

Welfare, behaviour and handling of working equids

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2.1

Welfare

Animal welfare and sentience

What is 'animal welfare'?

'Animal welfare' is not a purely scientific concept but one based on values of what is better or worse for an animal (Fraser et al. 1997). 'Animal welfare' is a term used to explain consideration towards an animal's life experiences, their needs and how they feel, both physically and mentally. Information that we gather on working horses, donkeys and mules when we observe them (Figure 2.1.1.) can be applied to different welfare frameworks (see glossary, page 33) to help reach a consensus about an animal's welfare state.



Figure 2.1.1 Observing working equids at the end of a working day.

What is 'sentience'?

'Sentience' is a term often used in discussions on animal welfare. Animals (vertebrates and cephalopod invertebrates) are sentient beings, meaning they have the capacity for sensing or feeling. This includes perceptions of their surroundings, awareness of what is happening to them, positive feelings such as joy and happiness, and negative feelings such as pain and loneliness.

'Animal welfare' is a complex concept designed to help observation and consideration of the animal's experience, its needs and feelings. This should determine the course of action: what can, should and must be done for the animal in any particular context.

In the working equid context, rarely is a working horse, donkey, or mule experiencing perfect welfare. Make a judgment about the animal's welfare which takes into consideration human behaviour towards the animal, its environment, available resources and aspects of the animal itself (e.g. age).

The animal's welfare may be:

- **Good** The animal is physically fit; mentally the animal feels well and enjoys positive life experiences. The animal appears strong, healthy and happy because its basic needs are met and its feelings are considered in daily life. There is an absence of actions and conditions which result in unnecessary harm for the animal.
- **Between good and bad** Some aspects of the animal's welfare may be good and some need improvement. There may be opportunities to provide alternatives to the conditions the animal is currently experiencing.
- **Bad** The animal is not physically fit; mentally it feels bad and does not enjoy life experiences. The animal appears weak, unhealthy and sad because its basic needs are not being met, nor are the animal's feelings considered. There is an absence of actions and resources which result in good for the animal.

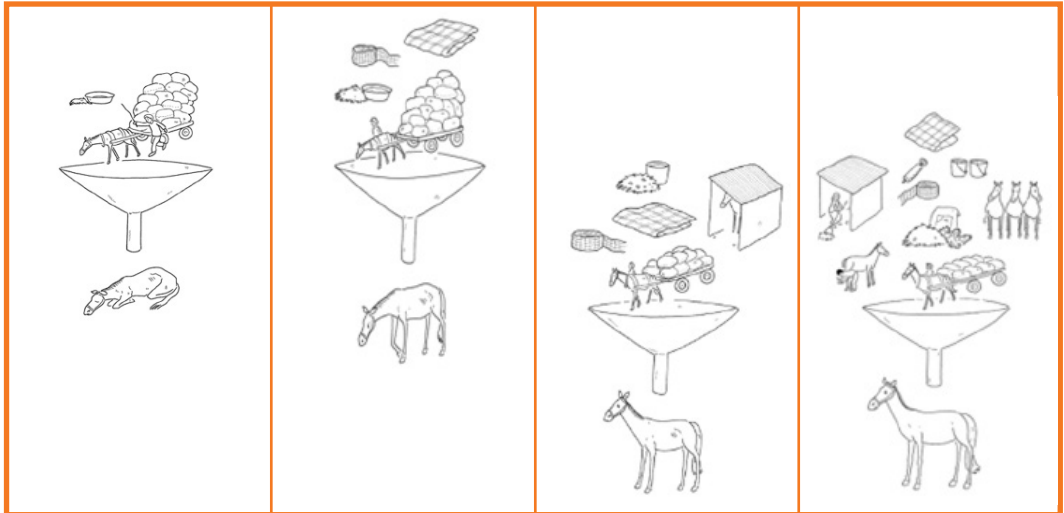


Figure 2.1.2 Visualising welfare inputs and outputs as a continuum. © Martha Hardy at GCI

Figure 2.1.2 shows the inputs at the top of the diagrams, such as food and shelter. From left to right the animal has more and more inputs available to them (going into the funnel). The outputs are the welfare state of the animal seen at the bottom of the diagrams.

The focus on inputs should be the inclusion of good practices, as outlined by the Five Freedoms (Passantino 2011) and also the absence of bad practices (e.g. overloading, poor handling).

How do animal welfare concepts fit into daily veterinary work?

A veterinarian will develop routines; it is equally important that there is flexibility to meet the needs of individual animals.

To capitalise on opportunities to create a better state of well-being and better life for the animal, it is necessary to spend time observing, thinking and practising 'listening to the animal!'

Consider the following four points at each interaction with a working equid:

Observe the animal and its surroundings.

Feel what the animal is feeling e.g. anxiety, confusion, struggle, contentment, pain, distress, comfort, or playfulness.

Reflect Think 'in this situation I would...'

Action Try something. If successful, great; if not, reflect and adjust the plan.

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Just as years were spent learning and practising veterinary knowledge and skills in university, learning how to understand the animal, its language, and how to provide for its needs takes continuous learning and practice. Creativity is required to overcome challenges faced in the field. Approaches that work for one animal may not work for another. With time, this process becomes automatic.

Contributing towards an animal's 'Five Freedoms'

The 'Five Freedoms' looks at welfare outputs in terms of 'freedoms'. This is a compact of rights for animals under human control.

