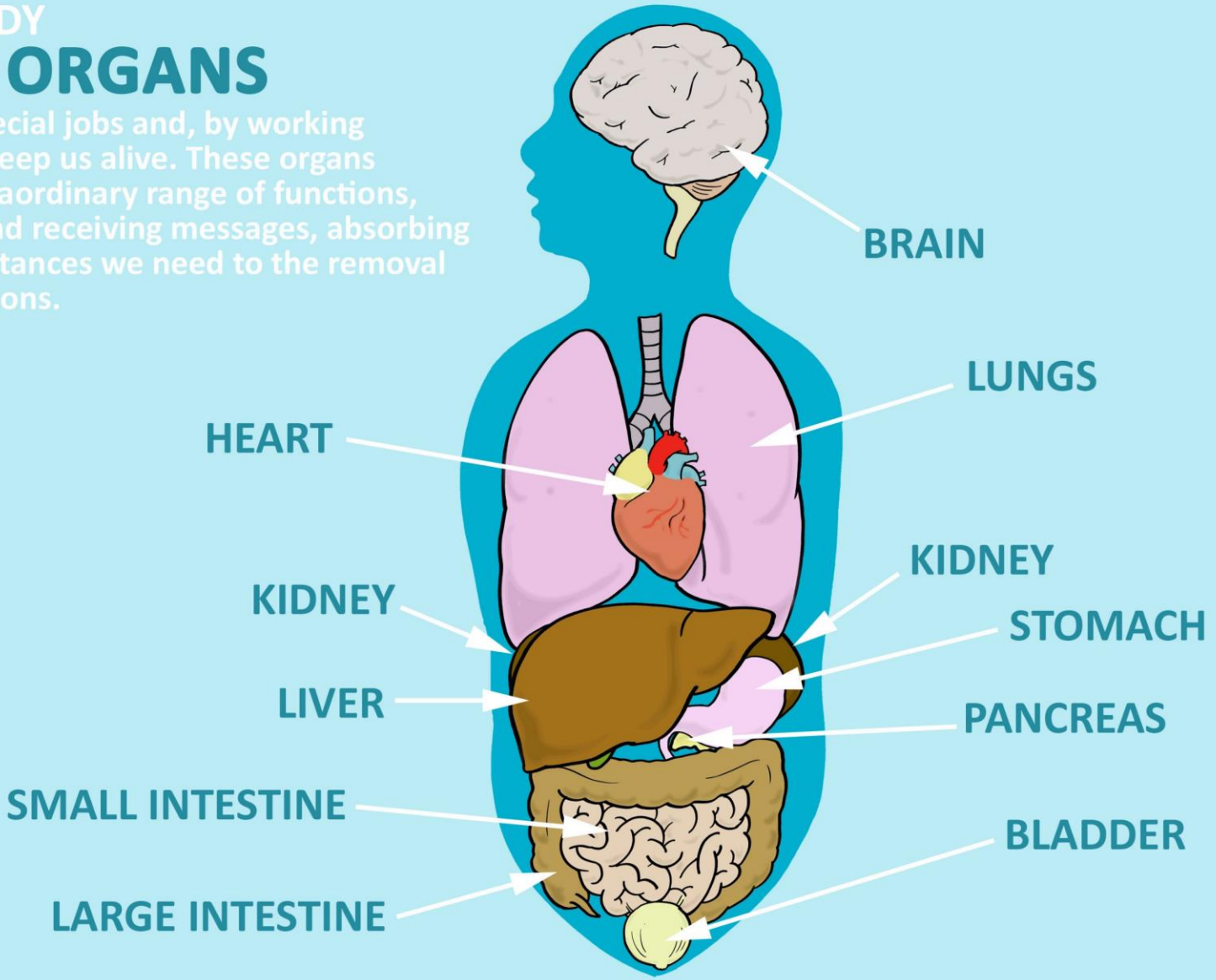


HUMAN BODY:
MAJOR ORGANS

HUMAN BODY

MAJOR ORGANS

Organs have special jobs and, by working together, they keep us alive. These organs perform an extraordinary range of functions, from sending and receiving messages, absorbing or creating substances we need to the removal wastes and poisons.



