

# Equine Dentistry

## It's Not Just Floating Anymore

Gregory L. Ferraro, W. David Wilson, Tony Basile, and Barbara J. Meierhenry  
Center for Equine Health  
School of Veterinary Medicine  
University of California, Davis

*Originally published in **The Horse Report**, Vol. 24, No. 2, April 2006,  
by the Center for Equine Health, UC Davis School of Veterinary Medicine*

When horses were the main source of farm power and transportation, dentistry played a prominent role in the routine veterinary care of a horse. Horses were an integral part of the work force and people depended on their performance and longevity. Consequently, every aspect of a horse's overall health was important, including its teeth and mouth. However, as horses came to be replaced by the automobile, their role as a worker gradually evolved into that of pet, hobby and recreational outlet. This had a negative impact on the quality of dental care they received. It also markedly slowed the advancement of equine dental science, especially when compared with the rest of veterinary medicine.

Until fairly recently, this neglect of oral health in horses and other animals has gone unnoticed. However, we know that poor dental health can cause colic, weight loss and a host of other health problems and can interfere with performance. Most importantly, it can be painful for the horse to live with. As a result, equine dental care has recently experienced a resurgence of interest and is rapidly becoming



*Image courtesy [www.javajane.co.uk](http://www.javajane.co.uk)*

emphasized as an integral part of veterinary college curricula.

In the history of human dentistry, there was a time when people consulted a dentist only when a toothache or gum problems became unbearable. Dentists contended that routine examinations and professional teeth cleaning would prevent minor complaints from becoming serious health problems, but convincing the general public that such preventive measures would be effective was not easy.

Perhaps the most convincing argument has been that **prevention is far preferable to the inevitable suffering that follows the neglect of teeth**. The same argument applies to horses.

Because of advances in other areas of equine health, horses today live well into their twenties and thirties. Consequently, it is vitally important to provide their teeth with regular preventive care starting at birth. Small problems that are recognized and corrected

at an early age seldom become the large problems seen in many of today's older horses. A veterinarian well-trained in equine dentistry has the skills to prevent most, if not all, major dental problems that have previously been accepted as an inevitable part of equine aging.

Good dental health is critical to the proper function of a horse's digestive system, since digestion is a complex process that begins with chewing and mixing of food with saliva. If the food is not properly chewed, it will not digest properly and could cause chronic colic, choke and general unthriftiness (a husbandry term used to indicate an unkempt appearance or a failure to thrive). Reluctance to drink cold water may also result from dental pain. Healthy teeth and gums will also prevent other problems such as infections in the teeth roots and performance problems because of pain or discomfort with the bit.

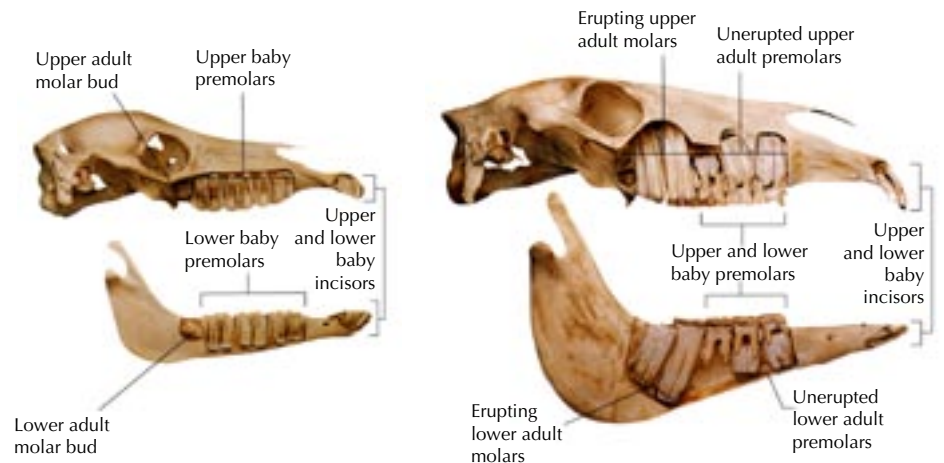
Not all dental problems in the horse are revealed by obvious clinical signs, any more than underlying diseases in humans always reveal themselves in symptoms right away. This underscores the importance of having regular, comprehensive dental examinations. According to Dr. Mary DeLorey, a veterinarian dedicated exclusively to equine dentistry at Northwest Equine Dentistry in the state of Washington, "One of the most important concepts that horse owners can embrace is that prevention is the absolute key to good equine dental health. The idea that a horse doesn't need dental attention until he is in his or her middle age must disappear. . . Once your horse has reached the age of 6 years, all his permanent teeth are in position and in [full] use. If your horse has had periodic, comprehensive dental care up to this time and has no

