



## **THE OLD MARE**

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*Fourth in a series on ovarian abnormalities*

Older mares can become pregnant and carry a foal to term well into their twenties. One of the oldest mares recorded to give birth was a 42-year-old mare in Australia. However, the overall reproductive potential of a mare typically begins to decline by about 15 years of age. Pregnancy rate per cycle and seasonal foaling rate both decrease with age. Owners need to understand the inevitable age-related changes in mares and develop realistic expectations regarding breeding potential. Assisted reproduction techniques such as embryo transfer and oocyte transfer have allowed many mares to continue to produce offspring well beyond their normal reproductive life span. The goal of this article is to review ovarian problems that develop or increase in frequency with advancing age in broodmares.

One of the first changes an owner may notice is a delay in the first ovulation of the year in older mares. On average, older mares ovulate about two weeks later in the spring than younger mares. The interval between cycles, or interovulatory interval, during the breeding season is 4 to 5 days longer in older mares as well. This is primarily due to a slower growth rate of developing follicles.

Mares over 20 years of age may experience irregular estrous cycles and it is not unusual for mares over 25 years of age to stop cycling altogether. The phrase that has been used for this phenomenon is ovarian senescence.

As noted in a previous column, the incidence of ovulation failure increases with age. In young mares, failure of the dominant follicle to ovulate occurs in less than 5% of cycles. In contrast, up to 13% of estrous cycles in mares 15 years old or greater result in ovulation failure. This issue alone can make breeding management of older mares unpredictable, frustrating and expensive.

It is common practice to induce ovulation in mares in heat with either human chorionic gonadotropin (hCG) or deslorelin, a potent derivative of gonadotropin releasing hormone. The effectiveness and predictability of hCG and deslorelin in causing a timed ovulation decreases slightly with age.

The oocytes or eggs contained within the ovaries may also be adversely affected by age-related changes. A mare is born with all the oocytes she is ever going to have. This is in sharp contrast to the situation in stallions in which new sperm are produced

throughout the reproductive life of the male. Oocytes must be penetrated by a sperm (or fertilized) within 8 to 12 hours after ovulation. Conflicting data exists regarding fertilization rates in older mares. Some studies have reported that fertilization rates were similar between older mares and younger mares, while other studies have noted that fertilization rates are lower in older mares.

There is little dispute about that fact that pregnancy rates in older mares are lower than that of younger mares and that older mares have a higher incidence of pregnancy loss. The difference in pregnancy rates and embryonic loss rates may be due to defects in the oocyte, changes in the oviductal or uterine environment, or other factors.

Age-related alterations in reproductive function most often occur slowly and progressively. A reduction in fertility is a natural and predictable course of events as a mare ages. Recognition of potential problems and adjustments in management procedures can often result in a very successful breeding program with older mares. Attention to detail, maintenance of sound medical and nutritional programs and selection of fertile stallions are a few of the keys to success.

Opinions abound as to the best breeding strategy for older mares. One generally accepted principle is that older mares that have recently carried a foal to term are easier to breed back than similarly aged mares that have been intentionally left open for a year or two. A second universally accepted principle is that older maiden mares are notoriously difficult to get in foal. Please consult with a veterinarian for the optimal breeding management options and techniques for your older mare.