

## COMMON DISEASES IN RABBIT

Disease/aetiology	Clinical signs	Diagnosis	Treatment/comment
<b>Abscess</b> <i>Pasteurella multocida, Staphylococcus aureus, Pseudomonas, Proteus, Streptococcus, Corynebacterium, Bacteroides and other anaerobes.</i> Local entry, e.g. wound or haematogenous spread	Subcutaneous or facial swelling, draining tracts May be dull, anorexic, pyrexic if bacteraemic. Also dyspnoea (pulmonary abscess), neurological signs (cerebral/spinal abscess)	Aspirate, bacterial culture (aerobic and anaerobic), abscess wall is best material for culture; complete blood count (CBC) and biochemistry; radiography, ultrasonography	Surgical removal is treatment of choice. If dental involvement, removal of associated teeth and debridement of bone plus various options, e.g. doxycycline gel, antibiotic-impregnated PMMA beads, sodium hydroxyapatite plus antibiotic, or marsupialization and flushing if unable to remove surgically, systemic antibiotics; injection of gentamicin into capsule (0.5–1 ml per rabbit empirically)
<b>Aberrant conjunctival overgrowth</b> Unique to rabbit. Unknown aetiology	Fold of non-adherent conjunctival tissue arising from limbus and covering variable area of cornea	Clinical signs	Surgical removal results in recurrence. Suturing fold to sclera allows vision
<b>Accumulation of caecotrophs</b> Excess production (low fibre, high-protein and high-carbohydrate diet) or reduced ingestion due to overfeeding, altered palatability (e.g. with high-protein diet) or physical problems, such as obesity, spinal pain, dental pain	Caking of caecotrophs around perineum, secondary myiasis (fly strike)	Clinical signs	Address underlying cause. Dietary reform to high fibre, low or no concentrate diet. May take several months on hay alone to resolve
<b>Allergic/irritant rhinitis/bronchitis</b> Environmental allergens or irritants	Sneezing, dyspnoea, nasal discharge	Exclusion of other causes of upper respiratory tract (URT) signs; response to elimination of suspected allergen;	Avoidance of allergen. Antihistamines. Corticosteroids (use with extreme care, as highly immunosuppressive; do not use if concurrent <i>Pasteurella</i> or other bacterial infection)

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		response to antihistamines/ corticosteroids	
<b>Antibiotic toxicity/enterotoxaemia</b>  Reported with all antibiotics except fluoroquinolones and potentiated sulphonamides, especially ampicillin, amoxicillin, clindamycin, lincomycin, cephalosporins and erythromycin. Will only occur if clostridia already present in GI tract	Diarrhoea (brown, watery, foetid, bloody), depression, dehydration, hypothermia, abdominal distension, collapse, death	History of antibiotic usage; faecal culture and toxin isolation (rarely performed)	Fluid therapy (intravenous/intraosseous). Colestyramine, ranitidine, metoclopramide, cisapride, metronidazole. High fibre diet (assisted feeding), probiotics
<b>Bacterial dermatitis (see also pododermatitis)</b>  Usually <i>Staphylococcus aureus</i> but also other bacteria. Primary bacterial dermatitis rare	Alopecia, erythema, ulceration, pruritus	Bacterial culture	Antibiosis (topical/systemic). Address underlying cause
<b>Bacterial enteritis</b>  <i>Escherichia coli</i> , <i>Salmonella</i> , Tyzzer's disease ( <i>Clostridium piliforme</i> ). High morbidity and mortality in young rabbits	Diarrhoea, depression, weight loss, hypothermia, abdominal distension, collapse, death	Faecal culture; postmortem examination; histopathology for Tyzzer's disease	Fluid therapy, Appropriate antibiosis, metoclopramide, cisapride, ranitidine. High fibre diet, probiotics
<b>'Blue fur' disease</b>  Secondary <i>Pseudomonas aeruginosa</i> infection of moist skin/fur	Moist dermatitis, blue coloration of fur in moist areas – dewlap, skin folds	Blue coloration pathognomonic; culture of <i>Pseudomonas aeruginosa</i>	Clip fur, keep dry. Topical antiseptic. Systemic antibiotics may be required. Address underlying cause
<b>Coccidiosis</b>  <i>Eimeria</i> spp., <i>Eimeria stiedae</i> (hepatic coccidiosis). Can cause high morbidity and mortality in young rabbits	Diarrhoea, weight loss, anorexia, jaundice, dehydration, ascites, death	Faecal oocysts; post-mortem examination	Sulphonamide drugs, toltrazuril, amprolium, robenidine. Disinfection, good hygiene
<b>Conjunctivitis</b>  Bacterial, e.g. <i>Pasteurella</i>	Photophobia, blepharospasm,	Bacterial culture	Topical and subconjunctival

