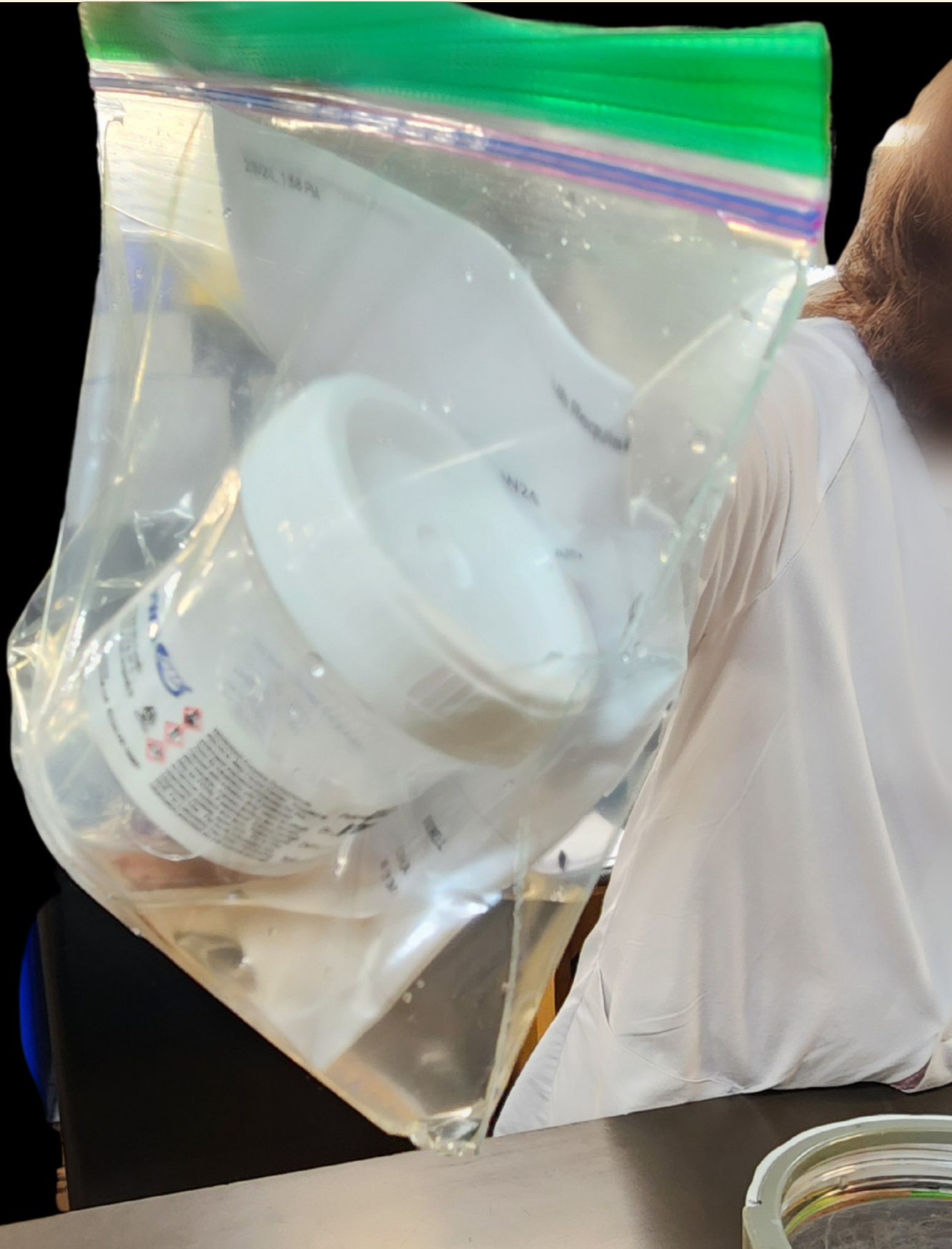


**Improper sample submission results in two simple facts.**

- 1. It puts our valued, hardworking staff at risk.**
- 2. It means potential sample compromise due to damage in transit or inadequate tissue fixation.**

**Together we can FIX common problems with histopathology submissions for the benefit of your patients, your clients and our staff.**



We are here to help with any sample submission supply inquiries as well as any packing and shipping concerns. **If in doubt, give a shout.**



## Transport Regulations for Submitting Histopathology Samples

- Complete the requisition form and **protect it by** placing it in a **separate** ziploc bag. Do not place it in the same bag as the sample. Use one requisition per patient.

