
Foaling Down Manual

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Introduction

This is a manual to help guide you through the very basics of foaling down using methods to help minimise the potential problems for both your mare and foal before and after the birth. The procedures mentioned in this manual are drawn from my own knowledge and experiences and are my own preferred method of treatment (with assistance from my vets). I have not covered all situations that could occur only ones that I have come across in my time working on various studs. These include Highland Pony studs and Thoroughbred Studs in the UK and Australia.

Do keep in mind if you are ever in doubt **YOUR VET** is your **FIRST POINT OF CALL ALWAYS!**

Let's begin with pre-foaling signs to watch out for

In the weeks leading up to your mares estimated due date there are a few things you can monitor to help determine when she may foal.

The most obvious sign that your mare isn't far away from foaling is the changes in her udder.

Udder scoring is a useful tool to use especially if you intend on breeding with the mare again as it'll help determine her pattern. Approximately 2 to 4 weeks before foaling, the mare usually starts to "bag up", however some mares do not bag up until fairly close to foaling, others will "bag up" earlier, this may be an indication of placentitis (this will be explained further on in manual) so you should let your vet know in case of any treatment required before or after foaling. Maiden mares can bag up from 6 weeks before due date and will often go up and down. It's advisable to check your mares udder **TWICE** a day.



A basic Udder scoring chart

1. Small movement, udder only slightly bigger than a dry mare (non pregnant)
2. Obvious change in bag, developing small to medium size udder
3. Big size bag, empty teats
4. Big size bag, teats full
5. Full teats pointing out, full, tight bag, waxed or running milk (see figure)

Other signs your mare may be due to foal include

- Mare carries her tail higher, particularly when walking
- Vulva will double or triple in size
- Muscles around the hindquarters will relax
- Changes in demeanour and behaviour

Foaling Procedure

It is advisable to create a foaling Kit in the weeks leading up to your mares due date.

In the Kit you should have:

Scissors

2X foaling chains& handles or straps (rug leg straps will do)

Rectal gloves

Examination long gloves

Lube

8% iodine spray

Naval clamps

Blades/scalpels

Enema

Also get a tetanus Anti-Toxin (TAT) VET usually provides

Oxygen - if you have it

Stages of Labour

First stage-on set of foaling

The visible signs of the first stage of labour are associated with mild contractions of the uterus and are highly variable between individual mares and may include mares becoming

- Restless/uneasy
- Walking the fence
- Pawing
- Sweating
- Rolling
- Getting up and down
- Moving away from the herd

NOTE: some mares will be very subtle and it can be difficult to identify signs of the first stages of labour.

Second stage - foaling

- Cervix opens
- Chorioallantoic sac (water bag) passes from the uterus into the vagina where it ruptures, releasing allantoic fluid "waters break"
- Put on rectal gloves and check foals presentation, Normal = 2 fore limbs one slightly in front of the other with heel pointing down towards the mares hocks and the nose positioned centrally above the forelimbs IF THERE ARE ANY VARIATIONS TO NORMAL CALL A VET IMMEDIATELY
- This stage of labour occurs rapidly lasting no longer than 10-20 minutes before the foal appears. If you feel that contractions are non productive and there is no progression of the foal through the birth canal **call a vet.**
- The mare will experience the greatest difficulty in passing the foals shoulders, this tends to be the widest part of the foals body.
- Foals will not begin to breathe on their own until the shoulder and rib cage are clear from the vulva, as the lungs have no room to expand.
- Once the shoulders have passed the mares pelvis, remove any remaining membranes from the foals face and gently slide your fingers down the foals nasal canal several times to clear the fluid from the foals nose and mouth.
- Once the shoulders are out the rest of the body will come out fairly quickly.
- The foal should be starting to breathe and move
- Leave the umbilical cord attached for as long as possible, once the umbilical breaks check that it stops bleeding, if not pinch the end of the stump and hold for a minute or two, if this is unsuccessful it may be necessary to apply the naval clamp.
- Spray the umbilical cord with 8% iodine solution
- Give the foal the TAT (tetanus anti-toxin) under the skin, this is best done at the flank. This can be done by your vet if you are not trained or have the vaccine available to you.
- Gently grab the foals forelegs and drag in front of the mare, so that she can lick and smell it, but not in a position where she'll walk on it when she stands



- Check the foals mucous membrane (MM) colour, this will provide an indication of oxygen and perfusion. They should be healthy pink. If not call the vet as intranasal oxygen may be indicated.