severe malocclusions or dental disease, he's well-poised for lifelong dental health. He should receive maintenance care every 8-12 months. Horses that are in demanding competition, have heightened sensitivity or pre-existing dental abnormalities may need routine attention more frequently, perhaps every six months, to maintain dental health and comfort. Each horse is an individual with unique needs. A veterinarian skilled in equine dentistry can work with you to determine a schedule most appropriate for your horse."

### Equine Teeth

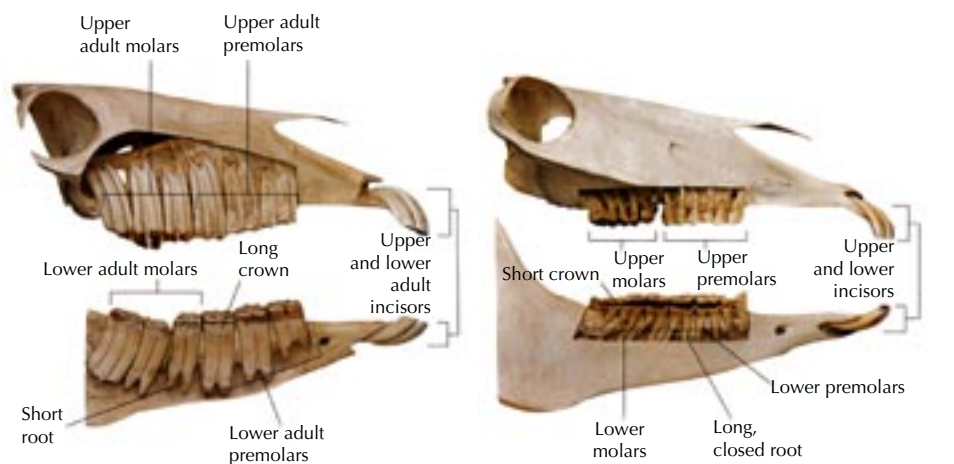
Like humans, horses develop two sets of teeth in their lifetime: the deciduous (baby) teeth and the permanent teeth. The deciduous teeth or caps are comprised of milk (or baby) incisors and premolars. The last of the deciduous teeth erupt at around 8 months of age and begin to be replaced by adult teeth (incisors, premolars and molars) around age 2-1/2. By age 5, most horses have their full complement of permanent teeth. An adult male horse has 40 permanent teeth including the canines, while a mare may have between 36-40 because mares do not usually have canines.

The following illustrations show the development of teeth in horses at birth, at 2 years, 6 years and approximately 20 years.



**TEETH AT BIRTH**

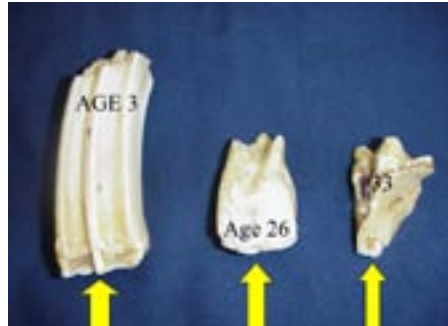
**TEETH AT 2 YEARS**



**TEETH AT 6 YEARS**

**TEETH AT 20 YEARS**

The initial length of the permanent equine teeth (crown and root combined) is about four inches. The roots are deeply embedded in the jawbone, as shown in the photo below. Teeth continue to erupt throughout a horse's lifetime and are worn down primarily by chewing. As seen in the next photo, the length of tooth diminishes significantly as the horse ages.



