

INTRODUCTION

The most important example that we can set for those watching us is to respect our patients. Each time you approach a horse with patience, respect and understanding, you have the opportunity to change the way the owner and community see and handle their animals. This interaction has the potential to do more good than anything else we do.

Just as you are a product of your experiences, so is every horse you will ever meet. Patience, respect, and understanding will get you further much faster than bullying your patient. Our job is to teach by example. If we choose to use derogatory terms to refer to our patients, we not only demonstrate a lack of understanding of equine behavior, but we give our clients license to treat their animals poorly. Our patients are not crazy, they simply act like horses.

Horses are by nature, flight animals, and our patients frequently have minimal experience with people. Many have been labeled “broncs” after being manhandled. People are watching us work. When you choose to finesse a patient rather than bully it, you make an investment. The payoff occurs the next time you (or some other veterinary professional) work with that patient.

Learn to watch (and listen) every chance you get. So much of what there is to be learned comes from watching others work. Don't cheat yourself out of these opportunities.

SAFETY

The safety of the patient, volunteers, and any observers is always of primary concern. Each situation must be evaluated and a common sense decision made as to the whether the procedure should be done. The ground covering and slope, location of fences and buildings, availability of skilled personnel, and presence of distractions that may frighten the horse must all be considered. These are elective procedures, which should only be done when it is safe.

- The safest place to stand when handling a horse is at the shoulder.
- Do not stand behind horses.
- Do not kneel or sit on the ground when working with or around horses, always remain on the ball of one or both feet.
- Do not stand directly in front of horses, except during dental procedures.
- When you are the handler, stay on the same side of the horse as the examiner.
- Never wrap the lead rope around your hand.
- Do not do anything you are uncomfortable with.
- Stay off of the “leg side” of any anesthetized patient. If you cannot do so, maintain a distance of at least six feet between you and the hooves of the patient.
- Never let a horse out of your field of vision unless you are at least 40 feet away.
- If a patient is wearing a speculum, always keep a hand on the nose.
- Do not hold anything under your arm or between your legs when you are handling or working on a horse

The single most important thing that you can do to keep yourself, patient, and your client safe is to learn to admit when you are over your head.

If you are not completely comfortable with any given task, say so. Ask for help or find someone who has more experience to perform the task. Some of the horses we work with will need to be sedated prior to unloading. Some may not be unloaded at all. Do not remove a horse from a trailer if you are unsure. Get help.

THE MOST BASIC OF NOTES ON HANDLING

Beware of people who are all about showmanship or worse, claim they are “experts”. These are generally the people who will get you hurt. If they need to put on a show for you, I have to question how much substance they actually have. All of the true horsemen that I know are quiet, unassuming people and I have never heard one of them say how good they are.

Don't make the mistake of looking at a particularly rough cowboy and deciding that he "cowboys" everything. Cowboys are the original horseman. Even if you don't like everything you see you can frequently pick up a real gem or two from watching them work.

The single most important thing that you can do to learn about being a horseman is to watch every interaction between a horse and a person that happens around you.

- Watch how the horse responds to the person
- Watch how the person responds to the horse
- Watch how the horses response differs from person to person, as this will lead you to the people you can learn the most from

You cannot learn to read/handle a horse by reading a few paragraphs in this document. It takes years of experience, and many people, perhaps the majority of them, lack the basic observational traits necessary to see what is in front of them, and learn from it. Start by looking at yourself.

- Think about how you move and speak. This is all that the horse sees and hears. People who move and speak in fits and starts do not instill confidence in their patient.
- Every interaction that you have with a horse is a training interaction. You either train the horse that you are partners, but you are in charge, or you train the horse that it is in charge (some would say in this case that the horse trains you)
- Learn your limits- don't start something that you don't believe you can finish. Every time you don't finish what you started you tell the horse you really don't mean what you say.
- Mean what you say. Ask for what you want/expect firmly and clearly, but without bullying. You cannot expect a horse to do what you ask if you are unclear or unsure when you ask.
- Approach every horse with the belief that everything is going to go well, and that you will be able to complete the task at hand. If you don't think that you can complete the task at hand, do not approach the horse. (you may work on mastering this for the rest of your life)
- Horses follow your lead. If your body, voice, or manner says that something may go wrong, the horse knows, and things go wrong. (they read this as "run for your life, we are going to die" and nothing you want from the horse is going to be more important than its self preservation)

How do I know if I can go into a trailer and sedate/anesthetize a horse?

