

BREEDING

Soundness

Evaluate your breeding stock before the season begins.

By Dr. Steve Fisch



Checking your broodmares before breeding season will increase your odds of successfully ending up with a foal.



Having your stallion in excellent physical condition can help his long-term breeding soundness.

AS THE NEW YEAR ROLLS IN, MANY BREEDERS ARE CONSIDERING adding new mares to the broodmare band and some new stallions off the track are heading to the breeding shed.

If the new mares are not pregnant, then a breeding soundness exam (BSE) is usually a good investment. A BSE can prevent a lot of wasted time and money that is spent trying to get a mare pregnant when that mare actually has reproductive issues that can prevent pregnancy. A BSE should also be performed on mares that failed to become pregnant or carry a foal to term in the previous breeding season.

It is equally important for stallions to have a BSE before the upcoming breeding season. Waiting until breeding season is underway and having mares showing up not pregnant is not a good idea.

Each BSE should be designed to fit the individual mare or stallion and the situation that is presented. Keep in mind that the results of a BSE cannot be used to guarantee the fertility of any mare or stallion. A BSE can only be used to evaluate the potential fertility of the mare or foal at the time of the examination.

The Mare Exam

HISTORY IS ALWAYS AN IMPORTANT PART OF A BSA. IN THE CASE of the mare, the BSE it is important to know when the mare has previously been pregnant, and if there were any years she did not produce a live foal, what years those were. It is also helpful to know the breeding management program the mare has been under in past breeding years.

The physical exam part of the BSE begins with an overall evaluation of the mare's condition, including body weight and condition of the teeth, because dental health is directly related to body condition. A mare is more likely to become pregnant if her weight is good and she is actually gaining weight at the time of conception. If the mare is too thin or too fat, her nutritional program should be adjusted accordingly. Quality nutrition is of vital importance when it comes to breeding or rebreeding a mare. Studies have shown that mares with a body condition score less than 5 (on a scale of 1-9, with 1 being emaciated and 9 being obese) at foaling had lower pregnancy rates. Several studies also have demonstrated



Ultrasounding a mare is part of a good breeding soundness exam.

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that a high percentage of mares with a BCS less than 5 at foaling and don't gain body condition by 90 days post-foaling, do not get pregnant. Mares must be in proper body condition to become pregnant and stay pregnant. This can be achieved with high-quality protein feeds and hay. In one study, mares fed unbalanced diets with low-quality protein had a 36 percent chance of losing their pregnancy.

The mare's external genitalia should be examined, including the mammary glands that produce the milk to feed the foal. Starting from the outside and working our way internally, the mare should have a proper alignment of the perineum. Ideally, the anus and vulva should be vertically aligned, with no sloping of the vulva. The vulvar lips should form a tight seal, and when manually separated, should not allow for aspiration of air into the vagina. Poor confirmation might require a mare to have a Caslick's procedure, where the top portion of the vulvar lips are sutured together to prevent manure from entering the vagina as well as decrease the amount of air aspirated.

The internal portion of the exam includes a thorough palpation and ultrasound exam. The uterus and ovaries are examined to make sure they are normal size and shape. The ultrasound exam allows the uterus to be examined for uterine fluid, uterine cysts and other abnormalities. This part of the exam allows for the determination of the stage of the mare's cycle.

The next part of the exam is the vaginal speculum exam, which allows visualization of the vagina, vestibule and cervix to check for adhesions, urine pooling and varicose veins. A vaginoscopic exam can be performed to assess the integrity of

the cervix and vagina, and determine if any urine pooling, discharge or cervical incompetence is present. A cervix that will not close properly during the appropriate times of the mare's cycle will predispose the mare to ascending uterine and placental infections. These infections can impair the mare's ability to become pregnant or cause her to abort if she does become pregnant. Urine pooling can also prevent a mare from conceiving. Flushing the vagina before insemination is attempted is recommended in a mare that pools urine. However, vaginal flushing does not prevent the urine pooling. Surgical correction is required to prevent urine pooling for mares with conformational defects that predispose them to the condition.

