

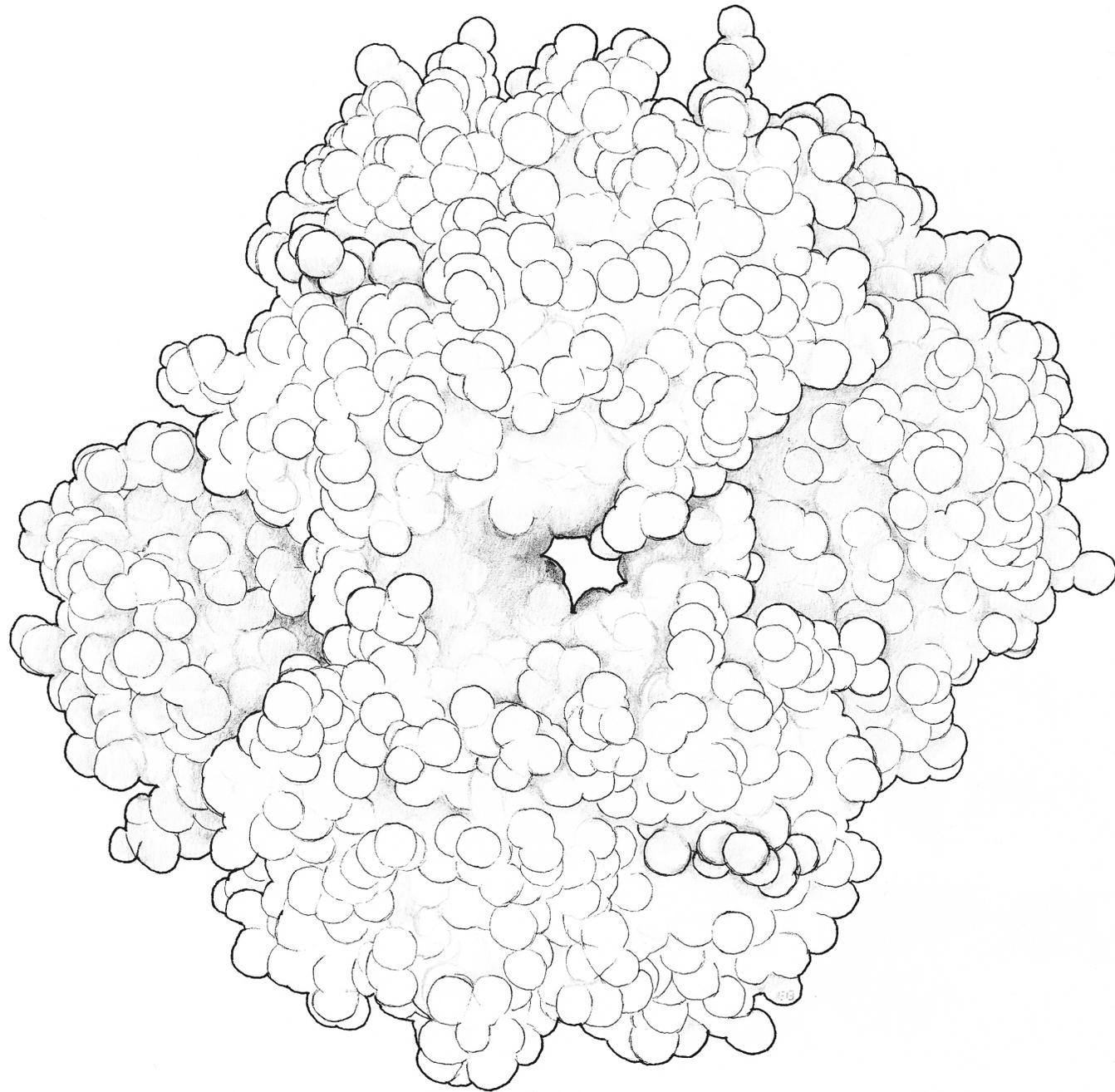
Bringing oxygen

Your body is amazing. This drawing depicts haemoglobin – the protein that carries oxygen around your body. It is found packed inside your red blood cells, which carry oxygen to all parts of your body.

Haemoglobin is composed of four subunits that interlock. Each subunit contains iron within a haem group, which reversibly binds oxygen. Two haem groups are seen peeping out in the top left and bottom right quarters. The four parts cooperate so, when oxygen binds to one, the shape change encourages other parts to also accept oxygen. Oxygen is released to the tissues when carbon dioxide levels are high (Bohr effect). Depending on whether oxygen is carried, haemoglobin changes colour: bright red with oxygen (seen in arteries) and purplish without (seen in veins).

The numbers of red blood cells drops (anaemia) following blood loss or illness; you would feel tired from a lack of oxygen. A transfusion can help replace lost blood and save someone's life. Donated blood is checked by pathologists to ensure compatibility with the recipient and that it is free from infection.

Add colour to this beautiful molecule and the circular atoms within. The bar at the bottom represents one nanometre (one millionth of a millimetre). Around 20,000 haemoglobin molecules would fit across the width of a human hair.



Transfusion
Haemoglobin

