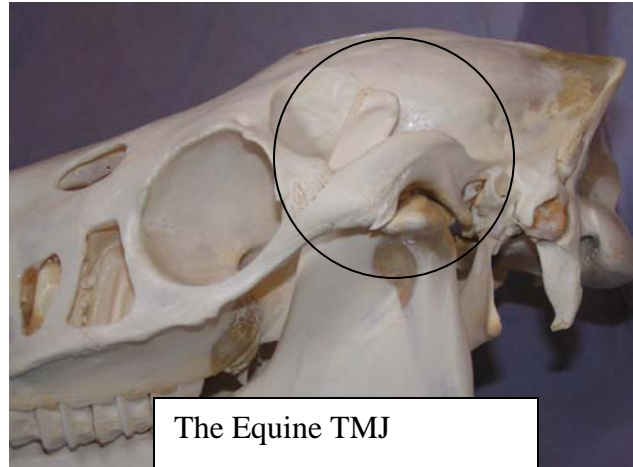


The Temporomandibular Joint (TMJ): More than a pain in the mouth!  
By Joanna Robson, DVM

“My horse has TMJ,” is becoming a more often-heard statement around barns these days. TMJ actually refers to the *temporomandibular joint*, and diseases in this region may include boney changes, soft-tissue inflammation or tears, and problems with the disc. TMD, or temporomandibular dysfunction, might be a more appropriate term to describe problems in this region. Understanding the function of this joint is very important in maintaining your horse’s comfort and peak performance.



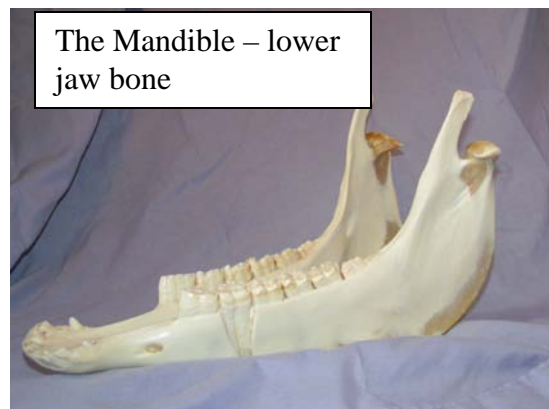
The Equine TMJ

There are two temporomandibular joints present, however, movement at one side is accompanied by movement at the other side, though they may not be equal. The joint surfaces are formed by the dorsal process of the ramus of the mandible, the mandibular fossa of the skull, and the condylar surface. A fibrous or fibrocartilagenous disc is present in the joint and divides the joint into upper and lower compartments. The whole joint is supported by fibrous lateral and elastic caudal ligaments.

Depending on whether an animal is a carnivore or a strict herbivore, the planes of movement in these joints can vary. For instance, a meat-eater relies on a tearing and biting motion and has a strong vertical, or hinge-like plane of motion. An herbivore,



which spends more time grinding food, relies heavily on lateral excursion to break down grasses and feeds.



The Mandible – lower jaw bone

The TMJs are part of the larger Stomatognathic System, which includes the shoulder girdle and all structures above it. Improper gait may actually cause abnormalities in the bite occlusion, and malocclusion may lead to changes in posture or gait!

For a fun experiment with a friend: Ask a partner to stand comfortably, eyes open, in front of you. Then ask them to close their eyes. Watch for changes in foot placement, swaying or tilting, and be ready to catch them if they become unstable. Now repeat this process, but ask your partner to bite down gently on a drinking straw with one side of their jaw, or place a folded piece of paper between her back molars and bite down gently. Notice any changes in the results? Sometimes the changes are quite profound!

The TMJ is one of our greatest proprioception (knowing where we are in space) devices when we cannot rely on our vision. The addition of a malocclusion (uneven bite) can create a terribly imbalanced individual almost immediately. Proprioceptive afferent nerves provide information about body posture and orientation in space. Likewise, craniomandibular alterations or dysfunction produce moderate postural instability. So let's put this into an equine context.

Temporomandibular dysfunction may occur for a majority of reasons, and may be an acute (short-term) or chronic (long-term) condition.

Training equipment can put a direct outside influence on this joint. Pressure from halters and bridles can cause inflammation in the soft-tissues around the TMJ's, leading to head-shyness, resistance to haltering or bridling, or even swelling directly over the joints. Likewise, internal equipment, such as bits, can have a significant impact on the jaw. Though biting is an entire subject unto itself, imagine how the different functions of different bits can have an impact on your horses jaw.