## The Dental Exam

At the UC Davis Veterinary Medical Teaching Hospital, a proper equine dental examination consists of the following:

- Sedation to keep the horse quiet and still.
- Appropriate head support system (suspension, head stand, head ring).
- An initial visual examination and palpation of the oral cavity.
- Full-mouth speculum to enable a clear view and ability to work deep into the mouth.
- Proper set of instruments that are complete and clean.
- Radiology when indicated by a potential problem or before and after dental extraction.
- In addition, pharmacological agents such as phenylbutazone (bute) or banamine and antibiotics may be needed as adjuncts to treatment.

The exam begins by rinsing the horse's mouth and evaluating the volume, consistency and odor of the flushed material. Using a full-mouth speculum, the horse's mouth is examined digitally and visually using adequate light and reflecting instruments. Further,

- The incisors are evaluated from the front and sides to check for evenness of wear and occlusion.
- Interdental spaces are observed and palpated for unerupted canine teeth and blind wolf teeth (small vestigial premolars; see note below).
- The tongue is examined for lesions such as ulcers, lacerations or scars.
- The upper front premolars are palpated and examined for hooks and sharp cusps that may cause ulcers on the inside of the cheeks.
- The cheeks are also examined for packing of feed or lacerations.
- The lower jaw is evaluated for adequate sideward movement (lateral excursion).
- The mouth is examined for evidence of any dental lesions or gum disease.
- The entire oral cavity is palpated (felt) manually for any abnormalities as a supplement to the visual inspection.

**NOTE:** Because the eruption time for wolf teeth is highly variable, veterinarians routinely examine the mouth for their presence and may remove them as they appear, anytime during the first five years of life.

## Who Should Care for Your Horse's Teeth?

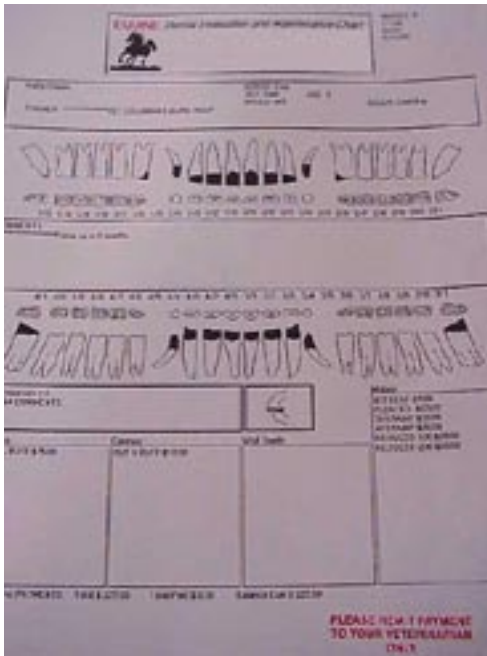
Dental health should be addressed by a licensed veterinarian. In many states it is illegal for nonveterinarians to perform equine dental procedures. In states that do permit trained dental technicians to perform dental procedures, such individuals must work alongside a licensed veterinarian. The American Association of Equine Practitioners also supports this but cautions that "the practice of equine dentistry is an integral branch of equine veterinary medicine. . . . Any surgical procedure of the head or oral cavity; the administration or prescription of sedatives, tranquilizers, analgesics or anesthetics; procedures which are invasive of the tissues to the oral cavity including, but not limited to, removal of sharp enamel projections, treatment of malocclusions of premolars, molars, and incisors, reshaping of canine teeth, the extraction of the first premolars and deciduous premolars and incisors; treatment, extraction or repair of damaged or diseased teeth; periodont treatment; and dental radiography are veterinary medical procedures and should be performed by a licensed veterinarian."

