



# WHO KNEW?

*FUN FACTS & WHY IT MATTERS*

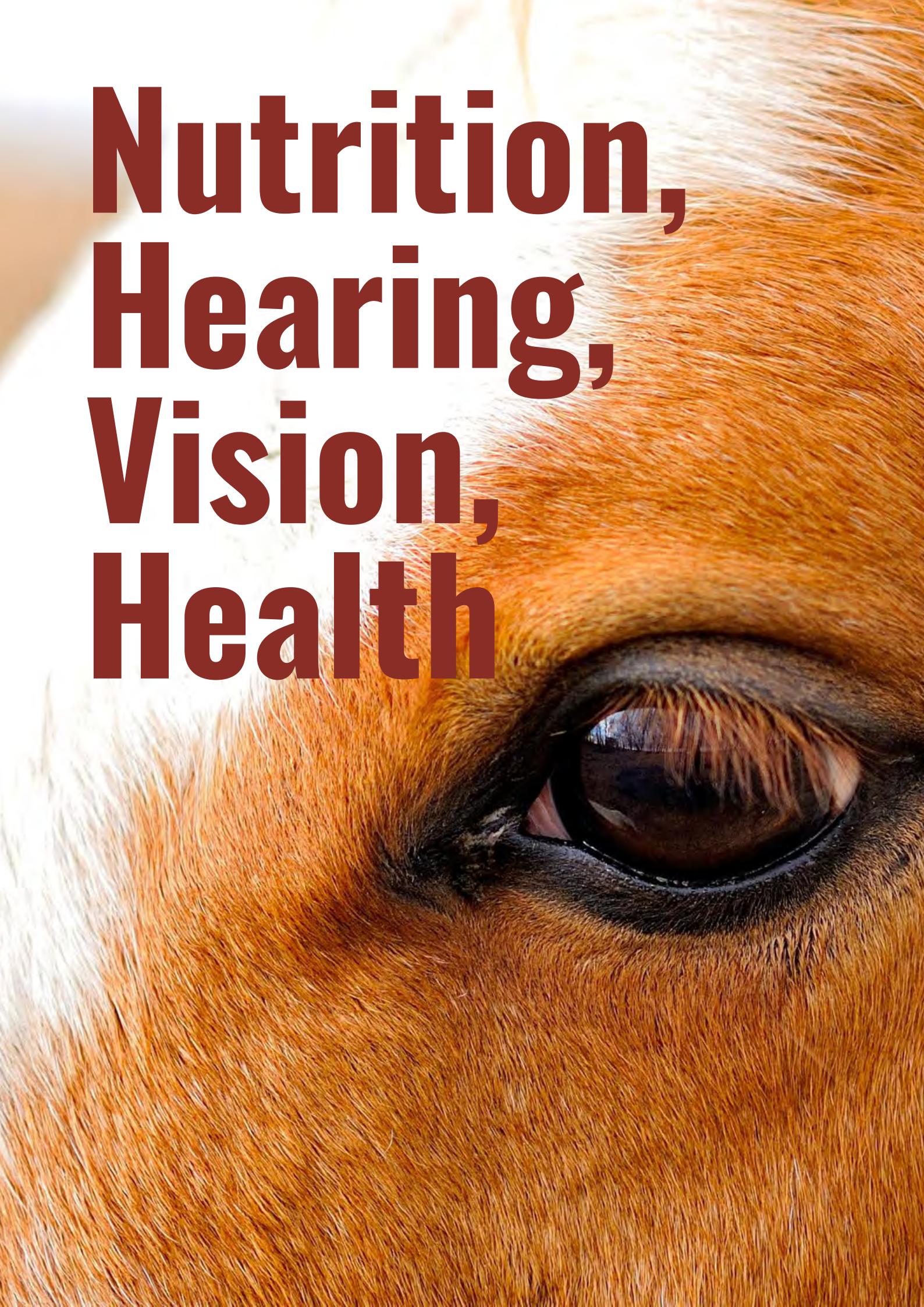
*A collection of horse facts for horse lovers!*