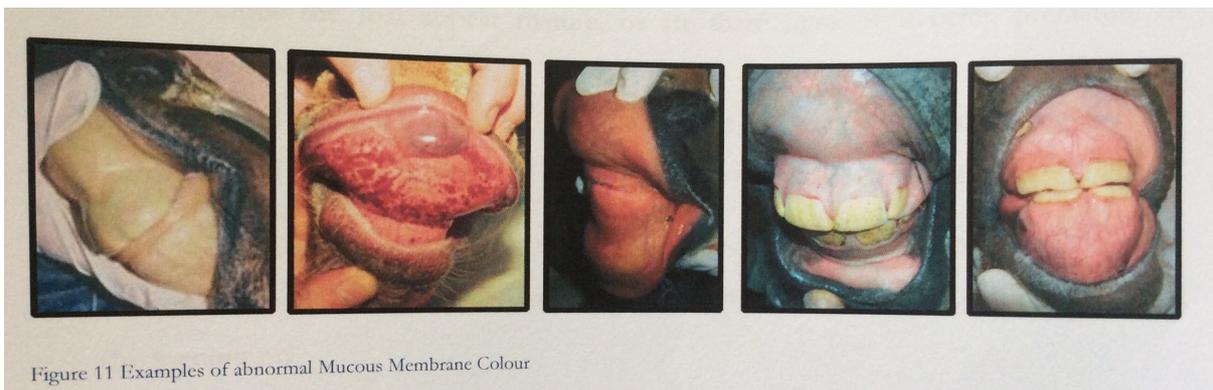


Figure 11 Examples of abnormal Mucous Membrane Colour

Third stage - passing the placenta

- Uterine contractions continue until the placenta is expelled.
- The exposed foetal membranes should be tied (using bailing twine if required) to prevent the mare stepping on them, as well as reducing contamination to the foal. Clk tune to tie the membranes up until they have completely passed

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- **Avoid pulling on the after birth as this can result in tearing off and remain in the uterus causing infection or actually tearing of the uterus itself.**
 - Once passed retrieve the placenta and assess that it is all there.
 - **If there appears to be a piece missing start the mare on AntiBiotics 4 hours post foaling, as a retained piece of placenta can cause serious problems.** Eg colic, septicaemia, laminitis Ect
 - **If the mare has not passed the placenta 2 hours after the foaling you need to call your vet and IF TRAINED start giving the mare 1ml SYNTOCIN IM every half hour until placenta has passed. If placenta is still retained at 4 hour post foaling Antibiotics must be administered.**
 - Keep the placenta in a Bucket until morning where it can be inspected by the vet if needed. A healthy placenta should be a rich deep red in colour with even thickness throughout the body and horns of the placenta. Any scarring/ brownish tinge or peanut butter type matter should be reported to your vet as these are an indication of placentitis and your mare may require further flushing and treatment of antibiotic after foaling.



Post foaling care of the foal

Perform a visual assessment of the foal

- Is the foal able to support itself enough to remain standing?
- Does the foal look normal, or are there visible abnormalities eg meconium staining, congenital abnormalities?
- Does the foal appear to be mature, or are there signs of it being premature or dysmature?
- Foal should stand unassisted within 1 hour of birth
- Foal should be nursing from mare within 2 hours
- After the mare stands wash the mares udder and hind legs, to minimise contamination to the foal when it attempts to find the teat to nurse, rinse off well so foal is not put off by or ingests iodine
- collect small sample of colostrum with the colostrum refractometer and test the percentage

Colostrum is essential for transfer of immunoglobulins and establishment of the foals immune system but it also has laxative properties that will assist the foal in passing the meconium 3-4 hours after birth. But your refractometer online at <https://starrinstruments.com.au/7-refractometer> AN IMPORTANT PIECE OF EQUIPMENT FOR ANYONE WANTING TO BREED. It can potentially save you thousands to avoid a plasma transfusion and even more importantly your foals life!

- If the foal becomes uncomfortable displaying signs of colic at any time or the foal is "tail flagging" at 6 hours after birth call the vet.
- A foal may pass a small amount of meconium and still develop a meconium impaction so monitor faeces for the first 24-36 hours, take note of "tail flagging" and let the vet know.
- Once the meconium is completely passed, faeces become softer (pasty), lighter in colour eg yellow to orange due to the milk diet.

(Meconium = dark greenish/brown to black in colour and may be pasty or firm pellets)

NOTE: most mares lie down to foal, however, some (nervous or young) mares will deliver their foals standing, make sure the mare doesn't bang her foal against

anything when she walks and be prepared to catch the foal, easing it to the ground when it is born.

It is not necessary to assist every foaling only if mare is showing signs of distress or something is wrong with the foal. Most mares can foal on their own.

Collecting Colostrum for storage

Collecting Colostrum for storage is an important part of breeding year after year. Having a supply of frozen colostrum in your freezer can literally mean life or death of a new born foal if they fail to get on suck within the recommended 6 hours after birth.

To begin with always assess whether your mare has a big enough udder to store colostrum as well as feed her new foal within the 6 hour window AND that the colostrum TESTS HIGHER THAN 22% using the refractometer. You may find most maiden mares will not have enough supply.

When collecting from your mare, it is best done immediately after foaling and done with a helper - one to hold the mare as steady as possible as she gets use to motherhood as well as keeping the second person safe from harm should she become foal proud. The second person can either hand milk the mares udder into a jug for easiness, buy a manual expresser or TOP TIP use a 60ml syringe.

