Abstract

Understanding and addressing innate equine behavior and body language are paramount for decreasing patient stress during veterinary visits. Clients can recognize signals of fear, anxiety, and stress in their horses, but most are unable to analyze what they are seeing. Veterinary nurses can describe the subtle changes in the patient’s body language, prevent escalation of stress that could lead to injury, promote communication among veterinary team members, and educate clients, thereby strengthening the client-patient-clinic relationship. Veterinary nurses can use techniques to de-escalate fear, stress, and anxiety in order to provide medical care while keeping the patient, team members, and client injury free.
We all know that veterinary work consists of long days, low wages, and occupational hazards. So why did we choose this career? Because we want to provide the highest standard of care for our patients. However, our patients may not view veterinary care in that same light. Examinations, diagnostics, and treatments can provoke fear, anxiety, and stress (FAS), resulting in injury to the patient, the client, or the veterinary team. In Australia, a cross-sectional survey of veterinarians indicated that large animal practitioners were 65% more likely than other veterinary practitioners to sustain a significant injury at work.¹ Veterinary team members should be aware of subtle body language signals so that they can avoid escalation, ensure that the patient receives the needed care, and maintain safety for all involved.

Veterinary nurses have the ability to practice gold standard medicine, increase client compliance, reduce injuries, and eliminate panic in our patients, all while using less restraint. A new subculture of horse training and handling is emerging, and it starts with understanding innate equine behavior, subtle equine body language, and what we can do to de-escalate signals of FAS. Chronic stress in horses that have been denied their innate needs can negatively affect their health and wellbeing.² If the veterinary team does not respond appropriately to horses that are displaying signals of FAS, the behavior can escalate rapidly into danger. Veterinary team members can avoid conflict with patients by understanding why they react the way they do and minimizing their fear of perceived threats during medical care, without lengthening appointment duration.

**Take-Home Points**

- To reduce a horse’s fear, anxiety, and stress (FAS), it is important to identify the patient’s subtle body language.
- Communicate with objective, fact-based language to educate both the veterinary team and client.
- Use your knowledge of equine innate behaviors to reduce patient stress during examinations.
- Use a considerate approach, gentle control, gradient touch, and food during the examination process to decrease stress and work-related injuries and increase client compliance.
- After evaluating the horse’s body language, adjust your plan accordingly; use chemical restraint if necessary.
- If the patient is displaying advanced signals of FAS during veterinary procedures, refer to a positive reinforcement-based trainer or a veterinary behaviorist.

**AVERSIVE RESTRAINT TECHNIQUES**

To be clear from the start, aversive restraint (e.g., use of stud chains, twitches) should become a practice of the past. Applying a lip twitch as a form of pain control, immediately followed by the procedure, is not a low-stress handling technique. A 2017 study of twitching indicated that ear twitching increases sympathetic nervous system activity and stress levels, making horses harder to handle immediately after twitching and over time.³ For lip twitching, the first 5 minutes seemed to significantly increase sympathetic tone, which calls into question the suitability of twitching for more than a few minutes. The study indicated that for the first 5 minutes, lip twitching does work through a calming, possibly analgesic, effect; however, debate remains as this is not fully understood.

**BODY LANGUAGE AND SIGNALS OF STRESS**

If subtle signals of stress are observed in a patient, the veterinary nurse should intervene before the interaction becomes dangerous. When evaluating equine body language, there are 6 indicators to assess: eyes, ears, nose/mouth, body posture/position, tail, and lower extremities. Body language encompasses all of these indicators of the horse’s emotional state, but it is best to start by focusing on 1 at a time.

**Signals Displayed by a Relaxed Horse**

A calm or relaxed horse will have soft, round, or even closed eyes, round nostrils, and a closed mouth with
the lower lip hanging. Ears may be forward or to the side, and the head may be held at wither height or below (FIGURE 1). The horse is still, usually resting 1 rear leg on the toe. If the horse is in motion, it would have a swaying rhythmic cadence to the body and tail. The horse may exhale deeply.

Signals Displayed by a Stressed Horse
FAS can be exhibited by a mix of subtle body language signals. The eyes may have an altered blink rate, and wrinkles may be noticed above the eye. The mouth may be tightly closed or chewing. Chewing is commonly believed to indicate that a horse is relaxed, but it is actually a response to a stressful situation. The nostrils may also have noted wrinkles. The ears may be in an altered position. The horse may also have an inward gaze or a general lack of responsiveness. These responses could be commonly seen in horses taken away from their herd, in a trailer, or in other unfamiliar situations.

