A breakthrough in bitting for comfort and performance and the relation to the Tellington Method rollerbit.

Understanding how bits affect equine physiology leads to better designs and horsemanship.
By Joyce Harman, DVM, MRCVS. Illustrations by Susan Harris.

A comfortable mouth is as important to a horse's happiness and performance as saddle fit, good shoeing, teeth care, removal of pain through acupuncture and chiropractic and, of course, TTEAM. For years, in my quest to help riders improve their horses' comfort and performance, I have asked English riders to loosen tight nose-bands. However, I have remained frustrated because, although the horses moved better with their jaws less restricted, they still opened their mouths, resisted the bit and played with their tongues. I often wondered why Western horses went without nosebands and did not generally play with their tongues. After attending a clinic given by bitmaker Dale Myler and researching the anatomy and physiology of how the bit affects the mouth, I have a new understanding of how bits work.

Sections of jointed mouthpiece are not equal in length, contributing to imbalance and inflexibility and exert downward pressure on the tongue.

Myler and his brother, Ron come from a family of bitmakers who have redesigned bits so that they truly allow the horse's mouth to be comfortable. Most riders spend a great deal of time trying to get their horses responsive to their hands and balanced. When horses are comfortable and responsive in the mouth, they become much lighter to ride, and the rider comes closer to achieving a true partnership with the horse instead of a battle of wills. Remember Sally Swift's Centered Riding® concept – when one part of the rider becomes tight, the corresponding part of the horse becomes tight? Well, when one part of the horse becomes tight, the rest of the horse cannot move freely. Clench your jaw and feel how far down your back and shoulders the tension travels. Once problems such as poor saddle fit, back pain, sharp teeth and other sources of pain have been eliminated, the comfort of the bit becomes a critical factor. Until now, there have been few answers to the question of how to make a bit really fit a horse. As quality dentistry becomes more available, I expect that deficiencies in our current knowledge about bits will become more apparent as expectations about mouth comfort increase.

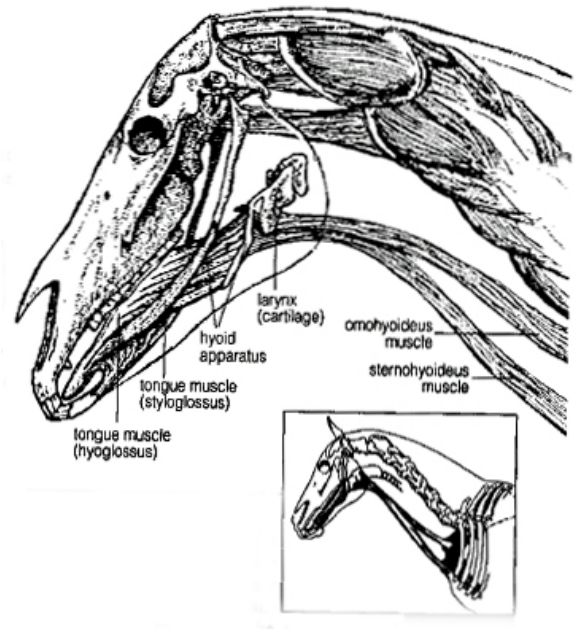
WHY SNAFFLE BITS DON'T WORK

The single-jointed snaffle is the most common style of bit in use today. It works by exerting downward force on the tongue rather than pushing up into the roof of the mouth as is traditionally believed. But the snaffle has several drawbacks, most notably preventing swallowing when rein contact is being taken. Obedient horses who can tolerate tongue pressure will keep their heads in the desired position with only minor moves to swallow. Horses ridden on a loose rein will be able to swallow in any bit since there is no pressure on the tongue other than the weight of the bit. Most horses will try to escape tongue pressure by either putting their noses up in the air or ducking "behind the bit" in order to swallow. If you look closely at almost any jointed snaffle, you will see that the two sections are not equal in length contributing to imbalance and inflexibility. If the bit is not balanced, how can your horse stay balanced? The rings or shanks can be Western or English in design. The only real difference between a Western and an English snaffle is that the Western bit can exert more downward pressure on the tongue because the shanks act as a lever.

ANATOMY AND PHYSIOLOGY OF THE MOUTH AS IT RELATES TO BITS AND HORSE COMFORT

The key to understanding bitting extends far beyond the mouth. It begins with the anatomy of the horse's tongue, head and neck and expands to include how the front part of the body affects movement of the whole horse. The tongue lies partly between the bones of the haw (bars of the mouth) and above the jaw. some of the tongue muscles connect to a small set of bones in the throat called the hyoid bones.

Originating from the hyoid bones are two major next muscles. One attaches to the sternum (sternohyoideus); the other to the inside of the shoulder (omohyoideus). Thus you have a direct connection from the tongue to the sternum and shoulder. Consequently, if you have tension in the tongue, you have tension all the way down to the sternum and should along the bottom of the neck where you actually want relaxation. Once you have tension to the sternum, the horses cannot raise its



back and use the circle or ring of muscles that Dr. Deb Bennett and Susan Harris write about (see references).

Here are some other important details. Small muscles connect the hyoid bones to the temporo-mandibular joint (jaw or TMJ) and to the poll area (where the head joins the neck). The TMJ joint is actually an important center for nerves of balance and proprioception. Proprioception tells your horse when his feet are without him looking at them, so it is also part of your horse's coordination system.

Other nerves for foreleg proprioception are located in the area of the hyoid apparatus. The poll is important because the bridle can exert pressure on it and there is a close relationship through the small muscles connecting the poll hyoid bones, TMJ, head and neck.

