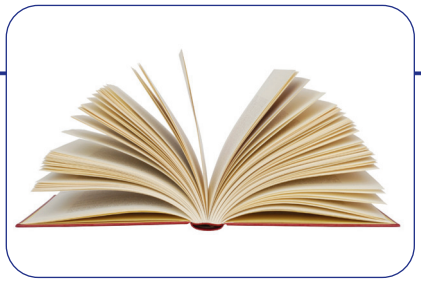



**Juan-Sallés C, Garner MM, Nordhausen RW, et al: Renal flagellate infections in reptiles: 29 cases. J Zoo Wildl Med 45(1):100-109, 2014**

Renal disease associated with infection of the urinary tract with flagellated protozoa was evaluated retrospectively in 29 reptiles. Pathology records identified 20 species of reptiles, including 12 turtles, 7 tortoises, 6 chameleons, 3 other lizard species, and 1 snake. The 3 species most frequently represented included the red-eared slider (*Trachemys scripta elegans*) ($n = 5$), veiled chameleon (*Chamaeleo calyptratus*) ($n = 4$), and leopard tortoise (*Stigmochelys* (*Geochelone*) *pardalis*) ($n = 3$). Most of the animals presented with nonspecific clinical signs or several concomitant diseases. Gross renal lesions, identified in 5 of the chameleons and 2 tortoises, included unilateral or bilateral renomegaly and pale kidneys. Tubulointerstitial nephritis was diagnosed in 19 of the 29 reptiles. Other renal lesions included urate tophi ($n = 6$), renal tubular mineralization ($n = 7$), nephrosclerosis ($n = 2$), and nephroliths ($n = 1$). Overall, 3 reptiles had lesions in the lower urinary tract, including proliferative cystitis and ureteritis with luminal flagellates, severe ureteral dilatation with urate plugs and flagellates, and luminal flagellate infection associated with severe dilatation of the urinary bladder. Several of the reptiles had soft tissue mineralization. Of the 29 reptiles evaluated, 9 animals had gastrointestinal or cloacal protozoan infections. Because the authors suggest that, in some cases, concurrent cloacitis or other cloacal disease may facilitate ascension of flagellated protozoa to the kidneys via the ureters, the importance of premortem and postmortem cloacal examinations is emphasized. Although previous reviews of renal flagellate infections in reptiles have reported *Hexamita* spp. as the most commonly identified parasite, the authors point out that currently validated diagnostic techniques, including molecular studies, are necessary to specifically identify the flagellates.

**Snook TS, White SD, Hawkins MG, et al: Skin diseases in pet rabbits: a retrospective study of 334 cases seen at the University of California at Davis, USA (1984-2004). Vet Dermatol 24:613-617, 2013**

This study documented the types of skin diseases and their prevalence in pet domestic rabbits (*Oryctolagus cuniculus*) in northern California. Moreover, the objectives of the research investigation were to analyze trends in breed, age, or sex for the dermatologic conditions identified most often. Computerized medical records of domestic rabbits examined at the Veterinary Medical Teaching Hospital from January 1, 1984 to December 31, 2004, were searched for selected dermatologic terms. A total of 1152 domestic rabbits were presented to the Veterinary Medical Teaching Hospital over the 20-year period, 334 (29%) of which met the inclusion criteria. The most common breeds involved were lop-eared rabbits ($n = 105$), Netherland dwarfs ($n = 30$), Dutch dwarfs ($n = 14$), and Angoras ($n = 13$). Overall, 52 different types of skin lesions or diseases were diagnosed. The 9 conditions diagnosed most frequently included pododermatitis ($n = 83$, 25%), abscess ($n = 66$, 20%), alopecia ($n = 53$, 16%), fleas ($n = 48$, 14%), otitis externa ($n = 40$, 12%), moist dermatitis ($n = 38$, 11%), ear mite infestation ($n = 22$, 7%), myiasis ($n = 21$, 6%), and cheyletiellosis ($n = 21$, 6%). In the cases of pododermatitis, plantar lesions were present in all cases, and palmar pododermatitis occurred in 3 cases. Abscesses were diagnosed most often on the face, principally the mandible, due to concurrent dental disease. The most common bacterial isolates, cultured from 27 animals, were *Pasteurella* spp. ($n = 8$), *Fusobacterium* spp. ($n = 7$), coagulase-positive *Staphylococcus* spp. ($n = 6$), and *Streptococcus* spp. ($n = 5$). Alopecia, observed in 53 rabbits (16%), was caused by pruritus in most rabbits because of ectoparasitism (fleas, *Cheyletiella* spp., and *Psoroptes cuniculi*). The most frequent underlying cause of otitis externa was due to confirmed or suspected infestation with ear mites. Secondary bacterial or yeast infections were recorded in 6 (12%) otitis externa cases. A total of 11 cases of otitis externa had concurrent otitis