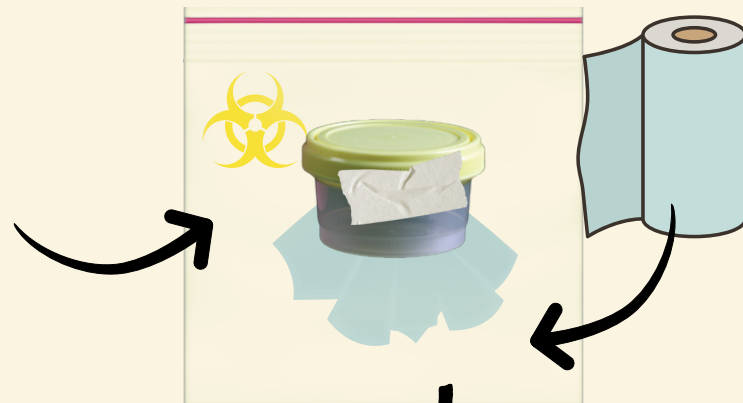


- Place tissue in fixative (10X the total tissue volume) as soon after collection as possible (at most within 30 minutes to limit tissue artifact). 10% buffered formalin is the most commonly used fixative; Bouin's fixative may be used for equine uterine biopsies and enucleated eyes. Tissue specimens should be placed in sterile red top tubes or histology containers. True North can supply 90 ml Urine/Histo containers as well as 250 ml and 1 liter Histology only containers.

- Follow the sticker instructions. An **extra 1/2 turn is needed to lock the lid**. Check the lid a second time to make sure that is fully closed.



