

**RABBITS AS HOUSE PETS:  
BASIC HUSBANDRY  
VETERINARY CARE**

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The domestic rabbit has been labeled the condominium pet due to its popularity in this type of lifestyle. The American Rabbit Breeders Association recognizes 42 different breeds of rabbits and many of these breeds have several varieties, or colors. They are available in many different sizes, shapes, colors, variation in ear length and carriage, and types of wool and fur. They range in weight from 2 to over 17 pounds and are almost noiseless. Rabbits are very affectionate, respond to attention and can be trained to use a litter box.<sup>1</sup>

The rabbit is a lagomorph, named because of lagomorph teeth, a set of teeth behind the upper incisors.<sup>2</sup> The female rabbit is called a doe, the male is a buck, and the young are called kits. They also have very vascular ears which function in temperature regulation.

## **BASIC HUSBANDRY**

### **Housing**

Rabbits can be kept in a cage or allowed to roam the house freely. They need good ventilation and lighting, and must be kept free from dampness, direct sunlight, temperature extremes, drafts and other animals that may cause them harm.<sup>3</sup> If they are allowed freedom of the house or a room, care must be taken to see that the rabbit does not chew on electrical cords. Rabbits love to chew, and chewing these can be very hazardous to the health of the animal and the occupant of the house. Most rabbits can be disciplined to prevent this and other vices that may develop.<sup>4</sup> Many people choose to keep the rabbit in a cage during most of the time with supervised freedom in the house for exercise.

Cages should be free of sharp edges, easily cleaned, and constructed to prevent escape and intrusion by other animals. The cage should be large enough to allow freedom of movement and normal postural adjustments.<sup>3</sup> A general rule of thumb is to allow 1 square foot of space per pound of adult body weight, with a minimum size of 24" X 24" X

20".<sup>5,6</sup> For ease of cleaning and handling of the rabbit, the cage should be constructed so that the owner is able to reach all corners of the cage.<sup>7</sup>

These cages can either be purchased commercially or constructed by the owner. Rabbits can be kept on wire, sealed wood, plastic or steel with most animals doing better on a solid floor.<sup>8</sup> Giant breeds should always be housed on solid floors to prevent a condition known as sore hocks.<sup>4</sup> When purchasing or constructing a cage, ease of cleaning and disinfecting must be considered. Unpainted wood, rusted material and other porous, deteriorating materials are difficult to sanitize and should not be used.<sup>3,8</sup>

Generally wire cages are easier to clean and less prone to odors.<sup>9</sup> Also be sure that all materials and paints used for cages, feeders, and etc. are lead free and non-toxic.<sup>10</sup>

Bedding should not be dusty, palatable, or too fine.<sup>11</sup> Dusty or very fine bedding or litter can irritate the rabbits lungs and eyes, and possibly lead to suffocation.<sup>9,11</sup> Any good quality straw, or thoroughly dried bracken or leaves can be used.<sup>12</sup> If a litter box is used, it should be approximately two times as long and two times as wide as the rabbit, with three to six inch high sides. It is important to be sure that materials used in the litter box are absorbent, non-toxic, and dust free. Wood shavings, shredded newspaper, or kitty litter are commonly used.<sup>13</sup>

Rabbits love to chew and play with their dishes, therefore heavy ceramic crocks or feeders suspended from the outside of the cage are preferred over plastic dishes. For water, bottles that can be purchased from pet stores are more sanitary than crocks and will keep insects out.<sup>9</sup> Be sure that the rabbit cannot spill the water and cause the bedding to become wet and soiled. Feeders and waterers should be cleaned regularly to help in the prevention of infection. A rack can also be attached to the side of the cage for hay and greens.<sup>14</sup>

Rabbits can also be housed outdoors year round, and even prefer cool weather, as long as adequate protection is provided and they are allowed to acclimate.<sup>8,9</sup> In the winter the cage must be checked for spaces that will allow drafts to blow through, as cold drafts

cannot be tolerated. During warm weather they should have a way to keep cool and avoid direct sunlight. Fans, trees and vines, and ice (milk jugs filled with warm water and frozen) work well for this purpose. Do not have fans blowing directly on the rabbit, since drafts at any time can cause respiratory problems.<sup>7</sup> Lop rabbits overheat easily because of their hanging ears and should be kept comfortable using ice bottles and fans during warm weather.<sup>9</sup>

Outdoor cages can be built off the ground to prevent rats, mice, snakes and other animals from access. Three feet is adequate to prevent all but the largest dogs from harming the rabbit.<sup>7</sup> Since rabbits have a tendency to burrow, if they are kept in a yard the fencing must extend twelve to fourteen inches below the ground to prevent them from burrowing beneath it.<sup>15</sup>

### **Feeding, Care, Training**

A rabbit that is normal and healthy will generally consume approximately 5% of it's body weight in dry food each day and 10% of it's body weight in water daily.<sup>15</sup> They can be fed once or twice per day and will eat the greatest amount of food during the night, since they are nocturnal creatures.<sup>9,12</sup>

