# The Newborn Foal

## by Charlotte Willoughby BVSc, MRCVS.

So, you've patiently waited 11 months and the big day is finally here.

Your foal's first 24-hours are vital in their transition into the world, and there are several targets they need to meet along the way.

It's essential that your foal:

- sits up within 5 minutes
- has a suck reflex within 2-10 minutes
- stands within 2 hours
- suckles from the mare within 4 hours, and then frequently after that (often every 20-30 minutes)
- passes meconium within 4 hours
- urinates within 8.5 hours
- has a temperature of 37.2-38.6ºC (99-101.5ºF)
- has a respiratory rate of 60-80 breaths per minute shortly after foaling, which reduces to 30-40 breaths per minute when they're 1-12 hours old

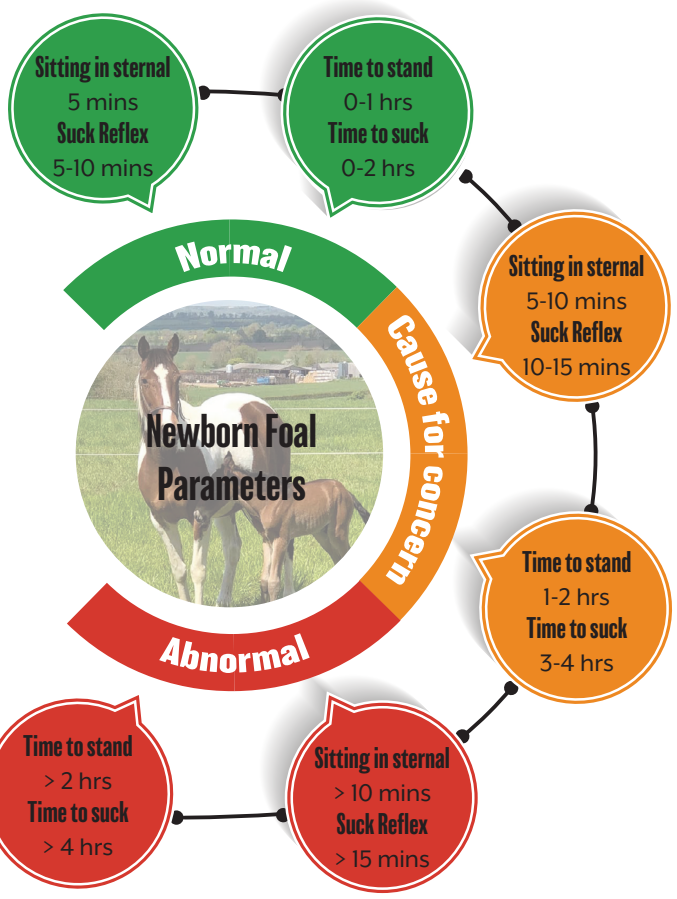
The foal's navel should be dipped in 0.5% (very dilute) chlorhexidine (e.g. 'Hibiscrub®') as soon as possible after birth, to help limit the risk of infection.

Once you are confident that your foal is happy and healthy, it is important to allow the mare and foal some time undisturbed to bond.

### Don't forget mum!

In all the excitement of meeting your new foal, it is easy to overlook mum, but lots of clues for the foal's health will be gained from the mare:

- Check her udder for signs of mastitis (infection and inflammation) or oedema (swelling caused by excessive watery fluid within tissues). If her udder is full, the foal may not be nursing; if the udder is empty, the mare may have low milk production, or the foal may just be nursing well!




*Foal Parameters*

- Check her vulva for signs of damage that may need repairing once the swelling has reduced.
- Check the placenta (afterbirth) and ask your vet to confirm that it is complete. If the placenta has not passed within 4 hours, it is considered to be 'retained', which is a severe condition in horses that can lead to endotoxaemia and laminitis.

