

What Every Rider Needs to Know About Equine Dentistry

The following article first appeared in Peggy Cumming's *Connected Riding Newsletter*.

A revised version was then printed in *Natural Horse Magazine, Volume 4, Issue x, 2002 – Equissentials*.

It was revised again (mainly reinstating the criticism of the use of power tools) for Linda Tellington-Jones' *TTeam Connections Newsletter*.

What Every Rider Needs to Know About Equine Dentistry

By Nancy Camp

Discomfort in a horse's mouth is not always bit related. An unbalanced set of teeth can be uncomfortable

and/or painful. It also affects the horse's ability to move its head. Requiring a horse with dental imbalances to turn his head, raise it or lower it, while haltering, leading, tying, or riding, will increase his discomfort. An amazingly high number of chiropractic and behavioral problems are related to dental imbalances. Consider such problems as head tossing, stiffness in the neck, shoulders and/or back, resistance to raising or lowering the head, pulling back while tied, and difficulty turning. Any of these may be manifested by dental imbalances.

The most commonly acknowledged reason for routine dental maintenance is to promote good mastication - grinding up of food - which in turn aids in digestion and may help prevent colic. But what is the nature of routine dental maintenance? It is more than a quick once-or-twice-a-year floating that often times addresses only part of the problem. The following is what you as a rider or horse owner need to know and understand about routine dental maintenance because it is your responsibility to oversee what is done in your horse's mouth.

First of all, what constitutes a balanced mouth? Three points of reference are examined to determine the

degree of balance in a horse's mouth: the molars, the incisors, and the TMJ (temporomandibular joint, or the jaw joint, that protrusion on the sides of the horse's head up by the ears where the brow band of a bridle comes across). A balanced mouth has good occlusion (the meeting surfaces of the teeth). Good occlusion allows for the cheek teeth to meet each other evenly, without high or low spots on the molars that cause uneven pressure or gaps. Good occlusion also allows for lateral excursion (simply put, the lower jaw swings freely from side to side). There must also be correct length and balance of the incisors to allow for occlusion. Any uneven wear on the occlusive surface of the incisors (as well as the rest of the teeth) indicates that the normal pattern of chewing has been disrupted. Such disruptions cause stretching or compression in the TMJ, sometimes stretched on one side and compressed on the other. In addition, the neurology surrounding the TMJ is closely linked to the horse's proprioception (knowing where he is in

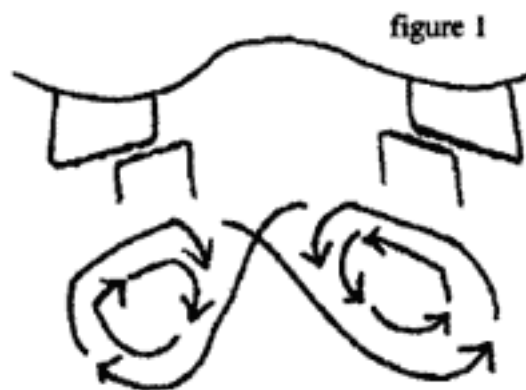


Figure 1: (View from front to rear) When chewing, the horse grinds the bolus of food first on one side of the mouth and then the other, back and forth and towards the rear of the mouth where the food is then swallowed.

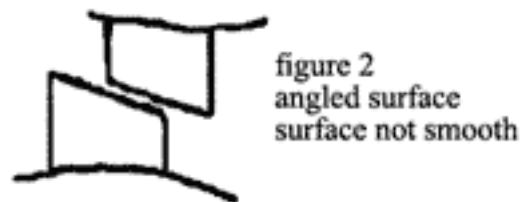


Figure 2: (View from front to rear) A properly angled, textured molar surface is best for grinding food.

space and where he is placing his feet).

In order to understand the importance of these criteria for balance in the horse's mouth, let's consider how a horse eats. He begins by taking in food. If he is grazing, his incisors do this job; if he eats hay or grain, the incisors do not get the proper wear (he may use only his lips when taking in hay or grain). The food is directed to one side of the mouth where the molars start to grind it and turn it, forming a cigar-shaped wad that is chewed first on one side of the mouth and then on the other, being swapped back and forth, traveling back along the grinding surfaces of the molars to the rear of the mouth where it can be swallowed. The chewing process is such that the horse swings his lower jaw in a circular fashion a few times in one direction and then the other, repeatedly. (Figure 1).