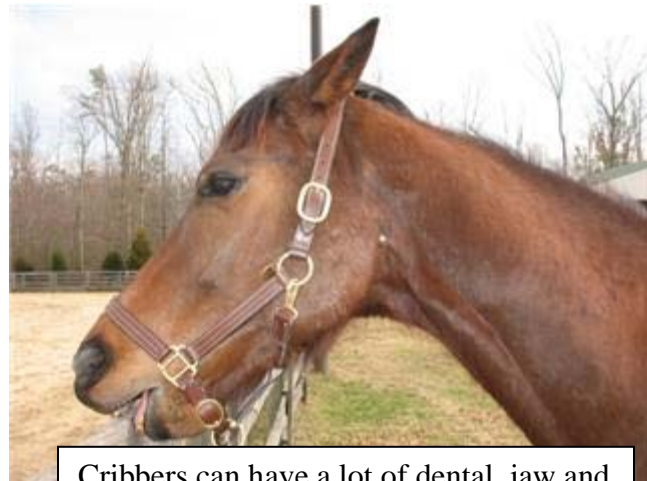
Overflexed at the poll, but demonstrating how the mandible must be allowed to slide. Also note that the bridle buckles are directly over the TMJ.

Going one step further, the horse's jaw must be allowed to slide when the horse is asked to engage or accept the bit. Improper equipment, poor biting methods, dental hooks, tight flash nosebands, can all prevent this active slide from occurring and create an incredibly resistant horse. Research shows that the cervical (neck) spine and the TMJ all function as a coordinated unit. If the TMJ cannot function properly, then effects may also occur in the neck!

Routine dental care is imperative for proper TMJ functioning, however the dental procedure itself may cause problems. Horses that are in mouth gags or props for extended periods of time may have mechanical damage done to the jaw, and have soft tissue inflammation at the least. Horses should receive frequent periods of rest from the gag, which is often not possible in times of extensive dental work, or with difficult patients. Having a mouth prop in is equivalent to you have a credit card stuck lengthwise between your molars! Soreness should be expected following dental procedures, and having a chiropractic or acupuncture evaluation of the jaw, head, and neck is advisable following oral procedures.

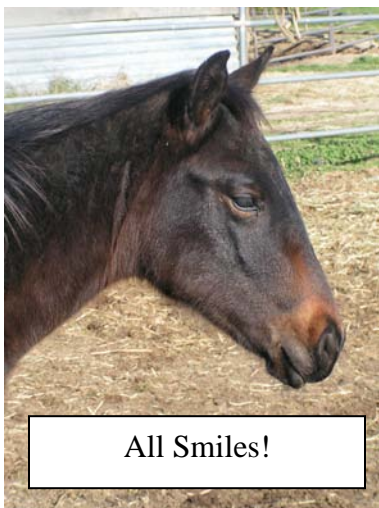


Emotional stress and stable vices can also cause TMJ problems. Cribbers work their jaws constantly as they bite on railings or other objects. Horses in stressful conditions may grind their teeth just as we humans do when we are anxious. Physical signs of stress may occur in the horse's facial anatomy as the muscles develop or change in accordance with their behaviors. Tight masseter (jaw) muscles, overdeveloped temporalis (forehead) muscles may indicate trouble.



Cribbers can have a lot of dental, jaw and neck problems.

Of course there are also issues such as direct trauma (horses kicked in the head or jaw), or falls and spills that affect the head region, that can affect this area. Not all problems are man-made; however, improper husbandry, ill-fitting tack or bits, heavy-handed riders, and dental work or lack thereof are all major causes of equine TMD.



All Smiles!

What can we do to fix this? First, do your best to determine the cause. Check the fit of your halters and bridles. Make sure your bits fit properly and are the correct types for your horse and your level of riding. Have an equine veterinarian examine your horse's teeth for any problems and provide routine dental care if needed. Determine the cause of any emotional distress – is there pain elsewhere in the body (bad saddle, etc), not enough turn-out time, buddy problems. As with any

inflammation in a joint, treatment options are numerous. If the underlying cause can be cleared, that's more important. To address inflammation, complementary therapies such as chiropractic, acupuncture, craniosacral, may all be beneficial. An anti-inflammatory may be needed if inflammation is secondary to a trauma, or to reduce pain and swelling enough to allow manual correction of decreased range of motion. Problems in the TMJ can cause numerous equine issues, from tripping to head-tossing. Have a skilled practitioner evaluate your horse if you think that these signs may be present or related.

Joanna Robson, DVM, CVSMT, CMP, VA, SFT is an equine veterinarian dedicated to Integrated Soundness Solutions<sup>(sm)</sup> and provides veterinary acupuncture, veterinary chiropractic, and saddle-fitting services in a whole horse approach. She can be contacted directly through her website at [www.InspiritusEquine.com](http://www.InspiritusEquine.com) and welcomes your questions or comments.