

# Animal Safety

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# I. The Safe Use of Laboratory Animals

The Institutional Animal Care and Use Committee (IACUC), pursuant to Federal regulations, mandates that all investigators who use animals in research enroll in the Occupational Health Program at the Health Sciences Division of Columbia University. This program is available at no cost to investigators or other employees and is designed to protect animal users. In the case of users of non-human primates, this Program may also benefit research animals by preventing exposure of these animals to individuals with tuberculosis. The services listed below summarize some of the services provided by the Occupational Health Program.

- All personnel who work with **Amphibians, Ferrets, Rodents** and/or **Rabbits** are offered a tetanus booster unless they have proof of a booster within the past 10 years.
- All personnel who work with **Dogs** and/or **Cats** are offered a rabies vaccination. We urge that individuals receive the rabies vaccine since many of these animals are random source animals from a variety of geographical areas. Employees must sign a waiver if vaccination is declined. Hearing tests are provided, when required by OSHA regulations as part of a hearing conservation program as determined by the Environmental Health and Safety, for personnel who work closely with dogs on a daily basis. A tetanus booster is offered unless they have proof of a booster within the past 10 years. Women of childbearing age who have contact with cats should obtain a toxoplasma titer.
- All personnel who work with **Nonhuman Primates** are required to have an annual TB test. Any person who has been TB tested within the last year must provide the OHS with proof of testing and this must be documented and kept on file with OHS. A tetanus booster is also offered unless a worker has proof of a booster within the past 10 years.
- All personnel who work with **Sheep** and/or **Calves** are offered a tetanus booster unless they have proof of a booster within the past 10 years. For individuals working with female sheep, Q Fever titers are required annually.
- All personnel who work with **Pigs** are offered a tetanus booster unless they have proof of a booster within the past 10 years. Hearing tests are provided when required by OSHA regulations as part of a hearing conservation program as determined by the Environmental Health and Safety.

To enroll in the Occupational Health Program:

- 1) Schedule an appointment with OHS – call Erica Pena (5-8199), Ranjana Hernandez or Latressa Fulton, (5-0944) at the IACUC Office, 722 West 168<sup>th</sup> Street, 4<sup>th</sup> floor to schedule.
- 2) Columbia University Health Sciences Division's Health History Form (see Form #1) – this form must be completed before you visit OHS. **NOTE:** Questions 1, 2, 3, must be **completed and signed by the SUPERVISING PRINCIPAL INVESTIGATOR**. Items under number three correspond with the appendices to the animal protocol form(s).
- 3) Day of appointment – bring the (completed) health history form, your CPMC identification badge and any immunization records you may have to the OHS. Depending on the risk assessment, it is likely you may have more than one visit to the OHS. The Occupational Health Service (OHS) is located at Harkness Pavilion 1<sup>st</sup> floor. Even though you have an appointment, the OHS is a busy clinic area and you may have to wait awhile before someone can see you. Your patience is requested. If you are unable to wait, you have the option of rescheduling your appointment.

Appointment date \_\_\_\_\_ time \_\_\_\_\_

**COLUMBIA UNIVERSITY HEALTH SCIENCES DIVISION**  
**HEALTH HISTORY FOR PERSONNEL WITH ANIMAL CONTACT**

Please Print or Type

Name: \_\_\_\_\_ **Cunix ID (e-mail):** \_\_\_\_\_

Department: \_\_\_\_\_ Campus Mailing Address: \_\_\_\_\_

Telephone Number \_\_\_\_\_ Female  Male

Date of Birth: \_\_/\_\_/\_\_ Supervisor name & number: \_\_\_\_\_ Facsimile: \_\_\_\_\_

**Must be completed by SUPERVISING PRINCIPAL INVESTIGATOR**

1. Species contact within Columbia University Health Sciences Division (check all that apply):

- Dog**    **Cat**  
 **Nonhuman primate** (Baboon, Monkey, etc.), please specify \_\_\_\_\_  
 **Sheep, Goat, Pig, Calves**, please specify \_\_\_\_\_  
 **Rodents** (Mice, Rats, Hamster, etc.), please specify \_\_\_\_\_  
 **Rabbit**  
 **Other**, please list: \_\_\_\_\_

2. Total number hours of animal contact per week at work: \_\_\_\_\_

3. For use with **live animals** only, any work with:

- A) **Recombinant DNA**             Yes    No  
B) **Infectious Agents**             Yes    No   please list: \_\_\_\_\_  
C) **Bloodborne Pathogens**  
    and/or **Human Cell lines**     Yes    No   please list: \_\_\_\_\_  
D) **Lasers** (Class 3b, 4a)         Yes    No   please list: \_\_\_\_\_  
E) **Extremely Hazardous Agents**  
    and/or **Toxins**                 Yes    No   please list: \_\_\_\_\_  
F) **Radiation**                       Yes    No   please list: \_\_\_\_\_

\_\_\_\_\_  
Name and Signature of Principal Investigator

\_\_\_\_\_  
Date

4. What is the date of your most recent tetanus diphtheria (Td) booster? \_\_\_\_\_

5. Have you completed a rabies vaccination (3 doses) series?  Yes    No   If yes, when?  
Have you ever had a rabies booster?  Yes    No   If yes, when? \_\_\_\_\_

6. Do you have any allergies to animals or birds?  Yes    No   If yes, please explain

\_\_\_\_\_  
*(Employees with suspected work related allergies should seek evaluation.)*

7. Have you ever contracted an illness or had a serious injury from an animal or in animal-related work?  Yes  No If yes, please explain in detail.