Keep the Five Freedoms of Animal Welfare at the forefront of veterinary work.

Aim to apply them practically as much as possible during the consultation process.

- Consider what can be arranged in advance of a field visit. For example, what should be brought, what can be arranged to benefit the animal? Some examples include: water, shelter, handling equipment and arranging for a community member to prepare the field/environment.
- During the consultation process consider the opportunities to meet the animals' welfare needs.

Observe the animal, its behaviour and environment (Figure 2.1.1).

Feel what the animal is feeling e.g. is it thirsty, hot, scared, in pain, exhausted, dull, depressed, alert, confused?

Reflect 'In this situation I would...'

Action Try something; make adjustments if needed.

- Reflect on the animal's future life. What advice is a priority? Check that the person receiving the advice understands and feels confident to comply with it.

Consider each of the Five Freedoms when 'listening to the animal'

- Freedom from hunger and thirst
- Freedom from discomfort
- Freedom from pain, injury and disease
- Freedom from fear and distress
- Freedom to express normal behaviour

1. Freedom from hunger and thirst

As a minimum, provide water (carry water in the vehicle or arrange beforehand with the community) and give the animal time to drink (Figure 2.1.3). Advise on nutrition.

Observe e.g. body condition, ability to eat/drink, quidding, sunken eyes, sharp teeth, mucous membranes.

Feel what the animal is feeling in its environment and working routine e.g. thirst, dehydration, exhaustion, respiratory distress, hunger, pain.

Reflect 'In this situation realistically I can...'

Action e.g. rasp the teeth, show owner what to feed and what not to feed (Figure 2.1.4).

Offering water is important; we might not always know when the animal last had the chance to drink. If the animal drinks it can help to diagnose and treat dehydration simultaneously (Pritchard et al. 2008).

Equids need time to drink undisturbed; there may be an initial delay before drinking and time must be allowed for this.

2. Freedom from discomfort

Look for opportunities to make the animal more comfortable physically.

At a minimum, pay special attention to the effect of environmental conditions and equipment on the animal.

Observe e.g. animal hobbled so it cannot move, wounds present under equipment, equipment itself (Figure 2.1.5), objects on the ground animal could injure itself on, natural shade options (Figure 2.1.6).

Feel what the animal is feeling in its environment and working routine e.g. hot, tired, in pain, unable to move, agitated by flies (Figure 2.1.7).

Reflect 'In this situation realistically I can...'

Action e.g. advise on equipment maintenance or fly control, remove stones/debris from hooves.



Figure 2.1.3 This animal has had the opportunity to drink.



Figure 2.1.4 An owner was advised on how to clean and sort feed to remove sharp objects; she demonstrates what she has learned.

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Figure 2.1.5 The wounds and scars caused by equipment (harness and chain hobble).



Figure 2.1.6 Use natural or man-made shade when preparing to work with animals.

Consider how owners could be advised on handling and equipment choices which are causing animals injury and distress (e.g. best material, correct fit, cleanliness and maintenance).



Figure 2.1.7 A fly fringe helps manage the animal's response to flies; this gives animals a further opportunity to rest.

3. Freedom from pain, injury and disease

This is partly achieved when a veterinarian attends to assist the animal. Further opportunities are always present.

When treating sick animals there is a high potential for disease to be spread by veterinarians, animal handlers and owners/users.

Pay special attention to the treatment environment, minimising transmission of pathogens and disease by keeping hands and equipment clean and disinfected.

Observe e.g. animal's temperament, physical marks on its body, other animals present that are also ill. This will help to spot trends.

Feel what the animal is feeling in its environment and working routine e.g. alert, dull, scared, sick, uncomfortable, blind, lethargic.

Reflect 'In this situation realistically I can...'

Action e.g. advise on equipment maintenance or fly control, treat priority health issues.

Harmful objects should be removed (e.g. those an animal could injure itself on, attempt to eat) and a safe, clean space should be set up in order to treat animals quickly, securely and calmly. This is especially important when high numbers of animals are waiting for treatment. Ensure work is conducted in a hygienic manner.



Figure 2.1.8 How an organised treatment and waiting area for animals and owners has been created.

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Encourage future prevention of welfare issues, particularly issues prioritised as affecting the animal the most.

For example, the practice of seton where foreign material is stitched under the skin of an animal, or other unnecessary mutilations such as firing, needs owner education to bring about the end of such harmful practices.



Figure 2.1.9 The harmful practice of seton.

4. Freedom from fear and distress

Look for opportunities to avoid causing unnecessary suffering and minimise stress during human-animal interactions.

At a minimum, work with an experienced handler and give the animal an opportunity to calm down and accept the presence of strangers before proceeding with diagnostic tests or treatment (Figure 2.1.10).

Observe e.g. how does the animal react to its owner or other handlers; is the animal protective towards any part of its body?

Feel what the animal is feeling in its environment and working routine e.g. is it alert, happy, scared, unsure, accepting, or fighting the interaction?

Reflect 'In this situation realistically I can...'

Action e.g. work as quickly as possible, or take more time (according to the individual animal), spend a few minutes comforting the animal (using a calm voice, stroking the neck, etc.)

Be vigilant of other animals, children, vehicles and onlookers, all of which can contribute to a chaotic environment and may frighten the animal.



