











Skin Biopsies: Technical Details

Factors that may affect pathology results include the choice of biopsy site, technique and transport medium, as well as the lack of clinical details.

SELECTING THE BIOPSY SITE

Routine Histology

	Blotchy, macular	Annular	Discoid, plaque	Papular	Vesicular, bullous*	Nodule, tumour
Incision Biopsy						
Punch Biopsy		sometimes unsuitable for punch			unsuitable for punch	

*Whole blisters can also be removed by saucerisation.

For vesiculobullous rashes, vasculitis, lupus/dermatomyositis or scarring alopecia take a separate biopsy for **direct immunofluorescence microscopy (IF)**:-

- ▶ Vesiculobullous rashes: Biopsy a non-blistered lesion or immediately adjacent (within 1cm) to a blister
- ▶ Vasculitis: Biopsy a fresh lesion <24 hours old
- ▶ Lupus/dermatomyositis: Biopsy an active established lesion (at least 6 months old)
- ▶ Scarring alopecia: Biopsy an active established lesion (at least 6 months old)

BIOPSY TECHNIQUE

1. Mark the site

- ▶ Allow an appropriate margin for punch/shave excisions

2. Skin preparation

- ▶ Be thorough but gentle, so that no scale or scab is rubbed off. Let alcohol dry before starting the biopsy.

3. Local anaesthesia

- ▶ Creating a wheal raises the lesion and makes it easier to shave.
- ▶ Lignocaine is most commonly used.
- ▶ Lignocaine with adrenaline helps control bleeding but should be avoided in certain sites.
- ▶ Recent evidence suggests that lignocaine with adrenaline can be safely used for digital anaesthesia unless the patient has peripheral vascular disease, connective tissue disease, Raynaud's disease or antiphospholipid syndrome.
- ▶ Over-infiltration with local anaesthetic can mimic dermal oedema.

4. Punch biopsies

- ▶ Choose the right punch size (excision vs partial biopsy; 4mm for inflammatory conditions)
- ▶ Determine the skin (Langer) line direction (see Fig 1) and stretch the skin perpendicular to the Langer lines to perform the biopsy. This will result in an oval that is easier to close.

>>> Continued Overleaf



Fig. 1: Langer lines

- ▶ Place the punch tool over the lesion and gently but firmly rotate through the skin until there is a decrease in tension when it 'pops' into the subcutaneous fat.
- ▶ Remove the punch and gently lift the tissue with fine-toothed forceps or a skin hook/needle to minimise crush artefact.
- ▶ Cut the biopsy from the surrounding skin with scissors or scalpel blade.
- ▶ Close wound with a haemostatic agent[†] (if 4mm or less) or a suture or surgical adhesive.

[†]Gelfoam, aluminium chloride 20% solution, Monsel solution, silver nitrate sticks

5. Superficial shave biopsies or saucerisation

- ▶ For superficial shave, hold the blade parallel to the skin. Ensure that the biopsy is sufficiently deep for lesions with a thick crust.
- ▶ For saucerisation, hold the blade at a 45-degree angle to the skin and ensure that reticular dermis has been sampled.
- ▶ For pigmented lesions, if any pigment is seen at the base of the wound, remove this too.
- ▶ Dress with petrolatum. Keep moist and covered for at least a week to minimise scarring.

6. Incisional biopsies

- ▶ Make an elliptical incision about 2-3mm wide, cutting vertically down to fat.
- ▶ Grasp the biopsy by the deep edge using a skin hook or fine-toothed forceps.
- ▶ Cut the base of the biopsy with curved scissors or a scalpel
- ▶ Close the wound with sutures.

7. Wedge biopsies

- ▶ Make a deep V-shaped or triangular incision with a scalpel blade and remove the tissue with the tip of the blade.
- ▶ The biopsy should look like a triangular pyramid, with the base formed by the skin surface.
- ▶ The wound can be left to heal by secondary intention.

TRANSPORT MEDIUM

Routine histology: **Formalin**.

IF: **Immunofluorescence transport medium***

Saline can be used if Immunofluorescence transport medium is not available.

Remove and rinse the biopsy in saline immediately if it is accidentally placed into formalin.

Flow cytometry (for lymphoma): Use **RPMI medium*** or wrap the fresh specimen in saline-soaked gauze if not available.

*For further information or to order any of these media, please contact your local QML Pathology Laboratory.

CLINICAL NOTES

Don't forget to include details of the biopsy type, site and differential diagnosis. For inflammatory conditions, useful information includes duration, appearance, symptoms and medication history.

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