Using a 60ml syringe involves cutting off the nozzle end and turning the plunger the other way up so the lungs of the syringe go against the mares udder and the sharp cut end closest to your hand. Place the lug end over the teat and draw the plunger back SLOWLY this will draw the thick colostrum out.

I would ONLY express 250ml of the mares colostrum to freeze. The rest I would leave for the foal. If you have more mares due that year I'd repeat the process. Making sure you add the mares NAME, the DATE and most importantly the PERCENTAGE of colostrum in that sample on the freezer bags for storage. When it comes to use the colostrum again (maybe that year or the next) I would retest on thawing.

To thaw - do so in warm water NOT BOILING as this destroys the molecules. Placing the freezer bag in a bowl/sink and allowing to defrost slowly.

Administering the colostrum to the foal can be done with any baby bottle - just make sure you make the hole in the teat large enough for the thick colostrum to move freely. Always hold the foals muzzle skywards (mimicking suckling) when bottle feeding. It is best done once the foal is standing. You can then use the bottle to encourage the foal to the mare udder should the foal be having issues finding the udder and latching.

Problem Foaling or Dystocia

The abnormal presentation and/or difficulty of the foal at birth. **If you suspect there is a problem call VET for assistance.**

A problem may be indicated by one of the following;

- Unsettled mare
- Red bag
- Tight foaling
- Incorrect presentation
- Failure to foal to progress through the birth canal after 5 minutes of forceful contractions.

NOTE: keep an eye on the time as it seems like a lifetime passes you by, when watching to see if contractions are productive. Remember not to panic, and call for help sooner than later.

Red bag delivery



Normally, the translucent amnion appears first at the vulvar lips. Premature separation of the placenta is characterised by the appearance of the bright red, velvety, intact chorioallantois between the vulvar lips before the foal is delivered this is a true obstetrical emergency, the attendant should assist with the delivery as the foal is at risk of suffocating.

- Placenta is presented first, red, velvety tissue protruding from the mares vulva
- Open the placenta (tear with hands or carefully use scissors) **as soon as possible**

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- Assist delivery, applying traction to foal with the mares contractions
 - Call VET ASAP
 - Give oxygen as a precaution IF AVAILABLE or mouth to mouth (blowing up one nostril while blocking the other)

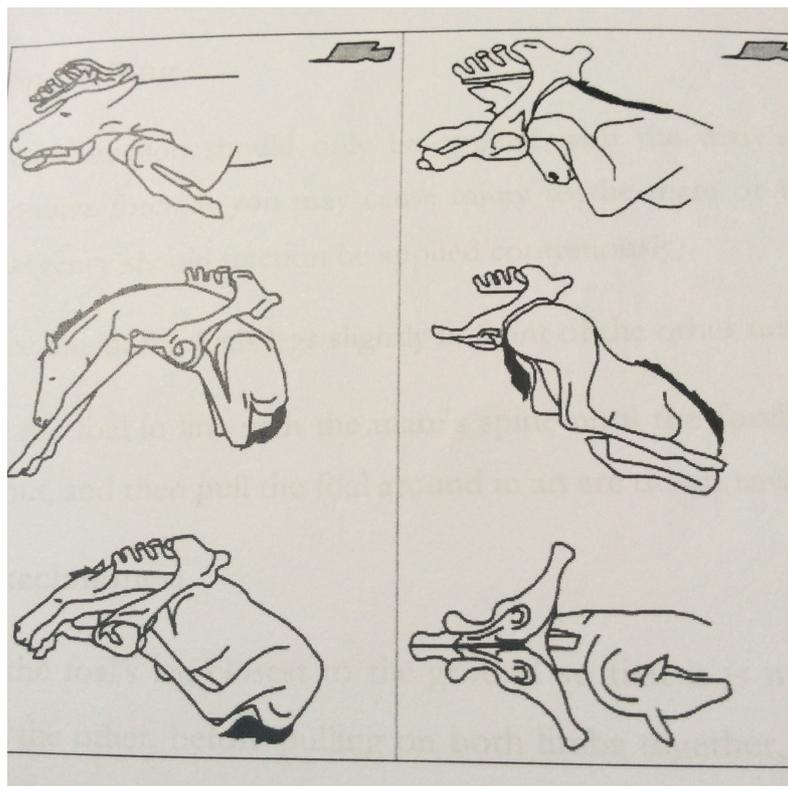
Incorrect presentation

A normal presentation = 2 forelimbs one slightly in front of the other with heels pointing towards the mares hocks and the nose positioned centrally above the forelimbs.

