THE SCIENCE WORLD
A Monthly e Magazine
ISSN:2583-2212
Popular Article
December, 2025 Vol.5(12), 11229-11233

A Comprehensive Guide to Rabbit Husbandry, Nutrition and Health

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DOI:10.5281/ScienceWorld.18111506

Abstract

Rabbits have become increasingly popular as companion animals worldwide; however, they remain among the most misunderstood domestic species due to their unique anatomical and physiological characteristics. Their specialised digestive system, continuously growing dentition, fragile musculoskeletal structure and prey-species behaviour demand precise husbandry and informed veterinary care. This article provides a comprehensive overview of essential aspects of rabbit management, including housing, nutrition, safe handling and common medical disorders. Emphasis is placed on appropriate enclosure design, temperature regulation, social housing and the need for regular exercise. Nutritional requirements are discussed in detail, highlighting the critical role of dietary fibre in maintaining gastrointestinal motility, dental health and caecal fermentation. Common diseases affecting rabbits, including dental, dermatological, respiratory, gastrointestinal, urinary and neurological conditions, are reviewed with a focus on early recognition, prevention and management. Overall, the article underscores the importance of owner education and evidence-based care in improving rabbit welfare, preventing avoidable diseases and ensuring a long, healthy life for pet rabbits.

Keywords: Rabbit husbandry; Nutrition; Dental disease; Gastrointestinal health; Preventive care

Introduction

Rabbits have rapidly emerged as one of the most popular companion animals across the world. Their quiet nature, exploratory behaviour and gentle temperament make them suitable companion animals for families, apartment dwellers and children under supervision. However, despite their popularity, rabbits remain one of the most misunderstood domestic species. Their unique digestive physiology, delicate musculoskeletal system and highly specialised dentition demand well-informed husbandry and veterinary care. This article summarises essential aspects of rabbit care, housing, nutrition, handling and common diseases.

1. Housing and Husbandry

Providing an appropriate environment is the first step in maintaining a healthy rabbit. A rabbit's enclosure must allow space for stretching, hopping, resting, and display of normal behaviour. A **minimum enclosure size of 3 ft (width) × 6 ft (length) × 1 ft (height)** is recommended for both the covered and open living area. Rabbits tolerate cool climates well, and the **ideal ambient temperature is 15–20°C**. They are extremely sensitive to heat and cannot sweat or pant; thermoregulation occurs mainly through the ears, making high temperatures potentially fatal. Rabbits naturally keep one area of their hutch for defecation and urination, which should be **cleaned daily**. Bedding must be soft and absorbent (newspaper layered with hay is ideal) and changed weekly.

Moreover, Rabbits require **at least four hours of supervised exercise daily** to maintain musculoskeletal and gastrointestinal health. They also benefit greatly from natural light exposure for vitamin D metabolism. Being highly social animals, they thrive when housed in compatible pairs or small groups. The safest combination is **two rabbits of opposite sex**, provided they are neutered to avoid aggression and unwanted litters.

2. Nutrition: The Foundation of Rabbit Health

Rabbits are strict herbivores with a digestive system adapted for **high-fibre diets**. Fibre is the most critical component which ensures normal gut motility, promotes dental wear, and maintains healthy caecal microflora. It is of two types. Indigestible fibre which promotes gut movement and stimulates consumption of caecotrophs and Digestible fibre which is fermented in the caecum, producing volatile fatty acids essential for energy.

Considering the same, **Grass and high-quality hay (timothy, meadow, or alfalfa for young rabbits)** should form the bulk of the diet. Leafy greens (spinach, cabbage leaves, carrot tops, broccoli, peapods and maize plants) may be added in moderation. Fruits, tomatoes, and lettuce should be reserved as occasional treats. Grasses and legumes also provide adequate amino acids, while **caecotrophy supplies vitamin B and K**. Calcium balance is crucial as excess leads to urinary sludge, while deficiency causes weak bones and poor dental mineralisation. Excessive cabbage (goitrogenic), kale (risk of haemolytic anaemia), and spinach or turnips (high oxalates) which are commonly given by some owners should be avoided.

General feeding of rabbits should emphasise gradual dietary transitions to avoid gastrointestinal disturbances. Unlimited access to good-quality hay and clean, fresh water should be provided at all times. Fresh vegetables should be offered daily in quantities approximately equivalent to the size of the rabbit's head. Pelleted feed should be given in

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Published 18/12/2025

limited amounts, generally restricted to about 2–3% of the rabbit's body weight and offered once daily. Adult rabbits typically consume an amount of hay roughly equal to their own body size each day.

3. Safe Handling and Clinical Care

Rabbits are prey animals and can easily panic. **Proper lifting and restraint support the hindquarters to prevent spinal injury**. Chemical restraint may be required for uncooperative patients; commonly used drugs include acepromazine, midazolam and butorphanol.