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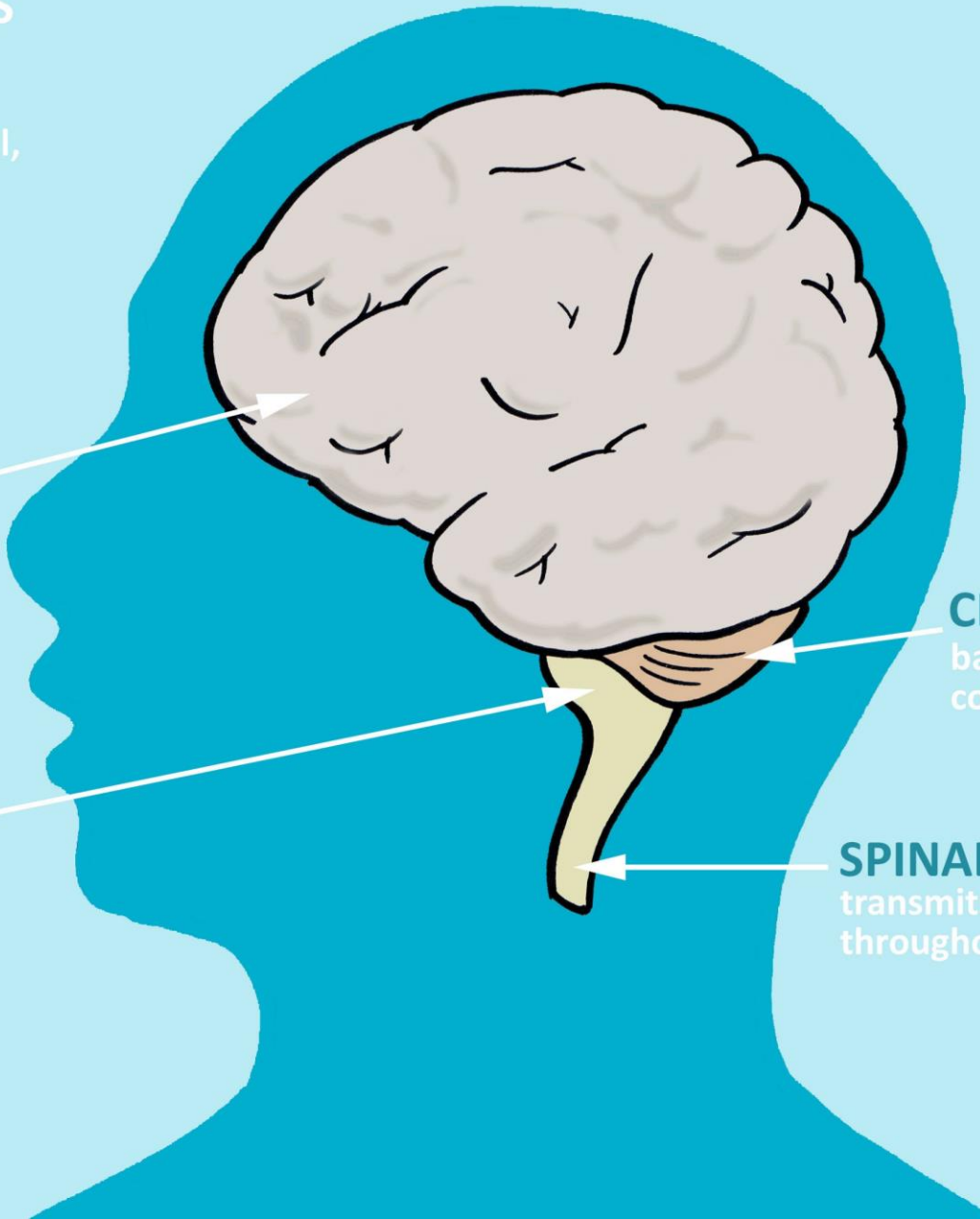
HUMAN BODY: MAJOR ORGANS

THE BRAIN

The brain, located within a protective skull, is the control centre of our body. It both sends and receives signals within the body, as well as understanding and responding to external stimuli.



