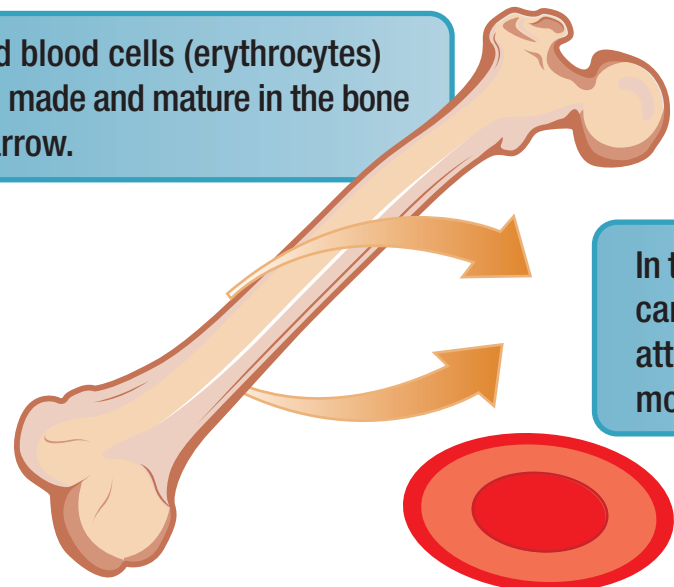
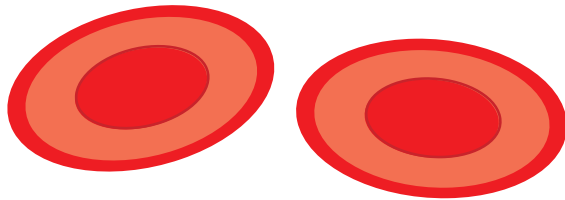


WHAT IS HbA_{1c}?

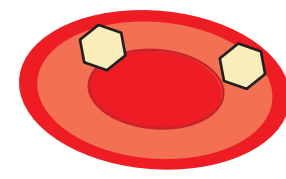
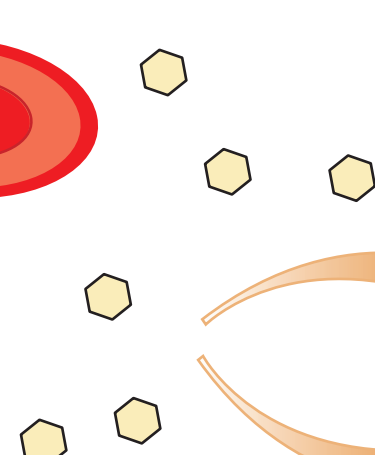
Red blood cells (erythrocytes) are made and mature in the bone marrow.



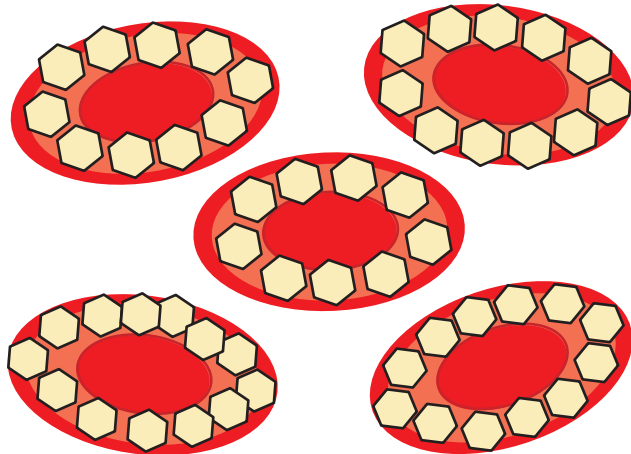
In the bloodstream, red blood cells carry oxygen around the body attached to haemoglobin (Hb) molecules.



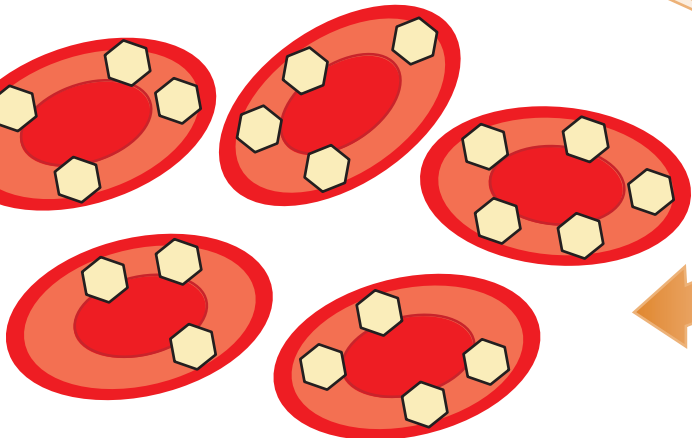
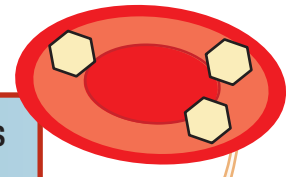
Glucose molecules bind to the haemoglobin molecules in red blood cells, so they become glycosylated (HbA_{1c}). The amount of glucose that binds to red blood cells is in direct proportion to the level of glucose in the blood.



Using a random blood sample, the lab can calculate how much glucose is stuck to the red blood cells (glycosylated) and this is averaged to give the HbA_{1c}. The average blood glucose for the previous 12 weeks.





After binding to a red blood cell, glucose remains attached for the entire 12 weeks of the cell's lifespan. This means HbA_{1c} provides a measure of long-term glucose levels.



When a person's blood glucose level is high, their red blood cells will have lots of glucose molecules attached – so their HbA_{1c} will be high (eg HbA_{1c} =11%).

When a person's blood glucose level is low, their red blood cells will have fewer glucose molecules attached – so their HbA_{1c} will be low (eg HbA_{1c} =4%).

HbA_{1c}-DCCT (%)	6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5
HbA_{1c}-IFCC mmol/mol	42	48	53	59	64	69	75	80

Key: DCCT = Diabetes Control and Complications Trial
IFCC = International Federation of Clinical Chemistry and Laboratory Medicine
 glucose  red blood cells

Source line?????