Figure 2.1.10 An animal accepting foot soaking, even with several people nearby.

Consider options for engaging with members of the community to demonstrate treatments and good welfare (Figure 2.1.11). Allow yourself enough space to work safely with the animals being treated.

Consider adjusting the approach to an individual animal (Figure 2.1.12). This might include: treating with a companion nearby, having only one person restrain rather than more, or moving the animal to a different area.

If the animal appears highly stressed, allow it time and space to calm down (Figure 2.1.13).

Only carry out actions which prove necessary and useful.

For example, if conducting a diagnostic test (e.g. taking the rectal temperature) on a highly stressed animal, question whether the result will be accurate. It is good practice to evaluate how necessary the diagnostic result is and how to obtain it in the best way.

5. Freedom to express normal behaviour

Working equids can be restricted from exploring their environment and behaving as they would choose to because they are working and/or have restricted movement during rest.

During a veterinary consultation, the animal can still enjoy opportunities to carry out normal behaviours during handling and treatment.

Remember, observing the animal from a distance prior to the clinical examination contributes to the diagnosis and approach to treatment (see Chapter 1).

As a minimum, using a correctly fitting halter and lead rope will allow control of the animal. This means the handler can feel confident to allow the animal to move its head, shift its weight, roll, vocalise, sniff and explore when it is an appropriate time to do so. Also the handler is easily able to position the animal when veterinary treatment is required.



Figure 2.1.11 A team in India engage the children from a community in field activities, away from the animal.



Figure 2.1.12 Examining the animal from the side.



Figure 2.1.13 If an unpleasant treatment is to be administered allow time for the animal to become accustomed to the situation.

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Do not punish the animal by using force. Immediately cease investigation if the animal expresses aggressive behaviour.

The animal may be frightened, distressed, in pain or be unclear as to what a person is asking it to do. Can something be adjusted: human behaviour, equipment, environment, method of physical or chemical restraint?

Observe e.g. easy or difficult to handle, sweaty, positive or negative interactions with other animals such as grooming or fighting.

Feel what the animal is feeling in its environment and working routine e.g. itchy, nervous, hot, annoyed by other animals, or wanting to play.

Reflect 'In this situation realistically I can...'

Action e.g. allow the animal to roll (Figure 2.1.14), release restraint, bring a companion animal close-by (Figure 2.1.15).



Figure 2.1.14 A community created this sand pit specifically to give their animals a safe place to roll before and after work, or after veterinary interventions.



Figure 2.1.15 Patients may be more relaxed if they are near other animals.

Glossary

Animal welfare science, ethics and law

- Animal welfare science investigates the effect on the animal (this informs ethics and law).
- Animal welfare ethics investigates how humans should treat animals.
- Animal welfare law states how humans must treat animals.

Recognised animal welfare frameworks which can be applied to working equids

- **Five freedoms** This framework looks at welfare outputs in terms of '**freedoms**': **the ideal situations for animals which we should work towards achieving**. Each freedom is then linked to the inputs (resources and management practices) which are needed to achieve that freedom.
- **Physical welfare, mental welfare and naturalness** This view of animal welfare emphasises three components, such as 'fit and feeling good'. It recognises that both physical and mental welfare are important. It also includes '**naturalness**': **the ability of an animal to do what it would choose to do in a natural or wild state**. For example, the opportunity for a working donkey still to be a donkey – grazing, braying, socialising in a herd with other donkeys – rather than just being a machine for people's benefit.
- **Fit and feeling good** **This definition says that an animal has good welfare if it is 'fit and happy' or 'fit and feeling good'**. Fitness means that the animal can sustain health and vigour throughout an effective working life. 'Feeling good' recognises that animals are sentient; in other words they have feelings that matter. We should aim to ensure that animals do not suffer and have the positive feelings gained from comfort, companionship and security.
- **Four principle ethics** This is an ethical framework developed and used extensively in human medicine, which may also help with thinking about animal welfare. It is a useful checklist to apply when making any ethical decision. The four principles are:

1. **Non-maleficence** 'Do no harm', or at least 'minimise the harm'.
2. **Beneficence** 'Maximise the good' (once the harm has been minimised).
3. **Autonomy** The ability of people (or animals) to be self-governing, or at least to make choices about their lives and their medical treatment. For animals, take into account what the animal would choose in a certain situation.
4. **Justice** Treat all people (or animals) fairly and equally.

3 R's – Refinement, Reduction and Replacement These have developed from laboratory animal protection law. They can be very usefully applied after making any ethical decision, in order to minimise or mitigate any negative effects; for example when deciding whether to use animals in training courses.

2.2

Behaviour

What do we mean by 'behaviour'?

Behaviour is an animal's way of expressing its feelings and experiences, positive or negative. In order to work with animals, it is important to understand their feelings.

Interpreting equine body language will improve the assessment of the health of an animal as well as allowing safe management of actions and reactions.

Opportunities to improve the welfare of animals enjoy interactions with them, will be missed if assessment of behaviour is skipped.

Getting to know the patients involves:

- understanding traits and general behaviours, e.g. natural history, evolution of equids, anatomy, categories of behaviour
- observing the animal; understanding what it might be feeling based on its behaviour
- questioning and interpreting what is seen, e.g. indicators of good or poor welfare.

Understanding traits of equids

Below are some key traits of equids. Appreciation of these can help explain some of the animal's actions or reactions.