*In collaboration with:*



**EQUINE GUELPH**  
helping horses for life™





**Nutrition,  
Hearing,  
Vision,  
Health**

### 3 |

The food eaten by the horse moves quickly from the stomach through the small intestine and then enters the cecum (an enlarged part of the intestine, analogous to our appendix). It can move at 1 foot/minute! If high amounts of sweet feed are fed, they move quickly into the cecum, often before the sugars of the feed are absorbed by the small intestine. This can disrupt the important work of the cecum which helps to break down the fibre and provide nutrients for the horse, so keep in mind that horses are “trickle feeders” and need to eat small meals frequently, rather than large meals.



There are millions of bacteria that live in the horse's gut, particularly in the cecum (collectively called the microbiome of the gut). This population of bacteria can - and needs to - adapt to a change in diet. The microbiome in the gut needs about 2 weeks to adjust to changes in hay (e.g. new season hay, or switching between alfalfa type hays to grassy hays). Otherwise, the risk of colic increases with sudden changes in the diet.

Horses have one of the smallest stomachs, relative to their size, of all mammals. If you were the size of a horse (~1000 lbs), your stomach would hold about 18-26 litres. A human stomach can also stretch when it gets full (the horse's stomach cannot do this the same). “Small meals frequently” are better for the horse.

The cecum, analogous to our appendix (which is about 2-3") is about 4 feet long and holds up to 33 litres or 8.7 gallons. Digesta can stay in the cecum for 2-3 days.

When a veterinary dentist visits your horse to rasp/file down its teeth, the procedure is called “floating teeth”. Horses’ teeth continue to erupt (not grow) throughout its life and need to be checked at least annually for sharp points and other dental issues. Dental issues can cause great pain, weight loss and other issues for the horse, so regular checks and monitoring for dental issues is important.

Horses are not able to vomit. Once swallowed, food has a one-way ticket through the digestive system. If a horse eats bad food or poisonous plants, it can take 2-3 days to complete the journey and can cause pain and suffering for the horse, so care must be taken to ensure the horse is not eating mouldy or spoiled food or ingesting toxic plants.

Once the water bucket gets down to only a couple of inches, it is difficult for the horse to drink. A dog or cat can lap up the water with its tongue but not the horse. If the water level gets down to only 2", it is time to fill the bucket with fresh, clean water.

For a horse to drink, the lips must be sealed. When we put a bit into the horse's mouth, this prevents the lips from creating a tight seal. Consider removing the bit so the horse can drink more effectively to reduce dehydration.

The “7 sips” rule is no longer a guideline for watering horses after exercise. Research studies have shown that the horse should be allowed to drink during the cooling out/walking out phase. Effective rehydration is an important part of fast recovery.

# HEALTH

- Up to 33% of colic cases occur in the jejunum, a section of the small intestine. A high fibre diet and access to fresh water 24/7 can reduce the chance of colic in horses.
- About 49% of colic cases occur in the large colon. Access to pasture and a high forage diet with access to fresh water, regular exercise and a consistent diet are management practices you can employ to reduce the risk of colic in your horses.
- It's not advisable to use a topical spray as first aid before the vet arrives. In fact, many blue and purple sprays contain gentian violet, a product Health Canada is advising Canadians to stop using due to risks associated with cancer. Just flush wounds with water or saline solution and protect with sterile dressing. This way the vet can see the wound when they arrive and assess how to treat it.



