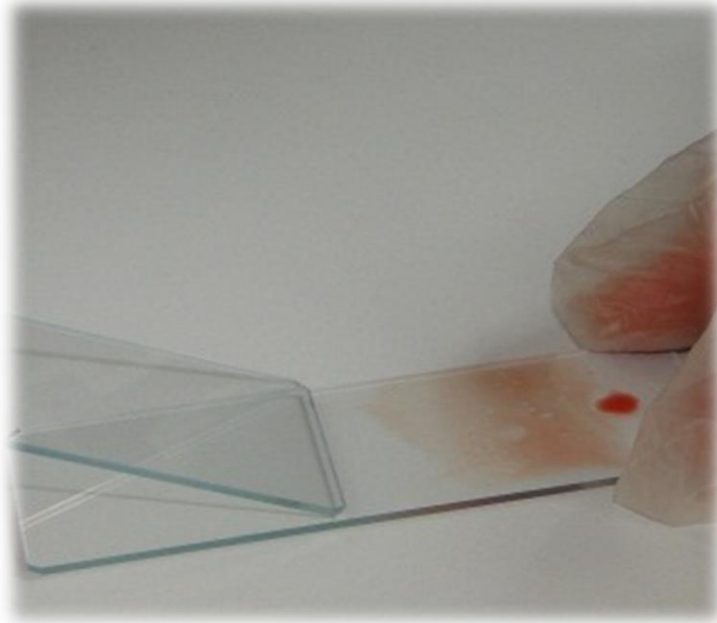


# Blood Smear



## Disclaimer

A series of booklets has been developed by the Clinical Skills Lab team (staff, recent graduates and students) from the School of Veterinary Sciences, University of Bristol, UK.

Please note:

- Each booklet illustrates one way to perform a skill and it is acknowledged that there are often other approaches. Before using the booklets students should check with their university or college whether the approach illustrated is acceptable in their context or whether an alternative method should be used.
- The booklets are made available in good faith and may be subject to changes.
- In using these booklets you must adopt safe working procedures and take your own risk assessments, checked by your university, college etc. The University of Bristol will not be liable for any loss or damage resulting from failure to adhere to such practices.

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Year Group: BVSc3 +



## Equipment list: Blood Smear

### Equipment for this station:

- Whole blood in heparin or EDTA tube
  - *N.B: Use substitute blood (instead of real blood) if practising this skill in the Southwell Street CSL*
- Capillary tubes
- Microscope slides
- Tissue or paper towel
- Gloves

### Considerations for this station:

- Wear gloves
- All glass must be disposed of in a sharps bin
- Anything contaminated with blood must be disposed of in a clinical waste bin (unless it is sharp)
- Handle glass capillary tubes with care. Instructions for handling capillary tubes can be found in 'CSL\_R01 Microscope slides' (in the CSL)
- To stain the smear with Diff-Quik refer to booklet 'CSL\_L06 Diff-Quik Staining'
- Make sure you are familiar with 'CSL\_I02 Lab Area Rules' and wear a correctly fastened lab coat/scrub top, mop up any spills and spray work surface with 1% Virkon and wash hands in the hand wash sink

Anyone working in the Clinical Skills Lab must read the 'CSL\_I01 Induction' and agree to abide by the 'CSL\_I00 House Rules' & 'CSL\_I02 Lab Area Rules'

Please inform a member of staff if equipment is damaged or about to run out.



# Clinical Skills: Blood Smear

1



Gently invert the tube to mix the sample.

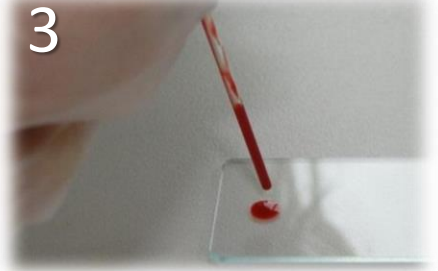
Hold the tube at an angle and introduce the capillary tube. Allow blood to move up the capillary tube.