Advanced Signals of Stress
The four Fs—fidget, freeze, flight, and fight—are signals that the horse has escalated beyond FAS (TABLE 1). The horse’s body language is no longer subtle and the sympathetic nervous system is activated in a self-preservation response. The goal is to identify subtle signals of stress to avoid escalation into the 4 Fs.

Fidget
A horse in fidget mode is unable to settle and is restless, with hooves and body in constant motion. The horse may paw at the ground, shift weight, step from side to side, toss the head, and swish the tail, all of which can be accompanied by stress diarrhea.

Freeze
When a horse begins to freeze, its body is rigid with muscle tension. The head is held high, the eyes wide and staring, ears perked forward, and lips pressed tightly together. Horses in this state generally will not eat; if they do take food, they hold it or drop it while they assess the threat. The hooves are not actively moving, but they may take a wide stance in preparation to bolt from the perceived danger.

FIGURE 1. Relaxed pony, showing a closed eye, round nostrils, a closed mouth, ears to the side, and head at wither height.

FIGURE 2. Eye of a stressed horse, with exposed sclera and a triangular shape to the eyelids.
Flight
Before a horse escalates into a flight response, defecation frequency may increase; stool consistency may be loose. Flight mode can consist of spooking, balking, or bolting—activities intended to increase the distance between the horse and the threat. When in flight, a horse will keep a “flight distance,” which is defined as the horse’s perception of safe space between itself and the threat. Signals of a horse in flight mode include a raised head; taking 1 or 2 steps away from the threat; and wide eyes with lids creating a triangular shape, exposed sclera, and dilated pupils (FIGURE 2). The tail may be raised, and the horse may assume a wide stance.

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<thead>
<tr>
<th>FIDGET</th>
<th>FREEZE</th>
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<tr>
<td>Restlessness</td>
<td>Rigid, tense muscles</td>
<td>Spooking, balking, or bolting</td>
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<td>Constant motion (e.g., pawing, shifting weight, stepping from side to side, tossing the head, swishing the tail)</td>
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<td>Eyes wide and staring</td>
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<td>Tail swishing</td>
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<td></td>
<td>Ears forward</td>
<td>Eyes wide open (lids in triangular shape, sclera exposed, pupils dilated)</td>
<td>Nostrils tightly pulled back</td>
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<tr>
<td>Sometimes:</td>
<td>Lips pressed tightly together</td>
<td>Escalation:</td>
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<td></td>
<td>Refusal to eat</td>
<td></td>
<td>Teeth grinding</td>
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Flight mode is exhibited as targeted aggression toward the threat, such as with a front hoof, quickly turning the hind end and kicking with 1 or both hooves, or biting. This aggression is a fear response; if the horse cannot flee from the threat, these actions are intended to cause the threat to move away. Signals indicating imminent acts of aggression include ears pinned flat back, exaggerated tail swishing, and tightly pulled back nostrils (FIGURE 3). These behaviors may escalate to teeth grinding, head shaking, or using the hind end in an attempt to force the perceived threat away. Lunging forward, chasing, biting, and actively kicking are obvious signals of fight behavior.

**REDUCING STRESS DURING VETERINARY EXAMINATIONS**
The veterinary nurse’s overall behavioral goal is to avoid, or eliminate, all situations and stimuli that may push a horse into the 4 Fs during veterinary care. Inadvertent escalation of the fear response can weaken the client–clinic bond, decrease client or horse compliance, and delay future patient care. While working with the horse, the veterinary team should

**TABLE 1 The Four Fs That Indicate Advanced Stress in Horses**

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**FIGURE 3.** Horse (right) in flight mode. Ears are tightly pinned and nostrils are tightly pulled back.
teach the client about their horse’s body language in order to avoid the 4 Fs in future daily handling.

Understanding the Horse
Veterinary professionals should interpret patients’ behavior objectively rather than subjectively. Objective interpretation is based on facts, such as body language or behaviors, while subjective interpretation is based on opinion. Subjective interpretation of a horse’s behavior decreases compassion toward the patient. For example, which of the following statements demonstrates more compassion? “Chestnut mares are always difficult and never stand still!” or “This chestnut mare has a raised head, wide eyes, and flared nostrils, which are signals of FAS.” The veterinary team must base its decisions on observable facts, not on preconceptions or opinions.

Before beginning an examination, the veterinary team should try to understand the horse’s needs and fears. The tone of an examination can be affected by a horse’s perception of its environment (e.g., location, people), along with its psychosocial (proximity to other horses) and physiological (discomfort, pain) states. Anything unfamiliar—smells, sounds, objects—can cause a horse to exhibit signals of FAS. Even the calmest horse can display signals of FAS at any moment. The way a horse perceives the environment affects how one should approach it and begin a medical examination.