At this point, a uterine culture and cytology is performed. These tests give information that can identify uterine bacterial or fungal infections. If the mare has a history of infertility, a uterine biopsy is probably indicated as long as there is enough time to allow about 60 days between the biopsy and breeding the mare. Discharge in the vaginal vault could be indicative of a uterine infection and is another indication for a uterine cytology and culture and biopsy. When all the lab results are in and have been combined with the physical exam findings, an intelligent evaluation can be made of the mare's chances to maintain a full-term pregnancy or to produce an embryo for embryo transfer. The data can also help determine a treatment plan for mares with uterine infections. These treatments might include antibiotic therapy, Caslick's surgery, acupuncture and a multitude of other treatments that will be decided on with the owner and veterinarian putting



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Culturing and collecting a stallion should be part of his pre-breeding season check.

all the pieces of the puzzle together. Additional hormonal therapy might be added before or during breeding season.

The Stud Exam

BSA OF THE STALLION STARTS WITH A THOROUGH HISTORY FROM previous years and includes any medications the stallion might have been on while racing or showing. The history should include the previous breeding management programs, the number of mares bred, the first cycle pregnancy rate and the seasonal pregnancy rate for all previous breeding seasons. The stallion's temperament and ease of collection should be part of the history.

Just as with the mare, body condition and overall health is important. The stallion's BSE includes examination of the stallion's genitalia, semen collection and collection of samples for culture along with an Equine Viral Arteritis test. The cultures are taken from the stallion's semen, prepuce, urethra and urethral fossa. These cultures allow the identification of any bacteria that are growing in the reproductive tract that might affect fertility. The EVA test can be taken with a blood sample. If it comes up negative then the negative test should be documented and the stallion vaccinated with an approved EVA vaccine. Most breeding farms require incoming shipped semen to be from EVA negative and vaccinated stallions. If the blood sample comes up positive for EVA because of a previous vaccination that was undocumented, the semen can be tested for EVA viral isolation. If the stallion is truly EVA negative but tested blood positive because of a previous vaccination, the semen viral isolation test will prove he is EVA negative.

The libido and ability to mount a breeding phantom or live mare is evaluated. While the stallion is being prepared for semen collection, his penis is evaluated for any abnormalities or injury. If there has been more than a week since the stallion's previous collection, a second collection should be performed an hour or so after the first so that a more accurate estimate of daily sperm output (DSO) can be obtained. DSO is used to predict the number of mares a stallion can impregnate in a breeding season. DSO can also be estimated

by measuring the size of the testicles with ultrasonography. Testicular size is directly related to DSO. Ultrasonography of the testicles allows for evaluation of any abnormalities such as tumors or scar tissue from previous injuries.

The semen is evaluated for color, morphology, volume, concentration, raw and extended motility. The motility is evaluated for total progressively motile sperm. The semen is also evaluated for its ability to survive cooling, freezing and shipping if such procedures are in his reproductive management plan. If the BSE is being performed because of subpar fertility, then other tests such as endoscopy, biopsy, sperm chromatin structure assay and hormonal analysis might be indicated.

Just as with the mare BSE, the final evaluation is done when all the tests results are available. Also like the mare, the stallion BSE does not guarantee a stallion's reproductive abilities but it can be a good predictor of a stallion's ability to impregnate mares. The results of all the tests will determine how many mares he can breed per day and per breeding season.

While a BSE requires some time and financial investment, it is usually well worth the time and money to know where the mare and stallion stand reproductively before they are into the breeding season. Working together with your equine reproductive veterinarian can go a long way toward having a successful breeding season. 🐾

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Dr. Steve Fisch owns AVS Equine Hospital, a full-service lameness, surgical, medical and reproductive equine hospital in Tallahassee, Florida. AVS Equine Hospital (www.avsequinehospital.com) operates as a referral hospital for performance-related lameness and also stands racing and performance stallions. Dr. Fisch is a racehorse owner and a member of the AQHA Racing Council, and he is very involved with legislative efforts to help American Quarter Horse racing flourish in Florida. For his efforts in bringing American Quarter Horse racing back to Florida, Dr. Fisch was the recipient of the 2010 Gordon Crone Award.