

Zoonotic Disease Risk Handout

This information sheet is being supplied to you to help assist you in understanding risks faced in the conduct of your job at The University of Toledo (UT). It is supplied to personnel identified as having a reasonable occupational exposure risk to the agent described. This information has been developed with the assistance of the UT Division of Laboratory Animal Medicine, Office of Health and Safety and the Office of Occupational Medicine. Questions and concerns should be directed to any of the units.

Cercopithecine herpesvirus 1 (*Herpesvirus simiae* or B-virus): Herpes B or *Herpes simiae* causes a very minor illness in macaque monkeys, but causes a fatal illness in 70% of humans who contract the disease. Infection rates in macaque monkeys are high to very high. In humans, the virus causes severe neurologic disease that is most frequently followed by death. Fortunately, transmission of this disease to humans is quite rare.

Personnel working with macaque monkeys (e.g. rhesus, cynomologous, etc.) will have their serum banked and stored at -70 C. As mentioned below, it is mandatory that caution be exercised and that a supervisor be notified immediately regarding any bites or scratches. Medical care must be obtained. Any wound should be carefully cleaned. Once a wound has been acutely managed, any unusual manifestations that develop later also need to be promptly reported. Symptoms of Herpes B infection at a wound include pain radiating away from the bite wound or blisters at the site of the wound. Again, it must be emphasized that careful adherence to safe handling procedures is the most important step in preventing illnesses.

- a. Since there is no vaccine for this disease, training in proper primate handling and care is essential. Additionally, wound management procedures will be re-enforced during primate training sessions. These procedures are posted in the animal room.
- b. Injury & Infection Log: Record all trauma (animal or cage) in the "Injury and Infection Log," which is maintained by the facility supervisor.

Guidelines for Prevention of B-Virus (*Herpesvirus Simiae*) Infection in Monkey Handlers:

1. Macaque monkeys should be used for research purposes only when clearly indicated.
2. When feasible, monkeys that are required for research purposes should be free of B virus infection and should be maintained under conditions that are appropriate to ensure their B virus-free status.
3. All macaque monkeys not known to be free of B virus infection should be regarded as infected because viral shedding is intermittent and can occur in the absence of visible lesions. Direct handling of macaques is to be avoided. Capturing, restraining, or otherwise handling fully awake macaques by hand should not be done. Rather, such procedures should

- be accomplished using chemical restraint methods. Chemical restraining by injection (i.e., ketamine HCl) may be used before removing the animal from the cage. All macaques should be housed in squeeze back cages that permit physical restraint of the animal before handling. When a number of animals are caged together, tunnels or chutes should be provided whenever feasible so that individual monkeys can be separated and restrained before handling. Behavioral conditioning of macaques is a practical and useful adjunct to the application of these restraint procedures and is particularly recommended where several animals are caged together.
4. Macaque handlers should be additionally protected with long-sleeved garments to prevent scratches and a face shield (or surgical mask and goggles or a full face shield) to prevent exposure of eyes and mucous membranes to macaque secretions. Latex or vinyl gloves should be worn to prevent direct contact with macaque secretions.
 5. Cages and other equipment that may be contaminated with virus should be free of sharp edges and corners that may cause scratches or wounds to workers. Cages should be designed and arranged in animal housing areas so that the risk of workers being accidentally grabbed or scratched is minimized. Access to areas where macaques are maintained and used should be limited either to workers who are properly trained in procedures to avoid risk of infection or to those accompanied by such workers.
 6. The routine screening of macaques for evidence of B virus infection is not recommended. Even animals previously found to be negative for virus or antibody might be positive at the time of a human exposure. In situations in which laboratory studies may cause immunosuppression of the animals, the investigator may elect to determine the infection status of the animals to be used, since virus shedding might be enhanced under such circumstances. Macaques with oral lesions suggestive of B virus infection should be quarantined until the lesions have healed to reduce the risk of virus transmission to workers and other macaques.
 7. Persons who handle macaques, including animal resource technicians, veterinarians and scientific investigators, should be trained in proper methods of restraint and in the use of protective clothing to help prevent bites and scratches. Such persons should be acquainted with standard operating procedures and other available training materials before handling animals. Training should be followed up with continual observation for lapses in these procedures as they occur.

(Source: **Guidelines for Prevention of *Herpesvirus simiae* (B Virus) Infection in Monkey Handlers**, Morbidity and Mortality Weekly Report, Vol. 3 6 (No. 41): 680-89, October 23, 1987.)

Care of Bites, Scratches, Cuts, Abrasions, etc.

1. Control bleeding by applying direct pressure with a sterile gauze or bandage.

2. Disinfect the wound by washing with copious quantities of soap and water. (Povidone-iodine or chlorhexidine surgical soap is recommended).
3. Secure medical attention.
 - a. Weekdays between 8 a.m. and 5 p.m.: Report to Employee Medicine or the Occupational Medicine Service.
 - b. After-hours, on weekends or for severe injuries: Report to the UT Medical Center Emergency Room.

The physician will evaluate the injury and may decide to culture the wound for B-virus (*Herpesvirus simiae*) or collect blood for a baseline titer against B-virus and/or use prescription drugs for preventative therapy. The physician directing the care of the patient will contact the OMS for instructions regarding the need for cultures or serology from the monkey inflicting the injury upon the patient.

Following a bite or scratch, the exposed person should be instructed to report immediately any skin lesions or neurologic symptoms (such as itching, pain, or numbness) near the site of the wound or any other unusual illness. It is the responsibility of the supervisor, when no illness is reported, to determine the clinical status of the handler at weekly intervals for 1 month after the exposure. Symptoms suggestive of B virus infection should be reported immediately to the medical consultant. When the possibility of B virus illness is seriously entertained, appropriate diagnostic studies should be performed and specific antiviral therapy should be instituted. The physician may wish to consult the Viral Exanthems and Herpesvirus Branch, Division of Viral Diseases, CDC (Dr. Scott Schmitt, 404-639-0066, as of May 12, 2006) and for laboratory assistance, the National B Virus Research Center at Georgia State University (Dr. Julia Hilliard, 404-358-8168 as of May 23, 2007).