

Equine lungworm

Description: Lungworms are slender and 25 to 70 millimeters long.

Predilection sites: Bronchi, bronchioles.

Geographic distribution: Common in the US, particularly in areas with heavy rainfall.

Life cycle: Infection of a host begins when infective larvae (the L₃ stage) are ingested. Once in the intestines, these larvae penetrate the intestinal wall and are carried to local lymph nodes, where they molt to become fourth-stage (L₄) larvae. L₄ larvae are then carried to the lungs and enter the lung tissue by breaking through the alveoli, the lung's air cells. At this point, they mature to the adult stage. The adults lay eggs that contain larvae (embryonated eggs) in the bronchi; respiratory secretions carry these eggs toward the mouth, where they are coughed up and swallowed, thus following a pattern of transport known as tracheal migration. Hatching of eggs can occur in the intestine. Eggs or first-stage (L₁) larvae are passed in feces, and larvae molt twice to become infective larvae. The prepatent period is 5 to 6 weeks.

Significance: Donkeys are a common host and are considered to be the prime source of pasture contamination for horses. Patent infections occur only in foals and donkeys, not older horses. However, infected older horses show clinical signs of infection, which rarely occur in foals and donkeys.

Clinical effects on host: Large numbers of larvae breaking into the lungs and many adult worms in the bronchi cause irritation of the mucosa, called parasitic bronchitis. The resulting inflammation of bronchial tissue causes the production of large amounts of mucus which, in turn, leads to difficulty in breathing, severe coughing, and loss of appetite. Severe bronchitis is often accompanied by chronic pneumonia, pulmonary edema, and secondary bacterial infection. As previously noted, foals show few, if any, signs of clinical infection, but heavy worm burdens are a significant cause of mortality in horses of all ages, especially among foals.

In cases of low-level infection clinical signs in older horses may be absent, though infection may predispose animals to other respiratory diseases.

Diagnosis: Clinical signs suggest lungworm infection; identification of embryonated eggs and larvae in fresh samples of feces supports the diagnosis. Adult worms can be identified in the lungs during necropsy.