

# Field Triage of the Neonatal Foal

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## KEYWORDS

• Neonatal foal • Field triage • Sick • Recumbent • Weak

## KEY POINTS

- When first evaluating a weak, recumbent, or lethargic foal on a farm it is often difficult to make a definitive diagnosis.
- The approach should be to treat what is treatable and prevent what is preventable.
- In many cases, the goal will be to stabilize a foal before referral to a tertiary care facility where more intensive and continuous treatment can be performed.

## INTRODUCTION

The purpose of this article is to provide a quick reference for field triage of the sick neonatal foal. Therefore, information is focused toward diagnostics and treatments that can be performed in the field. When evaluating a weak, recumbent, or lethargic foal on the farm, it is often difficult to make a definitive diagnosis. Therefore, the approach should be to treat what is treatable and prevent what is preventable. In many cases, the goal will be to stabilize a foal before referral to a tertiary care facility where more intensive and continuous treatment can be performed.

## PHYSICAL EXAMINATION OF THE NEWBORN FOAL

The normal foal should attempt to rise into sternal recumbency within seconds to minutes after delivery. On average, foals stand within 1 to 2 hours and nurse within 2 to 3 hours of birth. Mucous membranes and sclera may show the presence of ecchymotic hemorrhages caused by the pressure of passage through the birth canal and be mildly injected compared with adults. The capillary refill time is similar to adults. A normal cardiac sinus rhythm or sinus arrhythmia is ausculted. It is common to hear a systolic murmur (point of maximum intensity at the left heart base) for a few days after birth. Murmurs that persist longer should be evaluated further. The normal foal's respiratory rate and effort should decrease over the course of the first day of life,

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The author has nothing to disclose.

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and its heart rate should increase after a few minutes (Table 1). Foals should urinate within the first 24 hours of life, and urine should become progressively more dilute as they begin to consume a liquid diet. Newborn colts will occasionally be born with a persistent frenulum preventing them from dropping their penis to urinate. This condition is generally not a concern, as it will resolve over time. Many normal foals are born with a mild degree of carpal and fetlock valgus in their front limbs and slight varus in their hind fetlocks. This condition typically resolves as they grow. Foals should pass meconium, the first feces, within 12 to 24 hours. Meconium is dark brown to tan and may be hard or pasty. Subsequent milk feces are yellow tan and typically softer in consistency.

Neonates lack a menace response, as this is a learned behavior that will develop at a few weeks of life. Stimulation (auditory or visual) often results in exaggerated, jerky head movements. The neonatal foal's primary behavior should be directed toward maintaining close contact with its dam.

Foals should have a strong suckle reflex and nurse for relatively brief periods (minutes) as many as 8 times an hour. If a mare produces a large volume of milk, the foal may be unable to swallow it all and a small volume may be seen at its nostril after nursing. If persistent, this finding should trigger further evaluation to rule out dysphagia or a cleft palate.

Most lightweight foals will gain between 1 and 2 lb (0.5–1.0 kg) of weight per day. Foals that repeatedly return to the udder to nurse may be frustrated because of a lack of adequate milk production. Measurement of urine specific gravity and weight gain are important methods to determine adequate nutritional intake. Foals ingesting normal volumes of milk will have dilute urine (specific gravity 1.004–1.010). If a scale is not available, a string or weight tape can be used to measure change in body girth to assess daily weight gain.

Foals can be bradycardic at birth; the heart rate should increase relatively quickly to normal values. Persistent bradycardia can be caused by hypoxia, hypoglycemia, and hypothermia. Oxygen supplementation should be instituted. A continuous intravenous (IV) infusion of dextrose is recommended (see section on fluid therapy) if glucose monitoring is not available. Bolus therapy with glucose-containing fluids is not recommended, as hyperglycemia has deleterious effects. If bolus therapy is unavoidable, dextrose should be added to an isotonic crystalloid at a low percent (0.5% solution = 10 mL 50% glucose in 1-L crystalloids). If a foal is mildly hypothermic, it is recommended to allow slow, passive warming (cover the foal and keep in a dry, warm area out of the wind), as hypothermia is protective against hypoxic brain injury.<sup>1</sup> With more severe hypothermia, active warming is recommended and is best done by infusion of warmed IV fluids. The use of external heat sources is controversial as the resultant peripheral vasodilation can cause a reflex drop in core temperatures as cold blood flows centrally from the periphery.

The causes of tachycardia include pain, hypovolemia, anemia, fever, and excitement. If pain, fever, anemia, and excitement are ruled out, fluid therapy is indicated to attempt to correct hypovolemia (see section on IV fluid therapy).

**Table 1**  
Physical examination findings in neonatal foals at birth, 2 to 4 hours, and 24 hours of age

Parameter	<10 min	2–4 h	24 h
Heart rate beats per min	40–60	100–200	80–120
Respiratory rate beats per min	40–60	20–40	20–40
Body temperature (F/C)	99–102/37–39	99–102/37–39	99–102/37–39

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