OUTER CORTEX
(the outer brain)
thoughts and deliberate (voluntary) movments

BRAIN STEM
supports sleep and breathing

CEREBELLUM
balance and coordination

SPINAL CORD
transmits nerve signals throughout the body

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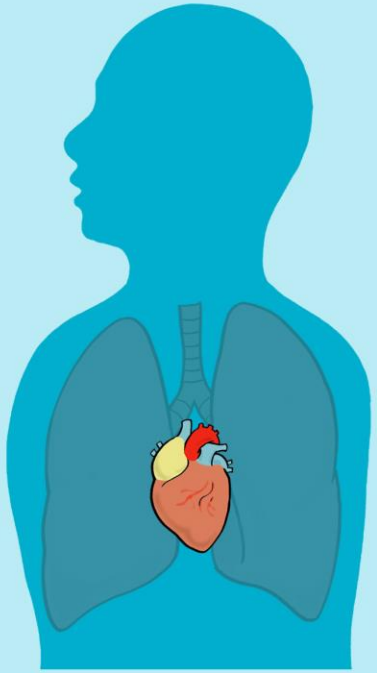
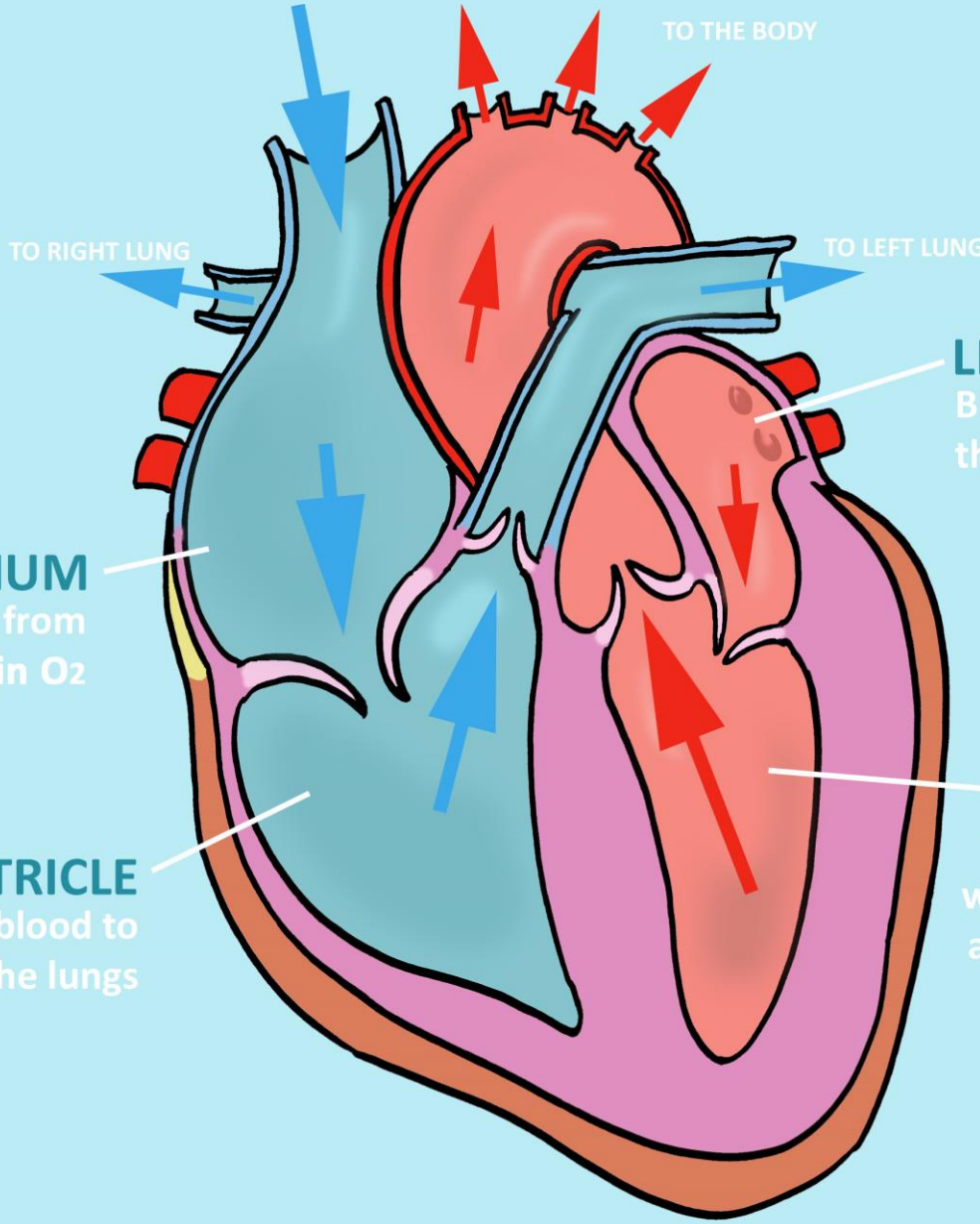
HUMAN BODY: MAJOR ORGANS

THE HEART

This muscular structure has VESSELS that both enter and leave the heart as it PUMPS BLOOD around the body. The action of the heart enables the transportation of a variety of substances around the body.