# HOOVES



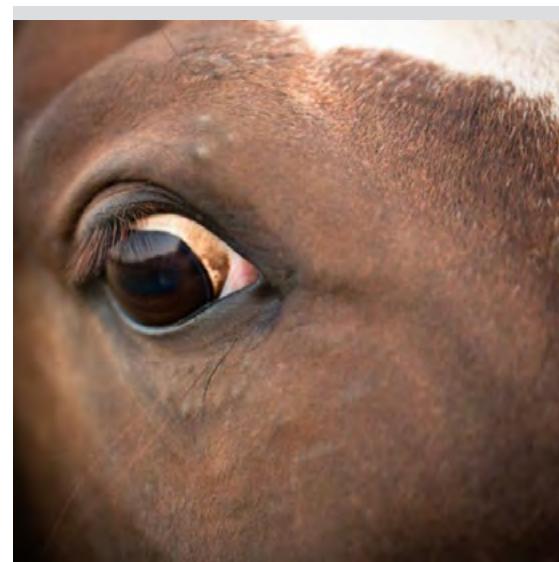
- Foals have "fairy slippers"! When foals are born, their hooves are covered with soft tissue to reduce damage to their mother's birth canal and uterus. Names for this tissue include fairy slippers, golden hooves, foal slipper, leaves, gills, and fingers. They dry out quickly after birth and drop off, so many people have never seen fairy slippers!
- It can take 9-12 months to regrow the length of the entire hoof. Daily care of the hooves by cleaning them out and checking them for any bruising, chipping, stones or other issues is an important job of the horse owner and caretaker. Hooves grow about 1/4 to 3/8 of an inch per month, but this can vary with the season, and there may be faster growth in the spring. Rapidly growing hooves are generally higher quality and can be influenced by better nutritional programs.

# SAFETY

## VISION



- ☞ The eyes of the horse take longer to adjust to changes of light and dark. It takes longer than for a human. It is important to give the horse time to adjust going from light to dark and from dark to bright light. Examples include going into a dark barn, stepping out of a dark trailer into the sunshine or going over jumps that alternate shady and bright light conditions. Until the eye has time to adjust to changes in light, the horse is effectively partially blinded. We need to be patient and let the eyes adjust before asking more of the horse.
- ☞ The horse is a prey animal and that means that their eyes are set to the side, unlike predators that have eyes close set to the front. This results in blind spots for the horse due to their wide set eyes. Blind spots for the horse are directly behind them, directly down in front of them, and over their backs. The horse has difficulty focusing in on something that is less than 2 feet ahead of them and may need to move their head to see it better. Their wide set eyes means that they have monocular vision with a different view on either side of its head. The horse uses both eyes (binocular vision) to focus on the view ahead of them. This can result in the horse suddenly moving its head to see a different viewpoint, and they may even be startled as an object appears in a different field of vision and the horse may shy away. It is important to let the horse have full vision and the ability to move the head to a new position so the horse can see the object of interest.
- ☞ It is not quite correct to talk about the “fight or flight” response in horses. More correctly it should be “fright, freeze, flight or fight” when presented with a fearful situation. Without calming the situation, the response may escalate, so we must learn to pay attention to the body language that indicates this startle and fear reflex in the horse. For many horses, “fight” may be resorted to, when the other reactions did not help, leaving “fight” as the only option. This is an important behavioural aspect to understand for the horse, rather than thinking of only fight or flight as the options.
- ☞ Horses do not see the world in full colour as most humans do. It is closer to that of humans that have colour-blindness. Yellow, blue and white on a contrasting background help the horse see better, whereas orange is not an ideal colour to use for horses, as we use it for humans to alert us, such as orange cones.