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<i>multocida.</i> Also irritants, e.g. ammonia, dust	chemosis		antibiosis. Topical corticosteroids if irritant and no corneal ulceration
<b>Cystitis</b> Primary or secondary bacterial infection. Hypercalciuria/urolithiasis may predispose	Urinary incontinence, urine scald, dysuria, haematuria	Urinalysis, culture and cytology; radiography	Antibiosis. Analgesia. Fluid therapy. Reduce calcium content of diet. Potassium citrate
<b>Dacryocystitis</b> Bacterial infection of nasolacrimal duct: <i>Pasteurella multocida, Staph</i>	Lacrimation, purulent ocular discharge	Bacterial culture	Flushing of nasolacrimal ducts until clear – may be required over several days. Topical antibiotic instillation. Investigate for underlying incisor and premolar tooth root elongation
<b>Dental disease/malocclusion</b> Primary congenital incisor malocclusion – mandibular prognathism (esp. dwarf breeds); acquired dental disease; cheek teeth malocclusion and overgrowth can lead to secondary incisor malocclusion	Weight loss, ptalism, dehydration, lack of grooming, lack of caecotrophy, facial/retrobulbar abscesses, ocular discharge, dacryocystitis, incisor wear abnormalities, palpable swellings on ventral border of mandible, ulceration (oral mucosa, tongue, cheek, palate, lip), deep laceration to tongue or cheek, spikes on the edges of cheek teeth occlusal surfaces, pain on palpation of maxillary zygomatic process or mandibular manipulation, food impaction between or around the	Dental examination; skull radiography	Burr sharp edges/spikes, burr crowns to correct form and height. Tooth removal: incisor extraction if primary malocclusion or uncorrectable secondary malocclusion. Antibiosis. Analgesia – may be required long term; oral meloxicam recommended. Euthanasia if severe disease

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	cheek teeth, missing teeth		
<b>Dermatophytosis</b> <i>Trichophyton mentagrophytes</i> (usually), <i>Microsporum</i> (rare)	Alopecia, scaling, crusting, with or without pruritus	Fungal culture	Clip surrounding hair. Topical antifungal agents, e.g. miconazole, clotrimazole, enilconazole for small areas; systemic griseofulvin for widespread lesions; systemic itraconazole
<b>Dysautonomia</b> Cause and incidence unknown. Degeneration of autonomic ganglia leading to GI tract stasis; similar to equine grass sickness	Mucoid diarrhoea, GI tract stasis, caecal impaction, dehydration, anorexia, weight loss, abdominal pain, abdominal distension, death	Histology of mesenteric autonomic ganglia	Fluid therapy. Metoclopramide, cisapride, ranitidine. Analgesia. High fibre diet. Treatment usually ineffective
<b>Ear mites</b> <i>Psoroptes cuniculi</i> (non-burrowing); 3-week life cycle on host	Pruritus, head-shaking, self-trauma, thick crusts in external ear canal, lesions can spread to face and neck	identification of mite	Ivermectin, moxidectin. Acaricidal ear drops for mild infections. Soften and remove debris – take care not to damage ear canal. Analgesia in severe cases
<b>Encephalitozoonosis</b> <i>Encephalitozoon cuniculi</i> , an intracellular microsporidian parasite. Target organs kidney and CNS. Spores shed in urine and ingested or inhaled. Very common, infection often asymptomatic but can cause neurological signs and renal disease. Antibodies not protective	Ataxia, torticollis, posterior paresis/paralysis, 'floppy rabbit syndrome', urinary incontinence, tremors, convulsions, chronic weight loss and polyuria/polydipsia	Clinical signs; serology; post-mortem examination	Fenbendazole. Short-acting steroids if severe neurological signs. Supportive care. Cleaning and disinfection of environment – quaternary ammonium compounds inactivate spores
<b>Endometrial hyperplasia</b> Common in unmated does. A continuum of aging	Haematuria, bloody vaginal discharge, palpably enlarged	Radiography, ultrasonography ; exploratory	Ovariohysterectomy

