

### SEBWAT parameter

(Standardised Equine-Based Welfare Assessment Tool)

#### Respiratory noise

#### Welfare issue

- The equid makes an audible noise whilst breathing, which can be heard without the use of a stethoscope.

#### Welfare significance

- Respiratory tract problems are common in working equids. Signs of respiratory problems can be very subtle, often just a small increase in watery discharge from the nose, a slight cough or sneeze, or the animal being described as less vigorous than normal by the owner<sup>1</sup>. An animal with respiratory noise that is audible without a stethoscope suggests a serious abnormality.
- Equids suffering respiratory difficulties tire more quickly, lose condition and be less productive than their healthy counterparts. This is because the body's muscles require oxygen to work efficiently, therefore any problems with the respiratory tract will reduce the amount of oxygen the animal can uptake.



Respiratory noise can be subtle, but serious.

<sup>1</sup> Brooke (2013)

<sup>2</sup> Horse and Hound (2003)

#### Possible causation

- Abnormal breathing sounds have various causes or be exacerbated by different factors, for example:
- Living or working in an environment that is dusty or contaminated with air pollutants, mould spores, etc.
- Bacterial, viral or fungal infection of the sinus, or upper or lower respiratory tract.
- Prolonged elevation of the head.
- Parasitism (e.g. lungworm).
- Exertion (e.g. laryngeal paralysis typically causes noise during exercise<sup>2</sup>).

Some examples of different types of respiratory sounds and possible causative factors are given below.

#### Coughs

- A cough is a reflex action used by the body to remove irritants from the airway. Equids may cough as a result of irritation caused by foreign bodies inhaled into the airway (e.g. dust particles, mould spores, pollen, fragments of fodder, etc.); a viral or bacterial infection; or chronic inflammation of the tissues of the respiratory tract.
- Frequent or chronic coughing indicates a problem and is often accompanied by other symptoms such as nasal discharge, raised temperature, or accelerated respiratory rate.

## Wheezes

- Wheezes are a continuous noise made both on the in-breath (inspiration) and the out-breath (expiration). Wheezing indicates inflammation within the respiratory tract, for example in chronic allergic conditions where the nasal passage, trachea and lungs become inflamed, restricting the passage of air and causing a wheezing sound as the air is squeezed past the inflamed tissues.
- Recurrent Airway Obstruction (RAO, also known as Chronic Obstructive Pulmonary Disease, COPD or heaves) is a common cause of wheezing sounds. Often the animal will show flared nostrils even at rest, and may also develop a 'heaves line' on the flank below the ribs, caused by abnormal muscle development due to the extra effort required to expel air from the lungs.
- Animals with chronic RAO may lose weight as the effort required to breathe burns more calories than the animal is able to replace. They can also expend more time and energy on breathing than eating<sup>3</sup>. An equid in this condition has been likened to a human suffering end-stage lung cancer<sup>4</sup> and euthanasia may be the most humane option.

## Crackles

- Discontinued crackling sounds can indicate that fluid is present in the lungs, for example in pleuropneumonia or other disorders which cause lung oedema.
- As grazing animals, equids are designed to breathe efficiently with their heads lowered. Forcibly preventing an equid from lowering the head can result in fluid collecting in the lungs, for example through the animal spending long periods tied up on a short tie (e.g. when travelling or not being worked) or harnessed as to prevent the animal lowering its head.
- Equids should be regularly offered the opportunity to lower their heads to ground level to clear the airway, which can be combined with providing opportunities to graze and drink.

## Squeaking/grating sounds

- Known as 'friction rubs', these sounds are caused by the overlying membranes of the lungs and the ribs rubbing against each other. These sounds usually indicate pleuritis, which is an inflammation of these membranes, often caused by viral infections.
- They are not likely to be heard without a stethoscope.