Companionship
Horses, like people, are very social. The herd setting is paramount for expressing healthy, innate behavior. If a horse is always with its buddy, being removed from the buddy is unusual. The buddy or horse calling out can increase distress, which can add trigger stacking (multiple stressors at one time) to the examination.

Keeping the buddy nearby reduces distress calls between the horses.

Lighting
Adjusting to ambient light changes takes longer for horses than for humans. Studies have indicated that horses need about 20 minutes to adapt to light changes. Thus, bringing a horse in from outside on a sunny day to a darkened room or stall may require additional time for the horse to adjust to the lower light level.

Location
Trailering horses to a medical facility can also increase FAS for psychosocial reasons when they are away from familiar herd mates and environments. If the patient is in a new environment, it is best to allow time to adjust. Having the client bring hay, grain, and treats to the clinic can help reduce the horse’s stress when in a new location as eating is a social behavior and familiar food will speed acclimatization. The ability to participate in the innate behavior of eating can reduce stress and tension during the visit. Besides giving the horse more time to acclimate, offering food of higher value can decrease the stress level by stimulating grazing behavior.

Pain
If the patient is being examined for lameness, bucking under saddle, or displays of aggression, the source of the problem could be physiological pain, especially if the behavior came on suddenly. Discomfort can also be the reason why a horse displays signals of FAS during a physical examination. The veterinary team should start by examining areas away from that of the presenting complaint and maintaining constant contact while working its way toward the potentially painful area.

FAS-Reducing Methods
Every patient’s needs differ regarding what is necessary to reduce FAS. There are many nonaversive techniques that can be easily integrated into examinations.

Fear Free Skills
The Fear Free Veterinary Certification Program — Equine (fearfreepets.com) defines 3 essential skills to use during examinations: considerate approach, gentle control, and gradient touching.
The considerate approach incorporates the interactions between the veterinary team and patients and inputs from the environment while care is being administered.

Gentle control involves how the patient is positioned for the procedure, ensuring that the patient is safe and comfortable.

Gradient touching involves both the considerate approach and gentle control by maintaining constant physical contact and increasing the intensity of touch. To ensure that the handling is in the patient’s best interest, evaluate the patient’s body language and comfort level.

Feeding
Offering food provides an excellent way to use classic conditioning/counterconditioning, as well as distraction, to create a positive emotional response to being touched in preparation for the medical examination (FIGURE 4). Feeding can also be used to distract the horse during radiographs, grooming, and tacking up. However, food is not indicated for some medical emergencies (e.g., choke, colic, the potential need for general anesthesia). Always confirm with the veterinarian if there is a reason food should not be offered. To encourage the horse to stand still and not be “pushy” for treats, feeding should take place in the horse’s space rather than having the horse reach for the food. For horses demonstrating low levels of stress, food such as hay, timothy pellets, alfalfa cubes, grain, or commercial treats can be offered. A rule of thumb is to offer food before the procedure to assess if the horse will accept the food, during the procedure to distract the horse, and again after the procedure’s completion to end on a positive note. When food is offered during a procedure, if the touching or procedure are interrupted, the food should be removed until the procedure resumes. If the horse is not willing to eat, the veterinarian should be alerted to create a new plan. Physical reinforcement (i.e., scratching, petting), if the horse enjoys it, can be used as well (FIGURE 5).

Topical Anesthesia
After a plan has been established with the client and supplies for the examination and procedure are being prepared, topical lidocaine can be applied to the indicated injection sites. These sites could be the area of a nerve block, vein before venipuncture, or the skin before intramuscular injection. If using topical lidocaine before a nerve block, apply it after the dirty scrub but before the clean scrub, allowing contact time of 5 minutes. Lidocaine reduces pain by blocking the nerve signals. According to a recent study, liberally applying commercially available 5% or 10% topical lidocaine gel or ointment to a horse’s skin and then

FIGURE 4. Hand-feeding a horse during vaccination.

FIGURE 5. Horse enjoying being scratched.
allowing contact time before administering the injection effectively reduces discomfort to the horse.⁶

Techniques for Common Procedures
The following are examples of using considerate approach, gentle control, feeding, and gradient touch when taking a temperature (FIGURE 6); auscultating the heart, lungs, and gut (FIGURE 7); or collecting a blood sample. Similar techniques can be used for lameness examinations, nerve blocks, vaccinations, and farrier visits.

For all procedures, the first 3 approaches are the same, but the specifics for gradient touch differ.

- **Considerate approach:** Find an environment where the horse is comfortable. This could be near the herd or in a barn. If in a barn, give the horse time to adjust to the light and environmental changes. If outside, allow the horse to graze before starting the examination.

