

# Sampling for Cytology

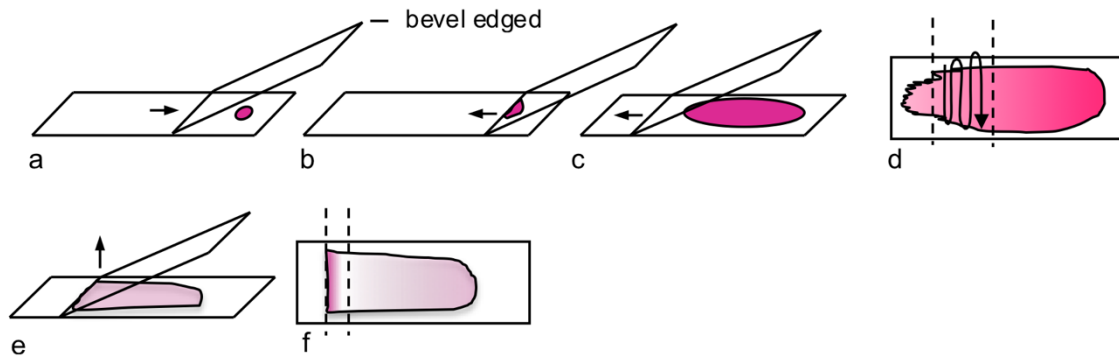


**H. Pendl**  
**Hematology, Cytology, and Histopathology**  
**In Birds and Reptiles**  
**Zug, Switzerland**

## Shipment

- Prepare a minimum of 3-6 slides per location
- Airdry quickly in dustfree environment (or use the cold setting of a hairdryer)
- In case of fluid aspirates
  - Leave 3 films native
  - Dip 3 films for 10x into methanol (i.e. light blue solution of Diff Quik® stain)
    - IMPORTANT: Apply highly concentrated (*absolute*) methanol free of acetone and avoid evaporation by using screw top jars as storage containers.
    - A drop of alcohol concentration below 70% will result in insufficient membrane fixation with progressive blurring and dissolution of subcellular structures in the stained sample
  - Again airdry in dustfree environment (see above)
- always include a detailed anamnesis including the location of origin and the type of the sample (direct smear, centrifuged smear....)

# Fluids



a-d preparation of opaque fluids (e.g. a blood sample)  
e-f line preparation technique for translucent fluids

Opaque hypercellular fluids such as blood are best processed with the blood film technique shown in the drawings a-d.

In contrast, hypocellular, transparent fluids should be processed with the line concentration technique shown in the drawings e and f. The cells within the fluid will concentrate at the end of the film, where the glass slide is lifted.

In very hypocellular samples, gentle cytospin centrifugation is recommended prior to preparation (< 1000g for five min). The sedimented plug is resuspended with a small amount of supernatant and carefully spread onto the slide.

# Solid tissue

Please refer to the educational videos of the Kansas State Veterinary Diagnostic Laboratory Youtube channel for

## Fine needle aspirate (FNA)

<https://www.youtube.com/watch?v=JTYJBNxeTH8&list=PLNjV05pK4JEVLI3x8mLYXxpjfMV-Gq4P&index=4&t=0s>

## Tissue swabs

<https://www.youtube.com/watch?v=GslFO8zodKk&list=PLNjV05pK4JEVLI3x8mLYXxpjfMV-Gq4P&index=5>

## Impression smears from organ tissue

<https://www.youtube.com/watch?v=hey21Z459X0&list=PLNjV05pK4JEVLI3x8mLYXxpjfMV-Gq4P&index=2>

## Additional comments:

### Fine needle aspirates

- In highly vascularized tissue the woodpecker technique without maintaining negative pressure is of advantage to avoid excessive hemodilution.

### Tissue swabs

- moistening of the swab depends on the fluid content of the tissue to be sampled
- moist swabs for dry lesions, dry swabs for moist lesions

### Impression smears from organ tissue

- squash preparations (as demonstrated in the video for FNAs) from tiny pieces (1x1x1 mm) of organ tissue will result in samples of higher cellularity and less hemodilution than impression smears
- they are especially useful in cytologic sampling during necropsy