1. Equids are a 'prey' species.

In a natural prey-predator relationship, prey animals are vulnerable to predators and therefore are focused on survival.

Equids are very perceptive. They have evolved to be aware of and react to experiences or objects they find threatening; this includes humans!

- Their eyes are positioned on either side of their head (Figure 2.2.1.) enabling an 'almost full circle of horizontal vision' (Hanggi 2012), which provides a strong scanning capability, useful in defence. There are believed to be two 'blind spots' or areas where the animals cannot see: immediately in front of the animal (anterior to the forehead and below the nose), and immediately behind them (Hanggi 2012). Their long noses allow them to have their heads down for grazing whilst still maintaining surveillance of their surroundings.



Figure 2.2.1 Equid eyes are situated on the sides of the head, enabling almost a full circle of vision.

Prey species do not like restraint or feeling 'trapped'.

- Equids are cautious and use their speed and agility as a means of self-preservation. Restricting their movement can cause fear, distress or displays of unwanted behaviour, demonstrating that they are upset; restraint must be done with consideration.
- They are able to stand for long periods of time, enabling them to move swiftly to escape from predators. Equids usually only lie down for short periods of time; normally when other equids are standing or grazing nearby.

Extended periods of trotting and cantering are unnatural for equids and they should be trained and conditioned for work slowly.

- They need to conserve their energy in order to have it available for survival situations – to escape from predators ('fight or flight'). So their natural instinct is to move slowly and regularly as they graze.
- In a working relationship, humans must use behaviour which shows that we mean no harm. By making the animal feel safe and allowing it enough freedom to carry out small movements, we can expect to see less unwanted behaviour, such as kicking and biting.

The goal should be for an animal to have a good experience every time it is with the veterinarian.

2. Equids adopt a 'flight or fight' response to threatening stimuli.

An equid's main aim is survival, it will adapt its behaviour to suit the circumstance and remain safe; flight is an escape response.

The stimulus for provoking a flight response may be visual, olfactory (smell), tactile (touch), auditory (sound), or a combination of any of these. Fight is an aggressive social interaction involving potentially harmful actions through physical contact. Fight responses occur when animals cannot escape; thus these responses are often secondary to flight attempts.

- Something which does not cause fear – the animal's reaction will be to ignore or explore the person, animal or object. It is in its nature to be curious.
- Something to fear – the animal's first reaction to the person, animal or object they fear will be to move away from it. This is the animal's 'flight response'.

If the animal does not feel it is able to escape the threat, it will send warning signals that it is prepared to fight. This is the animal's 'fight response'.

- Flight responses (e.g. turning head away, moving away) are attempted before fight responses (e.g. kicking, biting, or rearing).

If the animal shows a fight response, this usually means that it tried a flight response first and this was either ignored or prevented – equid fight responses are triggered by our own behaviour towards them so we should take responsibility for these.

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- In a working relationship equids will give behavioural warning signs when they are fearful or distressed and those handling or treating working animals should be aware of these and alter approaches as necessary.

In Figure 2.2.2 the donkey was startled by the movements of the examiner. In this case the examiner should stop, the donkey should be allowed to calm and another attempt should be made using a soothing voice and slow movements, with gentle but firm touch. Do not tickle.



Figure 2.2.2 This donkey is showing a flight response when touched by the examiner.

3. Equids are herd species or social herbivores.

Equids benefit from, and have an innate preference for, the companionship of other animals of the same species for added safety and mutual comfort.

Tactile communication between equids (along with olfactory, auditory and visual communication) is important. They can feel insecure or stressed as a result of being isolated.

In a working relationship, a greater success in handling and treating equids is attained with a calm and patient manner. Adjust the environment to suit the individual animal.

- There is an expression that 'horses are mirrors'. This means that the animal's behaviour reflects what it sees, both from humans and other animals around. Calm behaviour from humans will lead to calmer animals; rushed or agitated behaviour from handlers will lead to agitated or fearful responses from horses, donkeys and mules. Bringing another calm, controlled animal into the treatment environment may help comfort the animal receiving treatment.
- To show an equid that no harm is intended, try not to act like a predator – looking directly at its face, grabbing it quickly and holding on – because the instincts of the horse, donkey or mule will tell it that it is about to be hurt or killed. Instead, when approaching for the first time, lower the eyes, move close to the animal and/or touch it, and then immediately move away a few steps, turning sideways to the animal. Repeat this two or three times before examining or treating the animal.

A predator always faces the animal straight on, looks at it intently, and never just touches its prey and walks away, so this technique helps the horse, donkey or mule to understand that the veterinarian is not a predator.



Figure 2.2.3 A non-threatening approach. As the examiner retreats a few steps the donkey shows non-fearful interest.

4. Equids learn and make associations all the

time. They may not respond well to unfamiliar or confusing commands.

- In a working relationship, we should not assume that the animal knows what we want it to do, e.g. stand still for an injection or wound cleaning. We should also not assume that the animal knows when an experience will end, e.g. during a leg lift used as a means of further restraint.

If the equid acts in an unexpected way, it is actually reacting to whatever we are doing, or to something else in the environment.

- To prevent or minimise an unwanted behaviour we need to look for the action that led to the reaction in the horse, mule or donkey.
- Equids do not have the higher cognitive ability to be stubborn, deliberately naughty, jealous, vicious, annoy people, or indulge in other human behaviour. If we give their behaviour these labels, it can lead us to treat them in a way that does not take their real motivations into account and therefore help us to reduce the unwanted behaviour.

