



SOP 6.20 Routine handling of foals and weanlings during teaching, research and regular husbandry

Date and issue: February 2024
Written by: Prof. Hayley Randle
Review due date: January 2027

Purpose

- (1) The objective of this standard operating procedure is to provide guidance to the Charles Sturt University staff on:
- a. appropriate foal/weanling horse handling procedures to promote the safety and welfare of both foals/weanlings and the humans interacting with them.

Scope

- (2) This procedure applies to any person who is involved in AEC approved projects involving foal/weanling handling.
- (3) All researchers and teaching staff using animals for scientific purposes must be competent. For definition of competency refer to Charles Sturt University's Policy on 'Animal Care Competency Training and Assessment'
- (4) Recommended instructor to student ratio - refer to Table 1. for agreed (by Animal and Field) staff: student / horse type ratios.

ACTIVITY	STUDENTS PER HORSE	STAFF: STUDENT RATIO
Foal/weanling handling (including health checks)	2-3 students/mare and foal	1: ALL (only 2 students directly in contact with the foal at a given time)
Handling newborn foals	3-4 students/mare and foal	1:8 if up to 2 mares-foals 1:6 if >2 mares-foals

http://www.safework.nsw.gov.au/_data/assets/pdf_file/0005/79160/SW08262-Code-of-Practice-Managing-risks-when-new-or-inexperienced-riders-or-handlers-interact-with-horses-in-the-workplace.pdf

*These equid:student:staff ratios are critical when working with inexperienced students and/or young horses. Student:horse ratios are for a given period of time (e.g., during a single practical class) or procedure and are not indicative of the number of students each horse will be exposed to over the course of a session or year. *Staff:student ratios may exceptionally be adjusted at the discretion of the academic. Weaning usually takes place around 7-8 months at CSU. This SOP however refers to young horses from weaning (where the foal becomes a weanling) until the point of sale (usually before they are 12 months old)*



Details of procedure

Safety and risk considerations

- (5) Anyone handling foals or weanlings should be aware of the following:
- a. Horses are large animals and a prey species, even foals and weanlings. This means that their default reaction to an actual or perceived threat is likely to comprise one or more of the following: flight (run, escape), fright (startle response – which can vary from a full body response to a sudden head or leg movement) or fight (e.g., kick, bite). Horses have the largest amygdala in relation to body size of all mammals therefore are predisposed towards fear- based responding. Handlers should also recognise more subtle signs of discomfort such as becoming disengaged with the environment (shutting down) and becoming fidgety, typically characterised by rapid and short-stepping leg movements with frequent changes of direction.
 - b. Foals/weanlings have comparatively better senses of hearing and smell and substantially wider visual fields than humans due to the lateral placement of their eyes compared to frontal placement in humans. Foals also have a blind spot immediately in front of the nose, and behind the bottom. Horses are much more cued into their environments than many other species, including humans, and will respond to the smallest of stimuli, particularly those that are novel or familiar items that are out-of-context. This may include factors related to the weather, sudden movements, loud noises, unexpected or unfamiliar sensations and the presence of other species such as dogs, cats, birds, insects, and wildlife. Whilst it has been found that horses have an innate preference for observing objects with their left eye (left sided visual laterality) it is important to work equally carefully from both sides of the horse bearing in mind that just because something has been observed and responded to on one side, it may still be perceived as novel and be potentially fear inducing on the other side.
 - c. Foals/weanlings are social animals and separating them from their dam/herd-mates/conspecifics can be problematic.
 - d. Foals/weanlings are adept at learning 'unwanted behaviours' including those related to being handled. A response that has proved successful in the past (for example pulling away from handler) is likely to be trialled again particularly in a stress-inducing or unfamiliar situation. This can rapidly become a consistent response due to rapid synaptic changes.
 - e. Handlers of young equids should be aware of the existence of critical periods in their development, and as a result, strong propensity to acquire conditioned emotional responses that are usually fear-based and have a lasting negative impact into adulthood. The greater synaptic plasticity in young mammals during the period after birth results in enhanced ability to learn new tasks (Waran, 2005), so exposure to aversive stimuli should be avoided during this time. Likewise, weaning is also a particularly sensitive period where exposure to aversive stimuli should be avoided (Waran et al., 2008).