- I look at the patient's eye. If it is "soft" it is looking for a friend. These horses are generally not a problem for me.
- A large portion of the animals we work with have not been touched, or are very green. It is rare to find a green horse that is not looking for a friend. All I have to do is be that friend.

PHYSICAL EXAMS

At times we are unable to perform a physical exam on our patients. They often lack the training necessary to facilitate examination. As a patient becomes excited, sedatives become less effective, making it more difficult to achieve sedation in the patient. Then if the patient is a surgical case, anesthesia and recovery are compromised.

Do not compromise the patients' anesthesia and recovery, as well as your safety, by trying to take an obviously healthy horse's temperature.

Normal physical exam parameters: (these parameters are relatively unchanged by anesthesia)

| | | | |
|---------------|---------------|-------------|----------|
| Temperature: | 99.0 to 101.8 | Heart beat: | 32 to 44 |
| Respirations: | 12 to 24 | | |

The heart beat should be regular. An irregular beat should be evaluated prior to anesthesia or sedation. A regularly irregular beat (i.e., 3 beats, a dropped beat, 3 beats, a dropped beat) usually indicates a 2nd degree AV block. This is a relatively common arrhythmia in the horse. In most cases this will not affect anesthesia. An irregularly irregular heart beat may be indicative of atrial fibrillation. This is a more uncommon arrhythmia, and requires further evaluation.

The nose should be free of discharge and the patient's eyes and coat should be bright. The patients should be alert and should have an energy level appropriate to its age.

A Body Condition Score or BCS will be recorded on every patient. Note cards are attached to every caddy and clipboard. Refer to these cards, touch your patient, and assign an appropriate number.

| | 1 | 2 | 3 | 4 |
|----------------------|-----------------|-------------------------|---|---|
| Point of evaluation | Emaciated | Very Thin | Thin | Moderately Thin |
| Neck | Bones Prominent | Bones Faintly Prominent | Accentuated, Not Obviously Thin | Not Obviously Thin |
| Withers | Bones Prominent | Bones Faintly Prominent | Accentuated, Not Obviously Thin | Not Obviously Thin |
| Area Behind Shoulder | Bones Prominent | Bones Faintly Prominent | Accentuated, Not Obviously Thin | Not Obviously Thin |
| Area Below Elbow | Bones Prominent | Bones Prominent | Accentuated, Not Obviously Thin | Not Obviously Thin |
| Topline | Bones Prominent | Bones Prominent | Ridge | Slight Ridge |
| Ribs | Bones Prominent | Bones Prominent | Slight Fat Covering, Easily Discernable | Faintly Discernable |
| Tail Head | Bones Prominent | Bones Prominent | Prominent, But Can Not See Individual Vertebrae | Fat Palpable, Prominence Conformation Dependant |
| Point Of Hip | Bones Prominent | Bones Prominent | Rounded But Easily Discernable | Not Visually Discernable |
| Point Of Buttocks | Bones Prominent | Bones Prominent | Rounded But Easily Discernable | Not Visually Discernable |
| Spinous Processes | Bones Prominent | Thin Layer Fat Covering | Rounded But Easily Discernable | ---- |
| Inner Thighs | ---- | ---- | ---- | ---- |
| Flank | ---- | ---- | ---- | ---- |

| | IDEAL BODY CONDITION | | 7 | 8 | 9 |
|----------------------|----------------------|-----------------------------------|--|----------------------|----------------------|
| | 5 | 6 | | | |
| Point of evaluation | Moderate | Moderately Fleshy | Fleshy | Fat | Extremely Fat |
| Neck | Rounded Smooth | Slight Fat Deposit | Fat Deposit | Thickened | Bulging |
| Withers | Rounded Smooth | Slight Fat Deposit | Fat Deposit | Fat Deposit | Bulging |
| Area Behind Shoulder | Rounded Smooth | Slight Fat Deposit | Fat Deposit | Filled In | Bulging |
| Area Below Elbow | ---- | ---- | ---- | ---- | ---- |
| Topline | Flat | Possible Slight Crease | Possible Slight Crease | Crease Present | Obvious Crease |
| Ribs | Not Seen Easily Felt | Slightly Spongy, Not Easy To Feel | Palpable, But With Fat Filling Between | Difficult To Palpate | Patchy Fat |
| Tail Head | Slightly Spongy | Soft | Soft | Very Soft | Bulging |
| Point Of Hip | ---- | ---- | ---- | ---- | ---- |
| Point Of Buttocks | ---- | ---- | ---- | ---- | ---- |
| Spinous Processes | ---- | ---- | ---- | ---- | ---- |
| Inner Thighs | ---- | ---- | ---- | Fat Deposits | Fat Deposits May Rub |
| Flank | ---- | ---- | ---- | ---- | Fat Filled |

VACCINES, ANTHELMINTIC AND OTHER MEDICATIONS

All medications should be given for a reason and a cost/benefit ratio should be considered: There is no medication that cannot cause an adverse reaction.