LOCATED BETWEEN THE LUNGS



RIGHT ATRIUM

Blood enters from the body **Low in O_2**

RIGHT VENTRICLE

Pumps blood to the lungs

LEFT ATRIUM

Blood returns from the lungs high in O_2

LEFT VENTRICLE

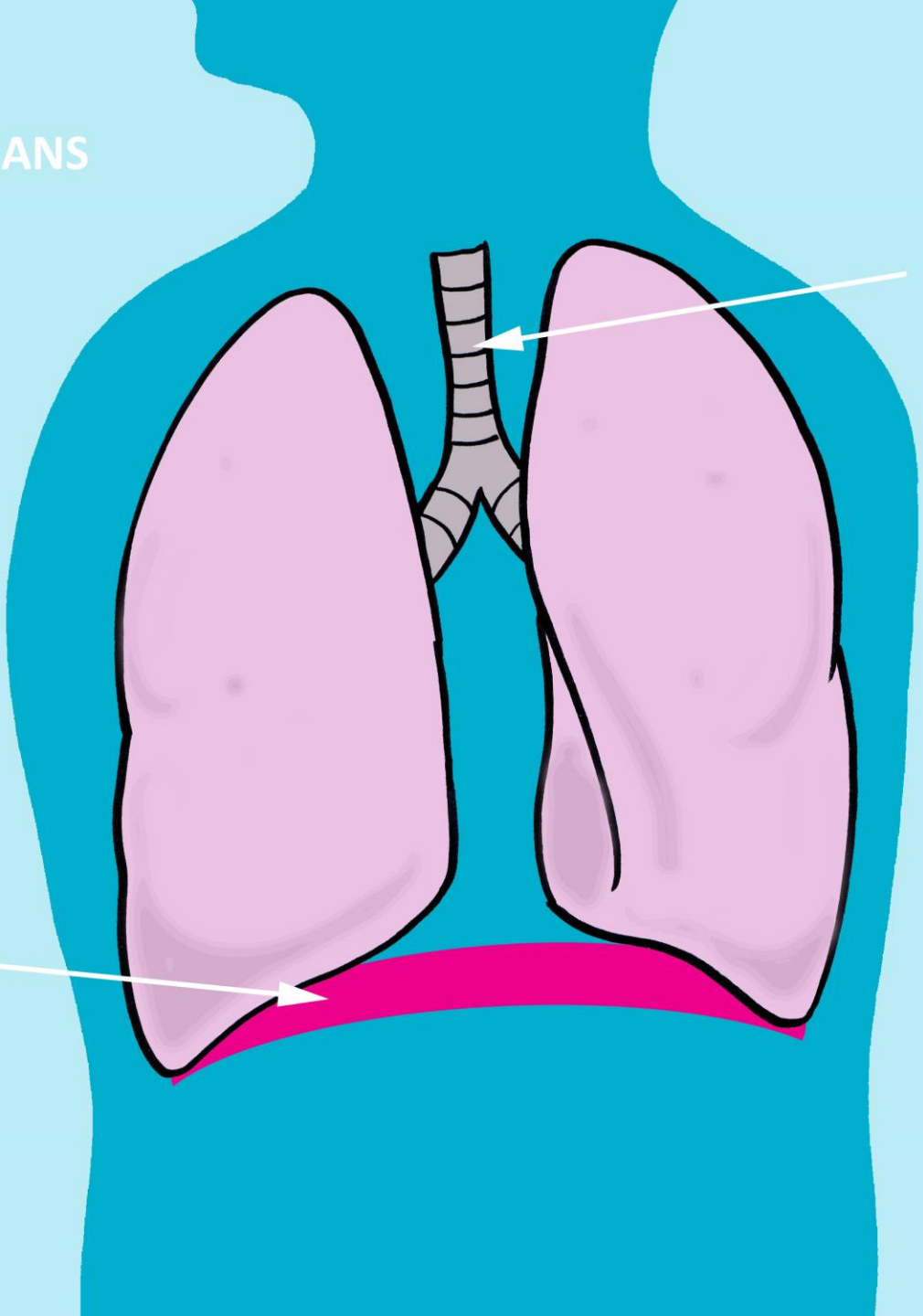
Thick, muscular walls force blood around the body

LIVING WORLD EDUCATION

HUMAN BODY: MAJOR ORGANS

THE LUNGS

The lungs are a pair of spongey sacs that enable us to extract **OXYGEN** from the air. They also expel **CARBON DIOXIDE** from the body. This swapping of gases is called **GASEOUS EXCHANGE**.