Equipment

- (5) The mare should be fitted with a suitable head collar and lead rope.
- (6) It is likely that foals especially will not be accustomed to wearing head gear, therefore a halter should not be used unless the foal is halter trained. Application of pressure to the head via a halter should be avoided as the foal is likely to respond by pulling back and/or



rearing. This can result in substantial trauma, paralysis and even death. For foals / weanlings that have been halter trained, only correctly fitting head collars, with a lead rope with fully functioning clip to attach to the head collar as per manufactures guidelines (usually to a ring on a head collar, or a specific loop on a rope head collar) should be used.

- (7) Consistent with guidelines below, the use of a rump rope to direct movement, or leading young horses (to yearling age) from the shoulder, is encouraged. During early handling a body harness (Figure 1) designed to control foals may be used (fitted by experienced personnel/staff) to manoeuvre foals that are naïve to the head collar and lead rope. A correctly fitted 'rump rope' may be used as alternative to encourage forward movement (Figure 2).
- (8) All handlers must wear boots or closed shoes of solid construction whenever handling horses. Open toed footwear is not suitable. Helmets complying with current industry standards *should* be worn at all times when handling horses including and arguably especially young stock due to their unpredictability particularly in potentially fear inducing situations. (At Charles Sturt students must wear helmets when undertaking activities associated with a subject/research, and whilst this is not currently mandated for staff, they are strongly advised to.) Gloves and coveralls will also be worn where deemed necessary by those managing the specific horse handling scenario.

Prior to work

- (9) Carry out a visual inspection of the environment in which the foal/weanling is going to be handled. Remove any items that are unnecessary and likely to be problematic, for example empty feed buckets, items on the ground, items causing an obstruction or items likely to cause a distraction.
- (10) Before commencing work, the handler should find out as much as possible about the individual foal/weanling to be handled from appropriate personnel.
- (11) Before catching and working with the horse, carry out a visual assessment of the equipment that is to be used on the foal/weanling (and mare). Check for broken stitching, sharp edges, frayed material/cracked leather, malfunctioning clips and buckles, and other anomalies. Any equipment deemed not suitable should be replaced before fitting to the animal.
- (12) If you are carrying a mobile phone on your person, and directly handling the foal/weanling, make sure that it is on mute.

On commencing work

- (13) It is critically important to always handle foals in a manner that reduces their flight response and general reactivity to reduce the risk of injury to the animal and humans interacting with them (Søndergard & Jago, 2020).
- (14) Make sure that the environment in which work is being undertaken is secure, for example by closing gates and catching the mare.
- (15) Wherever possible, for example during teaching activities, DO NOT separate the dam-foal during handling and avoid positioning yourself between the dam and foal. The dam must always have sight of the foal. Be very aware of how you are positioned in relation to the mare and the foal. Mares will jump over obstacles to get to their foal. When handling foals, it is important to minimise stress to both the foal and dam. An important consideration is that



the dam may be pregnant again within the critical window (<45 days) and minimising stress to her is as important as minimising stress to the foal.