- TMS can give the patient a life threatening antibiotic induced colitis.
- Adverse reactions to vaccines may include high fever in the day or days following the injection, swelling at the injection site, abscess formation, and anaphylaxis.
- Penicillin can cause anaphylaxis, or an excitatory response, either of which can result in serious injury.
- Intramuscular injections of non-antibiotics such as vitamins or flunixin can cause Clostridial myositis, which is life threatening (rarely even standard vaccines can do this: always take post vaccination lethargy and swelling seriously).

In the USA we de-worm and vaccinate horses who are presented for a dental procedure, a lameness workup, or a surgical procedure such as castration, hernia repair, or exploration of a wound or draining tract. While we will train residents to give anthelmintics and vaccinations to their horses we do not do “vaccination only” appointments for equine patients.

Ivermectin

Our Anthelmintic of choice is Ivermectin. We use 1% injectable solution for cattle, however we ALWAYS administer this orally. It is dosed at 200 mcg/kg or 1 ml/100 lbs of body weight.

The frequency with which a patient needs treatment for intestinal worms varies greatly.

- For a horse living on thousands of acres on the plains, twice a year (once after the first freeze in the fall and once when things start to thaw out in the spring) is entirely appropriate.
- For horses living in irrigated fenced pastures, once a month may be necessary.
- If a patient appears particularly “poor” we send a dose of ivermectin home with the patient to be administered a month later.

Vaccines

- All vaccines require refrigeration.
- One multi-dose vial will be carried in the cooler in each caddy.
- Check the icepacks every time you reach into the cooler for a vaccine. During summer clinics they will need to be changed mid day.
- You can draw up several doses at the start of the day.
- The syringes must be clearly labeled.
- After each use the needle is changed and the syringe is re-loaded.
- **If the syringe is contaminated in any way (aspiration of blood into the syringe or the tip of the syringe touching anything between needle placement) it is discarded and a new syringe is labeled.**
- All syringes are discarded at the end of the day and replaced with new ones

We carry tetanus toxoid and rabies vaccine on domestic trips.

Tetanus Toxoid:

- One ml of tetanus toxoid is administered IM to patients over the age of 8 weeks.
- Tetanus toxoid should be administered annually, as well as when a patient is injured or is undergoing a surgical procedure.
- To attain initial immunity tetanus toxoid must be boosted 3-4 weeks after the first vaccination.

- Until this booster is given, each tetanus toxoid vaccine is considered to be the patient's first.

Rabies

Rabies vaccines should be administered annually to equine patients. The dose is 2 ml given IM.

Tetanus Antitoxin

- Tetanus Antitoxin is **not** a vaccine.
- It is a treatment administered to prevent tetanus, but it treats the tetanus directly, rather than providing stimulation to the immune system and thus causing the body to fight the disease. It is what the immune system would do itself if it had adequate prior exposure to the insult (tetanus).
- It is administered only to surgical or injured patients who have not been previously or consistently vaccinated for tetanus.
- Tetanus antitoxin is administered IM at a dose of 1500 units. Packaging must be consulted to determine what volume is necessary to administer 1500 units.
- The antitoxin contains antibodies that afford the patient an immediate protection against tetanus toxins.
- There is a risk of acute liver failure in patients who receive a tetanus antitoxin. There is a higher risk of tetanus infection without the antitoxin. We feel that the risk is outweighed by the benefits.

Injectable flunixin meglumine (Banamine)

- It is dosed at 1.1 mg/kg and administered IV to:
 1. Surgery patients
 2. Patients undergoing significant dentistry.
- Because this drug is administered IV, the syringe must be used only once. The aspiration of blood into the syringe
 1. Contaminates the syringe, and
 2. Provides a perfect media for bacterial growth.
- This is a Non Steroidal Anti Inflammatory Drug (NSAID) and is administered to provide post-op analgesia.
- All NSAIDs are nephrotoxic (hard on the kidney) and ulcerogenic (hard on the stomach and GI tract) to varying degrees.

