Blood smears

Materials:

- Fresh blood sample collected into EDTA tube
- Sample slide
- Spreader slide
- Capillary tubes
- Tissues/ lens wipes
- Pencil
- CLEAN Diff quick stains and fixative
- Light microscope
- Gloves

NB: Do not use heparin tubes as they can create artefactual change. Aim to collect blood to the line on the EDTA tube to make sure the ratio of anticoagulant : sample is correct.

Protocol:

1. Gently agitate blood in tube – do not shake as this can damage cells
2. Collect sample into capillary tube from EDTA sample tube
3. Wipe outside of capillary tube to avoid blood contamination of your workspace
4. Place 3 drops of blood (match-head size) near the frosted edge of your sample slide
5. Hold the spreader slide between you thumb and middle finger, with your pointer finger on top of the slide
6. Place the spreader slide onto your sample slide at ~ 60-70° angle and gently drag backwards to contact the 3 drop sample
7. Wiggle your slide gently to distribute the sample across the spreader slide
8. Reduce slide angle to ~ 45°
9. Push the spreader slide forward over the sample slide in a single, smooth, gentle motion
10. Label with pencil
11. Air dry
12. Stain using CLEAN diff quick stain (see protocol on Continuing Education page)
13. Identify feathered edge and monolayer then move to 100 x oil immersion for further assessment

Tips & Tricks:

- Always make a fresh smear at the time of blood collection to minimise the risk of artefacts and cell damage.
- Aim to get your feathered edge approximately three quarters of the way along the slide to allow for an appropriate monolayer and ideal location of the feathered edge.
- Check the feathered edge for platelets / platelet clumps and cell distribution of WBCs.
- Perform differential cell counts on the monolayer (including platelet counts).

What information can you get from a blood smear?

- Cell types, differential counts, morphology, distribution, abnormalities, presence or absence of immature cell lines.