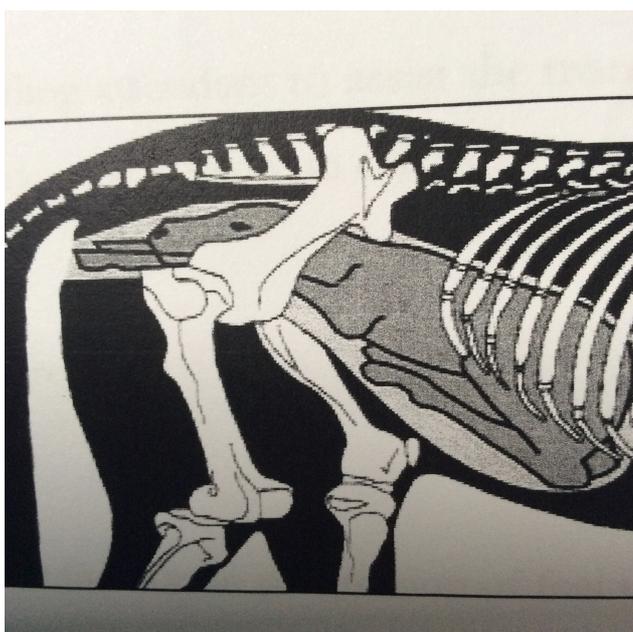
If there are any variations to normal call VET immediately.

Encourage mare to stand and begin walking her, until assistance arrives.

Examples of incorrect presentation



Examples of correct presentation



Placentitis

Inflammation of the uterus commonly occurs in the last trimester of pregnancy, this can be due to a bacterial, fungal, or viral infection. Inform a vet if you identify any of the following clinical signs and monitor progression twice daily.

- **Clinical signs;**

- ~ Vaginal discharge
- ~ Premature and rapid udder development "bagging up"
- ~ Premature lactation
- ~ Further preparation for foaling eg relaxation of pelvic muscles and ligaments, changes in behaviour Ect

- **Diagnosis;**

- ~ Ultrasound, demonstrating placental thickening and /or separation

- **Treatment;**

- ~ Antibiotics
- ~ Anti-inflammatories

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- ~ Progesterone (ready serve) mare should be gradually weaned off progesterone 2 weeks prior to her foaling date, allows for physiological changes in preparation for birth.
 - ~ Weaning of ready serve should be reduced by 2 ml everyday (eg, 14ml will take 7 days/10ml will take 5days)
 - ~ Weaning of Alt (injectable ready serve) should be weaned like so: 4.5ml, wean 3 weeks before due date to 3ml, 2 weeks before due date to 1.5ml then off. 3 ml Alt - 2 weeks before due date to 1.5ml then off.

NOTE: placentitis results in foetal stress and is the most common cause of abortion, and premature delivery

Assisting Mare to Deliver Foal

It may be necessary for the foaling attendant to assist the mare to deliver the foal. Indications for assisting the mare;

- Tight foaling
- Correct presentation but little or no progression of foal through the birth canal, after 5 - 10 minutes of forceful contractions
- Mare does not push effectively, or is fatigued
- Foaling emergency
- Red bag
- Meconium Stained fluid/foal

Traction/Pulling

When assisting a mare through traction or pulling it is important to remember this should be done gently and only applied WITH the mares contractions, DO NOT use excessive force as you may cause injury to the mare or foal. (Only in a true foaling emergency should traction be applied continuously)

METHOD

- Have one of the foals legs slightly in front of the other until the shoulders are passed

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- Pull the foal in line with the mares spine until the forelimbs, head and half the neck are out, and then pull the foal around in an arc down towards the mares hocks.

USEFUL TECHNIQUES

- Pull the foals legs closest to the ground so that it is more extended/ further forward than the other, before pulling on both limbs together, this flattens and lengthens the shoulders allowing a smoother passage through the mares pelvis, on the side bearing all the weight.
- Apply traction to one forelimb at a time, "walking the foal out"; this changes the angles/ shape of the shoulders and may ease the shoulders passage through the mares pelvis.

Application of chains/leg ties

- Loop chains/ties on itself above the fetlock
- Tie a half hitch with the chain below the fetlock
- Position the ring and half hitch so they lie flat on the back of the joint

General rule of thumb, if your technique has not resulted in the progression of the foal through the birth canal after 5 minutes try something different, be it another technique or someone else performing the one already being used.

Normal behaviour & Physical characteristics of a new born foal

Gestation length

- ~ 320-365 days (average 341 days)
- ~ Gestation length is a poor indicator of a foals readiness for birth, because the normal length of gestation for an individual mare varies considerably.

Righting reflex

- ~ Within 2 minutes

Time to suck reflex

- ~ 2-20 minutes (should develop suck reflex within 30 minutes)



Time to stand

~ 15-160 minutes (average 60 minutes) longer than 2 hours is considered abnormal.

