Libido, Erection, and Ejaculatory Dysfunction in Stallions

ABSTRACT
Continuous access to mares and skillful handling are generally the best approaches to dealing with inadequate libido in stallions. Although the problem can occur in experienced stallions, it is more common in slow-starting novices. Erection dysfunction primarily occurs subsequent to traumatic injury of the penis, such as kick injuries or semen-collection accidents. Ejaculation dysfunction can result from neurologic and musculoskeletal or ejaculatory apparatus problems.

Inadequate Libido
The most common type of inadequate libido involves slow-starting novice stallions. In most cases, the primary cause is simply inexperience with domestic breeding conditions rather than physiologic immaturity or an endocrine abnormality.

The keys to efficient turnaround for these stallions primarily involve handler education and relatively simple and inexpensive management changes (see Management Conditions to Maximize Libido in Breeding Stallions). Housing that provides ample continuous exposure to mares and reduced contact with other stallions naturally drives stallion endocrinology and behavior in a positive direction. Patient, quiet handling in the breeding situation will almost always be more effective than any other approach. I recommend as little restraint as safely possible under the particular conditions, as much positive reinforcement as possible, and avoidance of punishment and negative experiences. Continuous free-pasture access to mares for several days or weeks often allows the stallion to gain experience and confidence "naturally." This almost always enables an easy transition to in-hand breeding.

If results must be produced quickly, exogenous hormones to increase circulating steroids can sometimes speed progress. Short-term treatment with gonadotropin-releasing hormone (50 subcutaneously 2 hours and 1 hour before breeding) or aqueous testosterone (50 to 80 mg subcutaneously every other day for at least 1 week) can effectively increase circulating testosterone and boost libido. The greatest improvement in libido with testosterone treatment typically occurs after 4 to 7 days of treatment. Although it is often tempting to increase the dose of testosterone, there is concern about possible adverse side effects on pituitary gonadal function. Personnel must be taught that hormone treatment that increases sexual behavior is likely to simultaneously increase aggressive behavior. If the aggression is not anticipated and carefully directed or abided, mare or handler interaction with the stallion can be counterproductive. Hormone treatments usually can and should be withdrawn after a slow-starting novice stallion has had a few successful breedings.

Inadequate libido can usually be effectively managed with handler education and simple, nomic management changes.

- Limiting mounting attempts, employing pharmacologic aids, and other management changes can reduce the work of a stallion with neurologic- or musculoskeletal-related ejaculation dysfunction. Ejaculatory apparatus problems include apparent dysfunction of the neural ejaculatory apparatus, pain associated with ejaculation, and genitai tract pathology that may physically impair or cause pain during ejaculation.

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Sexual behavior dysfunction in breeding stallions primarily includes libido or ejaculation problems. Libido-independent erection dysfunction is relatively rare in stallions and mostly limited to penile trauma complications. This column discusses stallion sexual behavior dysfunction with a focus on recently developed therapeutic approaches.

KEY POINTS

- Inadequate libido can usually be effectively managed with handler education and simple, nomic management changes.
- Limiting mounting attempts, employing pharmacologic aids, and other management changes can reduce the work of a stallion with neurologic- or musculoskeletal-related ejaculation dysfunction. Ejaculatory apparatus problems include apparent dysfunction of the neural ejaculatory apparatus, pain associated with ejaculation, and genital tract pathology that may physically impair or cause pain during ejaculation.

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breeding stallions include handling changes, negative experience associated with breeding, a heavy breeding schedule, suboptimal stimulus mares, testicular degeneration, musculoskeletal discomfort, or other. Pain or illness. It is usually difficult to determine the causal factors. However, I recommend treating any suspected discomfort and then proceeding as described for a slow novice, reviewing all possible contributing factors with the goal of optimizing all aspects of the breeding and management environment.

Rowdy Breeding-Shed Behavior

Stallions are by nature quite variable in their level of sexual arousal. High libido can be problematic for some breeding operations. The handling challenge is to safely direct and accommodate energetic stallions without discouraging normal sexual behavior (see Management and Pharmacologic Aids to Facilitate, Ejaculation). Case reports detailing the implementation of these handling recommendations have been published and can be useful reading for most stallion managers.

Erection Dysfunction

Penile erection in a sexual context depends on adequate sexual arousal and a functional pelvic and penile neurovascular apparatus. Libido-independent erection dysfunction is rare in breeding stallions. The majority of cases that do occur are subsequent to traumatic injury of the penis, including stallion-ring injuries, paralyzed penis and paraphimosis, kick injuries, and other ‘breeding or semen-collection accidents. Artificial-vagina insertion problems are relatively common, particularly with “self-serve” dummy mounts. Another common semen-collection accident involves penile laceration associated with the failure to remove a thermometer from the lumen of the artificial vagina.

