Iowa Pathology Associates, P.C.
Histology Specimen Collection
Online instructions at www.pathologylab.org

Collection Procedures for Histology Specimens

1. Fixation

A. Tissue specimen should be placed in a container with 10% formalin (formaldehyde) immediately after removal to prevent drying and autolysis artifact. Fasten the lid securely to prevent leakage in transit.

B. A specimen in formalin can be kept 1-2 days before processing. No refrigeration is needed.

C. Large masses fix optimally if incised or sectioned; however, avoid sectioning if it will compromise margin status. Avoid over sectioning or mutilation. Masses within hollow organs/cysts fix better if exposed to fixative. EXAMPLE: Bowel segments should be opened opposite the surface of tumor.

2. Recommended Container Sizes

Iowa Pathology Associates offers several container sizes for specimen collection. It is recommended that an appropriate size of container be used for specimen fixation. An adequate volume of fixative or a ratio of 20:1 is used in a container of an appropriate size. This avoids distortion of fresh tissue and ensures good quality fixation.

Some suggested container sizes for specimen collection:

- 20ml pre-filled formalin containers – small biopsies, skins, needle biopsies, small specimens
- 120 ml pre-filled formalin containers – appendix, gallbladder, large biopsies, lipomas
- ½ L container – knee replacement, hip, lipomas
- 1 L container – small uterus, small ovarian cysts
- 3 L container – small colon resection, small mastectomy, placenta
- 5 L container – large colon, large breast

Iowa Pathology Associates provides a gallon of concentrated formaldehyde (37-40%) and a SDS upon request.

To prepare 10% formalin:

1 part concentrated formaldehyde (37-40%)
9 parts water

Example: 10 mL of concentrated formaldehyde and 90 mL of water would make a 10% formalin solution.

3. Identification

A. Two patient identifiers must be written on the container. Patient identifiers include the patient's name, and date of birth or social security number. Site is not an acceptable patient identifier. If a container is received without two identifiers, specimen turnaround time may be delayed. The chart number instead of the patient's name is unacceptable. The physician's name is not a patient identifier. If a stamper plate is used, please write the site on that label. Do not write patient information on the lid of the container.

B. Only one completed request form is necessary for all tissue specimens collected during the same procedure. If more tissue is subsequently submitted from the patient (e.g., following a frozen section on the same case), please indicate on the requisition that there was tissue previously submitted.

C. It is important to print or write the patient's first and last name on the tissue request form. Use the patient's formal name if the patient goes by a nickname. Also include the patient's date of birth, sex, and day of surgery. The identifiers on the requisition must match those on the specimen container.

D. Complete the patient history and clinical findings in the provided space. Note previous biopsies done on that site. Also, note if there are correlating pap smears or cultures. Identify suture markers/specimen orientation.

E. Any special requests should be noted on the request form (e.g., "Please call results ASAP). Document if assessment of margins/adequacy of excision is important.

F. Fill out insurance information, including Medicare, patient's address, and phone number.

G. Two similar specimens in one container (e.g., vas deferens) should be identified by attaching a suture to one specimen. Document on the request form which specimen the suture indicates.

H. Place the formalin containers (one case only) in the main compartment of the biohazard specimen transport bag. Fold the tissue requisition and place it in the side pocket.

I. Alert the courier to special storage of frozen or refrigerated specimens.

4. Tissue Culture

A. For optimum results place the tissue in a sterile urine or microbiology container in sterile saline-soaked gauze. Refrigerate until courier pickup. Fill out a laboratory request form for the culture. If the same tissue is also submitted for routine histology, complete a tissue request form, and put it in the same transport pouch. Indicate that the tissue is also being submitted for culture on the tissue request form.

B. For **toenail clippings**, collect in a sterile urine or microbiology container with no fixative. Specify if a culture is needed from the same specimen

container on the requisition. Submit two request forms, one for the culture and one for the histology processing.

5. **Gynecology Specimens**

   A. **Products of Conception** tissue passed by the patient at home should be placed in a glass or plastic container with a lid and refrigerated. As soon as the specimen is received at your location, transfer the specimen to a formalin filled container, unless chromosome analysis is needed then see part B. Document time of at home collection and time transferred to formalin on the requisition.