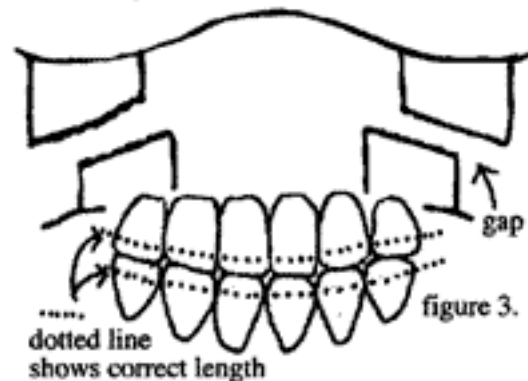


Figure 3: (View from front to rear) Lack of wear of the incisors results in their excess length and molars that cannot meet or wear properly.

For all of this to work the grinding tables (the surface plane of the set of grinding teeth) must have a slight angle (11 to 15 degrees, depending on the breed) and a textured surface (Figure 2). The textured surface has enamel ridges created by varying degrees of hardness in the make-up of the teeth. It is important to note here that smooth grinding tables are not good chewing surfaces because they slide rather than grind and turn the food. Therefore, when removing problem spots, the ridges should be left intact as much as possible. This is why the use of power tools can be so damaging. Power tools are heavy and unwieldy and, because of their high-speed nature, leave a much larger window for error. Another consideration regarding the use of power tools is that the horse will always require sedation when they are employed. Careful application of hand tools can often accomplish the job without the need for sedation. As a horse owner, it is critical that you are certain that any person using power tools in your horse's mouth is a highly skilled, educated, experienced and caring equine dental professional. In any case, finish work, will still need to be done by hand.

So what happens when dental imbalances enter into the picture? An unbalanced mouth promotes uneven wear that perpetuates the imbalance, and the sooner a problem is addressed, the better. Remember that the teeth are intended to wear as they continually erupt.

The unnatural conditions in which we keep horses contribute to dental issues. One of the most notable issues is lack of wear on the incisors. When the incisors get too long, the grinding surfaces of the molars are held too far apart to meet and function normally imagine a pencil between your front teeth while trying to get your molars to meet. (Figure 3). The increasing pressure on the incisors can cause them to gradually protrude forward and/or create a gap between the molar tables. The horse will pack abnormally large amounts of food into the resulting gap and grinding will be ineffective; also abnormal pressures are exerted on the TMJ. This situation causes the TMJ to be painful (He doesn't like his head touched. I have to take his bridle apart to put it on. He pulls back. I can't get near his ears. He goes ballistic when I tighten his noseband... to mention a few). Long term, this condition may result in permanent damage to the TMJ, possibly diminishing the integrity of his neurology.

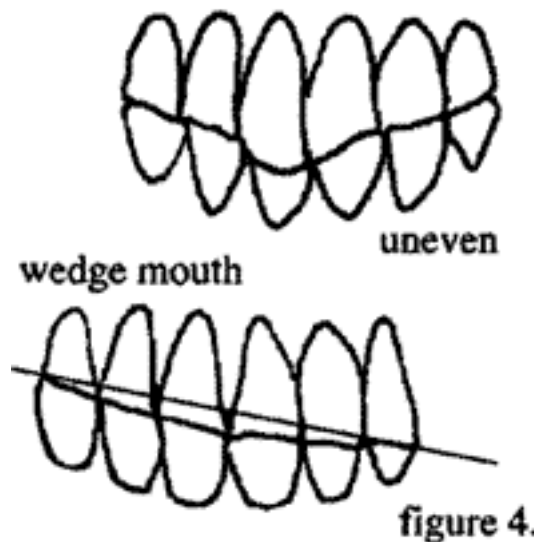


Figure 4: (View from front to rear) Uneven incisors adversely affect Lateral Excursion.

