

# DIPPING INTO WORLD OF DEGUS

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**Livia Benato** discusses approaches to husbandry and outlines treatment options for common issues encountered in this medium-sized rodent

**DEGUS (*Octodon degus*) are diurnal rodents that belong to the Histrichomorpha suborder, along with chinchillas and guinea pigs. First discovered in Chile in 1850, they were imported into the UK in 1950 for use as research animals to study diabetes.**

Degus are medium-sized rodents that are slightly smaller than chinchillas. Their body length can be 15cm to 20cm, and they can weigh up to 300g ([Table 1](#)). Degus have a short coat of hair in a uniform brown/grey colour, and a long tail that ends in a small brush. They have a life span of five to eight years.

Degus are sociable animals, and they should be housed in pairs or small groups of four to five animals, with one male and a few females, or animals of the same gender. They are easy to handle, but if not tamed, they can be very nervous and can attempt to bite to escape.

## Housing

Degus should be kept in a wiremesh cage in a warm room where the temperature does not exceed 30°C. Chinchilla cages are normally suitable for degus, and the minimum size should be at least 75cm x 85cm x 80cm for two animals.

Degus have strong teeth and are known escape artists, so cages with plastic parts should be avoided, and the distance between the bars should not be too wide. The bottom of the cage should

be solid, rather than wire mesh, to prevent pododermatitis and foot injuries.

The cage should be furnished using straw, hay and shredded newspaper as bedding, cardboard boxes as nesting areas and shelves and ropes for climbing and exercise.

## **Diet**

Degus are hindgut fermenters and their diet should be high in fibre and low in carbohydrates. Their diet should consist of hay, grass, roots, green leaves and small amounts of rodent pellets. These food items can also be used as treats. To prevent teeth problems, gut disturbances and diabetes, fruits and sugary treats – such as yogurt drops or raisins – should be avoided. Water bottles are generally the best way of offering water.

## **Habits**

Degus are territorial animals, and should always be introduced to each other gradually and in a neutral territory. If this is not done, they will fight until a hierarchy is established. They are bright and active, so the cage should be furnished with plenty of wooden toys to chew, branches and cotton ropes to climb and a large running wheel with a solid surface. The additions will allow the animals to exhibit normal behaviour.

Like chinchillas, degus need regular access to a dust bath to keep their skin and coat clean. A dust bath should be provided daily for half an hour, and then removed from the cage so it will not get contaminated by faeces and urine. Chinchilla sand, available in pet shops, is suitable.

## **Handling**

Degus that are used to being handled by their owners are easier to restrain.

One hand should be placed gently, but firmly, around the neck to control the animal while the other supports the rest of the body. A small towel or a pair of leather gloves can facilitate restraint and will help in the avoidance of painful bites.

## **Physical examination**

The processes for physically examining degus are no different to those for guinea pigs or chinchillas. Before starting the physical examination, respiratory rate, demeanour, coat condition, presence of faecal pellets in the cage and the cage itself should be evaluated for further information about the animal and its husbandry.

Once restrained, the eyes, nares, mouth and incisors should be examined. Cheek teeth can be

evaluated using an otoscope. This procedure can be performed towards the end of the examination to reduce the stress to the animal.

After the thorax has been auscultated for evidence of cardiac and pulmonary abnormalities, the abdomen should be palpated to assess internal organs and possible masses or free fluids.

The fur around the perineal and genital areas should be clean and free from any faecal staining, blood or purulent discharge.

The gender is distinguished through the anogenital distance, which is greater in males. Males do not have an obvious scrotum, and the testicles lie within the abdomen or inguinal canal. Females have a prominent urethral process, which is similar to the chinchilla.

Bodyweight and condition are important to the clinical examination, and should be recorded at each visit. A small plastic box can be used to restrain the rodent while it is weighed. The collection of blood and urine samples is important for the diagnosis of possible diseases. Blood samples can be taken from the femoral vein, jugular vein or anterior vena cava. The latter technique should be performed under sedation or general anaesthesia to avoid internal bleeding. The maximum amount of blood that can be collected is one per cent of bodyweight.

