AZA Policy for Animal Contact With the General Public

Adopted by the AZA Board of Directors 8/97
Incorporated into the AZA Accreditation Standardized Guidelines in 1998

Submitted by the Animal Health Committee
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Nearly every contact with other living organisms, whether it be with humans or other animals, carries some risk of disease transmission. Diseases that are spread from animals to humans are called zoonoses (adj. zoonotic diseases). Responsible zoos should and do make reasonable attempts to limit the risk of the spread of disease from the animals in their care to their employees and to the general public. (4,9) For the general public, the risk of contracting disease from most zoo animals is minimal to nonexistent due to their distance and isolation from the animals. However, contact areas for the general public can present increased risks that can be controlled with reasonable precautions. For this paper, contact areas refers to those areas in which there is direct physical contact between animals and people. These precautions are most effective when they are part of an overall preventive medicine program for the zoological park. (5,8)

Risks of zoonotic disease can be markedly reduced by avoiding direct animal contact. However, this foregoes many valuable educational experiences and the establishment of a direct relationship between animals and the public. A reasonable alternative is adequate hand washing for those in direct contact with the animals. Hand washing is perhaps the single most effective personal hygiene procedure for reducing the risk of infection. (4) Given that fact, all areas in which the public has direct contact with animals should have access to hand washing facilities that are in the immediate vicinity of the contact (or an equivalent; e.g., bacteriocidal hand-wipes).

As outlined by the AZA and the USDA’s Animal Welfare Act, animal contact areas should always be supervised by a trained zoo representative. Obviously, animals that are ill, should not be used. Human food consumption should not occur in the immediate area of contact. Additionally, zoological institutions should be aware that the Centers for Disease Control (CDC) standards advise additional precautions may be necessary for humans that they classify as at increased risk of disease, including those that are immunocompromised. When a reportable disease is identified, all appropriate local, state, and federal regulatory officials should be contacted.

More detailed information on zoonotic diseases may be obtained from a variety of veterinary and medical textbooks and journals, (1,6) and from public health officials. Additionally, the AZA’s Quarantine Protocol provides further testing recommendations. (7) Also referenced at the end of this report is a review of some of the risks associated with animals and immunocompromised humans. (3) Following is a list of disease considerations and control programs recommended for animals commonly used in contact programs. Depending on the disease and history of the animals, testing protocols may vary from an initial or incoming quarantine test, to yearly repetitions. This protocol should be at the discretion of the institutional veterinarian.

Reptiles and Amphibians

Most notable among the disease risks presented by reptiles is the transmission of Salmonella sp. Salmonellosis is a common and often nonpathogenic infection of reptiles (in one survey, according to species, the infection rate ranged from 3 to 55 percent). (2) Diagnosis may be difficult. A cloacal swab or other sample positive on culture for Salmonella sp. is diagnostic for infection. However, due to intermittent fecal shedding of these organisms, false negative cultures frequently occur. So it is difficult, if not impossible to ascertain with certainty that an animal is Salmonella "negative." Therefore, all reptiles should be treated as salmonella carriers. Attempts to eliminate Salmonella carriers with antibiotic therapy have been unsuccessful and may be contraindicated as they can lead to chronic carrier states and increased resistance of these bacteria to antibiotics. Risks of transmission can be reduced in two ways: 1) avoid all direct contact with reptiles or surfaces with which they have come in contact, or, 2) allow only supervised contact followed by hand washing as previously described.
Reptiles can also transmit a variety of other organisms, mostly gastrointestinal in origin, and the same procedures described above should be effective in reducing the risks of transmission to those in contact. These other risks include other gram negative bacterial infections. Reptiles used in contact areas should be free of snake mites and pentastomids (e.g., Armillifer sp.).

Amphibians may present several of the same zoonotic risks as reptiles, so again, contact should be followed by hand washing.