## Snoring

- A snoring sound when breathing is characteristic of sinusitis and will usually be accompanied by a thick discharge of pus from the nostril on the affected side of the face, and there may also be facial swelling and pain on palpitation.
- If the condition is chronic or is related to a dental problem, (e.g. an infected tooth), then the discharge often has a foul smell. There may also be difficulty in breathing which is made worse by exercise.
- Sinus infections often recur and can be frustrating to treat<sup>5</sup>.

## Rattles

- Loud, moist rattling sounds accompanied by rapid, laboured breathing; cough, nasal discharge and raised temperature in a foal can indicate *rhodococcus equi* infection (also known as summer pneumonia, or 'rattles').
- The condition is characterised by abscesses in the lungs and the development of pneumonia. Treatment is difficult and the prognosis is poor<sup>6</sup>.

## Note on donkeys

- Donkeys rarely cough when suffering from respiratory disease and may display only subtle clinical signs. Cases in donkeys are often presented for veterinary assistance only once the respiratory problem is advanced and severe<sup>7</sup>.

<sup>3,4</sup> Smith Thomas (2015)

<sup>5,7</sup> Brooke (2013)

<sup>6</sup> Hayes (1992)

## Means of resolution

- Minimising the animal's exposure to dust, mould, smoke and other air pollutants in the environment, and ensuring rest away from polluted environments, can reduce risk and severity of respiratory problems.
  - Good hygiene and avoiding cross-contamination is key to prevent infections and viruses. Handlers should wash their hands between animals and take particular care if respiratory infection is suspected.
  - Quarantine procedures should be followed whenever possible when introducing new animals to an existing group, during which new animals of unknown origin should be isolated and carefully monitored for signs of infectious disease for three weeks before mixing with others. Behaviour and social needs (e.g. visual contact with other animals) must be considered.
  - Drenching (forcibly administering liquid medications orally) should be avoided, as this is a possible cause of aspiration pneumonia if the medications being administered accidentally enter the lungs. Dehydration is a serious welfare concern in working horses and donkeys. We strongly advocate that animals are offered clean, fresh water throughout the day and that they are given the time and space to drink. In circumstances where animals are unable or unwilling to drink, fluid therapy may be required.
- We believe oral fluid therapy is the most physiological and least invasive way to restore hydration. Providing fluids through nasogastric intubation (through the nose to the stomach) is more practical than IV fluids because owners have access to water, buckets and funnels and service providers can easily carry a stomach tube, lubricant and electrolytes.
- In accommodation, ensuring good ventilation, avoiding overcrowding with too many animals, and using bedding materials that are low in dust are good practices.
  - Dampening feed or hay reduces dust and mould spores, and is often recommended practice for animals at risk of respiratory problems<sup>8</sup>. Beware of soaking hay for longer than 1 hour as this reduces its nutrient content. Once soaked, the hay should not be stored due to the risk of dangerous mould growth, so should be fed to the animal straight away. The effluent run off is also an environmental pollutant.
  - The use of nose bags should be avoided, as they reduce ventilation and quality of air.
  - Preventative treatment includes vaccination where available, and anthelmintics when appropriate.
  - Any respiratory problems should be investigated straight away, because the earlier treatment is started, the better the long term prognosis.
  - Equids suffering or recovering from respiratory problems should be given rest and a reduced workload, particularly in cases where significant damage to the airway may have occurred.
  - It should be emphasised to owners and local service providers that slitting of the nostrils does not improve breathing, or cure or prevent respiratory problems and will only increase suffering and risk of infection. (See the **Mutilations** section for further information.)

*Refer to the Working Equid Veterinary Manual, Community Engagement work plans or strategies and the Handling Guidelines before conducting an intervention..*



Animals should be unharnessed or the pack removed to allow air to circulate around skin, reducing bacteria etc.



Better use of nosebag, as it is not attached to the head, so the animal is able to get air more easily.

<sup>8</sup> University of Kentucky (2014)

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## References

Ball, M. (1998) *Equine Respiratory Disease Part 2: The Lower Airway*; The Horse, <http://www.thehorse.com/articles/10499/equine-respiratory-disease-part-2-the-lower-airway>, accessed February 2016.

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