Procaine Penicillin G 300,000 U/ml

- Must be mixed thoroughly,
 1. Some brands take longer than others to mix
 2. Turn the bottle upside down and look at the base to ensure that it has been properly mixed prior to drawing PPG into a syringe.
 3. Failure to mix thoroughly results in administration of the procaine portion of the drug to the patient, while the antibiotic remains in the bottle.
- Should be drawn from the bottle at room temperature
- Should be administered warm. If cold, place the syringe under your arm to warm.
- Must be refrigerated after opening
- Is administered IM
- May be administered at doses ranging from 20,000 to 40,000 IU/kg.
- We use PPG to protect against clostridial growth (tetanus and gangrene) while the wound or surgical site is healing.
- When discussing penicillin with the client we must be clear. Many of our clients use the slow release, long acting penicillin Benzathine (150,000 U/ml) in their horses. **This drug is not effective in the horse as it is not possible to administer it in high enough volume**

The Pharmacy:

- Trimethoprim-sulfamethoxazole tablets
- Phenylbutazone tablets
- Metronidazole tablets
- Procaine Penicillin G injectable
- Nacxell injectable
- Excede injectable
- Flunixin meglumine injectable
- Carbocaine, Injectable
- Lidocaine Injectable
- Assorted topical and eye ointments.

ADMINISTRATION OF INJECTABLE DRUGS: IM INJECTIONS

Most injections given to horses will be Intravenous (IV) or Intramuscular (IM) injections. Students will generally not be asked to give IV injections to patients who are conscious, and will only give IV injections under direct supervision. Mistakenly injecting any drug into the artery will cause your patient to seizure and fall down or flip over backwards. This places the patient, yourself and the client at risk of serious injury and reduces the client's faith in your ability and in the clinic. There is no excuse for an intra-arterial injection. Learn good technique and USE IT!

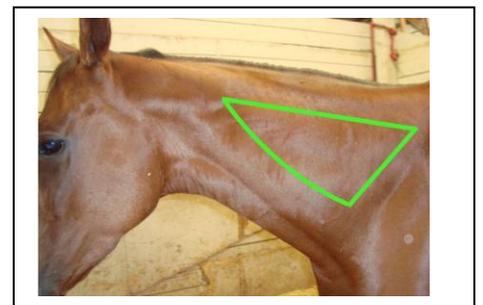
Syringes must be clearly labeled. Unlabelled syringes are garbage.

Syringes of carbocaine, vaccine and PPG may be used for more than one patient as long as they have not been contaminated. The needle must be changed after each injection. If the syringe is immediately reloaded, then all clinic participants can tell that the needle has been replaced, as you must do so prior to reloading the syringe. **Do not remove a dirty needle and set the syringe down prior to needle replacement as doing so results in contamination of the syringe.** All syringes used for IV injections are discarded after a single use.

Intramuscular injections may be given in the neck, semimembrinosus, semitendinosus, or pectoral muscles. Some clinicians also use the muscles of the forearms as well as the gluteal muscles. Use of the pectoral muscles is associated with a short lived edema. Use of the gluteal muscles is generally limited, as drainage of an abscess is difficult to achieve. The neck and Semis are the two most common sites for IM injections in the horse.

Intramuscular injections in the adult horse should be given using a 1 1/2" needle. Less viscous products such as vaccines, or gentamicin should be administered with a 19 ga or 20 ga needle while more viscous solutions, such as procaine penicillin should be given through an 18 ga or needle (a 20 ga needle can be used in foals as the volume is quite small).

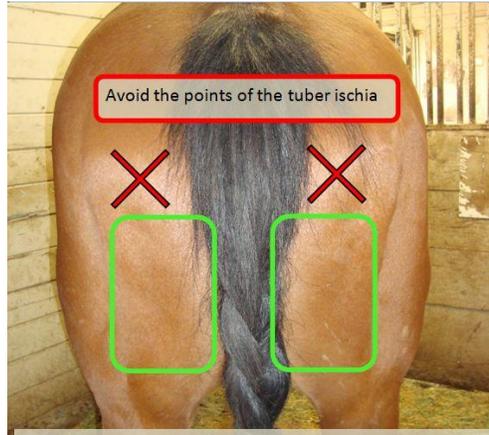
The area of the neck used for injections is bordered by the scapula, the nuchal ligament, and the spine. Prior to giving an IM injection, feel the neck. You can be certain you are above the spine if you feel where they are prior to choosing an injection site. Avoid use of the neck for IM injections in foals. They lack neck muscles and it is possible to inject into the spine. Avoid the use of the neck for viscous solutions such as procaine penicillin if the patient is very thin and lacks adequate muscle.



EQUINE INJECTION SITES



Note the change in orientation when the patient shifts weight



Correct site for injection of the semimembrinosus, and semitendinosus