NOTE: **if not standing within 1 hour assist foal.**

Time to nurse from Mare

~ 1-5 hours (average 2 hours) longer than 3-4 hours is considered abnormal

NOTE: **if not nursing within 2 hours assist foal**

Frequency of nursing

~ 1st week: 7times/hour

~ 4th week: 3times/hour

Passing of meconium

~ Usually passed in first 3-4 hours after birth

NOTE: if enema is not productive call manager on call

Sleeping

~ Onset 1.5-4 hours after birth

~ One third of a foals time spent lying down and sleeping

Body temperature

~ 37-38'c stress, vigorous exercise and warm environment conditions may elevate the temperature

Heart rate

~ 1-5 minutes post foaling: >60 beats/min

~ 6-60 minutes post foaling: 80-130beats/min

~ Day1-5: 80-120 beats/min

Respiration rate

~ 30 minutes post foaling: 60-80 resp/min

~ 1-12 hours post foaling: 30-50 resp/min

Urination

~ Colts 6 hours

~ Fillies 11 hours



Post foaling care of the mare

When the mare stands after foaling, the exposed membranes should be carefully tied, as close to the mares vulva as possible with bailing twine to prevent the mare stepping on it, as well as reducing contamination to the foal as it searches for the teat to nurse, it also aids with expulsion. Continue to tie the membranes up, until they have been completely passed and the mare is "clean".

- Most mares will cleanse (expel after birth) in the first hour after delivering the foal.
- Do not pull on the after birth as this may result in tearing it.
- Wash the mares udders to prevent contamination making sure to rinse thoroughly
- Collect a small sample of colostrum to test using a colostrum refractometer*

(If the colostrum, is of poor quality eg is 22% or less and/or the mare has a very small bag and/ or the mare has run milk days/weeks before foaling it is advised to supplement the foal either by bottle feed from previous years frozen colostrum/ colostrum supplement or call VET to stomach tube the foal) within 6 HOURS OF BIRTH) This is to prevent the need for a plasma transfusion if the foal is to fail an IgG test after 12 hour of age.

- 1 hour after foaling the mare should also receive a 2ml of SYNTOCIN IM a vet will administer this if you are not trained.

NOTE: if the mare hasn't cleaned ie passed the membranes by this time (4hours after foaling) it is advisable to CALL A VET who will start your mare on Antibiotics (30ml depo/30ml gent or Sulprim).

- Providing that the mare or foal do not require box rest they will be ok to be moved to a small yard.

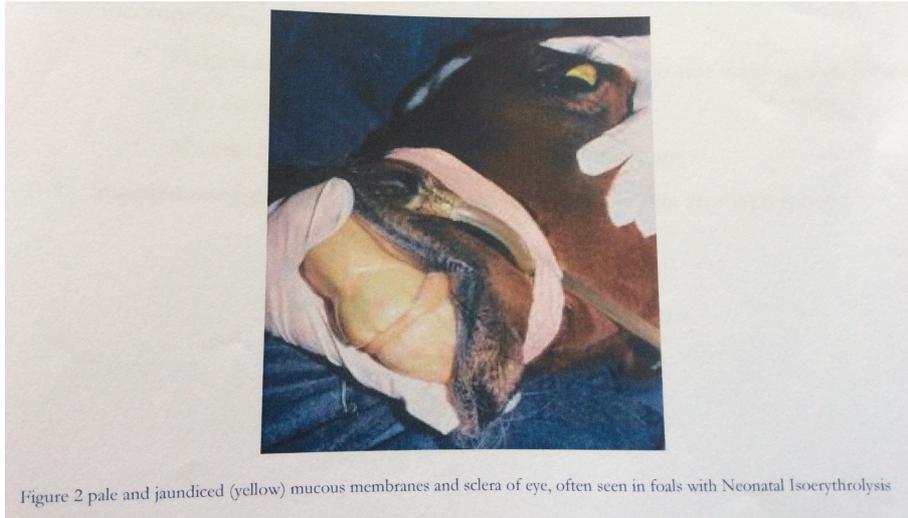
Complications that may affect the mare after foaling

There are a number of complications that can affect the mare after foaling so the mare should be observed closely, things to look for include:

- Aggression/rejection of the foal
- Depression/lack of interest in foal
- Colic
- Sweating
- Elevated heart rate
- Pale mucous membranes
- Weak rapid pulse

Mares displaying signs of complications should be kept quiet. If any of these signs are shown it's advised to seek veterinary advice.

Complications that may occur in a newborn foal



Neonatal Isoerythrolysis

Also known as haemolytic disease, jaundice foal syndrome or N.I. this is a condition of foals that are usually born healthy, but within hours up to 7 days after ingesting the mares colostrum, they develop a potentially life threatening haemolytic anaemia, ie the foals red blood cells are being destroyed by the mares antibodies in the colostrum. This condition. Occurs as a result of an allergic reaction or hypersensitivity between the mares antibodies in the colostrum and the foals blood.

If a foal exhibits Any of the following clinical signs inform the vet immediately.

- **Clinical signs;**

- ~ Foals become progressively lethargic, weak and depressed
- ~ Mucous membranes become pale and later have a Yellow tinge (jaundice/Icteric)
- ~ Dark urine (haemoglobinuria)
- ~ Respiration rate may become shallow, rapid and laboured
- ~ Heart rate may increase
- ~ In severe cases foals may convulse or become comatose and die
- ~ Foals may develop shock and die within 6-8 hours before becoming jaundiced.

