

The Basics

- Evaluate the patient and the lesion
- Determine if the process is involving the epidermis, dermis and/or subcutis
- It is recommended each exam room be stocked with biopsy instruments (shave blades, scalpels, and punches), alcohol swabs, prepared syringe with anesthetic, a hemostatic agent (aluminum chloride) and band-aids
- Regardless of the technique always clean the biopsy site using an alcohol swab
- Anesthesia is given with 1% lidocaine epinephrine using a 30 gauge needle
- Biopsy enough of the lesion so an accurate diagnosis can be made
- A simple band-aid is used to cover the biopsy site (aluminum chloride should be used to stop any bleeding)
- The average wound healing time is 8-12 days

Shave Biopsy

• Application:

- Verruca vulgaris, seborrheic keratosis, actinic keratosis, basal cell carcinoma, squamous cell carcinoma
- Melanocytic lesions (nevi and malignant melanoma)
- Some inflammatory diseases (contact dermatitis)
- Useful for lesions elevated in relation to the surrounding skin and superficial lesions without a dermal component

• Advantage:

- Quick
- Low cost
- Reasonable cosmetic result depending on depth of shave
- Ease of wound care
- No suture to be removed

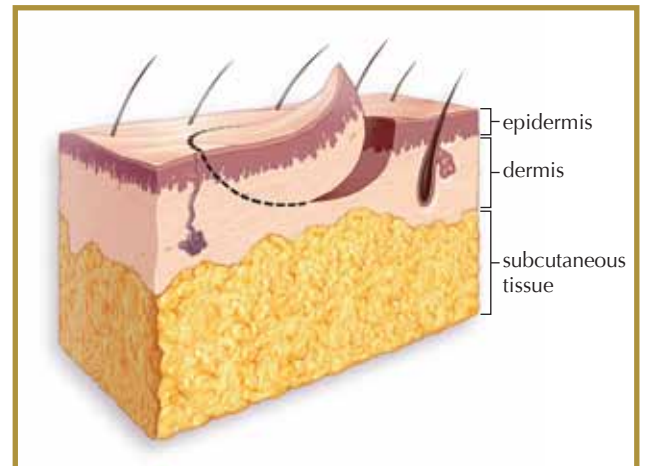
• Disadvantage:

- Not adequate for some inflammatory diseases, (arthropod bite reactions, panniculitis (Erythema nodosum)
- Uneven specimen and depth
- Difficult to maneuver in some anatomic locations

• Technique:

- Clean the biopsy site using an alcohol swab
- Anesthesia is given with 1% lidocaine epinephrine using a 30 gauge needle
- Use fingers to pinch lesion upward
- Papules should be shaved to the plane of the skin surface
- Macules and patches of pigmented (melanocytic) lesions should be removed entirely with a 1-2mm margin
- Place long shaves on a piece of paper and then place the specimen in the formalin bottle to prevent curling
- Apply aluminum chloride to stop any bleeding

- The biopsy is now ready to be placed in fixative and sent to your dermatopathologist for diagnostic evaluation



Images courtesy of Arthur Segall, DPM

Punch Biopsy

(Punch technique is used when more than superficial dermis is needed)

- **Application:**

- Lesions with a dermal and subcutaneous component
- Excellent for inflammatory diseases including panniculitis (Erythema nodosum)
- Not recommended for melanocytic lesions unless the entire lesion can be removed

- **Advantage:**

- Disposable and non-disposable
- Good cosmetic result if sutured
- Ease of wound care

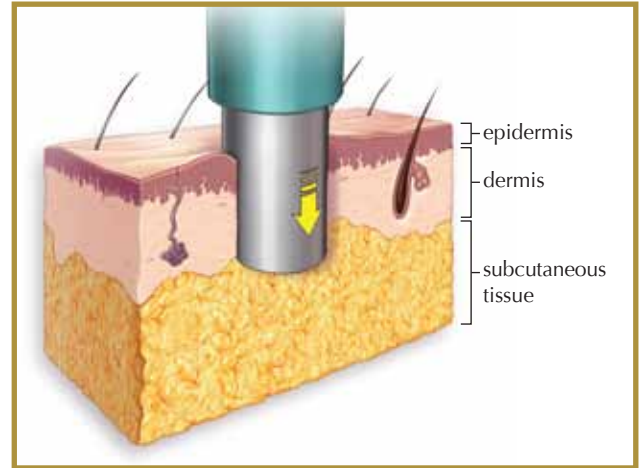
- **Disadvantage:**

- Require more healing time
- More costly if suture is used
- Suture removal

- **Technique:**

- Clean the biopsy site with an alcohol swab
- Anesthesia is given with 1% lidocaine epinephrine using a 30 gauge needle
- A 3 mm punch or greater is recommended to perform the biopsy
 - When taking a biopsy for panniculitis, use an 8 mm punch and optimize fat retrieval
- Stretch the skin opposite to skin tension lines so the defect will be oval in shape
- Using a punch, apply pressure and twist in a drilling motion
- Make sure the punch includes subcutaneous tissue
- Do not squeeze the forceps too hard when picking up the tissue
- Apply aluminum chloride to stop the bleeding
- Suture with Prolene or Nylon if needed (Vicryl for deeper dissolving)

- The biopsy is now ready to be placed in fixative and sent to your dermatopathologist for diagnostic evaluation



Images courtesy of Arthur Segall, DPM

Punch Biopsy for Epidermal Nerve Fiber Density testing

- Epidermal Nerve Fiber Density testing allows for quantification and qualification of small fiber peripheral neuropathy through immunohistochemical staining

- Perform the punch biopsy as instructed above keeping in mind the below exceptions:

- One 3mm punch biopsy is taken from the distal calf (10 cm proximal to the lateral malleolus)
- Handle the tissue gently by the reticular dermis only. Forceps should never contact the upper layers of the skin as this may cause crush artifact and damage the nerve fibers
- The specimen must be submerged in **Zamboni's fixative** immediately after the biopsy is taken
- The specimen must never be allowed to air dry on gauze
- Never use formalin fixative when performing epidermal nerve fiber density testing

- Refer to our complete *Tissue collection, fixation and shipping instructions* online at PodiatricPathology.com

Contact us at 866-369-6071 to request a kit and to find out more about Epidermal Nerve Fiber Density testing.