media; the 4 of these cases that were cultured yielded *Pasteurella* spp. ($n = 2$), *Staphylococcus aureus* ($n = 1$), and a mixed infection with *Staphylococcus* spp., *Corynebacterium* spp., and *Escherichia coli*. Rabbits younger than 1 year were 3.6 times more likely than adult rabbits to present with otitis due to ear mites. Dental disease was considered the underlying cause of moist dermatitis involving urine scald and moist skin on the chin and ventral neck. Myiasis was frequently found in and around areas of urine scald. During the 20-year period, there were 3 cases of myxomatosis, 2 cases of venereal spirochetosis (rabbit syphilis; *Treponema paraluiscuniculi* infections), and 2 cases of dermatophytosis from *Microsporum canis*.

**Doss GA, Nevarez JG, Fowlkes N, et al: Evaluation of metomidate hydrochloride as an anesthetic in leopard frogs (*Rana pipiens*). J Zoo Wildl Med 45(1):53-59, 2014**

The purpose of this study was to evaluate the effectiveness and safety of metomidate hydrochloride (an imidazole-based, nonbarbiturate hypnotic drug) as an immersion anesthetic agent in the leopard frog (*Rana pipiens*). Although metomidate is often used with fish to reduce stress during handling and transportation, the authors state that there are no literature reports of the use of metomidate in amphibians. Overall, 11 adult, wild-caught northern leopard frogs, 7 males and 4 females weighing 21 to 45 g, were obtained from a commercial source. Of these frogs, 5 were used in a pilot study that determined an appropriate dose of metomidate. During the 60-minute induction period in the current study, frogs were immersed in a solution of 30-mg metomidate powder dissolved in 1 L of amphibian Ringers, which was buffered to an average pH of 7.67. Oxygen was bubbled through the solution via an air stone. After induction, frogs were rinsed and recovered in amphibian Ringer's solution at a temperature of 26.6°C for 210 minutes. During the induction and recovery periods, heart rate, gular and abdominal respiration rates, righting reflex, palpebral and corneal reflexes, superficial and deep pain withdrawal reflexes, and escape response were recorded. The frogs were then transferred to well-ventilated plastic containers lined with moistened paper towels. All frogs experienced at least a 25% drop in heart rate during the experiment. The mean time for the loss of the righting and escape reflexes was 17.36 and 17.82 minutes, respectively, whereas the mean time for recovery of the righting and escape reflexes was 343.36 and 373.73 minutes, respectively. Metomidate produced clinical sedation in all 11 frogs. However, surgical anesthesia (i.e., loss of superficial and deep pain withdrawal reflexes) was reached in only 3/11 (27%) frogs, and anesthesia lasted 9 to 20 minutes. Complete recovery took a mean of 424.73 minutes, with a marked range of 313 to over 600 minutes. The results show that metomidate hydrochloride is not suitable as a sole anesthetic agent in leopard frogs; however, additional research is necessary to determine its effect in other amphibians.

**Halsby KD, Walsh AL, Campbell C, et al: Healthy animals, healthy people: zoonosis risk from animal contact in pet shops, a systematic review of the literature. PLoS One 9(2):e89309. doi:10.1371/journal.pone.0089309. Published online February 26, 2014**

The authors performed a literature review in September 2012 encompassing North and South America, Europe, and Japan, which identified reports of human infections acquired from a pet shop or other location selling pets. Information included zoonosis/agent, country of infection, year of infection, type of animals, setting (e.g., pet store and pet distributor), number of human cases associated with setting, age of humans, method of transmission (e.g., bite or scratch), and type of contact (e.g., domestic or occupational). A total of 82 articles satisfied the review criteria. The zoonotic infection described most often was psittacosis ($n = 18$), followed by salmonellosis ($n = 12$). Less common infections included cowpox ($n = 16$), ringworm ($n = 9$), leptospirosis ($n = 3$), and rat bite fever, tularemia, toxocariasis, blastomycosis, bartonellosis, and cryptosporidiosis (each $n = 1$). All cases of psittacosis were associated with birds. The groups of animals next most commonly referenced were rodents ($n = 11$), including rats, mice, and prairie dogs. Most of the articles described individual case reports or outbreaks of $\leq 10$ cases associated with pet shops or other locations selling/distributing companion animals ($n = 42$). Only 3 articles described outbreaks of $\geq 50$ cases: an outbreak of lymphocytic choriomeningitis virus in hamsters, an outbreak of monkeypox in prairie dogs, and an outbreak of salmonellosis in African dwarf frogs. Evidence from previous studies suggests that employees of pet stores do not adequately understand the risks of zoonotic infections associated with companion animals and thus do not pass that information along to the public.