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changes from hyperplasia to adenocarcinoma occurs	uterus	surgery; histology	
<b>Fleas</b> Rabbit flea ( <i>Spilopsylla cuniculi</i> ) important vector for myxomatosis. <i>Cediopsylla simplex</i> and <i>Odontopsyllus multispinosus</i> in USA. Also cat Flea ( <i>Ctenocephalides felis</i> )	Often none, pruritus	Identification of flea or flea faeces	Imidacloprid (authorized in UK), lufenuron, feline/canine pyrethrum products. Avoid Fipronil spray – adverse reactions reported. For cat flea, if cat/dog and environment are treated rarely need to treat rabbit
<b>Fur mites</b> <i>Cheyletiella parasitivorax</i> : 5-week life cycle on host but can survive off host; ZOONOSIS. <i>Listrophorus gibbus</i> not pathogenic or zoonotic; <i>Demodex cuniculi</i> rarely reported	Alopecia, scaling, crusting, minimal/no pruritus	identification of mite	Ivermectin. Treat all in-contacts and environment (can use feline/canine environmental flea products.)
<b>Mastitis</b> Bacterial infection of mammary glands in lactation or pseudopregnant does; often <i>Pasteurella multocida</i> , <i>Staphylococcus aureus</i> , streptococci. Also aseptic cystic mastitis in intact does >3 years	Depression, pyrexia, anorexia, polydipsia, swollen painful abcessated mammary glands, septicaemia, death, non-painful, may exude brown fluid	Clinical signs; bacterial culture; clinical signs; biopsy	Antibiosis. Supportive care. Analgesia. Drainage of abscesses. Surgical excision for severe infections. Wean young. Benign condition. Ovariohysterectomy will resolve
<b>Myiasis (fly strike)</b> Primary or secondary myiasis occurs rapidly in warm weather. Flies usually attracted to accumulated caecotrophs in perineal area, due to dental disease, obesity, spinal disease or any cause of	Depression, collapse, death	Presence of fly larvae	Fluid therapy and supportive care. Sedate rabbit and remove maggots; clip fur; flush wounds with antiseptic solution. Systemic antibiosis. Ivermectin. Address underlying cause. Fly control for

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debilitation			outdoor rabbits. Prevention with cyromazine (Rearguard)
<b>Myxomatosis</b> Poxvirus spread by the rabbit flea or other biting insects	Facial and genital oedema/ swelling, blepharitis, conjunctivitis, ocular and nasal discharge, pyrexia, subcutaneous masses, nasal scabbing only in some cases, depression, death	Clinical signs	Supportive care in mild cases. Euthanasia. Prevention by vaccination
<b>Otitis media/interna</b> Usually ascending bacterial infection via eustachian tube from nasopharynx ( <i>Pasteurella multocida</i> common)	Head tilt/torticollis	Skull radiography, CT; bacterial culture	Antibiosis. Bulla osteotomy
<b>Pasteurellosis</b> <i>Pasteurella multocida</i> : common inhabitant of nasal cavity and tympanic bullae; overt disease usually follows injury or stressor, e.g. overcrowding, intercurrent disease. Spread by direct and venereal contact, aerosol (slow), fomites, vertical/perinatal	Nasal discharge, sneezing, conjunctivitis, dacryocystitis, bronchopneumonia, head tilt/ torticollis, abscesses, pyometra, mastitis, orchitis, epididymitis, depression, anorexia, pyrexia, death	Bacterial isolation (serology); radiography (turbinate atrophy, pneumonia, pulmonary abscesses)	Antibiosis. Fluid therapy and supportive care. Nebulization with mucolytics (e.g. bromhexine, N-acetylcysteine, hyaluronidase) to break up nasal secretions. See treatment for abscesses, pyometra, mastitis, metritis, orchitis, epididymitis
<b>Pododermatitis</b> Bacterial infection (often <i>Staphylococcus aureus</i> , streptococci) secondary to poor husbandry (wet soiled bedding), obesity, inactivity, genetic factors (Rex rabbits)	Alopecia, erythema, skin thickening, lameness, ulceration, abscessation, osteomyelitis	Clinical signs; bacterial culture	Antibiosis – topical and systemic. Analgesia/NSAIDs. Bandaging. Surgical debridement if severe. Improve husbandry. Weight reduction

