

# Zoonotic disease in wild Australian native reptiles

## Fact sheet

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### Introductory statement

It is acknowledged that some pathogens affecting reptiles pose a risk to human health. The risk of the spread of disease from reptiles to humans would vary according to the specific pathogen. As a result, it is important to review and list potential zoonotic diseases carried by reptiles so that at risk groups in the community can be identified and risk management strategies formulated to prevent pathogen transfer.

### Aetiology

Table 1 lists most potential zoonotic pathogens known to be associated with reptiles, their distribution, routes of infection and the main clinical disease observed in infected humans.

### Natural hosts

*Mycobacteria* spp. and *Salmonella* spp. appear to be the most common zoonotic pathogens in reptiles. Mycobacteriosis occurs more frequently in aquatic or semi-aquatic reptiles, especially those in production systems such as crocodilians. The majority of marine turtles affected are either wild animals brought into captivity or free-ranging wild animals that are rehabilitated in captivity (Mitchell 2012). All reptiles, captive and free living should be considered at risk of infection with *Salmonella* spp. Very young, very old or immune-compromised animals may be more prone to developing signs of clinical salmonellosis.

### Prevention and management of human infection

Advice regarding prevention and management of human infection should be sought from your local public health authority. People at most risk of acquiring zoonotic infections from reptiles are those who have close and/or prolonged contact with infected animals, namely, wildlife carers, zookeepers, veterinary staff and pet owners.

Prevention of infection from contact with reptiles should be discussed with the local public health authority. Adoption of appropriate personal protection measures matched to the type of exposure is recommended. Hands should be washed after handling any reptile with chlorhexidine gluconate or an equivalent disinfectant

such as an alcohol gel. Gloves should be used when handling faeces, urine, blood or body discharges. Gloves, protective clothing and a mask should be used when conducting necropsies on reptiles.

Members of at-risk groups should be advised of the possibility of zoonotic disease and, in the event of illness, encouraged to discuss this issue with their medical practitioner.

**Table 1:** Potential zoonotic pathogens known to be associated with reptiles.

Pathogen	Reported in reptiles in Australia	Routes of infection to humans	Clinical disease in humans	References
<i>Salmonella</i> spp.	Yes	Faecal/oral	Gastroenteritis, septicaemia	Moffatt 2010
<i>Aeromonas</i> spp.	Yes	Maternal/neonate, faecal/oral, wound infection	Cystitis, gastroenteritis, sepsis	Bartolome et al. 1989 Freij 1984
<i>Campylobacter</i> spp.	Yes	Faecal/oral	Gastroenteritis	Johnson-Delaney 2006
<i>Mycobacterium</i> spp. (Non-tuberculous)	Yes	Aerosol, contact	Skin ulcers, respiratory disease ( <i>M. avium</i> )	Holz & Barker 2012; Mitchell 2012
Zygomycosis (Mucormycosis)	No	Inhalation?	Pulmonary, rhinocerebral form	Johnson-Delaney 2006
Deep and superficial mycoses	Yes	Contact with open wounds	Zoonotic transmission of fungal agents, although possible, has not been documented	Johnson-Delaney 2006
Pentastomes	Yes	Faecal/oral; eating snake meat	Usually asymptomatic larval invasion, and migration of nymphs or larvae.	Holz & Barker 2012; Johnson-Delaney 2006
Sparganosis	Yes	Oral (ingestion of raw or undercooked reptile meat), ocular (reptile meat used as a poultice – folk medicine treatment used in Asia)	Apart from ocular lesions spargana usually do not cause clinical disease	Munckhof et al. 1994; Berger et al. 2009
<i>Cryptosporidia</i>	Yes	Faecal/oral	No documented evidence has shown that reptilian cryptosporidiosis is zoonotic. <i>Cryptosporidia</i> are usually very host-specific	Johnson-Delaney 2006

## Viruses

Paramyxoviruses occur in a variety of reptilian species (Hyndman 2013). It has been suggested that there is a low level risk of these viruses crossing species barriers. Reptiles are hosts of flaviviruses (West Nile Virus [WNV]). The potential role of reptiles and amphibians in the life cycle and epidemiology of WNV is not known. If wild and captive species are susceptible, then the range of WNV and zoonotic potential will increase (Johnson-Delaney 2006).

## References

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## Other information

Wildlife Health Australia fact sheet “*Cryptosporidium* spp. in wild reptiles in Australia”, accessed 23 August 2013.

Wildlife Health Australia fact sheet “Salmonellosis in wild reptiles in Australia”, accessed 27 August 2013.

Department of Environment and Primary Industries, State Government, Victoria. Zoonoses – Animal diseases that may also affect humans. Note number NG1032. <http://www.dpi.vic.gov.au/agriculture/pests-diseases-and-weeds/animal-diseases/zoonoses/zoonoses-animal-diseases-that-may-also-affect-humans>

## Acknowledgements

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## To provide feedback on this fact sheet

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