



## RAT RESPIRATORY DISEASE

Upper and lower respiratory disease is very common in rats. Respiratory disease can present with a number of signs including sneezing, wheezing, nasal discharge, and unusual noises while breathing, including rattling or honking.

### What causes respiratory disease?

Commonly the cause is usually a combination of factors, which can be bacterial, viral, *Mycoplasma* infection, stress or environment. *Mycoplasma* is one of the main players in almost all chronic respiratory disease in rats, and it can be transferred via aerosolisation, when rats breathe or sneeze on each other, or sometimes from the female rat to her babies.

*Mycoplasma* can be a normal inhabitant of the respiratory tract, however if your rat becomes stressed or exposed to another respiratory disease, this can trigger *Mycoplasma* to cause disease. Other bacteria and viruses that can be a component of respiratory disease are usually transferred by aerosolisation.



The environment that your rat lives in can also play a factor, as ammonia building up in a rat's environment can destroy cilia inside their respiratory tract. Cilia are small projections extending off of the cells that line the respiratory tract which are covered with mucous. This mucous traps any dust, dirt or bacteria trying to enter the respiratory tract and the cilia move it back out of the respiratory tract. Ammonia can destroy these cilia which then allows bacteria to enter the respiratory tract. For this reason, we recommend well-ventilated cages with wire walls, rather than glass aquariums to house rats in. We also recommend regular and thorough cleaning of rat cages and even litter training your rats.

### How do we treat respiratory disease?

Treatment of respiratory disease is aimed at control rather than a cure. Unfortunately, in rats when respiratory disease occurs it is usually present for life. Respiratory signs can clear up with the right treatment however in many cases they will recur, as the organisms causing the infection can be very difficult to eliminate from the respiratory tract.

We use a combination of drugs in order to achieve the best relief for rats. These include:

- **Antibiotics** - Antibiotics are used to control secondary bacterial infections. Some antibiotics that are prescribed for respiratory infections can also have anti-inflammatory effects, which will further help relieve symptoms. Antibiotics commonly used include doxycycline, enrofloxacin, azithromycin and amoxicillin-clavulanic acid.





- **Anti-inflammatories** - Anti-inflammatory drugs are used to control any inflammation that may be occurring in your rat's airway. This is common in early respiratory disease or sometimes in relapses of clinical signs.
- **Bronchodilators** - Bronchodilators dilate the airways within your rat's lungs, allowing more air to flow through. This allows rats who are having difficulty breathing to be able to breathe better.
- **Nebulisation** - Using a specialised nebulizer, which turns drugs into a vapour, medications can be directly delivered to the airways. Nebulisation can also be used to help remove mucous that can build up in airways during chronic respiratory infections.

Your rat may be prescribed one or a combination of these drugs. Different combinations are picked based on the clinical signs your rat may be showing, so do not be concerned if you have not been provided with all these categories of drugs.

### **What does it mean if there is red discharge around my rat's nose or eyes?**

This red discharge is called porphyrin and while it looks like blood it is not. Increased porphyrin secretion occurs in rats due to stress or illness, which is common in rats with respiratory disease. You can clean away the discharge gently with a warm, damp cloth, as it can be irritating and often rats with chronic respiratory disease do not always clean it away.

### **Should I treat all of my rats?**

This depends on a number of factors, including how many rats you own, how many of these rats are showing clinical signs and how old your rats are. The answer is different for different scenarios, so speak to your vet about your situation and they can give you a more personalised treatment plan.



### **What else can I do to help my rat?**

Give them lots of love! Your rat will benefit from some extra TLC, including lots of warm bedding such as polar fleece, warm food and plenty of water. If your rat lives outside consider bringing it inside, especially during the cold winter months, as cold weather can exacerbate respiratory disease. If your house is cold cover their cage with a blanket to reduce draughts and consider providing them with a heat pack, but bear in mind that rats like to nibble! If you are using sawdust as a substrate in your rat's cage try switching to something less dusty, such as shredded paper, which is less likely to irritate your rat's airway.