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(lack guard hairs on plantar surface)			
<b>Pregnancy toxaemia/hepatic lipidosis</b> Affects pregnant, postpartum and pseudopregnant does or obese rabbits if for any reason anorexia occurs	Depression, incoordination, collapse, dyspnoea, convulsions, coma, death	Clinical signs: ketonuria, proteinuria, aciduria	IntraVenous lactated Ringer's solution and 5% glucose. Corticosteroids. Assisted feeding
<b>Rabbit haemorrhagic disease</b> Calicivirus: spread by direct or indirect contact (fomites)	Usually sudden death, pyrexia, depression, haemorrhagic discharge from nose and mouth	Post-mortem examination	Post-mortem examination No treatment. Prevention by vaccination
<b>Rabbit syphilis/venereal spirochaetosis</b> <i>Treponema paraluis cuniculi</i> : direct contact/venereal spread; kits can be infected at birth. Symptomless carrier state	Ulcerative crusting lesions around genitalia and on face and legs from autoinoculation; secondary bacterial infection and eosinophilic granuloma formation can occur	Detection of organism in direct smear (dark field background) or biopsy sample (silver stain)	Penicillin (not oral) – care, enterotoxaemia
<b>Splay leg</b> Inherited disease, several genes involved. 1 to 4 legs affected. Subluxation of hip in some cases	One or more legs held adducted	Clinical signs; radiography	No treatment
<b>Tyzzer's disease</b> <i>Clostridium piliforme</i> : can cause high morbidity and mortality in young rabbits	Watery diarrhoea, depression, death, chronic weight loss (older rabbits)	Post-mortem examination	Poor response to antibiosis: treatment only palliative once clinical signs observed – try supportive care and tetracyclines. Prevention by good husbandry. 0.3% sodium hypochlorite kills spores

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<b>Urolithiasis/hypercalciuria</b> Associated with obesity, inactivity, low water intake, neurological bladder disease and high calcium intake	Haematuria, dysuria, abdominal pain	Radiography, ultrasonography ; cystoscopy; urinalysis	Bladder lavage. Cystotomy and urolith removal. Antibiosis. Lower dietary calcium content. Not possible to acidify urine. Oral potassium citrate may be beneficial. Weight loss and increased exercise
<b>Uterine adenocarcinoma</b> Extremely common in older unmated does. Progressive uterine changes from hyperplasia to adenocarcinoma. Rapidly metastasizes locally and to lungs	Haematuria, vulval discharge, weight loss	Abdominal palpation; radiography; exploratory surgery	Ovariohysterectomy. Always radiograph thorax for pulmonary metastases
<b>Viral enteritis</b> Rotavirus. Coronavirus (RARE)	Diarrhoea, depression, anorexia, death. High morbidity/mortality in young rabbits	Viral isolation	No treatment

Drug	Doses	Indications/comments
Aspirin	100 mg/kg orally q12–24 h	Analgesic, antipyretic, antiinflammatory
Buprenorphine	0.01–0.05 mg/kg s.c., i.m., i.v., t.m. q6–12h	Analgesia, sedation. Doses <0.03 mg/kg have very limited analgesic effects