Dental technicians can be certified through different organizations. Two well-recognized ones are the **American Veterinary Dental Society** and the **International Association of Equine Dentists**. Bear in mind that a legitimate equine dental technician should be willing to work with your veterinarian, who is the best advisor for your horse's overall health care.



Initial visual examination and palpation of the oral cavity.

A thorough dental examination should include keeping dental records—similar to those used for people. Knowing a horse's dental history can be important if you move or change veterinarians or if you decide to sell your horse. This example of a dental chart shows what procedures were indicated by the exam and what was actually done:

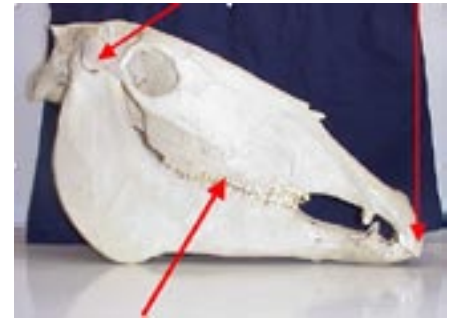


These photos show cavities in the teeth before and after being filled.



## Common Dental Problems

Horses grind their food using a side-to-side movement of the lower arcade of teeth against the upper arcade, known as *lateral excursion*. Consequently, an important part of equine dental care is to maintain good alignment at the three critical points shown in the following photograph so that the horse can chew its food properly. Since equine teeth grow throughout a horse's lifetime and wear down in many different ways depending on the individual animal, teeth can rapidly become uneven and alter the alignment of the mouth. A critical part of regular dental care



The red arrows show the three points of alignment: the temporomandibular joint at the top, the cheek teeth (molars and premolars) in the middle, and the incisors at the front.

is to keep all the teeth relatively even in length and prevent minor problems from becoming major problems.

Maintaining an even bite plane during a horse's middle teens is especially important to ensure a level grinding surface when the horse is in its twenties. If an even bite plane is neglected, it may be impossible to achieve alignment when the horse is older, since the teeth will wear unevenly and eventually stop erupting. Again, the goal of regular, consistent dental care is to prevent minor problems from becoming major ones that can impact the quality of an animal's life, particularly in its later years.

Some common problems that may be addressed during the course of regular maintenance include:

- Sharp enamel points forming on cheek teeth, causing lacerations or ulcers on the cheeks or tongue.
- Retained caps (deciduous teeth that are not shed).
- Discomfort caused by bit contact with the wolf teeth (small vestigial premolars).
- Hooks forming on the first upper and last lower cheek teeth.
- Long and/or sharp canine (bridle) teeth interfering with insertion or removal of the bit.
- Lost and/or broken teeth.

- Abnormally long teeth.
- Infected teeth and/or gums.
- Misalignment of the mouth/poor apposition (can be due to congenital defects or injury).
- Periodontal pocketing of feed and other evidence of periodontal (gum) disease.

The following photographs illustrate some of the problems listed above:



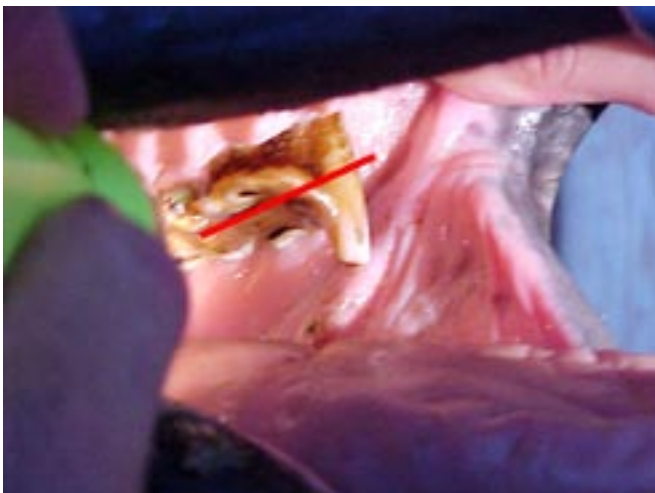
The arrow on the right shows a deciduous tooth that has not yet been shed, making it difficult for the permanent incisor (left arrow) to erupt properly.



