



that blood vessels contained air?
 b) Suggest a piece of evidence that we have today that shows this is not correct.

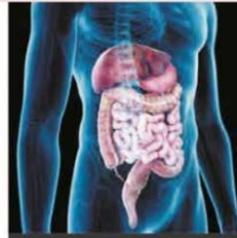
3 What is an organ system?

FACT

An adult's circulatory system contains over 100 000 km of blood vessels. That is four times around the Earth!



B | The circulatory system carries oxygen and nutrients (from food) around the body.



C | The digestive system breaks down food and takes nutrients from it into the blood.

7Ae TRANSPLANTS

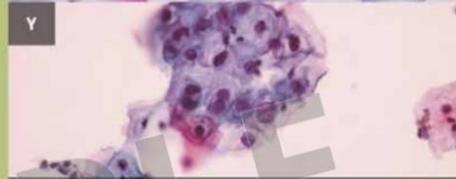
WHAT IS AN ORGAN TRANSPLANT?

Doctors today know a lot about cells, tissues and organs. They also have microscopes and other tools to help investigate problems with our bodies.

If a doctor thinks there is something wrong with an organ, a biopsy (piece of tissue) might be taken from the organ and examined. This can help to identify the problem and a doctor can plan a treatment.



B | This farmer was given a double arm transplant.



A | biopsy samples under a microscope

Sometimes an organ cannot be treated and doctors may consider doing an **organ transplant**. This is when an unhealthy organ is replaced with a healthy organ (usually from a person who has recently died).

The idea of replacing damaged tissues and organs goes back at least 2700 years to an Indian doctor, called Sushruta. He successfully replaced skin on a part of someone's body using nearby skin from the same person. Today doctors can transplant hearts, lungs, livers, kidneys and even faces, arms and legs between different people.

- 1 a) Draw one cell from biopsy sample X. Label its parts and their functions.
 b) In some cancer cells the nuclei become very large. Which biopsy sample (X or Y) shows cancerous tissue?
- 2 Draw a diagram to show how organ systems, organs, tissues and cells are linked. In your diagram use one example from plants and one from humans.

donor card



NHS Organ Donor Register

C | Some people want their organs to be used for transplants if they die. They may carry a card to show this.

HAVE YOUR SAY

'People should carry cards only if they do not want to donate their organs - the opposite of donor cards.' What you do you think of this idea?