### Optimising immunity

Foals are born with a naive immune system and have not yet developed the necessary antibodies (proteins produced by the immune system, which help the body recognise infection) to fight off disease-causing organisms. The most important source of antibodies for the foal is from its mother's colostrum (first milk). Therefore, to provide your foal with the best start in life, it is vital to make sure that:

- the foal drinks an adequate amount of colostrum in the first 6 hours of life
- the mare is up-to-date with her vaccinations (including a tetanus booster 3-6 weeks before foaling)
- ideally, the mare should be at the location at which she is going to foal for at least a month before foaling, to enable her to develop antibodies to local pathogens
- tetanus antitoxin can be given to the foal shortly after birth, especially if the mare did not have a tetanus booster
- the foal should be blood tested at 24-48 hours old to assess the foal's antibody level
- if the foal's antibody level is inadequate, a plasma transfusion can be given to boost its antibody levels

## The Straining Foal

*Meconium*

*Milk Poo*

When a foal is born, one of their first 'milestones' is to pass meconium, the dark, sticky faeces present in the gut at birth. The meconium should ideally be passed within 4 hours and should then be replaced by softer, orange-coloured milk poo. It is not uncommon for meconium to become impacted, especially in colt foals, which then strain or develop signs of colic. Your vet will administer an enema to help with their removal.

Another, less common, cause of straining in foals is a ruptured bladder. A ruptured bladder could be caused by incomplete development of the bladder, high pressures during foaling or infection. Foals may be seen to pass small volumes of urine but may be straining or have colic signs. As the condition develops, the foal's abdomen may start to swell, and the foal may become dull, stop suckling the mare and have laboured breathing as the urine fills up the abdomen and puts pressure against the diaphragm. This condition is a medical emergency, and the foal should see a vet as soon as suspicion arises, although if treated promptly, complete recovery is usual.

## The 'Wonky' Foal

*A foal with flexural deformity ('contracted tendons')*

*The foal responded well to oxytetracycline, splinting and corrective farriery.*

Angular or flexural limb deformities (ALD) are not uncommon in foals. With a flexural limb deformity, tendons often appear 'contracted', while with an angular limb deformity, the limb deviates towards or away from the midline. Flexural limb deformities are often congenital (present from birth) but can also develop secondary to pain in older foals. Angular limb deformities can arise from a difference in growth rate across the growth plate (an area of cartilage responsible for bone lengthening) adjacent to the affected joint, loose soft tissues surrounding a joint, poor calcification or bending of the cannon bone.

**Treatment:** many foals will be born with mild cases of ALD, which will self-correct with a few weeks of controlled exercise; however, some will need further input. The timeframe in which you can treat the deformity depends on which joint is affected: fetlocks need to be corrected as soon as possible as most growth occurs within the first two months, whereas with hocks and knees you have until 4 and 6 months of age respectively. X-rays can be taken to help determine the exact angle of deviation, which will then help determine the best method of treatment. Milder deformities can be treated with corrective farriery such as trimming and glue-on shoes/extensions, whereas more severe deformities, or those left until a later age, may require surgical correction. Surgery consists of either periosteal stripping (which promotes growth on one side of the plate) or transphyseal bridging (which limits growth across the growth plate on the faster-growing side of the limb).

Similarly, with mild flexural limb deformities, many will self-correct with pain relief and restricted exercise. Splints and casts may be used to stretch the tendons but need careful monitoring to prevent sores. A high dose of the antibiotic oxytetracycline can be used as it also inhibits muscle contracture and therefore promotes relaxation of the tendons. In very severe cases, some of the flexor tendons may need to be sectioned to allow the joint to straighten.



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**Charlotte graduated from Bristol University, where she then stayed to complete an internship in veterinary medicine, imaging, and surgery. Charlotte has also undertaken a placement at a well-known stud farm, in both the UK and Australia, developing her interest in reproductive medicine.**

**Outside of work Charlotte can be found riding her old event horse, who is refusing to retire to a life of dressage!**