

liquid part of blood transports carries
90% of plasma is water plasma carries away waste products
carries chemical messengers

Chap 14 Sec 2 carries nutrients

Plasma (55%)
White blood cells and platelets (<1%)
Red blood cells (45%)

ADAM.

Detailed description: This diagram illustrates the composition of blood. A large circle on the left contains the text 'liquid part of blood transports carries', '90% of plasma is water plasma', and 'carries chemical messengers'. A smaller circle in the center of this large circle is labeled 'plasma'. To the right of the large circle, the text 'carries away waste products' is written. Further to the right, 'Chap 14 Sec 2 carries nutrients' is written. Below the text is a test tube containing a yellow liquid (plasma), a thin green layer (white blood cells and platelets), and a red liquid (red blood cells). Labels with lines pointing to the test tube indicate: 'Plasma (55%)', 'White blood cells and platelets (<1%)', and 'Red blood cells (45%)'. The logo 'ADAM.' is at the bottom right.

take up oxygen in the lungs produced in bone marrow
red blood cells look like a disk with a dimple

Chap 14 Sec 2

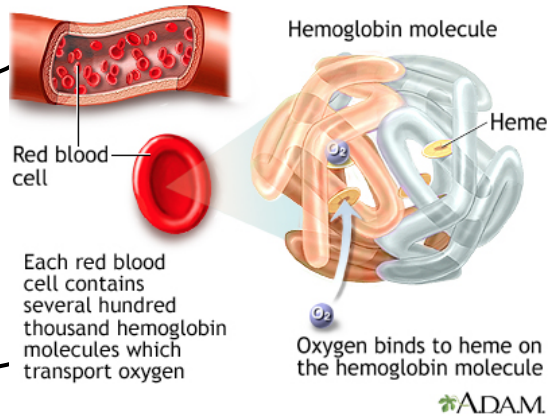
Detailed description: This diagram illustrates the properties of red blood cells. A large circle on the left contains the text 'take up oxygen in the lungs', 'red blood cells', and 'look like a disk with a dimple'. To the right of the large circle, the text 'produced in bone marrow' is written. Further to the right, 'Chap 14 Sec 2' is written. Below the text is a 3D illustration of several red blood cells, which are biconcave disks, shown in a red, textured environment.

what red blood cells are mostly made of

hemoglobin

a protein that contains iron

become bright red when it combines with oxygen



some WBC identify bacteria and viruses

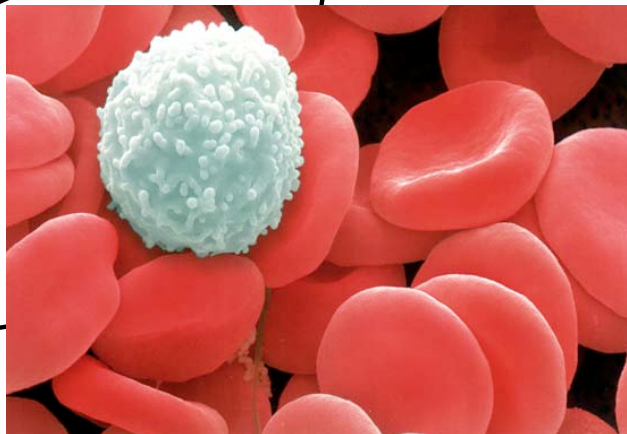
produced in bone marrow

bodies disease fighters

white blood cells

some WBC fight bacteria and viruses

some WBC surround and kill bacteria and viruses



important part of forming
clots to stop bleeding

Chap 14 Sec 2

signals the making of
fibrin to weave web
across cuts

platelets

platelets collect and
stick to cut blood
vessel



failure of circulatory system
to provide enough oxygen-
rich blood

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shock

can be caused by
major blood loss,
heart failure,
infection, emotional
trauma



the bodies drainage system

acts like a rain gutter

lymphatic system

a network of vessels like blood vessel that return fluid to the blood stream

Chap 14 Sec 2

The Lymph & Immune System

fluid inside the lymphatic system

moves slowly

lymph

part of the cardiovascular system

made up of water and dissolved materials

Chap 14 Sec 2

(a) **Lymphokinetic Motion and Pressure Gradient**

Blood capillaries → Interstitial Fluid → Lymph capillaries → Lymph veins → Lymph ducts → Large circ. Veins

Highest pressure Lowest pressure

small knobs of tissue in
the lymphatic system

filter lymph

lymph
node

traps bacteria and other
disease causing organisms

become
swollen or
painful when
sick