If we always think of equine behaviour in terms of the natural need for survival – to protect themselves from harm and to find food, water and other horses/donkeys/mules – then we will understand their true motivations and be able to reduce any unwanted behavioural consequences of these survival instincts.

- Useful questions to consider when dealing with unwanted equine behaviour (almost all unwanted behaviours have one of these four root causes):
 - Is the animal frightened?
 - Is the animal in pain?
 - Is the animal reliving a negative experience from the past?
 - Is the animal not understanding (or confused by) what it is being asked to do?

Understanding their language

Equids communicate to humans in the same way that they communicate to other equids.

1. Look and listen to the overall picture: what combination of vocalisations, breathing, posture, facial expressions, and muscle tension can be seen?

Observe the animal from a distance in the same manner as conducting a clinical examination.

- Does the animal appear bright, alert, responsive or dull, depressed, excited, stressed, in pain?
- Is the animal behaving normally? Or is the animal exhibiting unwanted or concerning behaviour?

2. Further information

- Further reading can be found in the References list at the end of this chapter.
- For information on the behavioural signs of pain refer to Chapter 3 Pain – Indicators and management in working equids and the review article by Ashley et al. (2005).

2.3

Handling and restraint

Handling of equids for any reason should be carried out in a calm and gentle manner with consideration for the animal's experience in the process.

The principle objective of restraint is to limit an animal's movement for its own safety, while it is receiving some form of attention (Fraser 2010), this may be an examination or treatment. No handling procedure should be based on infliction of pain on the animal and the principle of 'do no harm' should be practised. Even for very experienced veterinarians and assistants, handling and restraint of working equids can at times be difficult. While many patients will accept handling and treatment, some others may display unwanted defensive behaviours such as moving away, biting, rearing or kicking.

Ideally those coming in contact with working equids should:

- understand equine behaviour and appropriate communication methods. For example, be aware of natural behaviours and senses, and develop the ability to appear non-threatening from the animal's point of view.
- understand how to keep safe during any interaction. For example, be aware of danger zones and warning signs shown by the animal (Table 2.3.1).
- apply understanding of animal behaviour, needs and feelings when creating a treatment environment and preparing to work with each individual animal
- always use the minimum level of restraint needed to carry out a procedure safely
- have a willingness to adjust technique to the individual animal's needs and behaviours.

The aim should be appropriate treatment without force.

Table 2.3.1 identifies the six main body parts of equids (zones) which can cause injury to humans or other animals, and the ways in which injury could be caused (dangers). Veterinarians, assistants and handlers should remember these at all times when working around equids, and communicate between each other if warning signs are displayed.

Zone	Dangers
Head	Butting with the animal's nose or top of its head
Teeth	Biting
Front legs	Striking in front, standing on human feet, pawing, stamping, and kicking towards the belly
Body	Crushing the handler against something solid (e.g. fence, wall)
Hind legs	Kicking behind, kicking towards the belly, kicking to the side
Tail	Whipping in the face or eyes (particularly with horses, less so with donkeys)

Table 2.3.1 The six main danger zones of equids and the potential source of injury.

Approaching and examining a working equid

When considering the approach and examination of a working equid reflect on the following aspects of good practice in Table 2.3.2 (below).

Think about how the animal will perceive human actions and reactions, and be aware of the environment, other people, animals and distractions.

Good practice	Why
Remember to observe the animal, assess its feelings and anticipate how to work with the animal.	Behavioural assessment is valuable in determining the best approach to the consultation process.
Approach the animal from the side (same approach for left or right side). If the animal is blind in one eye, approach from the opposite side.	Equids' eyes are on either side of their heads (See Section 2.2). They are unable to see directly behind or in front ('blind spots').
Do not make direct eye contact, look at the neck and breast instead, and allow the animal to investigate (i.e. sniff).	Equids are prey species and feel threatened by predators. Predators approach with direct eye contact so this should be avoided.
Be aware of other stimuli (e.g. vehicles, children). Approach with your arms down or to your side, making a little noise (e.g. talking softly).	Horses, donkeys and mules have keen senses and startle easily. To minimise unfavourable reactions avoid approaching too fast, with sudden movements or loud noises (e.g. waving or outstretched arms, shouting, using mobile phones).
Observe the animal's response to an approach. Continue to do this throughout the interaction, moving with calm purpose around the body.	If the animal appears excited, nervous, frightened or aggressive, further time should be spent putting it at ease and making it feel calm and accepting the interaction.
Identify an area where the animal is comfortable having someone standing close (e.g. shoulder). Rather than retreating too quickly if the animal reacts negatively, return to this position to calm the animal before continuing.	It is often better to stay with the animal. Retreating too quickly will demonstrate fear. The animal will learn that it can control human movements in this way, making future attempts at handling and treatment less successful.
Use hands and voice to reassure the animal while working. Always try to maintain contact with the animal.	The use of hands and voice lets the animal know the position of the clinician and reduces the potential to startle. This is particularly useful if the animal is blind in one or both eyes.