An experienced equine dental professional will be aware that the over-reduction of the incisors or molars is counterproductive and will know whether to address the incisors or molars first to avoid removing too much from the teeth. Creating further imbalance is always possible, and too much pressure on one or more of the teeth can lead to cracked teeth or abscesses. Should your dental professional recommend 'bite' work to straighten out incisor imbalance, discuss his or her intentions and make sure that the overall balance of the mouth is being addressed.

Incisor imbalances restrict lateral excursion forcing the horse to chew in a more up-and-down fashion, or on only one side of his mouth. A wedge mouth, one in which the tables of the incisors are high on one side and low on the other (Figure 4) also prevents normal lateral excursion. Abnormal chewing patterns result in uneven wear of the molars, compromised grinding surfaces, uneven development of the skull's musculature and sharp points on the molars (Figure 5). Sharp points cut and gouge the insides of the cheeks and/or tongue and frequently result in chronic infection and scarring along the inside of the cheeks (He's even worse in a hackamore. He doesn't like his face groomed. He tosses his head no matter what bit I use... etc.). Horses with sharp points will take in extra food matter and pack their cheeks in an effort to protect them from the points.

Hooks (high, often sharp points at the ends of the tables) also interfere with jaw movement. Hooks on the upper front molars will pull the lower jaw behind its normal placement and cause a great deal of tension. Hooks in the back can cause a horse to favor a high or excessively low head carriage. (Figure 6).

When a horse turns, raises, or lowers his head, his lower jaw needs to be able to slide side-to-side and front to back. Dental imbalances that prevent these actions create pain, discomfort, and frustration for the horse.

Much can be ascertained about the nature of a horse's dental health by observing his chewing patterns, the musculature of his head, and the presence of abnormal movements and behaviors. No matter what problems come up with a horse, add 'check teeth' to the list of possible solutions, no matter how irrelevant the connection between behavior and dentistry may seem. The information in this article reveals only the tip of the iceberg; bringing a horse's mouth into proper balance is an art. It requires skill, knowledge and, often, a considerable amount of time. The condition of the teeth in the mouth of any horse that you ride is your business, because your safety and perhaps even your life depend on it. So, take responsibility and learn enough to be familiar with your horse's mouth and to be able to choose a dental professional who has the knowledge and skill necessary to do the best job possible for your horse.

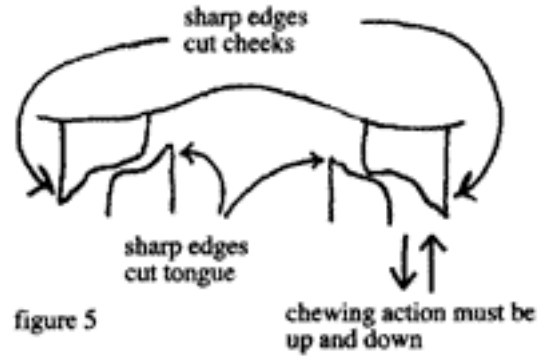


Figure 5: (View from front to rear) sharp points and edges on the molars adversely affect lateral excursion and can cut the cheeks and tongue.

figure 6

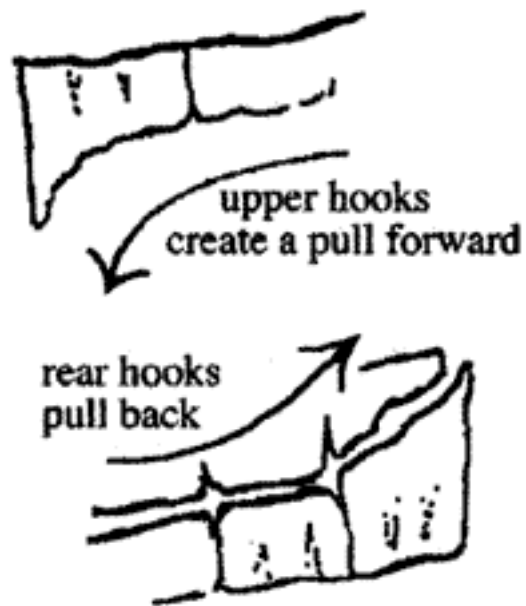


Figure 6: (View from the side) The lower jaw slides forward and backward as well as sideways when chewing. Hooks prevent this and stress the TMJ.