   B. Choose villi and fetal parts for **chromosome analysis study.** Place it in a sterile urine or microbiology container and cover with sterile saline or RPMI transport medium. Refrigerate until courier pickup. Do not freeze. Indicate on the tissue request form that a chromosome analysis study is wanted, and the collection medium used.

6. **Breast Specimens**

A yellow *Breast Case Fixation Record* sticker must be placed on the requisition for each breast specimen (core biopsy or mass). Please indicate on the sticker the time the specimen was collected and when it is placed in formalin. Additional stickers can be ordered by calling 515-241-8860.

7. **Skin Specimens**

   A. A margin can be identified with a suture (preferred) or nicks (visible to the naked eye). Tie the suture loosely for easy removal.

   B. If clinically significant, the specimen should be oriented with a suture (or two) to identify one landmark e.g., "12:00". Indicate sutured apex or margin on the request form.

   C. For cases involving re-excision include patient history, the previous surgical number and diagnosis.

   D. Tissue being submitted for **direct immunofluorescent studies (IF or DIF)**, requires being put into Michel's/Zeus transport media immediately after collection. To order vials containing Michel's/Zeus transport media call 515-241-8860.

   E. **Alopeica** biopsies – one to two scalp biopsies can be submitted (minimum size of 4 mm punch down to subcutaneous fat). The punch biopsy should be performed with a 4 mm punch through the subcutaneous fat to the "hub" of the instrument. An adequate depth to see the hair bulb/matrix in the subcutaneous fat is necessary. Please call our dermatopathologist if you have questions at 515-241-8866

8. Lymph Nodes

A. Culture studies - Obtain a sterile 2 x 3 mm lymph node sample. Submit in a sterile urine cup.
B. Immunophenotypic Studies (flow cytometry) – If lymphoma is a diagnostic concern, one 2-3 mm slice of node should be placed in RPMI. **RPMI** is a transport media for **flow cytometry studies** and can be ordered by calling the histology laboratory (515-241-8860). The media comes in a stock bottle and only a small amount needs to be transferred into a red top tube, a dilution vial or even a sterile capped urine cup. The specimen should be refrigerated until the courier arrives for pick-up. Call the histology laboratory (515-241-8860) to notify the staff that an RPMI specimen is being sent.
C. Note on request form if the tissue is also submitted in RPMI for flow cytometry.
D. Place the remaining tissue in formalin.

9. Frozen Section Evaluation

Contact our medical secretaries at least 24 hours (515-241-8866) in advance to confirm scheduling. If there is a delay between removing the tissue and frozen section, place tissue in saline moistened gauze to prevent desiccation. Do not place tissue in formalin. For specimens requiring needle radiographic localization, availability of mammographic services should be coordinated with frozen section scheduling.

10. Specimens for **uric acid crystal (gout)** demonstration must be received in 100% absolute alcohol.

11. Bone Marrow Aspirate and Biopsy

Contact our medical secretaries at least 24 hours (515-241-8866) in advance if the pathologist is to perform the bone marrow procedure.

A. Biopsy Specimen: If a biopsy specimen is obtained, place in 10% formalin.
B. Aspirated Specimen: Place 1/3 of the aspirate material into a 10 ml sodium heparin tube (green top) and 1/3 into a 10ml EDTA tube (purple top). Invert the tubes several times. Pour remaining 1/3 of aspirate into a petri dish for clotting. The clotted aspirate specimen can be placed in 10% formalin.
C. If an aspirate specimen cannot be obtained or particles are not observed in the aspirate specimen, make four touch prep slides with the biopsy specimen before placing it into formalin. This is done by gently pressing a glass slide against the biopsy.
D. Air dry touch prep slides. Place all slides in a slide carrier. Submit slides and formalin specimens in separate transport bags to protect the slides from formalin fumes.

E. If flow cytometry, cytogenetics, or special specimen handling is required, call the lab (515-241-8860) for special instructions.
F. Send the most recent CBC results on the patient with the requisition or an EDTA tube (lavender top) for a CBC.

12. Turn Around Time

Tissue specimens will be processed on the day of delivery. Results are reported the next working day usually via fax to the hospital laboratory or doctor's office. Requisitions marked "results ASAP" or "1st tray case" will be processed for the earliest diagnostic reading and the pathologist will call the clinician with results.

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