

# Chinchillas: a guide to nursing and husbandry

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**Wendy Bament** RVN, MSc, BSc(Hons) takes a look at this pet's environment and adaptations and how this influences its housing and care in captivity

**CHINCHILLAS (*Chinchilla lanigera*)** have gone from being jealously admired and hunted for their luscious coats, resulting in near extinction in the wild (they are listed as critically endangered on the IUCN Red List of Threatened Species), to being in high demand as an entertaining and endearing pet. However, they are not as tolerant of petting as other small mammals, and their anatomical and behavioural adaptations to their native environment should be considered when giving advice to owners and nursing this species.

## Origins and taxonomy

The wild habitat of *C lanigera* is in northern Chile, where colonies of up to 100 individuals occupy altitudes of 3,000m to 5,000m within the Andes mountain ranges (Johnson-Delaney, 2010; Keeble, 2009). This environment is dry and exposed and vegetation is sparse. Chinchillas will sleep during the day in rock crevices and forage socially during dawn and dusk (crepuscular). They may be found lying on their side asleep during the day when hospitalised ([Figure 1](#)). The taxonomy of this species, which is of the rodent family, can be found in [Table 1](#).

## Housing requirements

Chinchillas require plenty of vertical space (more than two cubic metres) due to their high activity levels. This should include closely positioned shelves at different levels and a wooden nest box

(Girling, 2003). They also require regular (10 to 30 minutes a day) dust-bathing opportunities to maintain their coat in optimal condition. However, increased access to dust baths may result in stereotypical behaviours, conjunctivitis and dermatophytosis (Johnson-Delaney, 2010).

Chinchillas are grazing herbivores and hind-gut fermenters and rely on microflora to break down fibre for digestion. They mainly eat at night and perform coprophagy in the mornings. They must have ad-lib access to good quality Timothy hay and clean water. Species-specific pelleted diets or higher fibre monocomponent formats may be a better option than muesli mixes, which can lead to selective feeding of components with high carbohydrate levels. Water sipper bottles are better for chinchillas than bowls due to their fur being difficult to manage when wet.

## Anatomy and physiology

Chinchillas are reported to have in the region of 60 to 90 hairs per follicle, which creates the characteristic silky-soft fur that acts as insulation against the cold temperatures of their natural habitat (Johnson-Delaney, 2010; Keeble, 2009; [Table 2](#)).

Their domed rodent skull, with characteristically large and well developed auditory bullae ([Figure 2](#)), optimises hearing during nocturnal activities and are reported to resemble the hearing range of humans (Heffner and Heffner, 1991).

Chinchillas have a “bird-like” skeleton owing to their fragile and slender bones. Their elongated hind feet, hocks and footpads enable agility through their naturally rocky terrain, but they are prone to pododermatitis in captivity.

The chinchilla’s gastrointestinal microflora is mainly Gram-positive and is thus very sensitive to antibiotics with a Gram-positive spectrum.

Male chinchillas are referred to as bucks. They do not possess true scrotal sacs and the testes lie within the inguinal region. Therefore, the testes are not as prominent as in other rodent species.

The penis has a characteristic “z-shape” ([Figure 3](#)), as described by Johnson-Delaney, 2010 and Girling, 2003.

Female chinchillas are referred to as does and are often larger than males. The female anogenital space is shorter and they possess a cone-shaped papilla housing the urethral and vaginal openings, which can easily be mistaken as a penis ([Figure 4](#)). This is used for targeted urination of potential predators (Johnson-Delaney, 2010).

Female chinchillas are seasonally polyoestrous, with spontaneous ovulation occurring during November to May, with each cycle lasting 40 days. Male chinchillas in an established group do not need to be removed throughout gestation and parturition and will participate in supporting the

young. Despite the females' tendency to be more aggressive, chinchillas should be housed in pairs or as single-sex, or polygamous, groups – for example, one male with up to five females (Johnson, 2006; Johnson-Delaney, 2010).

## Handling

The most important aspects of handling are to prevent furslip or injury to the chinchilla's slender bones. These animals should never be scruffed, but secured around their pectoral girdle in one hand, with their hindlimbs sitting on and supported by the other hand ([Figure 5a](#)). Alternatively, they can be coaxed into a small box for removal from a cage.

General nursing initiatives for chinchillas include providing a quiet and darkened environment, hide options, oxygen therapy, plenty of patience and time for treatments, warmth, and companionship to reduce stress levels. Collapsed, recovering or anaesthetised chinchillas should be maintained in sternal recumbency with the chest slightly elevated to minimise abdominal pressure on the diaphragm.

## Blood sample sites

The most useful sites for blood sampling in chinchillas are the cranial vena cava jugular and lateral saphenous veins ([Figure 6](#)). Bloods are usually taken under general anaesthetic (Johnson-Delaney, 2010).

As a result of living at high altitudes, chinchillas have evolved a higher haemoglobin-oxygen affinity than other rodents and, therefore, show seasonal haematological fluctuations (Girling, 2003).

