PREGNANCY TESTING MARES

Ultrasound pregnancy diagnosis in mares has become the most reliable way to tell if a mare is in foal early in her pregnancy.

How is it done?

As with traditional pregnancy testing in large animals, ultrasounds involve an “internal examination” via the rectum of the mare. The ultrasound probe is held in the hand of the Veterinarian and is directed over the uterus and ovaries of the mare, to produce a picture on the ultrasound screen. This is the only way to get a definitive result in early pregnancy (from 2 weeks to 4 months post mating), but later in the pregnancy, ultrasound examination through the flank of the mare may also be done. However, due to the large amount of intestines in horses, flank ultrasounds may not be as reliable as rectal ultrasound. There are also blood tests available, but they may also be unreliable, and definitely less reliable than rectal ultrasound.

Is it safe?

Any internal examination of a mare is not without risk, both to the Vet and the mare. However, provided the right facilities and conditions are available, these risks can be greatly minimised. The right facilities means a solid, well-built horse crush (not a cattle crush). The right conditions mean not during inclement weather, and under cover in dim light (NOT out in the open in sunlight). Many mares tolerate the procedure very well without any sedation required, especially if they have had this done before. However, some mares kick backwards initially, and hence the crush must have a solid kick gate of the right height behind her. Some mares get quite stressed and react more violently, and these mares need to be sedated as early as possible to prevent them getting too “worked up”. As with any internal examination, there is a slight risk of rectal wall injury, but provided the mare is relaxed (sedated if necessary) and can’t move around (restrained in a crush) this risk is minimized.

How soon after the stallion serves a mare can this be done?

Pregnancy can be detected as early as 11 days after service, but I recommend the earliest to be confident of the result is at 14-16 days after the last service.

The actual date of “ovulation” (when the mare’s ovary releases the egg into her uterus for fertilisation), which can also be detected by ultrasound, is the date which determines when the first pregnancy ultrasound can be done. Usually 14 days after “ovulation” the pregnancy can be readily detected by ultrasound, provided it is done in the right conditions. This coincides with about 14-16 days after last service if the mare was teased off after the last service.

Does it have to be done so early?

Traditionally, most stud managers and mare owners would wait one cycle, or 21 days post service, to see if the mare came back into season, before having the first pregnancy test. However, one of the great advantages of ultrasound is early detection of twins. Twins are a headache in mares, as most twin pregnancies result in early foetal loss (slipped pregnancy), late term abortions, or birth of one or two undersized foals, and birthing difficulties for mares if they try to deliver twins. Twins are more likely in some breeds, with Thoroughbreds having by far the highest incidence of twins, but other breeds can also be affected. Twinning tends to be repeated in some mares, often with more fertile stallions also. Twins in mares are rarely identical, and therefore usually come from the mare having a double ovulation (releasing two eggs), rather than from the embryo splitting after fertilisation (identical twins).
The reason why detecting twins as early as possible, ie at 14 days of pregnancy, is important, is because if the twins settle in the same horn(side) of the uterus (called kissing twins), there is only a short period of opportunity, from day 14-16, when one can be easily “pinched off” without risking lose both embryos.

If the twins settle in separate horns of the uterus, one can be removed up to day 26 of pregnancy without risking loss of the other. However, until you ultrasound the mare, you don’t know if she is pregnant at all, or whether she has twins, or where they are.

**How often should a mare be ultrasounded during her pregnancy?**

In humans, ultrasound is used primarily well after the mother knows already that she is pregnant, and mainly to look closely at the baby’s organs to see if they are healthy. In mares, we use ultrasound primarily to determine whether or not she is pregnant, and in the early stages whether the pregnancy looks healthy. We take into account events that occur with the pregnancy to determine when to ultrasound. In the early pregnancy in the mare, there are three phase we recognise:

1. The mobility phase-this is up to day 16, and during this time the embryonic vesicle moves up and down the uterus.

2. Fixation phase, from day 16 to 35, when the vesicle attaches to the uterine wall, and during which time the embryo can be seen growing inside the vesicle.

3. Implantation phase, beyond 35 days, during which time the placenta has cells invade the wall of the mare’s uterus to implant the pregnancy.

On busy horse studs, the routine approach is to do the first ultrasound before the end of the mobility phase, ie 14-16 days post ovulation. Depending on the health of the pregnancy and the history of the mare, the next ultrasound would be 1-2 weeks later, in which time the developing embryo is clearly seen and the heart beat is a visible indicator of life. Some mares lose their pregnancy after 16 days, and if this is detected early, the mare can be treated and sent back to the stallion for another try. A third pregnancy ultrasound is usually done at or around 6 weeks of pregnancy, or any time after 35 days when implantation occurs. Any further pregnancy ultrasounds are usually only done if the mare has a history of problems, or if visible problems develop.

In miniature ponies, sometimes only flanks ultrasounds can be done, and they should only be attempted after 4 months of pregnancy, as any earlier are often inconclusive.

*Ultrasound has greatly improved our ability to determine pregnancy early in mares, but to get the best results, and therefore the best value for money, we need to be doing it under the best conditions. Broad daylight on an ultrasound screen will greatly reduce our ability to detect subtle changes, and may cause twins to be missed in an early pregnancy. Very few people set up their TV screens in bright sunshine, and hospital ultrasound rooms are always darkened, so that the operator can see as much detail as possible. Therefore, doing ultrasounds in unshaded areas, or unroofed cattle races, may result in poor value for money and incorrect diagnosis.*
**IN SUMMARY**

1. Ultrasound pregnancy diagnosis via rectal examination is recommended at 14-16 days after service, with confirmation at around 28 days followed by 42 days.

2. Rectal ultrasound is generally safe, provided the mare is well restrained in a well designed and built horse crush, and fractious mares can also be sedated if necessary.

3. Having the ultrasound screen in a darkened area will improve the screen visibility and allow the operator to see greater detail and therefore make a more accurate diagnosis.

4. Flank ultrasound is available, but is not reliable as early rectal ultrasound.