TRACHEA

The "windpipe" is reinforced with rings of cartilage.

DIAPHRAGM

The diaphragm is a sheet of muscle that as it contracts and relaxes, causes the lungs to draw in or expel air.

LIVING WORLD EDUCATION

HUMAN BODY: MAJOR ORGANS

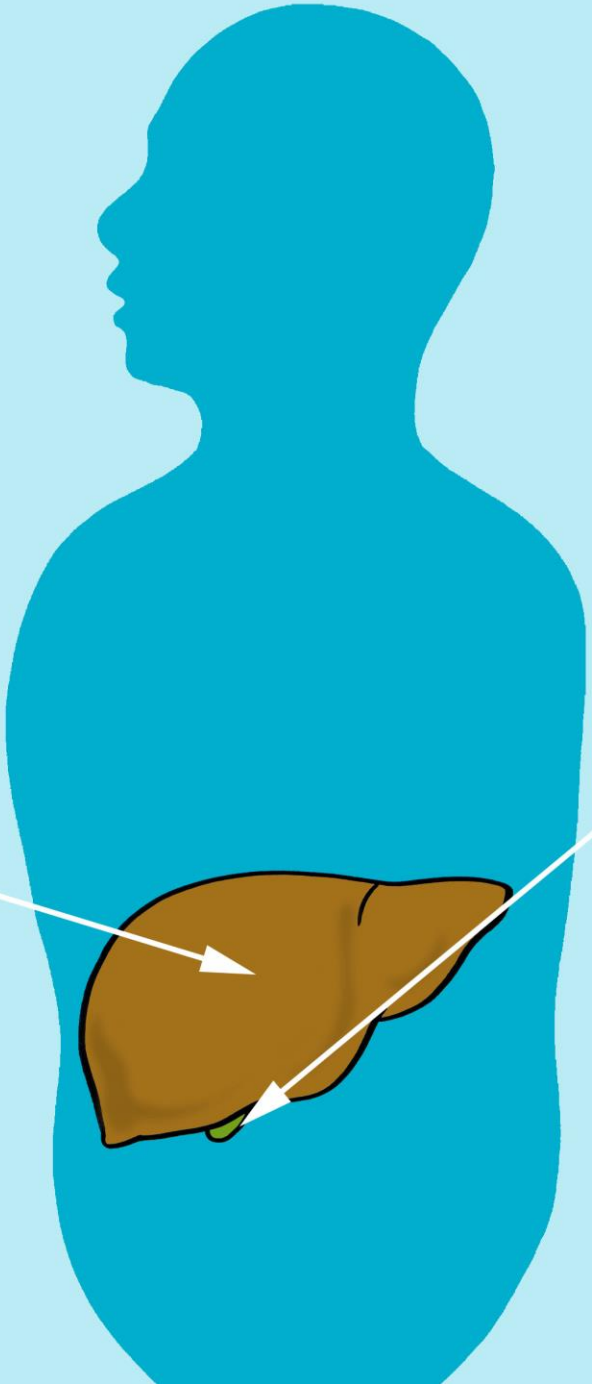
LIVER

Breaking down toxic chemicals that would otherwise poison us, the liver is vital in maintaining our health. It also stores sugar (glucose) in the form of glycogen as well as creating a variety of other important substances including...

- creating bile to digest fats
- helps our immune system
- makes vital proteins

LIVER

Our liver is sited under the lungs with the largest portion positioned on the right side. It is composed of two parts, or lobes.