- (16) When catching a foal, ensure the environment is suitable for the intended task. Initial catching will likely be stressful for the foal, so it is critically important that you set the foal up for success in order to minimize the duration and severity of the stress caused to the foal.
- (17) If you are working in a stall or yard, you should back the mare into a wall/corner and use her as a barricade for catching the foal against the mare. Move confidently without rushing, using your arms to catch the foal at the chest and rump. **Do not wave your arms around, use exaggerated body/limb movements or shout.** Once you commit to catching the foal you must follow through. Failure to do so can increase the likelihood of the foal learning unwanted avoidance and escape related behaviours. As these behaviours have a high habit strength, they are likely to occur again, and to become an established response within just 1 or 2 trials. This behaviour will then require substantial remediation if the foal is going to be safely manageable in its future interactions with humans. If you are catching a foal who has not undergone any training, in the paddock, you should use the shelter as the place for catching, setting the mare into the same position as you would in a stall or yard. However, every effort should be taken to avoid catching a naïve foal in this environment where possible.
- (18) When physical contact with the foal is made and the foal has become accustomed to you holding them, you should relax your hold on the foal. You want to restrain but not apply constant pressure to the foal as it is unlikely that the foals understand pressure-release yet, and they have an innate tendency to move forward into the pressure. Foals do not understand stroking. If you wish to reward the foal, scratch the foal on the wither or on the pectorals. Figures 3 and 4 are examples of how foals can be restrained in an ethologically sound manner.
- (19) NEVER reward foal behaviour with scratches on the hindquarters. This can rapidly develop into an unwanted behaviour and increase the risk of injury to the foal (legs through gates/rails/fences) or the human (getting pushed/ squashed/kicked).
- (20) NEVER hold, handle, manoeuvre or restrain the foal by the ears. Ear handling for the purposes of restraint or manoeuvring is NOT permitted. Ear twitching is NOT permitted under any circumstances during teaching, research or husbandry-related activities.
- (21) If the foal is wearing a foal control harness, do NOT pick the foal up by it.
- (22) If the foal needs to be put into a lying position this should be done under appropriate supervision of appropriately qualified personnel and determination that the foal can be safely positioned in lateral recumbency. Once the foal is sedated, two handlers position themselves on the side of the foal that is to be positioned down. One handler supports the head and neck and forelimbs, while the other handler supports the hindquarters: by reaching over the body of the foal, the handlers hold the upper portion of the respective limb(s), move carefully backwards while positioning the foal towards them and downwards to carefully lower the foal
- (23) into lateral recumbency. Once the foal is recumbent, the lower eye is protected using a towel/blanket, the head is supported, and the forelimbs of the foal are restrained in a flexed position by the handler positioned at the level of the foal's wither. The limbs of a recumbent foal must not be restrained by standing next to the limbs, due to risk of the handler being kicked. The act of 'laying a horse down', via submission, is widely recognised as poor practice as a training methodology in several parts of the equine industry due to the long term impacts it has on the horse's behaviour and welfare. It therefore must be avoided as a



standard handling or management procedure. This should never be done as part of a teaching or research activity with any horses.

- (24) NEVER manoeuvre or restrain the foal by the tail. Tail pressure MAY be used judiciously for stabilisation and support purposes when assisting foals during induction and/or recovery from general anaesthesia. Pressure should be proportionate to the size of the foal and not used to directly lift the foal during recovery (i.e., it is applied to assist and support while the animal attempts to stand). Pressure must be removed once the foal has sufficiently stabilised.
- (25) Foals should not be encouraged to express behaviours that would not be safe should the horse be full grown. This includes behaviours resulting from how they are handled. These behaviours can easily become established learnt responses and pose considerable danger to human safety as the foal increases in weight. Examples of unwanted behaviours include leaning or pawing at a person or backing up to the person in order to be scratched on the hindquarters. As the handler your actions inevitably shape the future occurrence of specific foal behaviours. The most effective approach is to ignore attention seeking behaviours (such as pawing, door kicking and seeking rump scratching). For more immediately dangerous behaviours such as striking with a forelimb, biting or squashing the handler into a solid object you should first safeguard your own safety and do your best not to respond in a way that further escalates the foal/weanlings escape/avoidance behaviour. The use of punishment to manage and modify equine behaviour is ineffective. This is due to several factors, including timing (application of an aversive stimulus is unlikely to be time contingent, that is delivered at the same time that the unwanted behaviour occurs), salience of the punishment (the value of the punishment method is unlikely to match the value of the behaviour) and resulting arousal levels (punishment methods are likely to increase arousal levels in the horse, typically manifest as anxious, avoidance and escape behaviours).
- (26) Initial foal halter training should be conducted in a secure area in an environment that the foal is familiar with, and under supervision of appropriately trained and staff who are proficient in applying the principles of learning theory in their interactions with equids. Ensure the foal is always alongside the dam. The same applies to weanlings, ideally in the company of a herd mate.
- (27) Place the headpiece of the head collar around the foal's neck, taking care to avoid catching the foal's ears, passing it from the right side over the top of the neck to the left side. Place the noseband of the head collar over the foal's nose and fasten the strap behind the foals' ears. Avoid putting the noseband on first. Horses have a blind spot directly in front of the nose and whilst adult horses may have learnt to tolerate this method of fitting a head collar, foals will not have habituated to this process and will likely react adversely once the object comes into view.
- (28) The process of leading a horse is a learnt response. The foal does not automatically understand pressure and release. Given that many foals will not have yet learned how to lead, handlers using foals in teaching must be always fully aware of this. Foals may be manoeuvred using equipment such as a body harness (Figure 1) or a rump rope (Figure 2). These should only be moved to apply brief pressure to stimulate movement. The act of movement should then automatically result in the release of pressure (and therefore reinforcement). It is preferable, where possible, lead the dam to the desired location and
- (29) allow the foal to walk alongside, or follow, the mare. Handlers should be aware that the foal may jump at novel objects so should be prepared to either 'guide' the foal back towards the mare or move the mare towards the foal, if necessary.