- **Diagnosis;**

- ~ Clinical signs
- ~ Foals IgG level to determine ingestion of antibodies
- ~ Blood test, haematology and biochemistry

- **Treatment;**

- ~ Stop further ingestion of the mares colostrum, (muzzle foal until it is 24+ hours old and can no longer absorb antibodies)
- ~ Supportive care to minimise stress - keep warm, supplement oxygen
- ~ Antibiotics
- ~ Intravenous fluids and
- ~ Blood transfusion

- **Prevention;**

- ~ Identify high risk mare
- ~ Mare has history of producing NI affected foals
- ~ Blood typing of dams and sires
- ~ With hold mares colostrum from the foal if she has been identified to have incompatible colostrum, until foal is 24+ hours old.
- ~ Strip mares colostrum and throw out you do not want to risk feeding it to another foal
- ~ Muzzle foal so it can not nurse from mare
- ~ Supplement foal with colostrum from another mare (via stomach tube)

Dummy Foals

(The following information on dummy foals has been taken from thehorse.com however we follow the same methods)

This term applies to foals that exhibit abnormal behaviour and/or neurologic signs during their first few days of life..

Dummy foal syndrome is not a disease but, rather, a broad term that applies to foals that exhibit abnormal, often vague behaviour and/or neurologic signs during their first few days of life. These signs include sleepiness, ataxia, weakness, circling, disinterest in the mare or in nursing, loss of suckle reflex, chewing or licking stall walls, abnormal vocalisation, hypersensitivity to the touch, depression, or seizures. Other names used to describe this syndrome are neonatal maladjustment syndrome,

hypoxic ischemic encephalopathy, peripartum asphyxia syndrome, wanderer foal, or barker foal (for foals having abnormal vocalisations).

Causes

Although commonly associated with an adverse periparturient (around the time of birth) event, dummy foal syndrome also occurs in foals that haven't had an obvious periparturient problem. "Thus, dummy foal syndrome could result from some type of unrecognised in utero hypoxia (inadequate oxygen supply)," says Bonnie Barr, VMD, Dipl. ACVIM, an internist at Rood & Riddle Equine Hospital in Lexington, Ky. Hypoxia can affect a number of the foal's organs, including the central nervous system and brain, gastrointestinal tract, liver, and kidneys. Caused by a decreased blood flow to the placenta or the foal, hypoxia can occur:

- in utero, due to placentitis (inflammation of the placenta) or a decrease in blood flow to the uterus secondary to a maternal illness;
- at birth, from dystocia (difficult birth), redbag delivery (when the placenta separates prematurely from the uterus and exits the birth canal with the foal), or a Cesarean section; or
- shortly after birth, because of prematurity, recumbency (inability to rise), pulmonary (lung) disease, sepsis (infection in the bloodstream), or anemia (a decrease in normal number of red blood cells).

Clinical signs could be present either at time of birth or within 24-48 hours after foaling. In these cases the veterinarian usually has identified risk factors during pregnancy (i.e., placentitis) or during foaling (i.e., dystocia), says Lucas Pantaleon, DVM, Dipl. ACVIM, equine internal medicine specialist in Versailles, Ky. "Foals that are normal at birth, have an uneventful delivery, and have no identified prefoaling risk factors usually don't develop clinical signs until 24-48 hours after birth."

Diagnosis

"The diagnosis is mainly based on history and physical examination," says Pantaleon. "Complete blood work is usually performed to rule out infection or involvement of other organ systems (i.e., kidneys). The antibody level (IgG) is routinely checked, since a low level of antibodies would make that foal very prone to infections. If warranted, other tests such as radiographs, ultrasonography, or spinal fluid analysis can be done. These tests are performed in order to identify other organ involvement or, for example, in a case where meningitis is suspected, a spinal tap would be done to confirm or refute the diagnosis."

Treatment

Treatment begins with general supportive options. "Most foals are placed on antibiotics, as they are more prone to infections, and on anti-inflammatory agents

such as DMSO (dimethyl sulfoxide) to control the inflammation in the brain," notes Barr. "Thiamine and vitamin C are routinely administered; these antioxidants can, hopefully, help the brain heal. Intravenous fluids and intranasal oxygen supplementation are also usually given, because it is important to maintain adequate blood pressure and circulation."

In addition, a foal could require intensive nursing care and/or medications specific to his condition. "For example, foals that are ambulatory but not nursing will require regular feedings and will need to be taught how to nurse," says Pantaleon.

This often involves providing nutrition intravenously or through an indwelling nasogastric tube. "Critically ill foals will need a higher level of care," Pantaleon says. Besides nutritional and general support, these foals require regular monitoring of vital signs, turning on the bed, intravenous fluid therapy, and medications that could include gastroprotectants, anti-inflammatories, antioxidants, diuretics, and anticonvulsive drugs.