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Good practice	Why
Use the minimum amount of contact necessary to assess/treat the animal, particularly in areas which are sensitive (e.g. girth/belly, limbs, equipment contact points, wounds, scars).	Animals may be more sensitive and reactive around areas where there tends to be little contact normally or where there is evidence of physical trauma or pain. Equids tend to be more sensitive over areas of bone than muscle. Scars are evidence of a previous painful occurrence. Typically once the tissues have healed, the animal will no longer feel pain. However, negative experiences can make animals more difficult to handle. This can be overcome by showing the animal non-threatening behaviour.
When unwanted behaviours (e.g. moving away, biting, rearing or kicking) are observed, stop the examination or treatment. Together with the handler, assess the situation and make adjustments.	Equids have evolved systems of behaviour to help them successfully detect, avoid and react to threats. Potentially these are justified behavioural responses due to the animal experiencing pain, distress or fear. Manage these behaviours to achieve the best welfare outcome for the animal.
Where sedatives and analgesics are not available, painful procedures should not always be attempted. Consider the harm versus benefit.	The consequences from any immediate course of action should be investigated from the animal's point of view.

Table 2.3.2 List of good practice relating to approaching and examining a working equid.

Methods of restraint

Physical restraint

Restraint is a necessary part of a meaningful consultation process. The whole veterinary team should ensure they are prepared with the knowledge and tools to handle the animal in a calm and gentle manner. When using methods of physical restraint, look out for signs of pain and distress in working equids. It is important to know when to stop and re-evaluate the situation should the interaction be difficult.

1. Halter, headcollar or rope halter

Equids use their head and neck as a way of resisting handling; it is essential to secure the head as a first step in control (Fraser 2010). While other methods may be used by owners (e.g. neck rope, head lock only) this is rarely a sufficient or acceptable way to control the animal during a veterinary procedure.

With control of the animal's head, the handler is able to manoeuvre the whole body of the animal more easily, thus achieving greater safety for the animal and person.

- Ensure the headcollar is well-fitting (Figure 2.3.1).
- A device can be made easily out of a 4–5 metre long, 15 mm thick, piece of rope, when a halter or headcollar is not available.
- Many working equids, especially donkeys, may not be used to wearing a headcollar. They may require more time and patience to become accustomed to it. Allow the animal to see/sniff the rope first, or place it on over existing work equipment.
- Ask for assistance from the owner if necessary.

To make a rope halter

Tie two knots in the rope ensuring each knot has a loop which the remaining rope can fit through. Feed the remaining rope through the first knot (this creates the part over the ears), then through the second knot (this creates the part under the chin). The rope halter can now be placed over the animal's muzzle, then behind the ears (see Figure 2.3.3). Use a long enough piece of rope so that the free end can serve as a 2-metre lead rope. There are many descriptions and videos available, outside of this text, showing this process in detail.

2. Leg lift

This is a useful alternative form of restraint, which can be used in addition to a halter or headcollar to help keep an animal still for a short period of time while an examination or treatment is carried out. It limits the animal's opportunity to move but the animal is able to balance on its other legs.

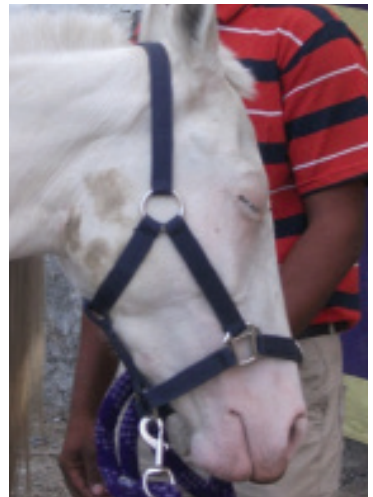


Figure 2.3.1 An example of a well-fitting headcollar.

Keep the leg up only for the duration needed to examine or treat the animal.

- To prevent the animal from moving around or kicking with a back leg, lift the front leg on the same side.
- Use a light grip and move with the animal, both will prevent the animal from snatching the leg away. Avoid letting the animal lean into the handler.
- If the animal is struggling to balance with one leg raised, place the leg back on the ground and give the animal time to regain its balance before lifting again.
- Raise the leg in line with the body. Avoid raising it too high or too far to the side as this prevents the animal from being able to balance.
- Working equids often have painful arthritis in their joints (Broster et al. 2009) – always bear this in mind with this form of restraint as it could be causing unnecessary pain; advise owners of this.
- This technique may not work with very nervous or difficult animals. In that case avoid repeat attempts of this form of restraint, particularly if the animal is rearing up. Decide when it is best to leave all four feet on the ground.

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Good lifting technique Lift the leg straight up to a comfortable height for the animal. The animal should stand without struggling once it has balanced (Figure 2.3.2).

Lifting the leg too high or out to the side (i.e. against normal movement) can result in an animal losing its balance and fighting against this method of restraint. Allow the animal to regain balance before proceeding.

Figure 2.3.2 shows a right foreleg being lifted to aid examination of the contralateral forelimb. Ensure that a competent handler is present, with a halter or headcollar, and a good lifting technique is used. Notice the animal in the photograph appears attentive but relaxed.

3. Upper lip twitch

Avoid use with donkeys.
Never twitch the ear, jaw or tongue.

A twitch is a loop of rope threaded through a hole in a wooden pole (50 cm long). This is a more extreme form of restraint but may be used in certain circumstances. Use in addition to a halter and lead rope with a competent handler. A twitch is used to divert attention and to control the animal's reaction to aid further necessary diagnostics or treatment.