In sick animals, it is advisable to collect a smaller sample. For example, in a healthy animal of 300g bodyweight, a total of 3ml can be collected. However, 0.5ml to 1.0ml of blood is generally considered enough for a routine haematological and biochemical evaluation. A urine sample can be obtained from the cage using the non-absorbable side of an incontinence pad, or via cystocentesis under general anaesthesia. Degus can have very concentrated urine.

## **Common problems**

### **• Respiratory issues**

The respiratory conditions that affect degus are similar to those seen in chinchillas. Degus kept in cages with poor ventilation and dusty or scented wood shavings used as bedding are more prone to developing respiratory problems due to irritation of the mucous membranes of the upper and lower respiratory tract. Nasal discharge and dyspnoea are common signs.

Diagnostic procedures, such as radiography, tracheal wash and ultrasonography, should be used where appropriate. While making a diagnosis, initial treatment consists of supportive care using oxygen therapy, fluid therapy and nutritional support if the patient is anorexic.

### **• Bite wounds**

As mentioned previously, degus are territorial and prone to constant fighting, so they may suffer

bite wounds. This behaviour can also be triggered after the cage is cleaned. To reduce the chance of fighting and the risk of bite wounds, it is important a bit of old bedding is left in the cage while it is being cleaned to maintain a familiar scent.

Bite wounds need to be cleaned and flushed profusely, and parenteral antibiotic treatment should be started while culture and sensitivity results are awaited. It is easier and less stressful for the animal if the procedure is performed under general anaesthesia using isoflurane or sevoflurane.

#### • **Ocular problems**

Conjunctivitis and keratitis are common as a consequence of fighting, dental disease or prolonged dust bathing.

Matted fur in the periocular area and ocular discharge can be seen unilaterally or bilaterally. Cataracts can be seen with or without an ophthalmoscope, and are generally due to diabetes. The treatment of choice is to address the underlying causes and administer antibiotics and analgesia if necessary.

#### • **Teeth**

Degus, like chinchillas and guinea pigs, have continually growing, open-rooted teeth, and they may develop dental disorders that could go unnoticed by owners. It is possible to examine the mouth in conscious animals using an otoscope, where abnormalities such as teeth spurs, food impaction and tongue and cheek ulcerations may be seen. If a dental disorder is suspected, a further investigation of the mouth under general anaesthesia is advocated. Endoscopy and radiographic examination may help in making a diagnosis.

#### • **Pododermatitis**

The feet should be examined for any evidence of inflammation and abscesses. This condition is generally seen in heavy animals and those living in dirty cages or where the bottom of the cage is made of wire mesh.

Treatment consists of changing the wire mesh to a solid floor, and using systemic antibiotics, analgesics and feet cleaning with diluted Hibiscrub or povidone iodine.

#### • **Tail trauma**

The degu's tail is long and thin, and ends with a small, black brush. As for gerbils, grasping the animal by the tail may lead to injury and degloving. If this happens, surgical amputation of the tail 1.0cm to 2cm above the injury is the treatment of choice.

- **Obesity**

In the wild, degus have a diet that is high in fibre and low in nutrients. In captivity, the diet is often too low in fibre and high in carbohydrate and energy, potentially causing obesity. This problem can also worsen if the cage is too small and the animal does not have enough space for exercising. To prevent or treat obesity, the amount of rodent pellets and treats should be reduced to a minimum while maintaining a high hay intake, and the cage should be provided with wheels and ropes for exercise and climbing.

- **Diabetes**

Degus are unable to regulate glucose concentrations and are prone to developing diabetes mellitus when fed on diets high in sugars (Opazo, 2003). Common clinical signs are obesity, polyuria and polydipsia and cataracts. Treatment consists of eliminating all sugary food from the diet.

## **Reference**

- Opazo J C et al (2003). Blood glucose concentration in caviomorph rodents, *Comparative Biochemistry and Physiology: Part A* **137**: 57-64.

## **Further reading**

- Keeble E and Meredith A (2009). *BSAVA Manual of Rodents and Ferrets*, BSAVA.
- Donnelly T M (2002). Disease problems of small rodents. In Quesenberry K E and Carpenter J W (eds), *Ferrets, Rabbits and Rodents: Clinical Medicine and Surgery* (2nd edn), Saunders: 299-315.