Pantaleon cautions that treatment targeted to help with central nervous system healing must be administered within hours of the insult to be effective. "Most of the drugs have a narrow therapeutic window."

Prevention

Although there is no surefire way to prevent dummy foal syndrome, carefully monitoring and promptly addressing problems during the mare's pregnancy reduces the risk of dummy foals.

"Look for and treat signs of placentitis such as premature udder development and vaginal discharge," suggests Barr. "Make sure the mare stays away from fescue because ingestion of fescue (which can contain a fungal endophyte that affects pregnancy) can result in placental abnormalities, difficult birth, or prolonged gestation, all which can result in dummy foal syndrome."

Prognosis

The worst prognosis is for foals that suffer problems involving multiple organs and/or infection. These foals could die or have long-term defects.

Foals that never learn to nurse or that take longer to resume nursing require more intensive nutritional management until they start eating solid feeds at three to four weeks of age.

Fortunately, the outlook is cheerier for most foals. Says Barr, "With appropriate and timely treatment, about 80% of affected foals recover completely within five to 10 days."

Useful tips for handling foals

How to fold (lay) a foal down.

Also known as fold and throw a foal.

To begin with the foal will be in standing position.

- Restrain the foal in standing position on the side you want towards the ground
- Reach your hand around the front of the foals chest and place the palm of your hand on the foals opposite shoulder to the one closest to you.
- Flex your shoulder and elbow joint up and out to the side so that your elbow and upper arm encourages the foal to turn its head away from you till its nose is almost touching its side of its ribs
- Perform a similar action with the other arm around the foals hindquarters simultaneously (folding action)
- This will unbalance the foal enough that you can take a step backwards pulling the foal towards you and ease it to the ground (throwing foal)
- Keep the foals neck in a flexed position to stop it from getting up again, so that you can reposition yourself if you are collecting blood or for another procedure.
- We often do bandage changes on young foals laying down as it's easier to keep them still.

Restraint of the laterally recumbent foal (sitting on the foal)

This form of restraint is useful in young foals for procedures such as catheter placement, abdominal ultrasound etc, and it is best done with the foals spine parallel to a wall with enough room for you to sit between the foal and the wall so that you can lean on the wall to support your back.

- Lay the foal down in an appropriate area eg spine parallel to the wall using the previous technique
- Sit on the ground as close as possible to the foals back preferably so that you can lean against the wall
- Extend your leg at the foals head, so that the middle of the foals neck lies over your thigh, you should be able to restrain the head with your elbow, and your hand is free to grab an ear if required. (This also exposes the foals vein for the vet)
- your other leg should be flexed at the knee and pass over the foals abdomen at the flank region. **Be careful not to put any weight on the foals rib cage or**

abdomen. Some people are able to use their lower leg and feet to help restrain the hind legs in this position; this may not be possible if you have short legs.

- Providing the procedure doesn't require access to the forelimbs the vet should then straddle the foals front legs and confine them between his/her knees.
- An extra person may be required to assist in holding the hind legs if the foal is particularly lively and uncooperative.
- An extra person should also put a head collar on the mare and hold her as she may become unsettled as she can not see her foal. Some mares may need to be sedated.

Giving an Enema (to help pass meconium)

Procedure

1. Restrain foal
2. Gently insert enema tube into the foals anus, approx 2-3cms
3. Slowly inject
4. Carefully remove
5. Monitor to see if enema is productive over the next 5-10 minutes

If the enema is not productive and the foal is tail flagging at 6 hours or displays signs of abdominal pain or colic at anytime call the vet.

Collecting blood from a neonate

(This will no doubt always be done by a vet however knowing the procedure can't go wrong)

Blood may be collected using either Vacutainer needles or a needle and syringe.

Collect only as much blood as required (8ml). Be careful using vacutainers in young foals due to the pressure on vein.. It can be difficult to collect blood from some foals, if you are not successful after two attempts call vet for assistance.

Requirements for Vacutainer method:

- Appropriate Vacutainer
- Vacutainer holder (purple top or red top)
- 20G 1" Vacutainer needle

Requirements for Needle and syringe method:

- 10ml syringe

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- 20G 1" needle
 - Appropriate Vacutainer (purple or a red top)

Blood can be collected on you own using the following method;

- If the foal is standing, fold and throw the foal using the described technique in this manual.
- Restrain foal in sternal recumbency
- Straddle the foal over the withers **without** placing any weight on the foal, so that you are looking forward over the foals neck and head
- Flex the foals neck around to one side by reaching under the foals jaw with your upper arm, so that your forearm lies along the foals head on the opposite side you can stabilise the foals head against your torso, your hand should be free to grab an ear if required.

This position exposes the foals jugular vein nicely.

- With you free hand swab the exposed vein with an alcohol soaked swab and then
- Hold the syringe or Vacutainer combo between your thumb and index finger, whilst holding the vein with your middle finger in your free hand.
- Using your thumb and index finger to direct the needle into the vein, whilst maintain pressure on the vein with your middle (2nd) finger.
- Now use your 3rd and 4th finger to draw back on the plunger of the syringe or to push the Vacutainer onto the needle, remembering to maintain pressure on the vein.
- Once the appropriate amount of blood has been collected, release the pressure and with draw the needle.