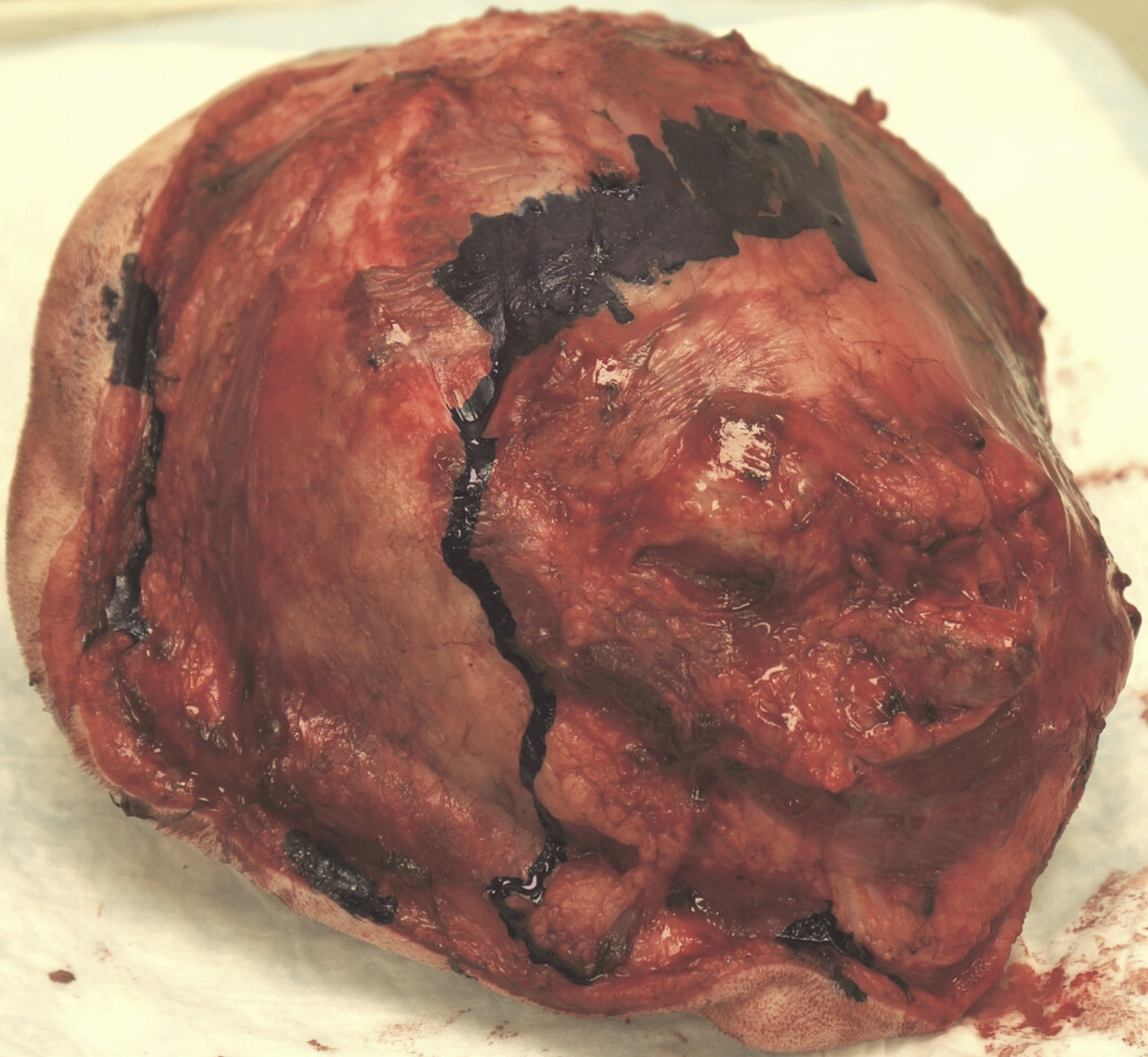
- Seal the formalin container with **tape**.
- Place the **formalin specimen** container in a **separate ziploc bag or other sealable container** with absorbent material.



- **DO NOT** pack cytology samples together with formalin samples. If sending cytology in the same box please double bag the formalin submission in tightly sealed bags.
- Place all items into the shipping box with **sufficient additional packaging material** to prevent movement and breakage under normal transit circumstances. Tape well for transit.



What if you have a very large tissue submission?



4.62 kg !!

Photo courtesy of  
Dr. Sarah Boston, DVM,  
DVSc, Diplomate ACVS

If you have a **LARGE** sample (e.g., whole organ, limb or large mass), that will not fit in one of our standard histology containers there are **three options**. Note the submission form still goes in a separate ziploc bag.



## FIXATION IN CLINIC

- Photographs can also be taken prior to fixation and emailed.
- Fix the sample in a **large wide mouth receptacle** using a large volume of 10% formalin (at least 10 times the volume of the sample) for 24 to 48 hours. It can be preferable to change the formalin after 24 hours and leave the organ/mass for another 48 hours when possible.
- It often helps to partially transect large organs such as spleen due to the thick capsule as this enables the formalin to penetrate adequately. Make slices 1 cm apart and do not cut completely through the organ in order that anatomical detail can still be recognised. Ensure the tissue remains in one piece to allow orientation. Avoid incising through surgical margins and instead slice through a visceral or epidermal surface.
- Hollow or tubular organs should be partially opened to allow for optimum formalin penetration. If you submit partially fixed tissue, be aware that there may be a delay in reporting while we wait for the sample to fix. Delayed tissue fixation will also alter the tissue architecture due to tissue autolysis.
- Once the entire samples is fixed remove the organ or mass from the formalin and wrap it in formalin-soaked gauze sponge or paper towel and place it in a sealable plastic bag. Do not submit these samples completely dry, as this can create artifactual changes. **DO NOT ADD ANY FORMALIN TO THE BAG.** Place that bag into two additional sealed Ziploc bags to prevent leakage or desiccation during shipping of the sample to the lab. Place the sample within the appropriately sized sealed rigid container.