## SAFETY - VISION CONTINUED...

- ☞ You may have been told to blindfold a horse to assist in handling a horse. Blindfolding a horse has been found to make horses more nervous and difficult to handle and it can have a negative impact on the horse's ability to stand, move, turn and back-up. Blindfolding should not take the place of proper training and handling, and is only used by veterinarians for emergency situations or some medical reasons, such as using a cup over the eye to block out light for painful eye ailments, infections or other medical conditions.
- ☞ The eyes of the horse are the largest of any land mammal for its size. The size of the eyes underscores how much horses depend on vision in their daily life, but that large eye is also at risk of injury as a result. Ensure that stalls, barns, trailers are free of sharp edges, nails and more and do not let horses hang their heads out of trailers as bugs and debris can suddenly damage the eye of the horse. Eye infections and ulcers need veterinary treatment as soon as possible as these conditions can be very painful but may also result in damaged vision or blindness (both of which are stressful for an animal that so depends on sight!)
- ☞ Horses have better night vision than humans do, however, it takes longer for a horse to adapt to the change over to night. However, once it is dark, a horse can see almost as well as it can by day. They see as well on a moonlit night as people do during the day.
- ☞ The horse's eye is eight times larger than the human eye. There is one eye situated to either side of the skull enabling the horse to see almost all the way around, except directly behind them, and over their backs. It is important to protect the eye of the horse and to act quickly for any eye conditions, as eyesight is very important for the horse.

- ☞ Horses use two-forms of vision, monocular and binocular. Monocular vision allows the horse to see on both sides of his head, meaning the left eye and the right eye work independently and see different views. Binocular vision allows the horse to use both eyes together to see directly ahead.