- (30) Like most young mammals, foals (and weanlings) have short attention spans. When handling them, regardless of whether it is for teaching or research, handlers must recognise when to cease interactions. Handlers should use known behavioural signals of excessive or very low arousal to halt the interaction with the foal/weanling.
- (31) Once the handling session is completed equipment should be carefully removed and the foal/weanling should only be released once it is standing quietly.

When finishing the work

- (28) When returning the foal/weanling to its home environment (paddock, yard, stable), move the foal/weanling quietly to where it is to be released. If possible, turn them in a half circle towards the gate/door (but not too close in case they step forward). Keeping hold of the lead rope (so that it is not dangling on the floor or near the horses or your legs) quietly undo the head strap of the head collar and carefully remove the head collar from the foal's/weanling's nose.
- (29) If you are involved in releasing two or more horses simultaneously, ensure that all horses are released at the same time and that you are not standing in the path of any horse as they move off with their companion/herd mates.

Drugs, chemicals, or biological agents

- (30) Typically, no drugs or chemicals are used with routine handling of foals and weanlings. However, in some situations requiring lateral recumbency, sedation with an appropriate drug (xylazine, acepromazine, butorphanol, detomidine) will be required.

Impact of procedure on wellbeing of animals

- (31) Horses thrive on predictable and controllable environments (McGreevy and McLean, 2009). This is especially important for young equids. The neonatal period has been highlighted as a critical period for handling and training young equids (Mal et al., 1984, Loy et al., 2021). Whilst correct training that aligns with equid ethology and avoids the use of aversive stimuli can lead to quick and successful outcomes, incorrect handling can result in learnt behaviours that may be difficult to retrain in the future. Handling foals in accordance with this SOP will help to mitigate against risks associated with confusing foals (for example through the use of varying, or aversive, handling methods) and ensure consistency (McGreevy & McLean, 2007) in how they are handled in teaching, research and other situations. The procedures outlined are based on the globally agreed and applied principles of training advocated by the leading international equine welfare organisation, the International Society for Equitation Science (ISES, 2020). This SOP encourages the continuous assessment of young equid's behaviour throughout handling procedures (see Randle & Waran, 2017; Waran & Randle, 2017). This will ensure that negative impact on the wellbeing of the individuals being handled will be minimised.

Animal care

- (32) The use of horses will be governed by the relevant AEC approval/s. Once the foal/weanling has undertaken the activity/ies for which they are being handled, the foal/weanling will be returned to their home environment (paddock/yard/stable as appropriate) and be managed and cared for according to normal procedures (these may be covered by other AEC



approved SOPs). If the foal/weanling is being handled as a part of clinical procedures, post-handling the horse will be managed according to veterinary advice and any treatment related requirements.