GALL BLADDER

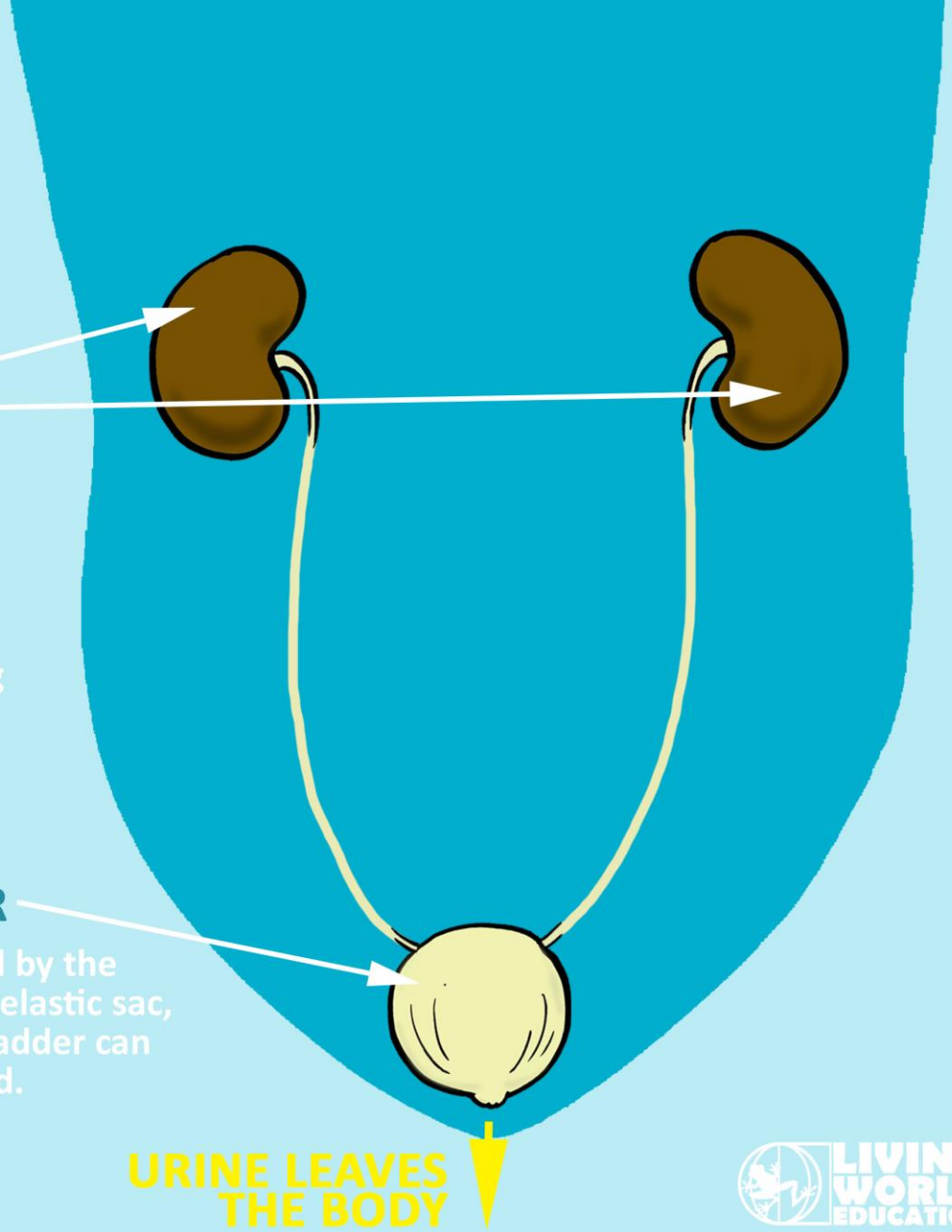
This extension of the liver stores BILE. This yellow liquid enters the small intestine and helps digest fats.

LIVING WORLD EDUCATION

HUMAN BODY: MAJOR ORGANS

KIDNEYS & BLADDER

These organs may be small, but they have vital, closely associated roles.



KIDNEYS

Balancing the water content of our blood, the kidneys remove excess water and other wastes. Blood flows in to the kidneys (sited on either side of our body) and the resulting liquid produced (URINE) contains these unwanted substances.
This liquid flows to...

BLADDER

Storing the urine produced by the KIDNEYS,the bladder is an elastic sac, stretching as it fills. The bladder can then be emptied as needed.

URINE LEAVES THE BODY

LIVING WORLD EDUCATION

HUMAN BODY: MAJOR ORGANS

DIGESTIVE SYSTEM

These organs work together to break down food we eat in to substances we can absorb in to our blood system. The NUTRIENTS can be used for ENERGY or created into new substances or in our GROWTH and REPAIR. Essentially, is is one long tube, along which food items are processed before being exacuated as faeces...