2



Put your index finger over the top of the capillary tube before removing it or blood will leak (run back down into the sample).

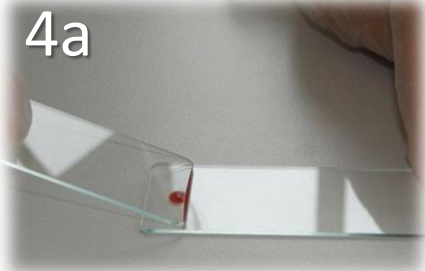
3



Place a drop of blood onto one end of a clean slide. Discard the capillary tube into a sharps bin.

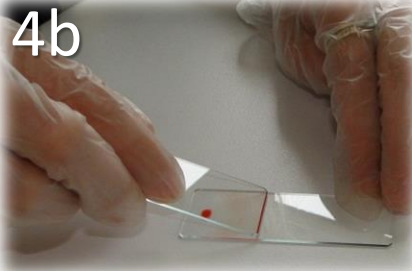
There are 2 different ways to make a smear: the 'push' technique (4a & 4b) and the 'pull' technique (6a & 6b)– either technique is acceptable and both are shown below.

4a



**The PUSH technique:** Take a second slide and lie the edge flat on the smear slide. Pull the second slide back until it contacts the drop of blood. Allow the blood to spread along the edge of the slide.

4b



Once blood has spread along the edge of the second slide then **push** it away from the drop of blood firmly and swiftly. This can take some practice!  
Air dry the slide by wafting it.

5



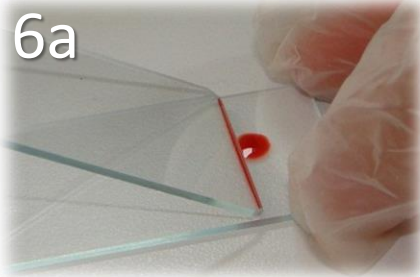
The smear should be fully contained on the slide (i.e. not off the edge). It should not be too thick or so thin that there are scratch marks. If held up to the light, the tail (feathered edge) of the smear should contain a rainbow effect.



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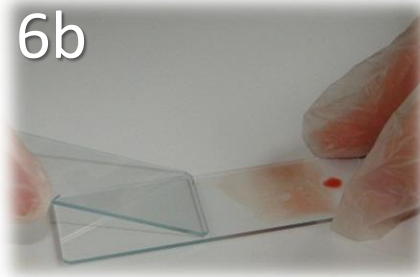
# Clinical Skills: Blood Smear

6a



**The PULL technique:** Take a second slide and lie the edge flat on the smear slide. Push the second slide back until it contacts the drop of blood. Allow the blood to spread along the edge of the slide.

6b



Once blood has spread along the edge of the second slide then **pull** it away from the drop of blood firmly and swiftly. This can take some practice!  
Air dry the slide by wafting it.

7



The smear should be fully contained on the slide (i.e. not off the edge). It should not be too thick or so thin that there are scratch marks. If held up to the light, the tail (feathered edge) of the smear should contain a rainbow effect.

To stain the blood smear with Diff-Quik refer to booklet 'CSL\_L06 Diff-Quik Staining'



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# Resetting the station: Blood Smear

1. Dispose of any glass in the appropriate sharps bin
2. Dispose of anything else contaminated with blood in a clinical waste bin
3. Return all equipment to its storage container
4. If there is blood left over in the sample, and no one is waiting to use the station, return it to the blood storage section of the fridge

*Station ready for the next person:*



Please inform a member of staff if equipment is damaged or about to run out.



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## I wish I'd known: Blood Smear

- Make a few smears and submit the best ones to the diagnostic laboratory. If the smear is too thick or too thin interpretation may be difficult and therefore the results from the lab may not be as useful as expected.
- Having the correct amount of blood on the slide to start with is important. If having difficulty making a good quality smear, the blood drop may be too large or too small.