## Nutritional therapy

Various syringe-feeding critical care/recovery formulas are available for chinchilla nursing (for example, Supreme, Oxbow and Vetark). Chinchillas can object to administration initially, although they do seem to enjoy the taste. In this author's experience, they may eventually sit happily on a table and voluntarily suck from a syringe ([Figure 7](#)). Alternatively, wrapping the chinchilla in a towel and gently inserting a catheter-tip syringe into the diastema (space between incisors and first pre-molar) may encourage feeding.

## Fluid therapy

The fluid maintenance requirement of chinchillas is 100ml/kg/ day. Compound sodium lactate/lactated Ringer's solution is used for general purpose maintenance fluid therapy during and following surgery or if suffering gastrointestinal problems. Fluid therapy can be administered orally (with care), subcutaneously, intraperitoneally, intravenously and intraosseously.

## Dental problems

Pet chinchillas are frequently presented with dental disease and develop painful spurs and overgrowth. Consequently, mandibular cheek teeth with medially-growing spurs can quickly trap the tongue, preventing it from moving dorsally. In some severe cases, tooth apices can reach into the eye orbit, causing blocked tear ducts and damage to the eye (Girling, 2003; [Figures 8](#) and [9](#)). Overgrown mandibular cheek teeth apices are clearly felt along the normally smooth jaw line.

## Gastrointestinal issues

**Oesophageal choke** is a condition specifically associated with chinchillas where food items or foreign bodies (such as bedding or placenta) get lodged in the oesophagus causing an obstruction. An affected chinchilla will seem panicked, followed by coughing, and oedema may be seen. Suffocation can occur rapidly without first aid, such as providing oxygen and efficiently removing the blockage, which may require general anaesthesia (Goodman, 2009; Meredith, 2011). **Non-infectious enteritis** is more of a problem for chinchillas than infectious causes. This type of enteritis can present as gut stasis or diarrhoea and is primarily caused by environmental stress, dental disease, pain or inappropriate dietary provisions (Keeble, 2009). Chinchillas can often be seen bloated and dyspnoeic and, in severe cases, a gastric tube may be needed to release pressure in the stomach.

## Skin disorders

Pododermatitis of the hind feet is commonly seen in pet chinchillas. Often this is due to inappropriately abrasive flooring, lack of exercise, unhygienic conditions or from reduced mobility – for example, due to obesity, injury or old age. The environmental or nutritional cause should be corrected and treatments applied where appropriate, including barrier creams (Sudocrem) and analgesia, to initially relieve discomfort and to aid healing. **Parasites.** *Cheyletiella* mites, or “walking dandruff”, may be seen in chinchillas from sticky tape samples, and *Trichophyton mentagrophytes* or ringworm has been identified in chinchillas. It should be noted that both pathogens are highly infectious and zoonotic; therefore, appropriate precautions should be applied. **Instantaneous alopecia or “fur slip”** is a trait commonly seen in chinchillas that are handled too roughly. Hair can take six to eight weeks to grow back and it may be months before shed patches are back to normal (Johnson, 2006).

## Reproductive disease

**Fur-rings** are frequently reported in male chinchillas, where a small ring of fur collects around the male’s penis inside the prepuce, possibly as a result of a busy breeding season or normal male grooming behaviour, and they should be carefully checked during this time (Johnson, 2006). Over time this can lead to a site of irritation and infection and can develop as a tourniquet, restricting

blood flow and damaging the penis. Dystocia is frequently seen in pet chinchillas owing to poor body condition of the female and/or abnormally large fetuses. However, unlike the guinea pig there does not appear to be any excessive pelvic separation during parturition and the age at which a chinchilla has a first litter is not as important (Girling, 2003).

## Cardiomyopathy

Cardiac enlargement (for example, dilated cardiomyopathy), arrhythmias and murmurs can be caused by congenital defects or dietary imbalances, such as deficiencies in vitamin E or selenium, or high calcium and fat content (Johnson-Delaney, 2010). Echocardiography and well positioned radiographs will help to diagnose abnormalities ([Figure 10](#)). Owners may report that their chinchilla has had a seizure, but this can often be a result of syncope (loss of consciousness from a drop in blood pressure; Goodman, 2009).

## Heat stress

The dense fur of chinchillas is perfectly adapted to the cold temperatures endured in their high-altitude environment in the Andes. In most households and garden sheds during the summer, the temperature reaches dangerously high levels for these specialised creatures. Temperatures above 21°C cause chinchillas to show discomfort and hypersalivation. Fitting and death can occur if the temperature is allowed to rise to above 28°C (Keeble, 2009; Johnson, 2006).

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***KEEPING your skills up to date through CPD is a compulsory part of being an RVN. A minimum of 45 hours over three years is the expected amount – averaging out at 15 hours per year.***

*Learning can take many forms, including the reading of veterinary nursing journals and articles, and this can be recorded on your CPD record card or on the RCVS professional development record ([www.rcvs.org.uk/education/cpd-for-vns](http://www.rcvs.org.uk/education/cpd-for-vns)). For more information, see the RCVS website or telephone the VN department on 020 7202 0788. For a video of how to use the RCVS development record visit [www.youtube.com/vetsonline](http://www.youtube.com/vetsonline)*