## SHIPPING FRESH TISSUE E.G., LIMB or ORGAN

- Place the sample in a small amount of saline, wrapping gauze around the tissue to keep moist, in multiple (3 or more) plastic bags. Securely seal all bags, placing absorbent padding in the outermost bag. Overnight shipping of the entire prerefrigerated fresh tissue sample using ice packs or other cooling materials will help to avoid autolysis. Do not freeze the specimen, and do not ship on dry ice, which may induce substantial artifact.

## TAKE REPRESENTATIVE SAMPLES

- An alternative to shipping the entire large sample is to cut it in half so that it can fit into separate appropriate labelled containers or choose 4-5 representative 1 cm thick samples from the periphery of the large mass including some of the normal tissue. These samples can be submitted in standard histology containers following the previous guidelines. If concerns regarding sample selection please call.

## Additional Important Notes: Thanks for Reading!



- Handle the specimens gently to avoid crush artifact.
- Avoid refrigerating or freezing specimens fixed in formalin.
- Do not use pill bottles, plastic food storage containers, glass jars or other non-approved containers for histology. Wide mouth dedicated histology containers are needed.
- Do not reuse specimen containers. This helps to avoid residual tissue from previous specimens and confusion from additional potentially incorrect patient information on the container.



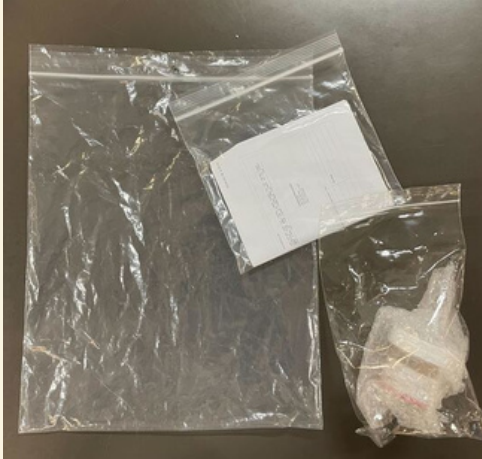
Label the container properly with owner's and/or patient's name, site of collection, veterinary practice/veterinarian, etc., for definite sample identification.



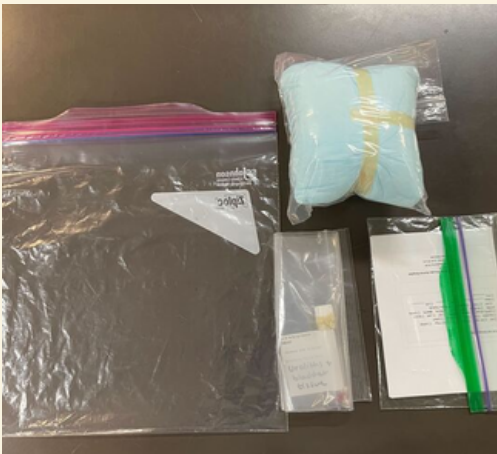
**Please note that these transport guidelines need to be taken seriously. We are here to help you troubleshoot. Clinics that do not comply with all aspects of sample submission requirements on repeat occasions can expect to receive a call and a warning that ongoing improper submissions will incur a fee. The fee will cover additional time and materials necessary for handling, clean up and protecting our staff. Thank you for your understanding.**



**Examples of  
Correct  
Sample  
Submissions!**



- **Submission form in separate bag.**
- **Formalin container sealed with tape and protected (bubble wrap).**
- **Both submission ziploc and sample ziploc placed in an additional third ziploc.**



- **Submission form in separate bag.**
- **Formalin container sealed within separate bag including absorbent material.**
- **Second submission also in separate ziploc.**
- **All items in a final ziploc.**

