* **Pre Operative examination**
* Do a thorough general physical exam, ensure patient is systemically healthy – any signs of nasal discharge, diarrhea, fever, pain.
* Palpate both testicles to ensure they have descended normally into the scrotum prior to surgery
* horse should be in good health and current on deworming and immunizations, particularly tetanus. If the horse has never received vaccinations, owners are advised to vaccinate the horse using vaccines recommended by the attending veterinarian and wait two weeks after vaccination to perform the castration procedure.
* **Pre-Op medication:**
1. Tetanus prophylaxis (tetanus toxoid or antitoxin) if not up to date
2. Antibiotics (IM procaine penicillin) – done pre operatively, not usually administered post operatively unless deemed necessary, based on
3. Analgesia (NSAIDS - phenylbutazone, flunixin- anti-inflammatory and analgesic)
* **ASA grade**

ASA CLASSIFICATION SYSTEM

ASA 1 A healthy horse.

ASA 2 Horse with mild systemic disease (mild anemia, mild recurrent

 Airway obstruction)

ASA 3 Horse with severe systemic disease (severe anemia, strangles)

ASA 4 A horse with severe systemic disease that is a constant threat to

 Life (ruptured bladder, intestinal incident)

ASA 5 A moribund horse not expected to live for more than 24 hours (foal

 With a uroperitoneum with severe meettabolic damage)

E The letter E is added to any classification when it is an emergency

 Procedure

<https://www.acvs.org/files/proceedings/2012/data/papers/173.pdf>

**Pre- Op Considerations associated with restraint:**

**Standing Castration**

* encourage owner to handle colt as much as possible before surgery to reduce risks of injury to horse, surgeon and assistants
* perform in a confined, clean area with good lighting
* twitch for added restraint
* heavy sedation required: alpha 2 agonist + opioid – detmoidine [0.12 ml/100 kg] or romifidine [0.9 ml/100 kg] and butorphanol [0.2 ml/100kg] as well as local anaesthetic [20 ml] into each testicle
* If right handed surgeon, approach scrotum from left side of horse. Position body against horse shoulder, keep head up by the flank, and use reach of arms.
* The requirement for a standing castration is that the horse must be big enough for your veterinarian to lean under the belly to remove the testicles–no miniature horses! The horse must be trained well enough to be restrained properly–that means no standing castrations in foals

**General anaesthesia/recumbent**

* done in field, in suitably clean and accessible area that is safe for both horse and humans
* Left lateral recumbancy for right handed surgeon, Dorsal recumbancy
* IV catheter: alpha 2 + ketamine [+/- butorphanol and diazepam]

 : alpha-2 + thiopentone +/- GGE

* local anaesthetic into the testcile that is removed second
* maintenance doses, gaseous/triple drip – esp for long procedure

{triple drip is Guaifenesin (5%) solution is combined with xylazine and ketamine to produce a solution commonly referred to as “triple drip,” or “GKX.”13 “Triple drip” is formulated by adding 1000 to 2000 mg of ketamine and 500 mg of xylazine to a liter of 5% guaifenesin. The combination is administered to effect up to a rate of 2 mL/kg of body weight per hour. The combination produces excellent muscle relaxation and suitable analgesia.)

**Considerations for anaesthesia in a stallion:**

Does the patient appear healthy?  Even if the patient is underweight anesthesia may be safe.  Some stallions when penned will pace the fence line and lose weight.  This patient is unlikely to gain weight until it is castrated and returned to its’ herd.  Patients living in rural Latin America tend to receive a very low plane of nutrition.  Not castrating them will not improve this situation, and may cause them to use more energy looking for something to breed than they might if they were castrated. To make this decision,  think about the following:

a. Is the hair coat healthy?

b. Are the eyes bright?

 c. Is the patient energetic?

2. If these questions are answered yes, we are likely to anesthetize the patient, even if the BCS is as low as 2.

3.If the answers to the above questions are no, then you must consider;

a. Is the patient a risk to the safety of those around it?

 b. Does the patient require an exam to rule out causes of its’ physical state in order to determine if euthanasia is warranted or if treatment is possible?

c. Is there a crippling injury to a structure such as a joint in an unhandled horse?  (Anesthesia for examination may be the only option.)

4.  If any of these questions is answered yes, we are likely to anesthetize the patient, even if the BCS is quite low.

* Check for umbilical and inguinal hernia
* Palpation: ensure both testes have descended

**Tie the leg.**

* Stand behind the patient. Raise the upper leg (the patient’s right leg)
* Stand so that you are in contact with the leg so that if the patient moves you will be pushed, not kicked
* Place the noose around the pastern.
* Figure eight twice around the hock ending at the pastern.
* Place a half hitch at the pastern.
* Step back from the patient
* Pass the rope behind yourself.
* Sit back on the rope, allowing your weight to do the work
* DO NOT TIE THE ROPE AROUND YOURSELF.
* The rope should lie smooth and flat on the leg.
* A ¾ “rope of adequate length (15-20 feet) is the rope of choice for adult horses.
* A 5/8” rope 12-15 feet long is more suitable for minis, ponies, foals and/or burros.

**Scrub**

* Place bucket behind patients’ leg.  The bucket should contain

a.1/3 to ½ full of water

b.Disinfectant

* Strong tea colored if using betadine
* 3 ounces per gallon if using  nolvasan

c. Practical/ pound cotton torn

d.  Spray or squeeze bottle of scrub floating in the bucket

  ALWAYS RETURN SCRUB TO BUCKET AFTER USE, NEVER SET DOWN ON GROUND.

* Place your body against the inside of the leg so that the foot is beside your shoulder.
* Squirt or spray the scrotum with scrub.
* Remove a handful of cotton from the bucket, squeeze ½ of the water from it, and scrub the scrotum thoroughly.
* For hernias or cryptorchids us a prep sponge.
* DO NOT PLACE USED SPONGES INTO THE CLEAN WATER BUCKET.
* Rinse with clean water from the prep bucket.