**Birds**

Birds used in contact areas should be free of chlamydiosis and zoonotic parasites (e.g., giardia). Chlamydiosis testing is appropriate for members of the orders Psittaciformes, Galliformes, and Columbiformes. As in reptiles, salmonellosis can be present and difficult to diagnose and so, birds should be treated as suspects. In the general human population, avian tuberculosis is generally considered to have very low zoonotic potential, however, it can present significant risks for immunocompromised individuals. Care should be taken to avoid public contact with known infected flocks.

**Mammals: General**

All mammals are considered at risk for infection with rabies. Current rabies vaccines are licensed for use in only six domestic species: dogs, cats, ferrets, sheep, horses, and cows. For wild-caught individuals of most species, a prolonged (three-six month) quarantine is necessary to reduce the risk that they are infected with the virus. Even then, some species such as skunks, foxes, raccoons, and bats may still represent a greater risk.

Any skin lesions compatible with dermatomycosis ("ringworm") should be carefully evaluated in order to prevent transmission to those in direct contact with them.

**Mammals: Primates**

Unless extensive testing has been performed for a variety of viral, parasitic, and bacterial diseases, all direct public contact with primates should be avoided. Public contact also places the primates at considerable risk of contracting diseases from humans.

**Mammals: Small Ruminants / Neonatal Ruminants**

All small ruminants; e.g., pygmy goats, sheep, dwarf cattle, llamas, etc., that are greater than six months of age and used in contact areas should be tested for tuberculosis, brucellosis, and leptospirosis. Obviously, any animals with lesions compatible with sarcoptic mange (mange mite = Sarcoptes scabei) should be removed from contact. Any animals with lesions compatible with contagious eczema ("orf" in man) should be tested and removed from contact until proven negative. Calves should be checked and found free of Cryptosporidium sp. And other infections with protozoa. Other diseases of a potential zoonotic nature include infection with Coxiella burnetii (Q-fever) in endemic areas. Additionally, recent reports indicate that infection with Johnes disease (Mycobacterium paratuberculosis) may present zoonotic concerns, primarily in goats.

**Mammals: Swine**

These animals should be checked for gastrointestinal infection with Balantidium sp. efforts made to control this infection. Additionally, consideration should be given to regular vaccination for the bacterial disease, Erysipelothrix rhusiopathiae ("diamond skin disease").

**Mammals: Small Carnivores**

In general, due to the potential for bites, small carnivores should be used in contact areas only with extreme caution. Due to the risk of bites, small felids are generally not used in direct contact. If they are, care must
be taken that such animals are negative for infection with Toxoplasma gondii. All carnivores should be
tested for and be free of zoonotic species of roundworms such as Baylascaris sp. Small carnivores (e.g.,
raccoons and skunks) obtained from the wild may present a greater risk of rabies and their use should be
avoided in contact areas.

**Mammals: Rodents and Lagomorphs**

When using rodents and lagomorphs in contact areas, consideration should be given to the risk of bites,
past history, and exposure to hantavirus, salmonella, and tularemia.

**Mammals: Chiroptera**

At the present time, CDC regulations effectively prohibit the use of bats in direct contact areas.

**Fish / Aquatic Tanks**

Due to the potential for infection with atypical mycobacteria, Vibrio sp., Erysipelothrix rhusiopathae, and a
variety of gram negative bacteria, contact with fish or touch tanks should also be followed by hand washing.

**Summary**

It is important to evaluate the risks of zoonotic diseases in a rational context. Contact animals can provide a
valuable educational experience for visitors and participants in public programs to zoological parks and
aquariums. Most zoonotic diseases of concern in public areas can be prevented with reasonable testing and
quarantine programs and proper hand-washing techniques.

These are intended to be general guidelines and the risk of diseases can vary by area, so each zoological
institution should develop its own zoonoses control program. Two excellent resources for reviewing testing
and preventative procedures for many of these diseases are the American Association of Zoo Veterinarians’
Infectious Disease Notebook, (1) and the American Veterinary Medical Association’s Zoonoses Updates.(6)
In summary, the most effective method for disease prevention is a complete and thorough veterinary
program and common sense sanitary measures.

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