- **Gentle control:** Position the handler on the same side as the person providing the medical care. Avoid cornering or surprising the patient. The handler should communicate the horse’s body language and behavior to the veterinary team.

- **Feeding for distraction:** Offer food as the veterinary team member is touching the horse or performing medical procedures.

Taking the Horse’s Temperature
**Gradient touch:** Start touching at the withers, maintaining physical contact while running your hand down the horse’s back, over the croup, and to the tail dock. Resting your hand on the tail dock, use your index finger to massage the posterior of the dock to encourage a raised tail, enabling insertion of a lubricated thermometer into the rectum (FIGURE 6).

Auscultating the Heart, Lungs, and Gut
**Gradient touch:** Let the horse investigate the stethoscope. After the horse contacts or smells the stethoscope, the handler can give a treat. This technique uses classic conditioning (or classic counterconditioning if the patient has had a previous negative experience). The handler can feed the horse as the veterinary team member starts touching the withers with the stethoscope, maintaining contact with the horse, and migrating down to the chest and abdomen. After the stethoscope is removed from the horse, the handler stops feeding until the veterinary team member resumes contact for the next procedure (FIGURE 7).

Collecting Blood
**Gradient touch:** To collect blood from the jugular vein, apply lidocaine gel to a gloved finger. Keeping that finger elevated, start at the top of the neck, making...
continual physical contact with the rest of that hand until it reaches the location where the needle will be inserted. Contact the horse with the finger that was elevated, rubbing the lidocaine onto the injection site. Allow 5 minutes of contact time for the lidocaine to take effect, and repeat the touch gradient steps with the hand that will hold off the jugular vein, and then start the touch gradient with the hand that has the needle and syringe. After the jugular vein is identified, the procedure may begin.

Sedation
Sedation is your (and the horse’s) friend. Pushing through and ignoring signals of FAS can escalate the horse’s fear response, making future veterinary care more difficult. Sedation (also called chemical restraint) is ideal for horses that are showing many signals of FAS. If the horse is in the flight or fight mode of the 4 Fs, it is best to reschedule or give the horse a break to graze and plan to sedate the horse later (FIGURE 8).

Behavioral Modification for Fears/Phobias
If the equine patient can be handled but is showing signals of FAS, it is recommended to consult a qualified trainer who uses humane training methods. The American Veterinary Society of Animal Behavior recommends that only reward-based training methods are used for all training, including the treatment of behavior problems. Aversive methods such as negative reinforcement (for which you remove an unpleasant stimulus to increase a wanted behavior) or positive punishment (for which you add an unpleasant stimulus to decrease an undesired behavior) can deteriorate the human–animal bond, increase phobias, or create learned helplessness.

If behavioral assessment is needed, contact veterinary nurse specialists in behavior, certified applied animal behaviorists, or a Karen Pryor Academy Certified Training Partner. If the equine patient cannot be handled safely because of high levels of fear, then referral to a veterinary behaviorist, not a trainer, is recommended. A veterinary behaviorist is a veterinarian trained specifically to address the “behavioral health of animals through research, science-based behavior education, and the practice of clinical behavioral medicine.” The veterinary behaviorist will diagnose and prescribe a treatment plan for the patient.

SUMMARY
Veterinary professionals should be able to read subtle equine body language. Communicating the subtle signals of stress to clients will educate them and promote communication between the client and the veterinary team. Reading and communicating the signals of equine stress will help the clinic incorporate practices such as considerate approach, gentle control, and gradient touch into their daily routine. Other
helpful techniques are feeding for distraction, applying a topical anesthetic, and/or use of sedation. These techniques will decrease stress for patients, increase client compliance, and prevent work-related injuries, all while strengthening the client–patient–clinic relationship. If the patient needs additional assistance, refer the client to a qualified positive-reinforcement trainer or veterinary behaviorist.

References


Danielle Bolm
Danielle earned an associate degree in veterinary technology from the Vet Tech Institute in Pittsburgh, Pennsylvania, in 2007. After graduation, she moved to Cleveland, Ohio, where she worked in emergency and general practice. During her 10 years in practice, she became passionate about animal behavior and started to dedicate herself to it. From 2016 to 2022, she worked in behavior-exclusive veterinary practices. She became a Karen Pryor Academy Certified Training Partner in 2017 and achieved her veterinary technician specialty in behavior in the fall of 2021. Her behavioral interests include aggression, reactivity, inappropriate elimination for cats, low-stress veterinary visits, and resolving fear-related issues in horses. In July 2022, Danielle opened her own behavior consulting business, Dedication-N-Behavior.