

## Breeding and foaling

### So you want to have a foal...

#### Choosing whether to put your mare in foal

The first thing to decide is whether your mare is suitable to breed from. Things that are important to consider are

- Temperament – will your mare tolerate multiple scans, injections and generally being ‘fiddled with’ by the vet for multiple days in a row? Additionally, is she likely to be a nice mother – is she kind to other horses, does she have any stable vices that the foal may learn, is she nice and relaxed in the stable (so unlikely to become very territorial and ‘foal proud’).
- How old is she and has she had foals before? Older maiden mares have much lower fertility rates than younger mares or those that have foaled before. If she has had previous foals, then a detailed history of the insemination and pregnancy can be helpful.
- Are there any undesirable genetic traits or conformational traits that could be passed on to the foal? Certain types of orthopaedic disease can be passed on so it’s important to talk to your vet before making your decision.

#### Choosing a stallion

The next vital step is choosing the ‘correct’ stallion for your mare - not only his type and credentials but it’s also important to consider how he is bred (i.e. artificial insemination or natural cover).

If the stallion is natural cover only, it is likely your mare will have to travel to the stallion, and also have many pre breeding tests (uterine swabs and blood tests to check for infectious reproductive diseases). If the stallion is artificial insemination, it is vital to know whether the semen is frozen or chilled, how many days it will take to order and where the semen is coming from (within the UK or Europe). Clear communication with the stallion manager is essential so that we can get the timings right, it is also worth noting that semen imported from Europe can be slightly more unpredictable with regards to delivery times.



#### You have chosen a stallion – now what?



Mares are seasonally polyoestrous, which means they have multiple cycles but only during the breeding season (March to September – when the daylight is longest). Therefore, it is between these dates that we look to inseminate. Most mares have a regular cycle of ovulation generally every 21 days. During these cycles the ovaries will produce waves of follicles and usually one follicle will become dominant, getting close to ovulation (when the egg is released from the follicle) when it reaches a certain size (around 36mm). The time around

ovulation is called oestrus, this generally lasts 3-6 days and during this time they are receptive to breeding and usually display signs of being “in season” (frequent urination, raised tail, squatting/winking).

When you are breeding from your mare, the vet will ascertain which stage the mare is at in her cycle through transrectal ultrasound – this means you can assess the ovaries and uterus, and follow the mare through the cycle, to accurately pinpoint at which time it is best for insemination. To help manipulate the cycle, the vet will often use hormones which is hugely beneficial when getting the timing of insemination right.



Once the mare has been inseminated, she will be scanned approximately 24 hrs after insemination – this is to check she has ovulated and also check that there isn't any fluid in her uterus following the insemination. Once this is done – the mare will be scanned at 14 -16 days to check for pregnancy (and also whether your mare is pregnant with twins), then again at 28 days post insemination to check for a heartbeat.



### My mare is in foal – now what?

Once your mare has been confirmed as in foal, there are various things that should be done. The mare should be vaccinated against EHV – EHV is a virus that can cause equine abortion (as well as many other clinical signs), therefore, it is very important, to minimise the risk of abortion, that your mare is vaccinated against EHV. Mares are vaccinated against EHV at month 5, 7 and 9 of their pregnancy.

Vaccinating against tetanus is also vital – this should be done in the last month of pregnancy, to ensure that there is some transferred tetanus immunity to the foal when it is born.

One important thing to look out for during the gestation period of the mare, are signs of placentitis. Placentitis refers to inflammation and infection of the mare's placenta. The condition interrupts the blood supply to the developing foetus and can result in the delivery of under-developed, premature and septic foals or in the worst case, abortion of the foal. Mares suffering from placentitis may show a range of signs including a cloudy white to yellow or brown discharge from the vulva and milk dripping or running from the teats. Mares that show these external signs already have significant damage to the placenta and to the foal they are carrying and it is vital to contact your vet. Mares with placentitis can be treated with appropriate antibiotics, anti-inflammatory drugs and progestagens to help maintain the pregnancy.

### After waiting 11 months, my mare is foaling!

First, it is very important to note that some mares (and especially donkeys) may go well over their 11 months – this is completely normal, and not something to worry about!

When the mare actually starts foaling, there are 3 stages

1. Stage I is characterized by signs of abdominal discomfort and restlessness due to uterine contractions. Patches of sweat on the flank and behind the elbows usually appear a few hours before foaling. The uterine contractions increase in frequency and intensity, causing the foetus to engage into the pelvic canal. The release of tea-coloured allantoic fluid marks the end of the first stage of parturition. In lay terminology, this event is referred to as the mare "breaking her water."
2. Stage II – This usually lasts 15–30 minutes and is the stage during which the foal is born. At the beginning of this stage, you should see a grey/white bag appear – this is essential – if the appearance is red – this is called a 'red bag' foal and is an emergency, due to the foal being at risk of oxygen starvation. The foal is normally delivered with the head, neck, and forelimbs extended.



One front hoof of the foal usually precedes the other hoof by ~15 cm, facilitating passage of the elbows and shoulders through the pelvic canal.