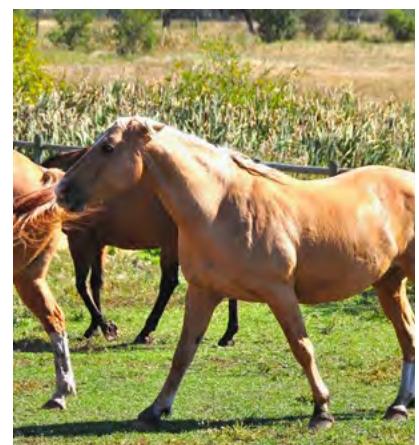
# SAFETY HEARING

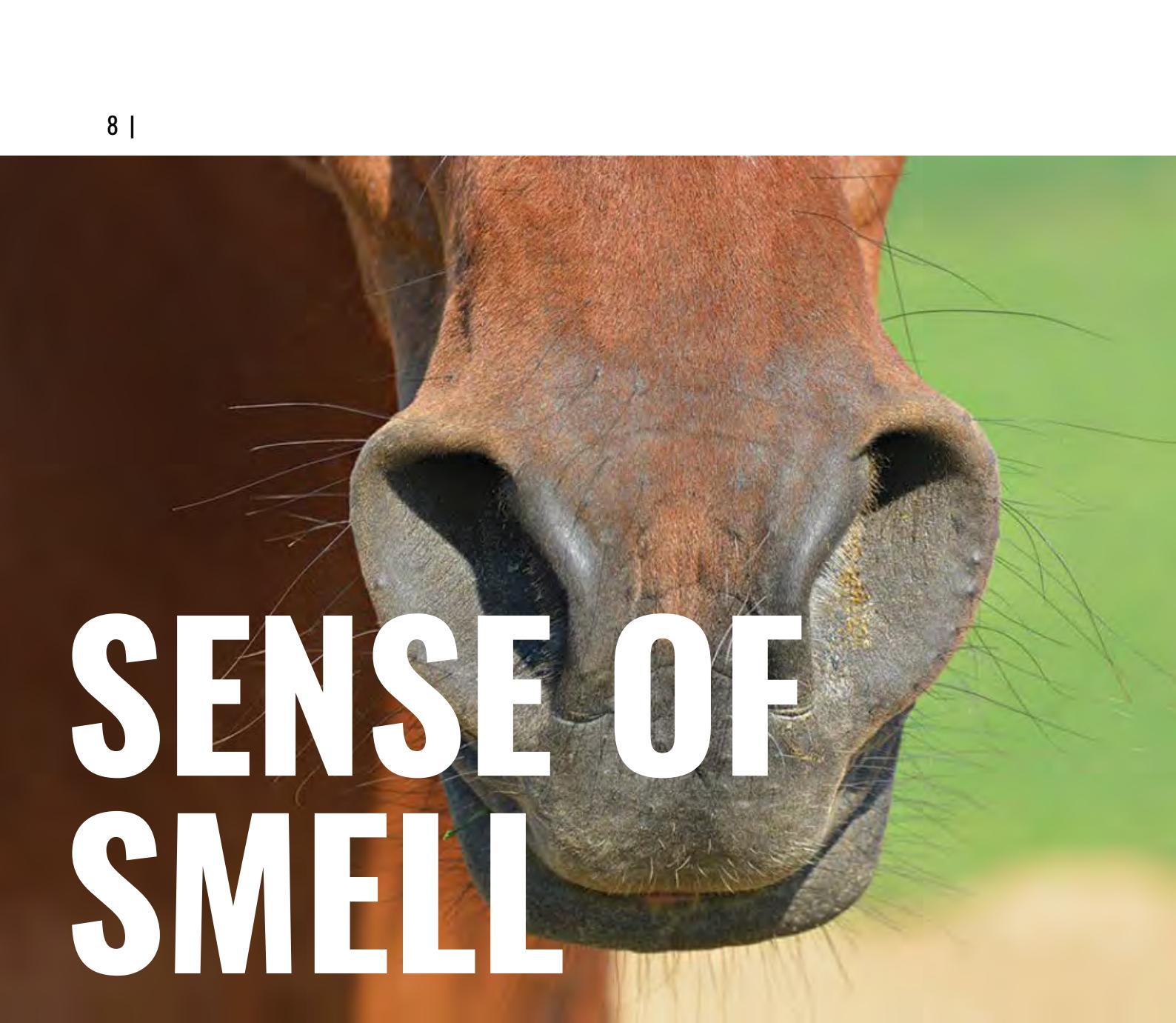


☞ The ears of the horse are very mobile, and are often actively moving to hear the sounds around them. Humans turn their heads from side-to-side to help locate the source of the sound. The ear of the horse, also called the pinnae can actually rotate 180 degrees to help localize the sound. The ears can also be pinned flat back as a warning to other horses and humans, and the behaviour should not be ignored for safety reasons as it is warning of more aggressive behaviour that may be coming.

☞ The hearing of the horse is much better than for humans. Horses can hear high-frequency noise that is far above the threshold for humans. Sudden high-frequency sounds can frighten a horse and result in a flight response, to the surprise of the handler. Horses can hear low frequency sounds and high frequency sounds better than humans. With 10 different muscles moving their ears (humans have only 3!), they can swivel their ears towards the sound to funnel in the sounds much better than humans can.

☞ Horses use body language to communicate with other horses, and conversing never stops. Every movement, even the slightest, can mean something. Horses also have roles within the herd. For instance, some are sentries, some are protectors, some are mentors, etc... Learning to "speak" their language is life changing, both for people and for the horses.





# SENSE OF SMELL

- ❖ Horses have a highly developed sense of smell, much better than humans! Horses have a great ability to remember and recognize scents, which helps them to identify other horses and people they have interacted with before. This is why horses often greet each other by sniffing noses as a way of exchanging information about each others identity and status.
- ❖ The horse's ability to smell is much more sensitive than for a human. Horses have even been trained successfully for tracking, just as dogs have been trained using their sense of smell to find missing persons and other things.
- ❖ Do horses laugh? When you see a horse with its upper lip curled up, it may look like the horse is laughing. Actually, it is trying to smell something that is new or unusual! Your horse stretches his neck out and turns his top lip practically inside out, exposing his front teeth and gums. Should you worry that something's wrong? No, your horse is just trying to get a better whiff of an interesting smell and this posture - known as the Flehmen Response - directs odorous air through his nasal passages for better analysis of the scent. Horses often Flehmen in response to pungent smells and tastes.