Two main hypotheses have been proposed to explain the twitch's mode of action on a horse: a sedative effect through the release of endorphins (McCarthy et al. 1993) and a distraction (McGreevy 2004). Either effect is controversial as discomfort and pain occur first. In fact, McCarthy et al. (1993) showed that the beta-endorphin release which occurs when a twitch is applied to the upper lip of a horse also occurs when a horse undergoes prolonged air transport or has severe abdominal pain (colic).

This evidence demonstrates that the beta-endorphin release when a twitch is applied may be due to the stress/pain associated with the technique.

Application of a twitch The decision to use a twitch should be taken carefully, not automatically. It may be appropriate when performing a short, non-painful procedure where the use of sedatives would be inappropriate as the effect would be too long-lasting. If a procedure will take some time, or a twitch is applied and the procedure takes longer than anticipated, stop. Take the twitch off and use chemical restraint where possible or re-assess the acceptability of performing the procedure.

Not every animal will accept the twitch. Only a few attempts should be made to place the twitch and force should not be used, particularly with highly stressed animals.



Figure 2.3.2 Leg lift restraint using the right forelimb.

- The handler should be experienced in this technique. Judge the time and pressure based on the animal's behaviour and remain vigilant towards the animal, the examiner, the handler, and the twitch itself during procedures.
- The handler should stand on the same side as the veterinarian (examiner), slightly to the side, so that if the animal kicks forwards with its forelegs nobody will be injured.
- The twitch should calmly be applied to the upper lip only. It should be done quickly but not excessively tightly. Do not tighten the twitch any more than is necessary. The initial response of the animal will vary but may include: rigidity, tension and a freeze in posture.
- Start the procedure once the animal shows signs of relaxing and calmness.
- Keep the duration of application as short as possible (5–15 minutes).
- Use caution when removing the twitch, keep control using the halter and lead rope.
- Release the twitch as soon as the procedure has finished.
- Gently rub the muzzle once the twitch is removed to aid circulation.

Check that the twitch is made from strong, natural rope with a smooth finish that will not damage the animal's skin, and has a long handle. Longer handles provide greater safety for the handler as well as the animal.

Twitch use in donkeys Less evidence is available for twitch use in donkeys, but what does exist suggests it is less effective (Vreeman et al. 2009).

- Donkeys have smaller, more rounded noses, so twitches slip off and are difficult to maintain in position.

The twitch is not advisable for use with donkeys.

- Equine professionals who have experience with donkeys state that twitches are less effective, particularly when the animals are stressed. Individuals may choose to use a 'head-restraining' approach with donkeys in addition to a halter and lead rope (Figure 2.3.3). With this approach the handler lightly cradles the donkey's head in their arms, approximately following the lines of the headcollar, and with one hand holding the nose or lower jaw. Be careful not to restrict breathing and do not use force. Handlers should use caution for their own health and safety with this approach. Halters are preferred.

4. Skin twitch – neck only

This is an additional form of restraint to a halter and lead rope. A fold of skin on the neck is held lightly (without force) to distract the animal (Figure 2.3.4, on page 44). This technique can be useful when giving an injection, but like all methods of restraint should be carefully thought through and not automatic. Release the pressure immediately after the procedure and stroke the area.



Figure 2.3.3 Use of a rope halter. Restraint of the head of a donkey for a brief treatment procedure (injection).

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5. Limiting the animal's sight using a cupped-hand

This is an additional form of restraint to a halter and lead rope. The handler stands on the same side as the veterinarian. Using the hand in a cupped-shape, the handler blocks the animal's view of the veterinarian. This technique can often prove useful.

Be flexible and creative when restraining an animal – what works for one animal may not for another.

Each individual animal is different. It may be helpful to utilise structures, spaces or other animals within the environment. These methods are anecdotal and based on field experience, what works for one animal may not work for another. Always remember 'do no harm'. This means pay attention to the animal's experience (e.g. behavioural indicators of stress) and avoid the use of excess pressure.

Having a companion nearby who is also well restrained with a halter and lead rope may calm or reassure the animal requiring treatment.



Figure 2.3.4 Taking a fold of skin to distract from an injection.

Consider any of the following:

- Move the animal to stand near a corner, so it cannot back up. This limits an option for movement in one direction but the animal will still perceive that it can move forwards and won't feel trapped.
- Move the animal to a more open space, so the animal perceives it can move in more directions. This may be enough to make the animal feel safe so it remains still.
- Examine and treat the animal with its working equipment on. Working equids often suppress their natural behaviour when in their working equipment, so whilst it is normally best practice to remove everything to enable a proper examination, it might be better to try keeping working equipment on, or take it on and off in sections.

Ensure that pain, fear and stress are minimised at all times during the consultation.

Be aware of how owners are using restraint and encourage them to try alternatives. For example, showing an owner how to use a halter and lead rope rather than ear twitching could be an immediate welfare improvement for the animal now and in the future.

Chemical restraint

Chemical restraint refers to the use of drugs for sedation, local/regional anaesthesia or general anaesthetic, all of which is discussed over various sections in Chapter 7.

Chemical restraint reduces fear, makes the procedure faster, easier, safer and, depending on the drug combinations used, may have an analgesic effect.

