

Gastrointestinal Biopsy Guidelines

In both endoscopic and surgical biopsies, interpretation may be hindered by submission of biopsies that are too small, crushed, do not include adequate mucosa or/and are not representative of a multifocal or regional disease process. Errors in sampling and/or processing can result in biopsies of little or no diagnostic value; in some cases, these errors can even contribute to erroneous diagnosis. It is therefore essential that there be excellent communication between the clinician and pathologist. All biopsies should be submitted with a full clinical history, including results of other diagnostic tests and endoscopic appearance of the areas biopsied.

Endoscopic biopsy

To maximize the value of your endoscopic biopsies:

- Have formalin-filled containers, labeled cassettes (use pencil for labeling), and surgical sponges ready prior to taking biopsies. Even a small delay in fixation can result in significant tissue desiccation.
- Obtain at least 6 samples from each region of the stomach, and from each segment of intestine that is examined.
- Obtain biopsies that are full mucosal thickness; ideally, at least some should also contain submucosa (muscularis mucosa).
- Observe the sample prior to removal from the biopsy forceps, and delicately unfold the tissue with a 22 or 25 gauge needle if necessary.
- Gently lift the tissue from the forceps, again using a small gauge hypodermic needle, and lay it mucosal side up on a biopsy sponge. Do not grasp, rub, or otherwise handle tissue at the mucosal aspect.
- Place up to 8 samples from each region on the same sponge and into a labeled cassette. Label cassettes with pencil.
- Place cassettes in 10% neutral buffered formalin. All cassettes can be placed in the same container provided the 10:1 ratio of formalin to tissue is present.

Surgical biopsy

To maximize the value of your surgical biopsies:

- Obtain a minimum of one surgical sample from each region.
- The mucosal surface area should be approximately the same as that of the serosa/muscular tunic. A triangular wedge should be avoided, as these commonly do not contain adequate mucosa for evaluation.
- If biopsies are not placed immediately in formalin, place them gently onto a saline-moistened surgical sponge to prevent desiccation.

For a more thorough discussion of the different techniques and potential problems in the biopsy of the gastrointestinal tract, we refer you to the following excellent review:

Mansell J, Willard MD. Biopsy of the gastrointestinal tract. *Veterinary Clinics of North America Small Animal Practice* 33: 1099-1116 (2003).

Interpretation

In addition to proper sampling and handling of tissues on the part of the clinician, systematic and consistent evaluation of biopsies by the pathologist is also essential. Unfortunately, interpretation has historically been hindered by the lack of standardization of normal morphological and inflammatory features of the gastrointestinal tract in companion animals. For endoscopic biopsies of canine and feline inflammatory diseases, we follow the microscopical standards developed by the World Small Animal Veterinary Association Gastrointestinal Study Group, and our written reports are accompanied by the standard reporting forms developed by this same group.