STOMACH

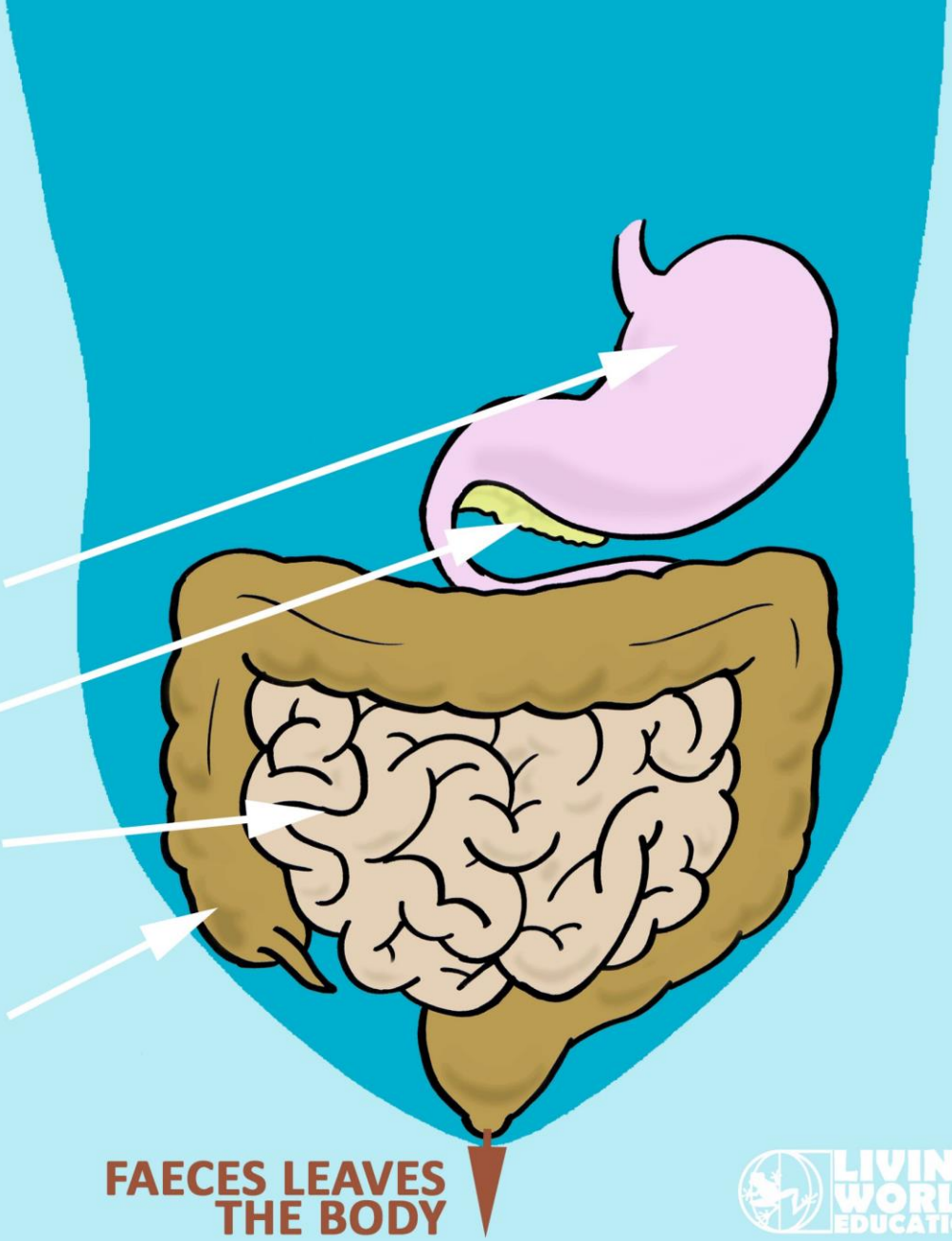
A muscular J-shaped bag in to which swallowed food is churned in acidic liquid, breaking it down. Digestion is further aided by the action of the **PANCREAS** which produces chemicals messages (HORMONES) and substances that break up starches and fats.

SMALL INTESTINE

This long organ resembles bundled rope. As the food travels along the narrow tubes, nutrients are ABSORBED into the blood system to be transported.

LARGE INTESTINE

This absorbed the salts and excees water from remaining mass of indigestable matter is very wet and to avoid dehydration. The solid waste (FAECES) is then expelled.



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