Performing an IgG

(This will be carried out by your VET unless you are trained in this procedure)

An IgG should be performed on every foal when the foal is 10 hours old. The foal, date and result of IgG test should be recorded for future records or for vet Information.

1. You will need- IgG test tubes, 3ml syringe and 21g1' needle and a stop watch for timing.

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2. Restrain the foal and lay down if needed.
 3. Draw 3ml of blood using needle and syringe
 4. Dispose of 1.5 ml of blood onto the grass and the other 1.5ml of whole blood inject into the IgG test tube
 5. Start the clock IMMEDIATELY
 6. Watch the blood in the test tube for setting (solidifying) keep tube STILL until on the minute where you can slightly lean the tube to see if it's solidified.
 7. A positive result (setting) is under 3 minutes if it is OVER 3 MINs another test is required at 24hours after.
 8. If the foal fails it's IgG test at 24 hours old it WILL REQUIRE A PLASMA TRANSFUSION by the vet.

Other useful Information

Intramuscular Injections

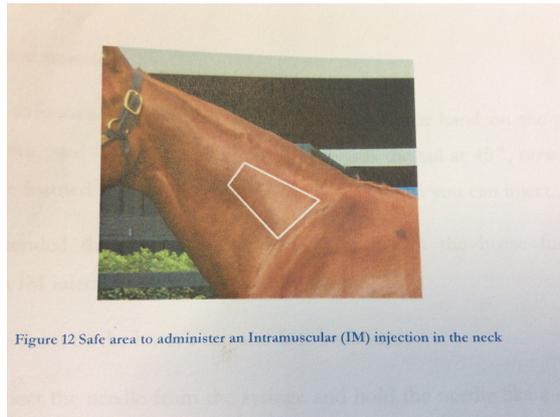
There are a number of considerations that must be addressed before administering any injections and because IM injections are such a common practice on a stud it is easy to become complacent about the procedure.

The Bore and length of needle

Decide the bore and length of the needle used based on the following:

- Consistency of the medication eg drugs such as depocillin are quite thick and require a large bore needle.
- Horses age and condition eg adult horse of normal body weight with good muscle would need a 1 1/2inch needle in length to get deep enough into the muscle, while a foal or a very thin horse with little muscle mass would only need a 1 inch needle.

Injection sites - Neck



This is a good site for IM injections if there isn't someone available to restrain the horse.

There are a number of very important structures in the neck that must be avoided, including the cervical spinal cord, and the nuchal ligament.

To locate the safe zone for injections, imagine that there are three borders forming a triangle when viewing the horse from the side. The top border of the triangle corresponds to the nuchal ligament, the front border to the position of the cervical spinal cord and the remaining border to the muscle in front of the shoulder. Anywhere within this triangular shape is a safe site for the needle to enter.

1. Stand at the horse's shoulder
2. Pinch an area of skin within the safe area, this helps to defuse the sensation of the needle passing through the skin
3. Gently guide your needle at 90° to the skin into the muscle to the depth of the needle hub, next to your skin twitch.
4. **IMPORTANT** - draw back on the syringe plunger to create a negative pressure watch for blood in the needle hub, if you see blood **STOP** and remove the needle from the horse. You have entered a vein or grazed a blood vessel on the way in, do not inject into that site.
5. If there is no blood when you draw back on the syringe, slowly depress the plunger and inject the medication slowly.
6. Remove the needle from the horse

NOTE-it is quite common to see people rub the area after the IM injection this should be avoided unless you are wearing gloves as there will be some drug residue on the horses skin and many of the drugs used can be adsorbed readily by your skin.

Rump

To identify a safe area for injection, place the palm of your hand on the point of the hip, with your fingers pointing up and towards the tail at 45', now spread your fingers, the arc formed at your finger tips is the area in which you can inject.

It is recommended that you have someone else restrain the horse for you whilst performing an IM injection into the horses rump.

1. Stand **INFRONT** of the horses hip facing backwards
2. Disconnect the needle from the syringe and hold the needle like a dart
3. With quick firm tapping with the back of your hand tap the rump to desensitise the area first this will help minimise the horse from taking fright, after a few firm taps turn your wrist with the needle pointing downwards to the rump and insert the needle, (be ready to get out of the way if the horse reacts badly)
4. Place the syringe back on the needle securely
5. **IMPORTANT DRAW BACK** on the syringe plunger to create a negative pressure to ensure no blood in the needle hub, if you see blood **STOP** and remove the needle from the horse. You will have to re-inject in a different area and start again, as you have hit a blood vessel on the way in.
6. Place a new needle on the syringe and choose a different injections site
7. If there is no blood in the hub when you draw back slowly depress the plunger and inject the medication.
8. Remove needle from the horse