# BEHAVIOUR

- 尥 Horses are “herd animals” which means they like to be with other horses and not alone. Horses in groups are usually referred to as being in a herd, however they spend the majority of their time directly within their band or family. The term herd is representative of the greater collective of horses within an area that individual bands cross paths with or share an area/resources with.
- 尥 Horses are considered to be one of the most intelligent animals on earth! Horses have the ability to learn quickly and remember things for a long time. When we train them with care and compassion, there are amazing things a horse can learn!
- 尥 Horses can suffer from loneliness just like humans and other animals. By itself, a horse can be very anxious when it does not have herd members nearby. Over time, this can have a very negative impact on the horse and its health as they feel more protected when they are with one or more horses.
- 尥 Young horses are weaned off their mothers. In a wild herd, a foal will be naturally weaned around the time that its dam is set to give birth to the next foal. And, the weanling will remain in the dam's herd, by its mother's side for years after even though it is no longer suckling. For our domestic horses, we need to be careful when weaning a horse from its dam and not do it too soon or too abruptly as that can cause various problems for the dam and the foal.
- 尥 Horses can find water! Left to their own in the wild, horses will be able to find a source of water using an amazing innate instinct and their sense of smell. They have even been known to dig underground to find water sources.

## ARE YOU LISTENING?

- 尥 Horses can express their emotions if we are paying attention. Horses are emotional beings who communicate their emotions through their behaviour and the sounds they make. While they often talk with their ears and eyes, they show feelings through snorts and whinnies and nickers.



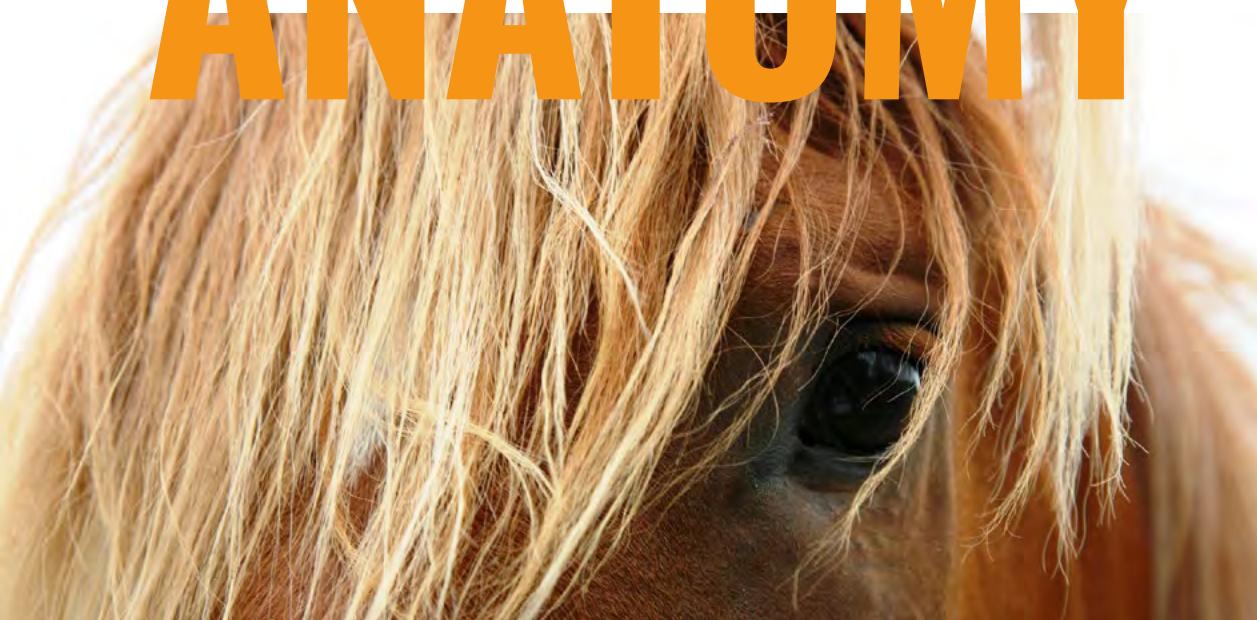
- 🐴 Horses respond to positive training. A horse will remember the last event in a sequence the best. This means ending an interaction on a positive note goes a long way to building relationships. This is also important as they can also recall individual humans after a long separation. Positivity is key.
- 🐴 Horses like to play! Play behaviour is an important part of learning to grow up and socialize with other horses in the herd. Providing lots of turn out time with other horses allow them to choose to play with other horses and this can be a positive aspect for their health and welfare.
- 🐴 Licking and chewing can signal that a horse is now starting to feel relief from a stressful situation. It is a myth that the licking and chewing indicates submission to a trainer.
- 🐴 Horses need to feel safe before they can be at their best for learning! When handling or training a horse, it is important to ensure the horse is not fearful of the handler or the surroundings. Reward-based training is the best way to train horses.
- 🐴 When in a fearful situation, horses respond with a flight, freeze or flee reaction. If they cannot escape, then fight may be a response.
- 🐴 When a horse feels comfortable in checking out a new object, they may often nuzzle the new object with their whiskers, as a way of “touching” the object to learn more about it.

