- i. Haemostasis (e.g. damaged vessel walls)
- Pathological
  - i. Thrombosis  $\rightarrow$  occlusion

Leukocyte migration

Margination (has to hit the wall)  $\rightarrow$  contact  $\rightarrow$  capture (selectins)  $\rightarrow$  rolling  $\rightarrow$  stop (pick up signal from endothelium, which activated integrin)  $\rightarrow$  Spread  $\rightarrow$  migrate through (through gaps between endothelial cells)

Circulatory Pathology and Blood Rheology Red cell rheology:

- Genetic defects in structure  $\rightarrow$  membrane instability ٠ and haemolysis (anaemia)
- Mechanic abnormality: • Sickle cells  $\rightarrow$  haemoglobin S polymer Malarial parasites  $\rightarrow$  membrane and cytoplasm
- Adhesion abnormality: Malaria (falciparum) Sickle cell .

White Rheology:

- Generally: occlusion and/or tissue damage
- Mechanical abnormality: ٠
  - Vasculitis autoantibodies Smoking Inflammatory mediators (septic shock)
- Uncontrolled Adhesion •
- Preview from Notesale.co.uk Page 2 of 2 o Ischaemia/reperfusion (e.g. myocardial infarction)
  - Shock
  - Chronic Inflammation
  - Graft rejection
  - Vasculitis

Red Cells	vs. White Cells
Function Gas transport function	Specialised functions in immune and inflammatory responses
Numbers Large numbers of cells	Small numbers of cells
Location Function in the circulation	Function outside the circulation
Activity Passive carriers	Passive in circulation Active to leave circulation
Adhesion Generally non-adhesive to other cells	Adherent to endothelium under controlled circumstances
Structure Simple structure - high concentration of Hb - low resistance to deformatio - 'tough', with long life-span	Complex structure - nuclei, specialised organelles - high resistance to deformation - variable life-span