This photo shows an excessively long crown, which can become quite sharp. Red line indicates the point to which tooth should be reduced.



The **above photo** shows incisors that are excessively long and interfering with the proper alignment of this horse's mouth. The **photo below** demonstrates a better alignment after the teeth have been reduced.



This photo shows a hook that has formed on the front portion of the first upper cheek tooth. Hooks can also become sharp and cause lacerations to the cheek and tongue. Similar hooks can form on the back portion of the last lower cheek teeth, causing severe discomfort to the horse. Red line indicates the point to which the tooth should be reduced.



Horses with dental problems may show signs of pain or irritation, or they may show no signs at all. If a horse starts behaving abnormally, dental problems should be considered as a potential cause. The following signs, though not always indicative of dental problems, can alert you to a potential problem:

- Loss of feed from mouth while eating (quidding), difficulty chewing or excessive salivation.
- Loss of body condition, weight loss.
- Large or undigested feed particles (long stems or whole grain) in manure.
- Head tilting or tossing, bit chewing, tongue lolling, fighting the bit or resisting bridling.
- Poor performance such as lugging on the bridle, failing to turn or stop, even bucking.
- Refusing to take a lead.
- Foul odor from mouth or nostrils or traces of blood from the mouth.
- Nasal discharge or swelling of the face, jaw or mouth tissues.



*These incisors belong to a 25-year-old horse and are in very good condition due to long-term regular dental care. The instrument is pointing to a chip in one tooth, which in this case was left alone.*

If you are diligent about caring for your horse's teeth, chances are you will not be surprised by a sudden problem. Oral exams should be an essential part of an annual physical examination by a veterinarian. The end result is a healthier, more comfortable horse and teeth that may sustain the horse well into old age.

### Dental Problems in Older Horses

Older horses can be more susceptible to infections, gum problems and broken or lost teeth. Horses that are 20 years old and older should have their teeth examined at least once a year (and preferably twice a year) to prevent any serious problems. An aging horse that can chew its food properly will be more inclined

to have good nutrition, be less susceptible to colic or choke, and maintain good body condition.

### Approximate Cost of Dentistry

At the UC Davis Veterinary Medical Teaching Hospital, the cost of a complete initial dental exam starts at around \$50 to \$75, including sedation. Additional expenses would depend on the treatment indicated by the exam. A follow-up exam is recommended after 6 months. Once a horse's teeth have been balanced, many horses can go from 8 to 12 months until the next exam.

And as the adage goes, an ounce of prevention is worth a pound of cure. ❖

## Dentistry Services at the UC Davis Veterinary Medical Teaching Hospital

Equine dentistry services at UC Davis are offered at the hospital through the Equine Medicine Service and in the field through the mobile Equine Field Service, which serves the needs of horse owners in a defined practice area. Dental services in the field are provided by Drs. Sharon Spier and Joie Watson, as well as by members of our team of resident veterinarians. Appointments can be made by calling (530)752-0292.

Appointments for dentistry services at the hospital can be made by calling (530)752-0290 and are typically scheduled on Wednesdays. Dental services are provided by Drs. David Wilson and Monica Aleman and resident veterinarians who work closely with Mr. Tony Basile, an equine dental technician. In addition, consultations with veterinary specialists in the Equine Surgery and Small Animal Dentistry services are provided as necessary.



*Tony Basile (left) and Dr. David Wilson with "Cat on Guard".*