

Blood and the immune system

Name the four components of blood.

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What does plasma transport?

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Where is urea transported from and to?

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How is the shape of a red blood cell adapted?

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Why do red blood cells have no nucleus?

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What is the role of haemoglobin?

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How do phagocytes defend the body?

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How do lymphocytes defend the body?

Carbon dioxide, digested food, urea, hormones and heat energy.

Red blood cells, white blood cells, platelets and plasma.

Biconcave disc: a large surface area for absorbing and releasing oxygen.

From the liver, where it is made, to the kidneys, to be removed in urine.

It combines with oxygen to form oxyhaemoglobin, so red blood cells can carry oxygen.

It leaves more room for haemoglobin, so they can carry more oxygen.

They release antibodies that are specific to the antigens on a pathogen.

They ingest pathogens and destroy them.

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Why are antibodies specific?

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What are memory cells?

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How does vaccination protect against future infection?

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What is the role of platelets?

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What changes in blood clotting?

Lymphocytes that stay in the body after exposure to an antigen and respond quickly if the pathogen returns.

Each antibody has a shape that fits the antigens of one pathogen only.

They are involved in blood clotting, which prevents blood loss and the entry of micro-organisms.

It makes memory cells, so antibodies are made sooner, faster and in greater quantity.

Soluble fibrinogen becomes insoluble fibrin, forming a mesh that traps red blood cells.