



# Australian Rat Fanciers Society Inc.

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## NEBULISING TREATMENT FOR RESPIRATORY PROBLEMS IN RATS

### INTRODUCTION

The AusRFS has always been proactive in looking to find the best treatments for our beloved rats.

Treating rats by nebulising has been done for a while overseas, but is relatively new in Australia. In 2009, several AusRFS members began trying nebuliser treatment under the care of Dr. Shaun Wynne of Whitehorse Veterinary Hospital. Those first treatments proved very successful and more rats began this treatment with Shaun. Gradually, other vets are becoming aware of the use of nebulisers with rats, as our members mention it to their own rat vets.

We believe it is the most effective treatment currently being used for vet diagnosed respiratory problems (commonly Mycoplasma). In some cases, nebulising has had dramatic, immediate and lifesaving results even after only one treatment. It has brought a couple of our darlings back from the brink, and cleared up some that have had the rattles for years, despite the normal oral medications. Of course, results will differ, but we certainly recommend trying this treatment.

This information reflects the collective experience of the AusRFS members who have tried this treatment. The instructions, medications and doses described are those that are being used with the best results at the time of printing.

### BEFORE STARTING TREATMENT

Firstly, the rat will need to be taken to a vet who is experienced in treating rats for a diagnosis and to confirm that this treatment is suitable for the individual rat. The medications required must be either supplied or prescribed by a vet.

Not all vets are aware of this treatment. Please contact the AusRFS and we can advise which vets can help.

If your vet wants to learn more and perhaps speak to another vet who has experience with the nebuliser treatment, please feel free to pass on this information and the AusRFS contact details.

The AusRFS is happy to answer any questions about this treatment or rat care in general.

We would like to hear from anyone who has tried variations of this treatment, especially if using different medications or doses.



## **NEBULISING MACHINES**

A nebuliser converts liquid (medications) into tiny particles which are then breathed in and transported straight into the lungs. The advantage of this treatment is that the medication is delivered directly to where it is needed.

Nebulisers are commonly used to treat asthma in humans with a nebuliser mask being placed over the person's nose and mouth. Since the mask is too big for a tiny nose, nebulising a rat is a little different. The rat is placed in a small plastic box and the medication is pumped into the box.

Nebulisers can be purchased new from chemists or health supply shops for around \$150.

Alternatively, very good second hand machines can be picked up very cheaply on eBay or Gumtree for as little as about \$30 and these work just as well.



In fact, we find the older style blue Ventolair machines (as pictured above) seem to work the best for rats. This brand later changed its name to Allersearch and the extra parts such as cups, hoses, etc made for the current Allersearch models are compatible with old Ventolair machines.

When buying accessories for your machine please be aware that not all accessories will work with all nebulisers. Even if the attachments physically fit the machine, they might not work because some machines have different systems of nebulising.

You can tell if a nebuliser is working because the box will mist up and you can see (and smell) the meds coming out of the holes; though you should avoid inhaling as much as is practicable.

## **SETTING UP THE BOX** *(see diagrams on next page)*

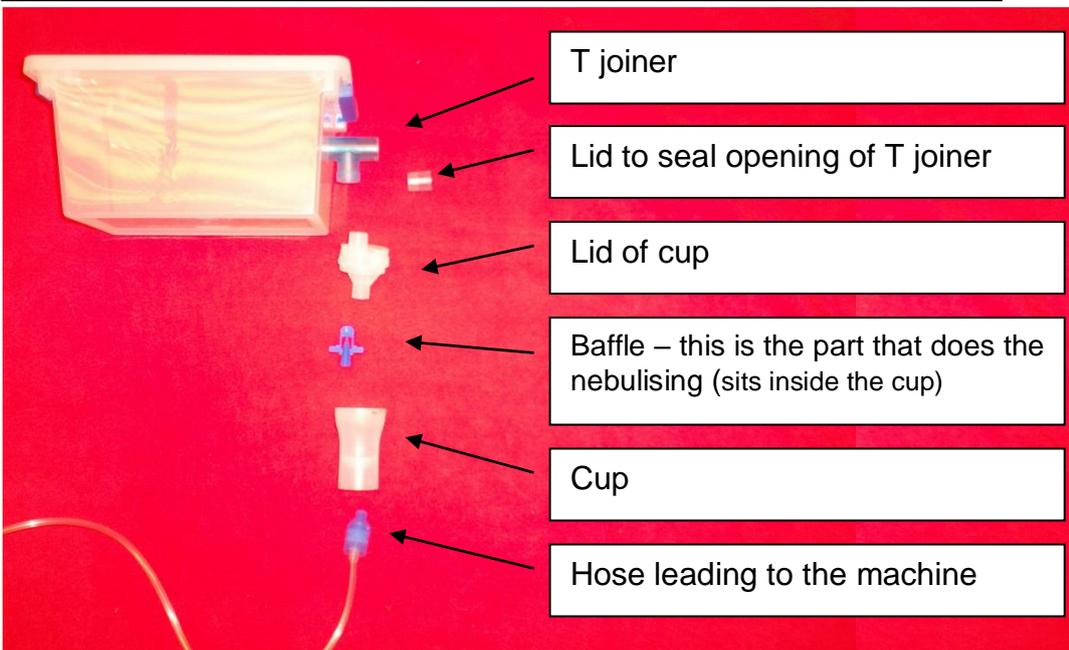
You will need a small plastic see-through box with a tight-fitting clip-on lid. Avoid anything with ridges or crevices that would be hard to clean. It needs to be just big enough for the rat to turn around in and not too high. If you are going to treat more than one rat at a time, make up a few different sized boxes only just big enough for the number of rats being treated.