4. Common Diseases in Rabbits

Rabbits are prone to a wide range of dental, dermatological, respiratory, gastrointestinal, urinary and neurological disorders many of which can become life-threatening if not identified and managed promptly. Early recognition, appropriate treatment and optimal husbandry practices play a critical role in improving prognosis and overall welfare.

Dental disorders represent one of the most common and preventable health problems in pet rabbits due to their continuously growing teeth, which elongate by approximately 1–2 mm per week. Inadequate tooth wear resulting from low-fibre diets, genetic malocclusion (particularly in dwarf breeds), dental trauma, metabolic bone disease or chronic infections can lead to malocclusion, excessive salivation, difficulty eating, facial swelling and alopecia around the mouth. Acquired dental disease may involve progressive tooth root elongation, resulting in epiphora due to nasolacrimal duct obstruction, facial abscessation, pain, anorexia and secondary gastrointestinal stasis. Tooth root abscesses are particularly challenging to manage due to the formation of thick caseous pus and often require aggressive surgical intervention, prolonged antibiotic therapy and intensive supportive care.

Diagnosis of dental disease involves thorough oral examination, often under sedation, supplemented by skull radiography or computed tomography to evaluate cheek teeth and root involvement, along with detailed dietary assessment. Prevention remains the cornerstone of dental health and includes providing unlimited grass hay, minimising high-carbohydrate pellets and treats, ensuring adequate dietary calcium and scheduling regular veterinary dental examinations every 6–12 months. Effective dental management is essential for maintaining long-term gastrointestinal health, comfort and normal behaviour in rabbits.

Dermatological disorders are frequently encountered in rabbits and include alopecia resulting from nutritional deficiencies, barbering behaviour or endocrine abnormalities. Parasitic infestations caused by mites such as *Cheyletiella* and *Psoroptes* lead to intense

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pruritus and crust formation, while myiasis (fly strike) commonly affects outdoor rabbits, particularly those with urine scald or obesity. Dermatophytosis caused by *Trichophyton* and *Microsporum* species carries zoonotic significance and ulcerative pododermatitis often arises from poor flooring, obesity and inadequate hygiene. Management typically involves antiparasitic treatment such as ivermectin, topical antifungal therapy, wound care and correction of environmental and nutritional factors.

Respiratory diseases are commonly dominated by pasteurellosis, also known as "snuffles," which represents the most prevalent respiratory condition in rabbits. It may present as rhinitis, conjunctivitis, pneumonia and in severe cases, neurological signs due to inner ear involvement. Diagnosis relies on radiographic evaluation and bacterial culture, while treatment requires prolonged antibiotic therapy using agents such as enrofloxacin or chloramphenicol along with environmental optimisation.

Gastrointestinal disorders are among the most serious health concerns in rabbits. Enteritis and enterotoxemia are often associated with low-fibre diets and inappropriate antibiotic use, manifesting as foul-smelling diarrhoea, dehydration and sudden death. Coccidiosis caused by *Eimeria* species primarily affects young or densely housed rabbits and may result in diarrhoea, poor growth, or hepatic involvement in hepatic forms. **Gastrointestinal stasis and obstruction constitute true emergencies**, characterised by anorexia, reduced or absent faecal output, abdominal pain and gas distension. **Prokinetic agents such as ranitidine or metoclopramide should only be administered after ruling out obstruction**. Trichobezoars (hairballs), resulting from grooming combined with low fibre intake and boredom, can contribute to obstruction, as rabbits are incapable of vomiting.

Urinary tract disorders are common due to the rabbit's unique calcium metabolism, whereby excess calcium is excreted in the urine. This predisposes rabbits to conditions such as sludgy urine, cystitis and urolithiasis. Clinical signs include dysuria, urine scalding and red-tinged urine, the latter often attributable to normal urinary pigments rather than hematuria.

Common neurological disorders in rabbits include vestibular disease and encephalitozoonosis. Torticollis or head tilt may arise from peripheral causes such as otitis media or interna, or central causes including *Encephalitozoon cuniculi* infection or neoplasia, presenting with head tilt, circling and nystagmus. Encephalitozoonosis, which is also a significant zoonotic protozoal disease, can lead to neurological signs, renal disease, cataracts, seizures and sudden death. Treatment typically involves fenbendazole administration for approximately 28 days along with supportive care.

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Conclusion

Rabbits are delightful, intelligent, and rewarding pets, but their care requires informed commitment. Understanding their unique needs from housing and nutrition to dental care and disease prevention helps ensure a long, healthy life. Veterinarians must continue educating owners on proper husbandry, as most health problems in rabbits are preventable with correct management. With improved awareness and evidence-based care, rabbits can enjoy a high standard of welfare, and their owners can benefit from the companionship of these remarkable animals.

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