Pain relief

- (33) Not applicable – The handling procedures within this SOP should not necessitate the use of pain relief as a result of being handled during teaching or associated management related activities.

Reuse and repeated use

- (34) Horses are handled as part of almost every horse-human interaction. Therefore, reuse and repeated use is normal. Handling horses, **specifically foals and weanlings**, in accordance with this SOP will help to mitigate against risks associated with frightening or confusing horses (for example through the use of varying, or aversive, handling methods and the development of negative associations). The handling of horses for handling-related training is managed through AEC approved teaching or research protocols and the frequency of horse-use is managed locally by those responsible for the care and management of the horses (e.g., CSU Equine Centre technicians, horse owner or proprietor, or delegate, of external sites where research is being conducted).

Qualifications, experience or training necessary to perform this procedure

- (35) Demonstrators should have been trained for this procedure.
- (36) All handling of foals/weanlings should only occur under direct supervision of appropriately trained and experienced CSU staff, who understand the relevant ethology and learning theory necessary to achieve successful handling that does not compromise young equid welfare and their future outcomes (King et al., 2019).

Record requirements

- (37) Routine monitoring sheet recording. In addition, details of all equine use including procedures should be reported to the technical staff for documenting on Ardex software.



Associated documentation (including pictures if available)



Figure 1. Foal control harness



Figure 2. Rump rope on foal



Figure 3. Hold around the neck



Figure 4. Hold around the chest

Glossary

(38) None required

References and relevant links

- (32) Hall, C., Randle, H., Pearson, G., Preshaw, L., Waran, N. 2018. Assessing equine emotional state. *Applied Animal Behaviour Science*. 205: 183-193.
- (33) ISES 2020. Principles of learning theory in equitation. www.equitation-science.com/equitation/principles-of-learning-theory-in-equitation. (Accessed 02/02/2020).
- (34) King, S., Willis, L., Randle, H. 2019. Early training of foals using the ISES training principles. *Journal of Veterinary Behaviour: Clinical Applications and Research*, 29, 140-146.



- (35) Loy, J., Wills, L., King, S., Jenkins, K., Ellis, S., & Randle, H. (2021). A preliminary study of the effects of the number of consecutive days of training and days off on foal recall. *Journal of Veterinary Behavior*, 46, 62-68.
- (36) Mal, M.E., McCall, C.A., Cummins, K.A., Newland, C. 1994. Influence of pre-weaning handling methods on post-weaning learning ability and manageability of foals. *Applied Animal Behaviour Science*, 40:187-195.
- (37) McGreevy, P.D. and McLean, A.N. 2007. Roles of learning theory and ethology in equitation. *Journal of Veterinary Behavior: Clinical Application and Research*. 2:108- 118.
- (38) McGreevy, P.D. and McLean, A. 2009. Punishment in horse-training and the concept of ethical equitation. *Journal of Veterinary Behavior: Clinical Application and Research* 4:193-197.
- (39) Randle, H. and Waran, N. 2017. Breaking down barriers and dispelling myths: The need for a scientific approach to Equitation. *Applied Animal Behaviour Science*.190:1-4.
- (40) Safework NSW. 2017. Code of practice: managing risks when new or inexperienced riders or handlers interact with horses in the workplace. Government NSW.
- (41) Søndergard, E., Jago, J.G. 2020. The effect of early handling of foals on their reaction to handling, humans and novelty, and the foal-mare relationship. *Applied Animal Behaviour Science*, 123; 93100.
- (42) Waran N. 2005. Horse Training. In D.S. Mills and S.M. McDonnell (Editors). *The Domestic Horse: The Origins, Development and Management of its Behaviour*. Cambridge University Press.
- (43) Waran, N.K., Clarke, N., Farnworth, M. 2008. Effects of weaning on the domestic horse (*Equus caballus*). *Applied Animal Behaviour Science*. 110:42-57.
- (44) Waran, N., Randle, H. 2017. What we can measure, we can manage: The importance of developing robust welfare indicators for use in Equitation. *Applied Animal Behaviour Science*. 190:74-81.