



Wyoming State Veterinary Laboratory

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**Title** Skin biopsies for histopathology

Skin biopsy is the most cost-effective tool in dermatology. It requires a close partnership between the clinician and the pathologist. Samples will be unrewarding if sampling is done late in the clinical course, an inadequate clinical history is provided or if the selection of biopsies is poor. Biopsy should not be reserved only for "difficult" cases or clients. They should be part of the standard work-up in dermatology cases, since it provides a permanent record of pathology findings at a particular time.

**Key points**

- What to sample: diseases for which therapy is likely to be expensive, dangerous or time consuming; any dermatopathy that appears unusual or serious; all persistent cutaneous ulcers; diseases which do not respond to apparently rational medical treatment; vesicular diseases.
- Provide signalment and good clinical history.
- Biopsy early in clinical course.
- Use a 6 or 8 mm punch, or excisional biopsy with scalpel. Reserve 4 mm punches for difficulties like eyelids, pads or nasal plenum.
- Multiple biopsies are best. There is no additional charge for submitting up to 5 samples because these are often helpful.
- If multiple samples are submitted, identify each by site and, if different by gross appearance.
- Rotate punch in one direction to avoid shearing artifacts.
- Biopsy a range of active and chronic lesions.
- If mailing a sample during cold weather and there is a possibility of freezing in the mail, add 95% ethyl alcohol to the formalin solution, since this will lower the freezing point.
- If secondary pyoderma has developed, control this first medically before sampling. Otherwise a primary problem (e.g., allergy, endocrine dermatopathy, or keratinization disorder) may be masked.
- If practical take the animal off medications, particularly glucocorticoids, 2-3 weeks before biopsy.
- Place the sample into 10% neutral phosphate buffered formalin immediately it is sampled. Biopsies dry out quickly under surgery lights.



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- Include a margin of normal skin with lesions, but not so much that little of the lesion is represented. Do not scrub the biopsy site.
- If serocellular crusts are present, include them with the biopsy in formalin.
- Include air-dried skin scrapings on a slide to permit assessment of surface bacteria and other organisms please submit photographs of lesions if you think they may be helpful. You can email these as JPEG attachment to [vetrec@uwyo.edu](mailto:vetrec@uwyo.edu). Please keep the image size small.
- If bacterial culture is needed, take separate biopsy samples using either a ring block or a general anesthetic, since lidocaine inhibits bacterial growth. Subcutaneous injections of lidocaine, which are fine for histopathology biopsies, may result in false negative bacteriology findings.
- If the report does not correlate with clinical picture, please contact the laboratory and talk to a pathologist

An excellent review of taking skin biopsies is provided in Scott DW, Miller WH, Griffin CE: 2001, Biopsy and dermatohistopathologic examination. In: Muller and Kirk's Small Animal Dermatology, 6th edition, pp. 125 -131, Saunders