The most convenient and reliable method of feeding is to use a commercial pelleted food.<sup>16</sup> Commercial pellets are nutritionally balanced for the needs of the rabbit, and the only additional nutrient required is a constant, fresh supply of water.<sup>16,17</sup> Water consumption is directly related to proper food intake. If there is not enough fresh water, the rabbit will not eat sufficient amounts to stay healthy.<sup>9</sup> Water is often blamed for diarrhea but the real cause is often a lack of fiber in the diet.<sup>16</sup>

The rabbit pellets used should contain at least 16% fiber and 15% protein. With pellets the quantity of food can also be easily controlled.<sup>16</sup>

It is not necessary to use pelleted food entirely.<sup>16</sup> Figure 1 lists non-poisonous feeds that can be used as treats, as well as poisonous feeds that should be avoided.

Be sure that these foods have not come into contact with weed killers and are thoroughly rinsed before feeding.<sup>8,16</sup> Lush grasses must be dried in the sun for a few hours before being fed.<sup>16</sup> All treats should be fed sparingly so that the balanced nutrition of the pellets is not upset. Never feed frosted, wet or stale greens, and remove uneaten portions since spoilage can cause intestinal distress.<sup>9,16</sup>

Rabbits tend to be very selective in their eating. If they are used to a particular brand of pellets, they may not eat a new brand until hunger pains force them to eat it. Likewise, rabbits that have been raised exclusively on pellets may eat greens only after all the pellets are gone. To avoid problems, make all changes in food gradually, mixing the new food with decreasing amounts of the old food.<sup>16</sup>

Over feeding is a common problem in pet rabbits.<sup>9</sup> Commercially available high fiber diets (22.5%) can be fed to allow free choice feeding while controlling weight gain in the adult, obese prone rabbit. An alternative is to limit feed the lower fiber pellets and supplement with free choice, good quality, grass hay which is high in fiber and low in calories.<sup>3,16</sup>

Because a rabbits' teeth continue to grow, they must also be provided materials to gnaw on to keep their teeth worn correctly. Pet shops often sell pieces of wood or bone to be used as rabbit "chew toys" for this purpose.<sup>18</sup>

Nails should be trimmed every 3-4 months using nail clippers, which can be obtained from a pet supply store.<sup>14</sup> This can be done by holding the rabbit on it's back, firmly between your legs, with it's back legs closest to you. Stroke the abdomen gently until the rabbit relaxes. Have a second person hold the front legs below the elbows while you trim the back nails and reverse the process for the front nails.<sup>19</sup>

Rabbits will shed two to three times per year.<sup>20</sup> Grooming them by repeatedly stroking the animal from the nose to the tail with slightly dampened hands will remove the loosened hair and help to prevent fur balls in the stomach.<sup>17</sup>

Rabbits can quite easily be trained to use a litter box since they most always return to the same location to urinate and defecate. Place the litter box in an isolated location where the rabbit will not be frequently interrupted, but yet aware of it's presence, and fill with one to three inches of material. The younger the rabbit is when exposed to the litter box, the less difficult the training will be. At the start of training, keep the rabbit confined to a small area and place a small piece of urine soaked paper in the box to encourage this location for further elimination. If accidents do occur outside the litter box, clean it up immediately, place it in the litter box and thoroughly clean the site to eliminate the odor. During the training process, leave some feces and urine in the litter box to encourage the rabbit to return to the box for further use. Also, do not completely disinfect the litter box during this time so the remaining odor will attract the rabbit to return. Once the rabbit has become accustomed to using the box it can be moved to the desired location and the rabbit will usually follow. Occasionally rabbits, usually males, will suddenly begin to urinate at various locations. This indicates that the animal has become sexually mature and is marking his territory. Neutering will usually stop this habit.<sup>13</sup>

### **Cleaning**

Buildup of ammonia can damage a rabbits' lungs and cause excessive sneezing. Daily brushing of the cage bottom and cleaning of the litter box (if one is used) is essential for the rabbits well being.<sup>9</sup> The bedding should be changed at least once a week.<sup>3</sup> The cage and all equipment should be scrubbed periodically with a good disinfectant such as a 10% mixture of bleach and water.<sup>9,12</sup> Do not return the rabbit to the cage until all traces of the disinfectant odor have disappeared.<sup>12</sup>

Rabbit urine normally contains excreted calcium which makes it cloudy. This calcium will precipitate and adhere to the cage bottom or litter box causing it to be roughened. This precipitate is difficult to remove, unsightly and allows a place for

**bacteria to collect and multiply. A slightly acidic solution made by mixing one part vinegar with five parts water will remove this material.<sup>13</sup>**

**Areas of a rabbits coat that are soiled can be cleaned with vinegar or hydrogen peroxide on a cotton pad. Corn starch is excellent for removing grease stains in the fur. Shampooing should only be used in extreme cases and then only if restricted to small areas, since bathing will destroy the natural oils in the fur. After cleaning, be sure the animal is thoroughly dried to avoid chilling.<sup>9,12</sup>**

