

Diagnostic Sample Collection, Handling, and Transport Guide

Laboratory Selection

Practitioners are encouraged to establish good working relationships with diagnostic laboratories, as lab personnel often serve as knowledgeable sources of information regarding appropriate diagnostic test samples, protocols specific to their laboratory, and shipping guidelines.

Sample Collection

The chart below provides basic guidance regarding sample collection for diagnostic tests commonly performed in equine practice. Practitioners are encouraged to contact their laboratory for questions and more specific instructions.

Use of inappropriate sample collection materials can compromise the reliability of test results.

ABTM= Amies Bacterial Transport Media

ATM = Anaerobic Transport Media

RTT = Red top tube

VTM = Viral Transport Media

WTT = White Top Tube

*BD eSwab™ in liquid Amies media is appropriate for non-enteric aerobic, anaerobic and fungal culture and may be substituted for ABTM and ATM

Test Type	Sample	Container	Storage & transport	Additional comments
PCR	Fluid, tissue, feces, whole blood	Variable - contact laboratory	Chilled	Use sterile Dacron (polyester) swabs with plastic or aluminum shafts. Wooden shafts, cotton wool or calcium alginate tips may inhibit PCR

				testing. Do not put samples for PCR in bacterial transport media.
Serology	Serum	Separate serum from clot and transfer to RTT or WTT without clot activator.	Chilled or frozen	Do not ship serum separator tubes
Aerobic culture, fungal culture, and enteric Salmonella culture	Fluid, tissue, feces	- Swab of feces/tissue/fluid in ABTM -Fluid, tissue or feces at least 1 cubic inch in size in sterile leak proof container	Overnight in an insulated container with ice packs. When overnight shipping is not possible, freeze fresh tissue samples and place fluid or feces in refrigerated ABTM.	ABTM supports bacterial/fungal viability for 72 hours from inoculation.
Anaerobic culture	Fluid, tissue, tied-off loop of bowel	-Swab of feces/tissue/fluid in ATM -Tied-off loop of bowel or fresh tissue at least 1 cubic inch in size in leak-proof sterile container	Overnight ATM using insulated container, do not chill. When overnight shipping is not possible, freeze fresh tissue samples and place fluid	ATM supports bacterial/fungal viability for 72 hours from inoculation

			or feces in ATM stored at room temperature.	
Virus Isolation	Fluid, tissue, feces	VTM <i>Note: RTT or other non-additive sterile container can be utilized. Add a few drops of sterile saline to keep specimen moist, while avoiding dilution effect.</i>	Chill, ship overnight in an insulated container with cold packs.	Your diagnostic laboratory can often provide or identify VTM kit suppliers. Use sterile Dacron (polyester) swabs with plastic or aluminum shafts. Wooden shafts, cotton wool or calcium alginate tips interfere with virus isolation.

Sample Packaging and Shipment

The following are general guidelines for the transport of diagnostic samples:

- In general, specimens other than those in anaerobic transport media or blood culture vials should be refrigerated immediately after collection and hand-carried or express-shipped to ensure refrigerated conditions are maintained through delivery to the laboratory.
- Submit all specimens in a leak-proof container.
- Enclose completed submission forms in a separate plastic bag to protect them from sample leaks.
- Surround the specimen container with sufficient absorbent material to absorb any possible leakage.
- Containers must then be enclosed in a sturdy and sealed secondary container (cardboard, plastic, styrofoam, etc.).
- Fresh tissue samples should be placed in individual, well-sealed, clearly labeled, heavy plastic bags, or other containers. Double bag to prevent leakage.
- Ship refrigerated and frozen specimens with adequate cold packs or dry ice to ensure samples are kept cool or frozen during shipment.

- If a delay of more than 48 hours is expected between specimen collection and laboratory submission, specimens other than whole blood and those in bacterial transport media should be frozen. Store bacterial transport media per the manufacturer guidelines.
- The **United States Postal Service** has set specific guidelines for the proper packaging of biological materials for shipment. Diagnostic specimens, potentially infectious specimens, and other animal products are considered hazardous materials. Shipping services may refuse to handle any package that shows signs of internal breakage, spillage, or dampness. The sender could be held legally responsible for improperly packaged specimens; careful packaging is essential.

Do not

- Submit samples in syringes
- Include needles in samples submitted
- Use ice cubes or water-filled plastic bags as refrigerant
- Wrap submission form(s) around sample(s)

Necropsy Sample Collection:

- Practitioners are advised to contact their diagnostic laboratories for instruction regarding sample collection and shipment. Many laboratories also offer necropsy sample collection kits for veterinarians.
- AAEP Resource: [Practical Equine Field Necropsy](#)
- *Note: A rabies protocol should be followed on ALL horses exhibiting signs of neurologic disease which undergo a post-mortem examination. Detailed instruction may be found in the [AAEP Rabies Guidelines](#)*
- Many equine pathogens are potentially zoonotic. The following precautionary practices are recommended to prevent exposure:
 - Do NOT use mechanical saws to obtain tissue samples, as these tools may disperse aerosolized tissue particles.
 - Wear Tyvek disposable coveralls or (at a minimum) solid-front, water-resistant, long-sleeved gown.
 - Wear double gloves and consider Kevlar gloves if available to prevent accidental exposure
 - Innermost pair—latex or other disposable gloves
 - Outermost pair—substantial waterproof gloves (Playtex kitchen gloves) long enough for gown sleeves to be tucked inside
 - Wear a face shield or goggles to protect mucous membranes.
 - Wear a disposable KN95 or ‘half mask’ HEPA respirator (3M 8293) to avoid aerosol exposure. Personnel using these masks may need to be fit-tested prior to use and on a regular basis to maximize the protection the masks provide.