When the tongue is free and soft, all of this translates into a horse who is able to move more freely and with better coordination. With proper bitting, the stride can lengthen significantly, balance improves and above all the horse is softer to rife. The only downside is that the rider may have to learn a new way of handling the reins to respond to the degree of softness.

A RATIONAL APPROACH TO SELECTING MOUTHPIECES

The key to having a comfortable mouth-pieces is to free up the tongue as much as possible and still maintain control. As we begin to accept that horses may need more than one saddle in their lives as they change shaped and workload, we need to add that horses also generally need more than on type of bit as they progress through training.

The better educate the horse, the less tongue pressure needed, and there is no need for pinching or a "nutcracker" effect from the snaffle design. A green or poorly-educated horse will require more tongue pressure and maybe some pinching action from the nutcracker effect. As the green or poorly-educated horse becomes better schooled, less tongue contact of nutcracker is needed.

In the Myler bitting system, there are three stages of training, from maximum control to minimum, as the horse progresses through his education to the bit. In the first stage, you want tongue pressure above the bars, some tongue pressure below and between the bars as the bit presses down slightly (in a moment I'll give you a detailed description of bit types). You also want bar pressure and the pinching action of a snaffle to get the uneducated horse's attention.

The second stage removes the pinching action and pressure on the tongue below the bars, but keeps tongue pressure and bar contact. These bits use tongue pressure above the bars but the bit does no press down between the bars. In the third stage of training, the softest bits are used that put contact only on the bars, leaving the tongue released. The key here is that when your horse begins to resist a bit, you actually need a softer bit, rather than the harsher on most people want to use.

Some poll pressure is present in all stages of bitting with Myler bits and any bit with a shank, including Kimberwicks, though if you ar using some of the standard English snaffles, you will not have poll pressure. All Western bits have more poll pressure due to their longs shanks.

Gentle pressure applied to the poll does several things. One, it helps keep the connection between the head and the neck loose. Gentle poll pressure also helps distribute the forces from the rider's hands over more places, reducing the pressure needed in the mouth for control. Pressure on the poll also reminds the horse to release his head in a downward direction, helping the muscles on the bottom of his neck as well as around the TMJ to release. Stronger poll pressure can send a very powerful signal to the horse to release in the downward direction.

STAGE ONE
First-stage Myler training bits are made with an extra joint in the center as in the "French" or Dr. Bristol snaffle. This allows easier swallowing than a snaffle because the bit lies flat across the tongue and does not drive a point down into it. This bit will put some tongue pressure across from one side of the bars to the other, and some pressure down on the tongue inside the bars since the bit has the extra joint in the center.

For dressage horses, many bits with the extra joint in the center are legal in the dressage ring. At the time of this writing, a bit of this style may be the best you can do for competition. Normally, horses need this style of bit in the early stages of training, then grow out of needing both the snaffle pinching and the tongue pressure below the bars. Some horses will be quite happy in the type of bit, especially if then do not require much contact.

STAGE TWO
The next softer bit (second stage) in the Myler system is a straight mullen-mouth style with no joints. This could be a soft or hard rubber bit or any other stiff non-jointed or plastic solid mouth-piece. Many horses go better when riders decide they cannot control them in a snaffle, so they use a Pelham or Kimberwick; suddenly the horse behaves and the rider thinks the reason is that the bit is harsher when actually the bit is softer. The reason the horse goes better probably has more t do with the solid mouthpiece and possible the presence of a port if there is one. Bits designed with a curve in the mouthpiece will give more tongue relief than a perfectly straight bar. Many of these bits are permitted in the dressage ring although not in a snaffle bit futurity.

STAGE THREE
The softest bits have a port and a non-jointed mouthpieces, allowing complete freedom of the tongue with the main contact of the bars. Most English riders consider the port a severe bit that gouges the roof of the mouth. Nothing could be further from the truth. A very large, incorrectly designed port can hurt the roof of the mouth, but a smaller port will only clear the tongue.

Most well-trained, obedient horses perform better in bits with a port, especially dressage horses who are ridden on constant contact. If you wish to compete if dressage or snaffle bit futurities, you can ride in a ported bit three or four days out the week, keep the horse soft and light, then even after a day or so of work in a bit with some tongue pressure, the horse will generally stay light in your hands. Too many days in a row of tongue pressure usually will cause the horse to become uncomfortable.

OTHER ASPECTS OF BIT COMFORT

Another aspect of bitting comfort is to have the joins in the bit be as forgiving as possible; that is, the joints should begin moving with the slightest change in rein contact, giving the horse plenty of warning that you are about to give a signal The Mylers also have designed a unique rotational joint into their bits so that you are working only on one side of the mouth at a time. This also helps free up the TMJ and the muscle down to the shoulder and sternum. The signals from you hands become much clearer and more precise to the horse.

The TELLINGTON TRAINING ROLLERBIT: WHY IT WORKS

Many of the characteristics of a comfortable bit, including tongue and TMJ release, can be found in the Tellington Training rollerbit. The high port bit and loose shanks free up the tongue, and the roller seems to encourage tongue softness which carries through all the way to the shoulders. This allows the horse to carry himself better with minimal or no input from the rider. The Tellington bit also removes any pinching of nutcracker effect, further contributing to its comfort. Using the curb rein softly is important, since contact of the lower (curb) rein tips the port slightly forward, freeing up the tongue more.

I look forward to continuing my work with the Tellington Method to explore the relationship between, the horse and the bit and to bring you innovative solutions to everyday problems.

Author Joyce C. Harman, DVM, MRCVS, is an equine holistic practitioner. She contributed chapters on the Tellington Method and alternative therapies in the equine medical textbook, **Complementary and Alternative Medicine.**

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