### **Handling**

**Two hands should always be used to lift a rabbit. One hand under the chest, or grasping the loose skin at the back of the shoulders, and the other under the rump to support most of the weight. Holding the rabbit to the chest will make it feel more secure and less likely to struggle. Another method is to hold the animal securely against the body of the handler with all four feet against the handlers torso, supporting the body weight of the rabbit with both hands.<sup>21,22</sup>**

### **Choosing a Rabbit**

**Rabbits are bred for a variety of sizes, colors, shapes and hair lengths. When choosing a rabbit as a pet, keep in mind the size and type of housing you are willing to maintain and the amount of work that will be necessary to keep them groomed and clean. For example, angora rabbits are bred for a long, soft, silky texture hair coat that must be shaved or stripped regularly to prevent hair balls and lop eared rabbits are prone to ear wax accumulation, and therefore need to have their ears cleaned more often.<sup>9</sup>**

**Rabbits should be at least eight weeks old at the time of purchase. This allows about two weeks after weaning for them to adjust to the stressful weaning period and adapt to a diet of solid food.<sup>22</sup>**

**The sex of a rabbit can be determined by holding them upside down and pressing gently on either side of the sex organ area. Bucks will have a minute tubular protrusion**

and does will have a minute slit. At 6-8 weeks of age the penis of the buck will push out through the little protrusion and the testicles will become visible.<sup>23</sup>

It is not advisable to house two mature rabbits together unless they are neutered. Rabbits of the same sex, especially bucks, tend to fight violently. Unplanned pregnancies are a problem if unneutered adults of the opposite sex are housed together.<sup>2,15</sup>

When purchasing a new rabbit, be sure to examine it well to establish that it is healthy. The overall appearance should be smooth and sleek with a sparkling coat. There should be no bald patches in the coat, no signs of sores on the bottom of the feet, and no evidence of fleas. There should be no signs of cuts or abrasions, especially around the lips or eyes, which can indicate fighting due to keeping the young rabbits together for too long. Check that there are no traces of diarrhea and no evidence of fecal material attached to the fur, or discharge from the sexual organs. The body should be well rounded and firm with no protuberances of bone, especially along the back. The eyes and nose should be free of discharge. If the rabbit has a nasal discharge it will often attempt to clean its nose with its front paws, leading to damp, sticky front feet. The ears should not have scabs or a waxy deposit in them. Be sure that their teeth are in proper alignment, with the upper incisors overlapping the lower incisors for proper wear. The rabbit should be alert and bright eyed with an interest in its surroundings. The ears should turn in the direction of each unusual sound, and its nose should be moving constantly.<sup>20,21</sup>

It is common for rabbits to have a condition known as red urine. This is due to the incomplete metabolism of a vitamin causing the urine to appear bright red. This condition is not harmful to the rabbit in any way.<sup>13</sup>

A rabbit will normally stomp its hind foot on the floor in a loud thump when approached by strange sounds or individuals. This thump may be repeated several times in succession, or at repeated intervals. If a rabbit is attacked, it is not uncommon for them to elicit a shrill shriek.<sup>15</sup>



**Figure 1<sup>8,9,16,38</sup>****Non-Poisonous**

<b>Hay</b>	<b>all grasses or clovers</b>
<b>Weeds, Flowers, &amp; Grasses</b>	<b>dandelion (all parts), hog weed, comfrey, young shoots of woody growths (such as heather, bramble tips, raspberries, and black currants), groundsel, knotgrass, prunings of fruit bushes,* thistle, dried netts, shepherds purse, sow thistle, goose grass, plantains</b>
<b>Fruits, Vegetables, &amp; Breads</b>	<b>turnips, kale, peas (all parts), broccoli, beets, bean shucks, lettuce, beet root, sweet corn (all parts), celery, chicory, cabbage leaves, brussels sprouts, leek, cauliflower, kohlrabi, parsnips, parsley, oranges, apples, ripe bananas, rice cakes, dried bread, crackers</b>

\*Prunings are particularly good because the rabbits can wear their teeth down on them.

**Poisonous**

<b>Flowers, Vegetables, &amp; Weeds</b>	<b>laurel, ivy, bittersweet, belladonna, rhubarb, honeysuckle, daffodil tops, potato (cooked or raw), arum lilies, anemone, buttercup, bluebell, bryony, celandine, convolvulus, elder, deadly nightshade, dog mercury, fig wort, foxglove, poppy, henbane, fools parsley, hemlock, laburnum, toadflax, travelers joy,</b>
<b>yew</b>	

**Figure 2<sup>3</sup>****Rabbit Physiologic Values**

The values listed below are approximations only and may not represent the normal range in a given population.

Adult body weight: buck	2-5 kg
Adult body weight: doe	2-6 kg
Birth weight	30-80 g
Life span	5-6 yr or more
Food consumption	5 g/ 100 g/day or more
Water consumption	5-10 ml/ 100 g/day or more
Breeding onset: male	6-10 mo
Breeding onset: female	4-9 mo
Cycle length	induced ovulator
Gestation period	29-35 days
Postpartum estrus	none
Litter size	4-10
Weaning age	4-6 wks

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