# BREEDS

- 🐴 There is a small breed of ponies in Northwestern Ontario called the Ojibway ponies or Lac la Croix ponies and there are less than 200 left in Canada!!
- 🐴 There are ponies and then there are miniatures? Regular-sized horses and ponies are measured at the withers. Miniature horses are measured slightly further down the back, right at the point of the last hair at the base of their mane. While horses and ponies are measured by hands (one hand = 4 inches), miniatures are measured only in inches. Mini's do not exceed 38" tall or 9.2 hands high if measured by regular standards. The standard true mini should measure under 34" (8.2 hands).



# ANATOMY



- ☞ Hair – Horses can grow a thick hair coat for warmth in the winter. The long hairs of the winter coat “elevate” (also called piloerection) and trap air next to the body which helps to retain heat. The coat must be clean and dry to help with maintaining heat, so a good curry and brush out as part of the regular grooming is just as important throughout the winter.
- ☞ Some horses can grow a mustache! These are quite different than whiskers. There are different horses, often with Gypsy Vanner breeding or draft types, that grow a cute little mustache, usually on male horses, but it can be found on female horses as well.
- ☞ Whiskers- Horses, like dogs and cats and many other animals, grow whiskers! Whiskers are an important contributor to the sensory organs of the horse. Highly sensitive whiskers help them navigate in their stalls and outside for safety and when grazing. Whiskers can even detect movement of the air and possibly vibrations and electrical fields! Due to the importance of the whiskers, there are many groups that ban the practice of trimming whiskers for cosmetic reasons. There are also long hairs around the eyes to protect them from damage.
- ☞ Horses don't have collarbones. Humans have a collarbone that joins the arm to the rib cage for greater stability and strength. The horse does not have a collarbone, and this helps allow a longer stride when running – a very helpful thing when running away from a predator!
- ☞ Horses only have one less bone than humans! Unless it's an Arabian. Horses have 205 bones in their skeleton, humans have 206. Arabian horses have one less pair of ribs, and lumbar vertebrae.
- ☞ Horses have big hearts! A human heart may weigh about 280 to 340 gm for males and about 230 to 280 gm for females. For the average horse, the heart weighs 3.6 kg (7.9 lb). Two famous racehorses, Phar Lap and Eclipse, had large hearts of 6.4 kg (14 lb) but the amazing Secretariat's heart weighed about 10kg (22 lb).
- ☞ Horses can't vomit. Horses have a different anatomy of the stomach than humans, and a strong muscle ring called the cardiac sphincter at the entrance to their stomachs. This structure helps prevent food that enters the stomach from coming back out.