As stated, machines have different cup attachments so you will need to be a bit inventive to work out how best to attach the cup to the plastic box. Most nebulisers come with a T joiner so you will need to block one of the top openings – the lid off a small bottle works. Alternatively, you could get an L joiner from a hardware shop. However you do it you'll need to create an airtight seal.

Attach the L/T joiner on the short side of the box about halfway up. Don't attach it too low or your rat might sit against the inlet and block the flow. Make the hole carefully to exactly fit the L/T joiner. If it's a very snug fit, you won't need to seal around the edges. The nebuliser cup needs to be kept upright to work. Depending on the box and the fittings it may be necessary to attach the cup so that the bottom of the cup and hose is lower than the bottom of the box. Then you will need to place the box on the edge of a table so that the cup attachment can hang over the edge or place the box up on something like a thick book. Make sure the box is secure in case the rat moves around inside.

Drill some small holes at the opposite end of the box to the inlet and put them fairly high up. If the lid is loose fitting, you might not need holes.

***Nebulising machine and box - set up ready for treatment***



***Box, cup and attachments unassembled***

A T joiner is used here to attach the cup to the box. A plastic bottle lid is used to seal the extra hole at the top of the T.



***Box, cup and attachments fully assembled***

## **THE MEDICATIONS REQUIRED**

Use BOTH the following medications at the same time – put both in the nebuliser cup together.

**Salbutamol** 5mg in 2.5ml (5 mg is the strength 2.5ml is the amount)

While Ventolin is the better known brand, Butamol, Asmol and others have been used and all work as well, and there is only a slight difference in packaging. You need to get a prescription from the vet and purchase at a chemist. The price is about \$13 for a box of 30 (i.e. a 15-day course). It is very important that this medication is kept in the dark. It will also have a use by date printed on the box. This medication comes in single dose vials so you don't need to measure it – just use one vial per treatment.

**Gentamicin** Please ensure both you and your vet have read the following as different strengths are available. Make sure you know which one you are using each time.

Supplied by vet: Vets will generally stock either of the following, although the 50mg/ml has been discontinued. However the information for it has been included as there may still be some small quantities still available:

50mg/ml – use 0.25ml.

100mg/ml – use 0.13ml.

Supplied by chemist: If your vet writes you a prescription to get Gentamicin from a chemist, then you will be supplied with the human equivalent, which is a different strength than vets carry. The prescription should therefore be written for the strength 80mg/2ml, and the dose would be:

80mg/2ml – use 0.33ml.

There is also a lower strength human paediatric version available but you do not want this as the quantities required for use is just too high.

Long term use of Gentamicin has been known to cause kidney damage in dogs and cats, but we are not aware of it causing problems in rats. The normal life span of a rat is so short perhaps any potential side effects don't get a chance to develop. Or perhaps rats don't have a reaction to the drug. To our knowledge none of the rats that have been treated with Gentamicin have shown any adverse reaction or side effects. The AusRFS is collating information all the time and will keep members informed if any possible problems are reported. The symptoms of kidney problems include excessive drinking and urinating.

## **DOSAGE RATES**

The dosage rates above are the same for all rats of any weight because the rat breaths in the appropriate amount for its size. The amounts are what most people use, and what has proved effective. Some vets may decide to prescribe higher dosages, for instance if the rat isn't improving as much as expected. Please only increase dosages under your vet advice.

