

Rabbit Behaviour Bulletin

Veterinarians need to be familiar with all the wonderful and diverse species we see. Sometimes it can be challenging to remember what is normal in our less commonly encountered companion animals. This makes it difficult to understand them, identify problems and treat them. It's always handy to brush up on some basics. This document is a review of some rabbit biology and behaviour.

Rabbits - European rabbit ***Oryctolagus cuniculus***

The domestic rabbit originates from the European wild rabbit *Oryctolagus cuniculus* and is closely related to rodents but has four upper incisors rather than two. Humans' relationship with rabbits was first recorded before 1000BC by the Phoenicians on the Iberian Peninsula, now Spain. It is believed they were domesticated around 2000 years ago in Europe by the Romans and also in France. The Normans brought rabbits to Britain in the twelfth century where they became established. All domestic rabbits are the same species as the European wild rabbit *Oryctolagus cuniculus*.

European rabbits live in large social groups and dig burrows to form warrens, often housing about 30 rabbits. Some warrens may contain hundreds of rabbits when the environmental carrying capacity allows. They sexually mature at 4 - 9 months (depending on breed). They have multiple litters a year and can breed all year round with large litter sizes (3-12). The males are very territorial, and females will aggressively defend their nests.

In America, the European rabbit has not become well established, instead the ecological niche has been filled by the cottontail rabbit *Sylvilagus spp*. Cottontails are smaller, mature later (2-3 years for sexual maturity) and are seasonal breeders. They live a solitary life, in thickets and under shrubs for protection. They do not dig burrows and are aggressive to other rabbits.

Most studies in rabbit behaviour, until 1990's, focussed on wild rabbits in natural colonies and experimental colonies, rather than pet rabbits. The behaviour of wild and domestic rabbits is very similar – their major difference is their response to confinement. Wild rabbits do not adapt to cages, often fail to breed and exhibit abnormal behaviours. Rabbits are social, burrowing herbivores (really "leaf"-ivores). They are a prey animal for many predators. They have subsequently evolved to be constantly vigilant, lightweight and fast-moving, with a highly efficient digestive system that enables them to spend the minimum time possible above ground in danger. They are most active dusk and dawn (crepuscular).



As with many herbivores, rabbits' eyes are placed laterally with a large cornea for an extensive circular field of vision. Rabbits use their vibrissae and lips to distinguish various food items via tactile input. Rabbits are obligate nasal breathers (and cannot vomit). They do not like their noses being touched. This needs to be considered when handling the rabbit and giving medication. Their ears are used for an acute sense of hearing and thermoregulation as their ears are very large and highly vascular. The ears account for about 12% of their body surface area. Rabbits are strongly territorial, and use scent marking to mark both animals and inanimate objects. They use both urine and scent glands located on the body to scent mark.

Crunching some rabbit numbers:

- Life span 5-10 years (up to 15 years)
- Sexual maturity:
 - 4-5 months females (does)
 - Induced ovulators with no defined oestrus cycle
 - 5-8 months males (bucks)
- Gestation 30-32 days - altricial kits
- Litter size 4 – 12 kits
- Up to 10 litters per year
- Teeth are open rooted and grow constantly at a rate of 3-4mm per week

Reproductive and developmental behaviour:

- Does make a nest from their own fur
- Ears functional from 7 days, eyes open at 10 days – they can hear before they can see
- Kits emerge from nest at 2-3 weeks and start eating solids
- Caecotrophy starts at 3 weeks (eating own “night” faeces)
- Weaned at 4 - 6 weeks
- Only fed usually once (occasionally twice) a day by doe – feeding time of around 4 minutes
- Doe ignores kits when not nursing

Common behavioural problems in rabbits include urine spraying, failure to use the litter box, fear of humans and human-directed aggression, intraspecies aggression, destructive digging and chewing. These problems are best prevented and treated by understanding their origin in both species-specific behaviour and learning.

Urine spraying is primarily a problem of intact males and females. Rabbits tend to use particular sites for elimination and can be trained to use litter boxes. Territorial marking is a common reason for loss of litter manners. This territorial behaviour can also lead to aggressive rejection of new rabbits that are not members of the group. Introduction of a



new rabbit must be gradual, allowing rabbits to become familiar with each other and preventing them from fighting

Rabbits may become fearful of humans because of painful or frightening experiences with them. They will become more comfortable with humans if they have numerous positive interactions with them, such as playtime and high value treats (these may include sultanas, blueberries, strawberries, apple pieces, banana pieces – rabbits can be quite fussy and have broad individual preferences).

Digging and chewing are natural rabbit behaviours. Giving rabbits acceptable objects to chew prevents them from destroying household items. Removing or covering all electrical cords is also a must.