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		but still have some sedative effects
Butorphanol	0.1–1.0 mg/kg s.c., i.m., i.v. q2–4h	Analgesia, sedation
Carprofen	1–2 mg/kg s.c., orally q12h 2–4 mg/kg s.c., orally q24h	Anti inflammatory, analgesia
Flunixin	1.1 mg/kg orally, s.c., i.m. q12h	Anti-inflammatory, anti-endotoxic. <b>Use with caution, especially in hypovolaemic patients, for 3 days maximum</b>
Gabapentin	3–10 mg/kg orally q8–12h	Analgesia, particularly in cases of neurogenic pain
Ibuprofen	2–7.5 mg/kg orally q12–24h	
Ketoprofen	1–3 mg/kg s.c., orally q12–24h	Anti inflammatory, analgesia
Meloxicam	0.2–0.6 mg/kg s.c., orally q12–24h  ≤1.5 mg/kg orally q24h for up to 5 days	Some rabbits seem to respond better to doses at the lower end of the range given twice daily than to higher doses given once daily
Paracetamol	200–500 mg/kg orally	Analgesia. Short-term use only, hepatic toxicity
Morphine	2–5 mg/kg s.c., i.m. q2–4h  5–10 mg/kg s.c., i.m. q2–4h	
Tramadol	4.4–11 mg/kg orally q12h	Analgesia

Drug	Doses	Indications/comments
Enrofloxacin	10–30 mg/kg orally, s.c., i.m. q24h  Up to 20 mg/kg orally, s.c., i.m. q24h	
Ciprofloxacin	5–20 mg/kg orally q12h	
Doxycycline	2.5 mg/kg orally q12h	
Marbofloxacin	2–10 mg/kg orally, i.m., i.v.	

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	q24h	
Metronidazole	20–40 mg/kg orally q12h	Treatment of choice for enterotoxaemia
Trimethoprim/ sulfamethoxazole	40 mg/kg orally q12h	
Tylosin	10 mg/kg orally, s.c., i.m. q12h	
Penicillin G	40,000 IU/kg s.c., i.m. q7days for 3 doses	Treponematosis
Oxytetracycline	30 mg/kg s.c. q72h 15 mg/kg s.c. q24h	
Gentamicin	1.5–2.5 mg/kg s.c., i.m., i.v. q8h	
Azithromycin	15–30 mg/kg orally q24h	
Amikacin	2–3 mg/kg s.c., i.m. q8–12h	
Cefalexin	20 mg/kg s.c. q24h 11–22 mg/kg orally q8h	
Chloramphenicol	30–50 mg/kg orally q12h	

Drug	Doses	Indications/comments
Itraconazole	10 mg/kg orally q24h for 15 days	Dermatophytosis
Ketoconazole	10–40 mg/kg orally q24h for 14 days	
Miconazole	1 ml/kg q12h Once daily for 2–4 weeks	Dermatophytosis
Terbinafine	100 mg/kg q12h	
Clotrimazole	Topical	Dermatophytosis. Avoid

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		concurrent usage with cisapride
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Drug	Doses	Indications/comments
Albendazole	15–20 mg/kg orally q24h for 2–4 weeks	<i>Encephalitozoon cuniculi</i> TERATOGENIC
Fenbendazole	20 mg/kg orally q24h for 9 or 28 days	
Praziquantel	5–10 mg/kg orally, i.m., s.c., topically	
Ivermectin	0.4 mg/kg orally, s.c. q10–14 days × 2–3 doses	Ectoparasites
Imidacloprid	10 mg/kg topically	Fleas
Selamectin	6–18 mg/kg topically; repeat after 4 weeks for <i>Cheyletiella</i>	
Trimethoprim/ sulfamethoxazole	40 mg/kg orally q12h	Coccidiosis
Sulfamethazine	100 mg/kg orally q24h	Coccidiosis
Toltrazuril	2.5–5.0 mg/kg orally q24h for 2 days; repeat in 14 days	Coccidiosis

Option	Drug	Dose	Route	Use
1.	Medetomidine or Dexmedetomidine	0.05 mg/kg or 0.025 mg/kg	i.v. induction to effect	Young and healthy patients that need a quick recovery
	Ketamine	5 mg/kg		
	Buprenorphine or Butorphanol	0.03 mg/kg or 0.1 mg/kg		
2.	Diazepam	1–5 mg/kg	i.v. induction to effect	Non-painful procedures
	Midazolam	1 mg/kg		
	Ketamine	10–40 mg/kg		
	Midazolam			
	Buprenorphine			