- The 'apparent viscosity' decreases with decreases vessel diameter
- Haematocrit in many arterioles is lower than the systemic arterioles
 - Flow resistance is lower than expected from systemic viscosity
 - However, resistance still depends on haematocrit

White cells and platelets have negligible effects on blood viscosity

Clinical/ Physiological Indices

BLOOD: done routinely

- Haematocrit •
 - Oxygen carrying capacity
 - Blood viscosity
- Erythrocyte sedimentation rate (ESR) ٠

PLASMA: only in research

- Plasma viscosity
 - Affects blood viscosity
- Fibrinogen concentration

RBCs:

- **Blood content** ٠
 - Haematocrit
 - Red Cell count
- **Cellular Characteristics** •

Consequences of Anaemia

- Reduced October Ver corpacity 0
- Reduced viscosity and resistance to flow Ο
 - Cardiac output may be high

Blood Rheology and Circulatory Pathology

- 1. Hyperviscosity Syndromes
 - a. Elevated immunoglobulins
 - b. Haematocrit (polycythaemia genetic disorder or smoking in response to carbon monoxide)
 - c. Hyperleukotic leukaemia
 - d. Abnormal RBCs? E.g. sickle cell or malaria
- 2. Acute Phase Response (chronic) response to damage or trauma
 - a. Atherosclerotic
 - b. Vascular disease
 - c. Diabetes
 - d. Smoking
 - e. Increases fibrinogen \rightarrow increased plasma viscosity (and blood viscosity), increase RC aggregation, increased ESR