3. Stage III involves expulsion of the foetal membranes – colloquially known as the ‘afterbirth’. Normally, the foetal membranes pass rapidly (within 3 hours) after delivery of the foal. The mare may stand with the amnion hanging from the vulva at the level of the hocks or below. It is a good idea to tie the exposed membranes in knots to shorten the length to above the hocks, to decrease the risk of the mare standing on the placenta and tearing it. If the placenta hasn’t been passed by 3 hours – you must call the vet to help assist the mare in expelling the placenta, as retaining the placenta for prolonged periods of time can result in septicaemia and death.

### Examining the placenta

It is vital to check the placenta is entire when this has been expelled – as small parts of the placenta can be retained inside the uterus, causing septicaemia and death. The most common part of the placenta that is retained, is the non-pregnant horn.



### I have a foal – what should I do with it now?

Timings are key! There is the simple 1-2-3 timing rule with foals

- 1 hour to stand
- 2 hours before the foal suckles
- 3 hours before the foal passes its first droppings – ‘meconium’



As soon as the foal is born, it is important to dip the navel in iodine or chlorhexidine to prevent any infections, this should be repeated twice daily for the first few days of life. It is also essential that the foal suckles a large volume of milk – following birth, the first ‘milk’ that the mare passes is colostrum – this is high in antibodies and nutrients that are absolutely essential for a new-born foal to survive. To check that the foal has received adequate colostrum, the foal should be examined by a vet 12 hours after birth and an IgG blood test performed. This is a test that is done at the side of the foal and ascertains whether the foal has taken in enough colostrum or whether the foal is at danger of

sepsis. The IgG should be >800, however, if it is less than this, a plasma transfusion may need to be done, to ensure the foal has enough antibodies to survive the first few days of life. The foal should suckle every 15mins, therefore suckles an average of 30 times per day, ingesting 12-20% of their body weight in milk, and gaining an average of 2 to 3% of their body weight daily.



### Key signs to look out for in foals

There are various key things to look out for in foals

- Tail flapping and straining – if your foal is ‘flapping’ its tail, it could be a sign that it is constipated and has a meconium impaction. In these cases, it is important to give the foal an enema, as they can start to colic when there is a build up of meconium.

- Foal has large volumes of milk dripping from the nostrils – in some cases, this is purely due to the mare producing a greater volume of milk than the foal can swallow, however in a few rare cases it can be a sign of a cleft palate.
- Foal has urine dripping from the umbilical cord. Inside the umbilical cord, there is a structure called the urachus, which is the tube through which urine from the unborn foal travels from the bladder. Sometimes, after birth, this structure opens, resulting in urine dripping from both the penis/vagina. If this happens, notify the vet, as although not an emergency, your foal will need to be placed on antibiotics.
- Swollen joints/lameness – if the foal develops any lameness or swollen joints, this is an emergency, due to the risk of septic joints. This is more common in foals that have not received adequate colostrum, however all foals are at risk.
- Coughing – if your foal starts to cough or show increased effort when breathing – this is also an emergency due to the increased risk of pneumonia in new-born foals.
- Diarrhoea – it is completely normal for foals to have a period of diarrhoea at between 5 and 15 days of age. It is called foal heat diarrhoea because the foal's dam usually is experiencing her first heat (or oestrous cycle), since the birth, however the diarrhoea isn't actually caused by the changes in milk composition, but due to changes within the foal's GI flora due to introduction of feed and other bacteria.

### Once the foal is a bit older..

The foal should be wormed with fenbendazole (Panacur) at 2 and 4 months old, to control ascarids (roundworms). A worm egg count should then be done at 5 months old and repeat every 3 months. In the late autumn/early winter, the foal should be wormed with a moxidectin/praziquantel wormer (Equest Pramox) to control tapeworms and encysted redworms, however this should not be used in foals less than 6 1/2 months old.

Foals can have their first vaccine for influenza and tetanus from 6 months old, at this age, many people will also passport and microchip their foals, however, this can be done at a younger age (especially if you are registering the foal with Wetherbys – as the foal must be microchipped and DNA tested within 4 weeks of birth).

If your foal is a colt – some people will opt to castrate within the first year, however this can only be done if your foal has 2 fully descended testicles which are easy to palpate.

The foal can then be weaned at 4 – 7 months of age - After 4 months of age, the foal's nutritional requirements exceed that provided by the mare's milk, and most foals are eating grain and forage on their own.

### Final comments

The cost of breeding from your mare should not be underestimated! As a rough guide, the scans/insemination from the vet and the cost of semen is approximately £1500 (depending on the stallion chosen), in addition to this, if the foal requires a plasma transfusion – this can cost hundreds of pounds, and at the very worst case – a caesarean section costs over £5000! Therefore, it is worth bearing in mind the financial implications if things don't quite go to plan.

The key things to remember are

- From the waters breaking to foal on the stable floor should be less than 30mins
- If the placenta has not been passed within 3 hours – ring the vet
- 1,2,3 rule of foals – standing in 1 hour, feeding in 2 hours, passing meconium in 3 hours
- Blood sample to check foal IgG levels to ensure the foal is not at risk of sepsis