Considerations with chemical restraint

1. Although very effective and commonly used in veterinary practice, no form of chemical sedation will improve animal welfare if the wrong drug/dosage is used, or if the risks have not been accurately assessed beforehand.
2. The importance of having a plan has already been mentioned: **the earlier chemical restraint is given, the more beneficial it is to the animal**. So planning will also help with making early decisions as to whether sedation will be necessary.
3. **Drugs require time and a quiet, calm environment to work most effectively**; they are not as effective in situations where an animal has become distressed. In such cases, allow the animal to calm down first before administering the chemical sedative.
4. **The veterinarian is responsible for the animal until it fully recovers**. If something happens during recovery it will be the veterinarian's responsibility, not that of the owner, the veterinary assistant or anyone else who happens to be there. Leave enough time to supervise recovery, and warn the owner beforehand that the animal will not be able to work until fully recovered from the sedative, which can be a number of hours; ensure 'informed consent'.

Drugs are always preferable over force but they must be used responsibly. Always ensure that the owner is aware of why the animal needs to be sedated, understands the risks involved, and knows how to manage the animal in the recovery phase.

2.4

Harmful traditional practices – Firing and nostril slitting

Firing

Firing (thermocautery) is practised in many parts of the world, particularly in poorer, rural areas where access to health services (both animal and human) are scarce (Figure 2.4.1). In many countries local healers have a long family tradition of firing animals, and are supported and respected by their communities for the role they play in animal health service provision.

Firing patterns are a combination of points and lines. Points penetrate deeper into the tissues and lead to scarring, reduced blood supply and contraction especially over joints. Lines usually penetrate less deeply and cause cutaneous inflammation and scarring (Auer and Fackelman 1981).



Figure 2.4.1 Firing of the pelvic and lumbar areas.

To prevent the use of these practices, veterinarians must work with local communities to look at the reasons why people fire and why they feel it helps their animals.

- Raising owner awareness starts with looking at the root causes of why animals are ill or lame in the first place (nutrition, overloading, irregular hoof care) and helping owners to understand that, scientifically, firing cannot prevent or resolve conditions since it is merely the burning of the outer skin layers, and does not address the root cause (McCullagh and Silver 1981).
- Training days for local practitioners comprise discussions and practical sessions based on preventative practices such as correct drug administration routes, farriery, good harnessing and saddling techniques, wound management and hair clipping. These aim to provide alternatives to firing, and offer alternative sources of income for the local healers.

Nostril slitting

Nostril slitting occurs in many countries due to the belief that it increases an animal's air intake, and therefore increases the capacity to work.



Figure 2.4.2 A donkey with slit nostrils.

Alternatively, signs of pain such as experienced during colic are often thought to indicate that an animal is having difficulty breathing; this is another reason why nostrils are slit (Figure 2.4.2).

To prevent this practice, simply 'persuading' the owners not to do these things is difficult and not effective. Use knowledge of anatomy and physiology to find a way to describe the airways which makes sense to owners, and thus convince them from a scientific viewpoint why slitting the false nostril will have no impact on the speed or volume of air intake.

Case study – Firing

2.5

Signalment This 15-year-old mare has been in the owner's possession for 2 years, and is used to transport goods by cart.

History The mare has had recurrent bouts of lameness over the first year of ownership. The owner took her to a traditional healer who fired both her forelimbs (Figure 2.5.1). The lameness did not improve.

Clinical examination The mare has a body condition score 2 and appears dull and depressed. On gait assessment she is lame on both forelimbs with a shortened stiff stride. On flexion of the forelimbs there is reduced flexion of the metacarpophalangeal joints in both forelimbs and signs of pain on flexion as the mare pulls her limbs away. There is bony enlargement around these joints and distension of the synovial pockets of the metacarpophalangeal joints.

Treatment The mare is given an injection of flunixin meglumine and the owner given phenylbutazone to continue giving orally daily for the next 5 days before a follow-up visit. The owner is advised to rest the animal. The owner said this was not possible, so the advice was to reduce the work load or work speed of the animal to allow the inflammation within the joints to subside. The owner is advised that the bony growth around the joint is permanent and no treatment can reduce this. The thickening of the skin around the limb has been made worse by the scarring resulting from the firing. The owner is made aware that the practice of firing was detrimental to the animal and should not have been carried out.

Follow-up The joint swelling had reduced slightly but the rest of the pathological changes had not altered as these are permanent.

Discussion The owner was made aware that the firing process does not cure the problem, but causes more pain to the animal and should not be carried out. The owner was advised that, due to the permanent changes in the metacarpophalangeal joints, only reducing the work pattern combined with analgesia would keep her from suffering too much.



Figure 2.5.1 Firing of the distal metacarpus and metacarpophalangeal joints of both forelegs.

Ideally the mare would stop work, but due to financial reasons the owner is not able to do this. Long term analgesic drugs can lead to side effects on the body (see NSAIDs in Chapter 5) and should be managed carefully. Correct shoeing can go a long way to ameliorate the condition. Gentle therapies, such as massage of the limbs, can be carried out by owners. The mare should have regular check-ups by a veterinarian to assess any progression or deterioration of the condition and advise the owner as necessary.

Cases of degenerative joint disease need to be treated individually, formulating a management plan that suits both animal and owner (Auer and Fackelman 1981).

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Further Reading

For information on the behavioural signs of pain refer to Chapter 3 Pain – Indicators and management and the review article by Ashley et al. (2005).

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