## ANATOMY CONTINUED...

- ☞ Did you know that each horse has 4 frogs? The frog is a V-shaped structure on the bottom of each hoof. It is important to clean out the frog and check it regularly so that dirt and gravel do not get caught up in the frog and cause damage or infection.
- ☞ Horses can sleep standing up! Can you do that? Horses can sleep standing up as they have this cool anatomy feature called a “stay-apparatus”. This is a system of tendons and ligaments that allows the horse to lock their legs in position so they can relax without falling over. As they are still standing, they can run away quickly if danger lurks nearby!

# PHYSIOLOGY

- ☞ Horses can get sunburns! While most of the body is covered in hair, there are parts, most notably on horses with pink noses, where the skin can be sunburned. If you have a horse that gets sunburn, you may want to try a fly mask with an extended nose piece that covers the nose to protect it from the sun.
- ☞ Horses can't breathe through their mouth! If you and I get a stuffy nose, we can open our mouth to breathe and get more oxygen. But a horse is an “obligate nose breather” and cannot open their mouth to bring in more air. They have to breathe faster or deeper.
- ☞ A horse's breathing rate is locked into its stride rate. When a horse is cantering or galloping, the force and extent of contraction of the abdominal muscles synchronized with the mechanics of locomotion results in forced exhalation. This is called respiratory-locomotor coupling. One stride equals one breath; an inhale when the legs are extended and an exhale in the moment of suspension when the horse's legs are all tucked underneath the body. When humans are running, we can breathe deeper and/or faster and can open our mouth to bring in more oxygen when needed. A horse that is quickening its stride will automatically be quickening its breath.
- ☞ Horses' coats grow due to decreasing daylight, not the temperature. With shorter days, the level of melatonin increases and this supports the growth of the winter coat. Keeping horses under artificial lighting during the evening may disrupt the melatonin production and may decrease the growth of the coat.

# DENTAL



- 🐴 Horses need a dentist just like humans! The teeth in the horse are so important for chewing their forage and need to be checked by a veterinarian at least annually, but sometimes more often when there can be issues that need care.
- 🐴 Horses' teeth take up more space in their head than their brain. Teeth called molars extend far back into the jaw and have very long roots. These molars are very important for grinding up the forage and grains to help increase digestion and obtain nourishment from the feed.
- 🐴 When a horse loses a tooth, the corresponding tooth in the opposite jaw may continue to erupt (become longer) and can cause serious and painful dental issues. The veterinarian can help by monitoring the tooth to keep it filed down during regular dental checks.
- 🐴 Horses only salivate when chewing. "Chew time" is important to the horse to lubricate the food and prevent choke. That also means that a salt block may not be able to provide all the salt needed, as a dry tongue is not effective at licking the salt block. If you see horses chewing or raking their teeth across the salt block (you can see the teeth marks on the salt block), it can indicate that there may be a salt deficiency in the diet. Consider providing loose salt in a bucket or in the run-in shed to help prevent salt deficiencies. Always provide fresh, clean water throughout the day and night. We also need to consider this when feeding small, pelleted feeds, if the horse eats them too quickly without chewing, then choke becomes a risk. Adding some water to the feed can be helpful to help lubricate the feed.
- 🐴 Horses have "wolf teeth". Well, most of them do, anyway, about 70% have them. Molars and premolars are two types of teeth that humans and horses have. The premolars in the horse are called "wolf teeth" and you may see these erupting at about 5-12 months of age. The wolf teeth may need to be removed if you are riding with a bit, if the bit hits the teeth and causes pain.
- 🐴 Horses have teeth called "canine teeth". Canine teeth (sometimes called "tushes") are larger than wolf teeth and may need to be removed by a veterinarian. They are usually only found in male horses but can be found in female horses too. These teeth are often quite sharp and can cut the tongue, so veterinarians will file down these teeth during regular dental visits to prevent this damage in the mouth.
- 🐴 Did you know that Horses teeth keep erupting for their whole lifetime, up to 25-30 years? The teeth don't actually grow like they do in humans, but they continue to erupt out of the gums, and get longer. That is why dental care, done annually at least and more often when there is a problem, is so important for the teeth of the horse.

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