Although rare, aortoiliac thrombosis that impairs pelvic circulation can result in inadequate tumescence, particularly on exertion during mounting and thrusting. Neurologic disease can also be manifest in erection dysfunction (e.g., premature and exaggerated tumescence of the glans penis).8

A potentially confusing type of erection dysfunction involves the penis folding back within the prepuce as tumescence commences. Typically, the stallion appears aroused and ready to mount despite no visible erection. The stallion may also appear uncomfortable or intermittently distracted, pinning the ears, kicking toward the abdomen, or stepping awkwardly on the hind legs. Close visualization reveals a rounded, full-appearing prepuce with the skin stretched taut as the penis doubles back on itself within the prepuce. Resolution usually requires removing the stallion from the sexual situation until the penis detumesces. After the penis is fully withdrawn, applying a lubricating ointment to the prepuce is usually adequate to facilitate subsequent normal protrusion.

This situation tends to repeat occasionally over time with particular stallions. I have noted this condition to repeat in stallions that accumulate large amounts of smegma as well as in stallions in which the penis and sheath are fully cleansed one or more times daily for breeding. One might speculate that this tendency may be related to too much accumulated “sticky” smegma or too little normal smegma lubrication. I have seen one stallion appear to suffer secondary psychologic libido dysfunction associated with a relatively frequent occurrence of this event.

Erection is not requisite for semen collection in stallions with an active libido. Vigorous manual and thermal stimulation of the base of the penis typically elicits pelvic thrusting adequate to achieve ejaculation, either with the horse mounted or standing on the ground. Pharmacologic aids to enhance erection or enhance or induce ejaculation without erection can also be useful in prolonging the breeding life of stallions with inadequate erection.

Ejaculation Dysfunction

Neurologic and Musculoskeletal Problems

Most cases of ejaculatory dysfunc-
Management and Pharmacologic Aids to Facilitate Ejaculation

To enhance sexual arousal
- Excellent stallion handling
- Prolonged teasing under conditions that yield the highest safe level of arousal
- Breeding schedule for maximum arousal
- Natural estrus stimulus and mount mares
- Minimal distractions in the breeding area
- Established breeding routine rich with conditioned stimuli for maximum arousal
- Encouragement and positive reinforcement
- Gonadotropin-releasing hormone (50 μg subcutaneously 2 hours and 1 hour before breeding)
- Diazepam (0.05 mg/kg via slow intravenous administration)

To reduce back and hindlimb pain and accommodate musculoskeletal deficiencies
- Mount mare or dummy of appropriate height and conformation
- Excellent physical facilities for breeding (e.g., good footing, head room)
- Stable (no side-to-side movement) mount mare or dummy
- Mount mare or dummy placed on a downgrade from stallion to reduce weight on hindlimbs
- Semen collection on the ground (artificial vagina or manual stimulation)
- Weight loss to reduce work of hindlimbs, particularly during breeding
- Lateral support at the hips during mount
- Good footing (e.g., grass or dry athletic surface)
- Phenylbutazone (1 g orally twice daily)³
- Acupuncture and associated therapies⁴,⁵

To increase positive stimulation of the penis
- Pressure and temperature of artificial vagina that yields most vigorous thrusting
- Hot compresses applied to the base of the penis

To lower ejaculatory threshold in copula
- Imipramine hydrochloride (500 to 1000 mg orally in grain 2 to 4 hours before breeding)²

References
4. Martin BB, Klide AM: Diagnosis and...
TABLE ONE
Pharmacologically Induced Ejaculation Protocols for Stallions

<table>
<thead>
<tr>
<th>Drug (Starting Dose)</th>
<th>Ejaculate Characteristics Compared with Artificial Vagina</th>
<th>Latency to Ejaculation (min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Xylazine hydrochloride(^{(14)}) (0.66 mg/kg IV)</td>
<td>Similar</td>
<td>1-20 (usually less than 5)</td>
</tr>
<tr>
<td>Imipramine hydrochloride(^{(13,15,16)}) (2.2 mg/kg IV)</td>
<td>Lower volume and higher sperm concentration, greater total number of sperm, no gel</td>
<td>1-0-60</td>
</tr>
<tr>
<td>Imipramine hydrochloride (0.75-2 mg/kg PO) followed in 1-2 hr by xylazine (0.3 mg/kg IV)(^{(18)})</td>
<td>Lower volume and higher sperm concentration, greater total number of sperm, no gel</td>
<td>3-15 (after xylazine administration)</td>
</tr>
<tr>
<td>Prostaglandin F(_{2\alpha}) (0.005-0.01 mg/kg IM)</td>
<td>Greater volume of semen and gel, similar concentration, greater total number of sperm</td>
<td>5-90</td>
</tr>
</tbody>
</table>

\(^{IM}\) = intramuscularly, \(^{IV}\) = intravenously, \(^{PO}\) = orally.