## **TREATING MORE THAN ONE RAT**

If you are treating more than one rat then you can put them in the box together. Just make sure the box is big enough for the rats to be comfortable.

**Only use the amount of medication as you would for ONE RAT – don't increase the dose!**

Each rat will breathe in the amount it needs.

## **NEBULISING TREATMENT**

Treat the rat twice daily for 15 days. Most rats are surprisingly calm when being treated and aren't at all bothered. They soon learn that nothing bad is happening to them and most will just sit in the box and wash themselves. If the rat is getting stressed then try covering the box with a towel and walk away. Most rats will settle, but if the rat is getting badly stressed then you will need to decide whether the benefit of the treatment is worth the stress that it's causing. Do the treatment in a well ventilated room, preferably away from other rats, pets or children. If you think the rat might be disturbed by the noise of the machine, try placing the box as far away as the hose will allow. Don't put any bedding, litter etc in the box because it will absorb the meds. Firstly, put both medications in the nebuliser cup (you don't have to mix them), put the baffle inside the cup (handle the baffle with care – this is the part that does the nebulising), put the lid on the cup and attach the cup to the machine. Place the rat/s in the box and put the lid on. Start the machine and run until all the liquid in the cup has evaporated, depending on the type of machine this can take from 5 to 15 minutes. The cup is clear so you will be able to see when the liquid has all gone. You will see that it's stopped coming out of the holes and the inside of the box will have cleared. Then turn off the machine. If the rat is relaxed and hasn't soiled in the box, then you may leave them in the box for a couple of minutes after turning off the machine to allow them to take in a little more of the medication.

The rat will be a bit damp when you get it out of the box. Have a towel or something ready to dry it. Make sure you dry them off completely. Some rats may seem a little disorientated when they are first treated, some are sleepy afterwards and some are full of energy. Either way give them a cuddle and some 'special' time and maybe a treat before returning them to their cage.

Obviously it's not good for the rats to be soiling in the box, so don't feed them immediately before treating. If they have been asleep then give them time to go to the toilet before putting them in the box.

NOTE: Nebulisers can affect the colour of gas flames, so if you use a gas hotplate in your home during or soon after nebulising, you may notice the flame is slightly pink, yellow or orange. This is an interesting, but completely harmless, chemical reaction due to the small amount of sodium in the air from the saline used in the nebuliser.

## **CLEANING**

Immediately after each use detach the hose from the cup and run the machine for a few minutes to dry any meds or condensation from the hose. This is VERY IMPORTANT as bacteria can easily develop in the hose if it's left damp.

Never wash the hose. If you feel that the hose isn't clean or hasn't been dried out properly after a treatment then it will need to be replaced.

The box and all its attachments (except the hose) must be cleaned thoroughly after each use – remember anything that is in there will be nebulised next time and could end up in your rat's lungs.

The cup and attachments should to be rinsed out and thoroughly air dried after each use. If any medication is allowed to dry on the baffle it will block the tiny holes and the nebuliser won't work properly. You can buy nebuliser cleaner (Nebuclean) and follow the instructions or just use very hot water. After cleaning always rinse out in VERY hot water and lay out in an open place to air dry – don't use cloths or anything to dry the cup or its parts as tiny fibres can block the small holes or get breathed in.

Wash out the box after each use. Rinse out first then use nebuliser cleaner or wipe over with a mediswab. If the box is dirty then use something like antibacterial dishwashing liquid first. If using anything other than a mediswab then rinse the box really well in very hot water and make sure there is no residue. Always leave the lid off to allow to fully dry and any smell to dissipate.

## OTHER NEBULISER TREATMENTS

There are other medicines that can be used in the nebuliser. In the US, injectable Baytril is sometimes used (it is essential that it is injectable Baytril, not the oral one). The Baytril would replace the Gentamicin, and the dosage would be the same (but it could be increased if necessary).

A few people have tried Baytril, but in it didn't work as well as Gentamicin and the rats were put back on Gentamicin. However, this does not mean Baytril won't work for some rats, so if nothing else is working, it is worth giving nebulised Baytril a try – talk to your vet.

We would like to hear from anyone who has tried variations of the treatment described in this document, especially if using different medications or doses.

The AusRFS is happy to answer any questions about this treatment or rat care in general.

The information in this document is taken from the AusRFS Book *The Pet Rat Care Guide*. This book is available from the AusRFS and can be purchased at all club events.

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