Care and Use of Nonhuman Primates

The Occupational Health Program is designed to inform individuals who work with animals about potential zoonoses (diseases of animals transmissible to humans), personal hygiene, and other potential hazards associated with animal exposure. This information sheet is directed toward those involved in the care and use of non-human primates.

Injury & Potential Zoonotic Diseases

Nonhuman primates can be very difficult and even dangerous to handle. No employee should attempt to handle or care for a non-human primate without first being trained. Primate Center departmental guidelines should be strictly followed when it comes to the care and use of nonhuman primates. Non-human primates are highly susceptible to human diseases, such as influenza, measles and tuberculosis, and humans can be highly susceptible to non-human primate diseases. If you have an immune-compromising medical condition or you are taking medications that impair your immune system (steroids, immunosuppressive drugs, or chemotherapy), you are at higher risk for contracting these diseases. The following is a list of some of the non-human primate zoonoses.

Tuberculosis: This disease may be transmitted to people through contact with birds, livestock, and non-human primates. Tuberculosis is usually transmitted by the aerosolization of infective bacilli which can be found mainly in the sputum as well as other body fluids. When dealing with animals, contact with body fluids during necropsy may be a major mode of transmission of tuberculosis to humans. Pulmonary tuberculosis is the most common type, but other organs may also be involved.

Cercopithicine herpesvirus 1 (CHV1, Herpesvirus simiae, monkey B virus): Macaques are the major source of infection. This disease is quite rare in humans, but if contracted, it is either fatal or causes permanent neurological disease. Most macaques are asymptomatic carriers or display only mild oral lesions that are difficult to detect. Therefore, all macaques should be presumed to be shedding B-virus. Other old world primates may also be infected. Transmission occurs by percutaneous exposure to infected oral or genital secretions via bites, scratches, needle sticks, or direct contact with macaque tissue. Additionally, exposure can occur by splashes to the eyes, mouth, or open skin lesions from infected body fluids. The incubation period is 5-21 days. Some cases have presented as an unexplained febrile disease (fever, chills, nausea, vomiting, and dizziness) and persistent headache. Other cases have presented with fluid-filled vesicles that form near skin wounds sustained from an injury related to the macaque and are followed by localized paresthesia.

Simian Immunodeficiency Virus: Simian immunodeficiency viruses (SIVs) have been found as persistent nonpathogenic infections in their natural reservoir in various species of Old World non-human primates. Animals with naturally occurring and experimental SIV infections and the associated primate tissues...
(including blood and blood products) constitute potential infectious hazards to personnel. Mode of transmission can occurred through splashes of infectious material onto mucous membranes, contamination of open cuts or abrasions on the skin, and needle stick injuries. Post exposure prophylaxis regimens involve the use of antiretroviral agents.

**Shigellosis:** *Shigella* appears to be acquired by non-human primates in captivity from contact with infected humans. The presence of asymptomatic, chronic carriers and re-infections can maintain high rates of endemic infections in research colonies; stress promotes episodes of overt disease. Clinical signs can include diarrhea containing mucus, dehydration, and weight loss. Transmission is by the fecal-oral route in humans and non-human primates. In humans, the incubation period averages 1-4 days. The disease varies from mild gastrointestinal infections to dysentery or watery diarrhea, fever, and nausea.

**Salmonellosis:** As in the case of *Shigella*, the *Salmonella* pathogen is probably acquired by non-human primates in captivity from exposure to infected humans, and transmission of the agent back to humans is likely. Various species and bio-serotypes of *Salmonella* have been isolated from non-human primates such as macaques, guenons, tamarins, owl monkeys, and chimpanzees, however, it is rarely reported in established colonies. Symptoms of infection are watery diarrhea, sometimes containing blood or mucus, and fever.

**Other Diseases:** There are several viruses associated with non-human primates that can cause significant disease in people. These include the *Hemorrhagic Fever Viruses*, *Filoviruses* and *Monkey Pox Viruses*. These are usually associated with recently imported, wild-caught animals in quarantine but are very rare in domestically bred animals.

**Allergies:** General animal related allergies are common. Although there are no known allergens associated with nonhuman primates, the environment may have common allergens present, such as dust from bedding.

**How to Protect Yourself**

- **Wash your hands.** The single most effective preventative measure that can be taken is thorough, regular hand washing. Wash hands and arms after handling any animal. Never smoke, drink, or eat in the animal areas or before washing your hands.

- **Wear protective clothing.** Protective clothing such as coveralls, lab coats, gloves, face shields and goggles should be worn according to the Primate Center’s policies. Dirty protective clothing should never be taken out of the Primate Center.

- **Seek Medical Attention Promptly.** All Primate Center injuries must be reported immediately, and medical care or consultation is required. Primate Center policies on the handling of bites and scratches should be strictly adhered to. Call UCD Occupational Health Services for questions regarding medical care.

- **Tell your physician you work with nonhuman primates.** Whenever you are ill, even if you’re not certain that the illness is work-related, always mention to your physician that you work with non-human primates. Many zoonotic diseases have flu-like symptoms and would not normally be suspected. Your physician needs this information to make an accurate diagnosis. Questions regarding personal human health should be answered by your physician.
Contact

Occupational Health Services
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