\_\_\_\_\_

\_\_\_\_\_

8. Have you had a splenectomy?  Yes  No  
Are you on immunosuppressant drugs?  Yes  No

9. Please note any other health history you consider significant: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**10. If you are in contact with nonhuman primates:**

Have you ever had tuberculosis?  Yes  No  
Have you been vaccinated (BCG) for tuberculosis?  Yes  No  
Have you had a positive reaction to a tuberculin test?  Yes  No If yes, when

\_\_\_\_\_

**11. If you are in contact with sheep and/or goats:**

Do you have valvular heart disease, congenital heart defects or prosthetic heart valves?

Yes  No

Do you have pre-existing hepatitis?  Yes  No

If female, are you pregnant?  Yes  No

\_\_\_\_\_  
EMPLOYEE SIGNATURE and DATE

\*\*\*\*\*

**For CPMC Occupational Health Service Use Only**

DATE

DATE

Tuberculin Skin Test \_\_\_\_\_  NEG  POS \_\_\_\_\_ mm

Td Vaccine \_\_\_\_\_ RABIES 1: \_\_\_\_\_  
(Tetanus-diphtheria) \_\_\_\_\_ RABIES 2: \_\_\_\_\_  
RABIES 3: \_\_\_\_\_

Bloodborne Pathogen surveillance  
HBV vaccine 1: \_\_\_\_\_ POLIO vaccine \_\_\_\_\_

HBV vaccine 2: \_\_\_\_\_

HBV vaccine 3: \_\_\_\_\_ VZV vaccine \_\_\_\_\_  
(Varicella) \_\_\_\_\_

\_\_\_\_\_  
TOXOPLASMOSIS \_\_\_\_\_

MEASLES: \_\_\_\_\_ WAIVER: \_\_\_\_\_

NOTES: \_\_\_\_\_

\_\_\_\_\_

The most frequent type of injury related to the use of animals in research are bites, scratches, and the development of allergy to animal fur, dander, or fluids. Allergies may manifest immediately upon initial contact with animals, or may develop slowly over the course of months to years. Symptoms of allergy include skin rashes, hives, with or without itching, runny eyes and nose, or difficulty breathing. If you suspect that you have any of these symptoms that are associated with your use of animals, report it to your supervisor and to Occupational Health Service for evaluation.

## **WHAT YOU MUST DO IF YOU ARE INJURED ON THE JOB.**

- Report the injury to your supervisor promptly**
- Seek medical attention as soon as possible** - your options include:
  - The Occupational Health Service, 1<sup>st</sup> Floor Harkness Pavilion
    - Monday-Friday, 8:30 AM – 4:00 PM; Telephone 305-7590
    - You must bring your *CPMC photo-identification card*
  - New York Presbyterian Hospital Emergency Room, 1<sup>st</sup> Floor Vanderbilt Clinic
  - Private physician authorized by the Worker's Compensation Board

Tell the physician you were injured at work. Make sure the doctor is authorized by the Worker's Compensation Board to treat work-related injuries and will file any necessary medical reports.

Do not pay the doctor or hospital, and do not let them charge your medical treatments to your health plan, unless it is an emergency. Save all receipts for treatments (ER, prescriptions ...).

Advise the doctor to send the report ("C-4" form) and bills to the University's insurance carrier:  
CHUBB Services Corporation  
P.O. Box 974  
Florham Park, New Jersey 07932  
Phone (973) 360-6313

**Fill out the Columbia University Accident Report Form** in order to receive any Workers' Compensation benefits. You can get this form from your supervisor. It must be completed by you and your supervisor without delay and faxed (212-854-9709) for processing directly to Michael Amuso, Columbia University, Risk Management Department. Keep a copy of this form. Risk Management will send a "C-2" Form (Report of Accident) to the insurance carrier and the New York State Workers' Compensation Board. Late reporting may delay processing your claim.

**Remember ...** In addition to filing the necessary forms, you must provide your supervisor with medical documentation (physician's note) to cover any absence, as well as keep him/her properly informed with respect to your anticipated return to work date.

Do not fill out a disability form (DB-450) unless you receive a "C-7" (Notice of Controversion) from the insurance carrier (CHUBB Services Corporation) or Workers' Compensation Board.

Contact Phone Numbers:

Environmental Health & Safety  
305-6780

Human Resources  
305-3819

Risk Management  
854-9706

## II. Animal Bites and Scratches

### Prevention:

The most important factor in preventing animal bites and scratches is for the individual to be well trained in techniques for holding or restraining a specific animal species, and to recognize differences in behavior of animals within a species. No one should attempt to restrain any animal unless they have received appropriate training and experience with the animal species to be used.

Individuals who are identified as lacking such training within an Animal Protocol by the principal investigator must attend an Institute of Comparative Medicine wet-lab to receive training on restraint and other common procedures.

### Bites and Scratches:

All animals are capable of inflicting bites and scratches. Small animals, such as mice, gerbils, hamsters, rats, guinea pigs and rabbits usually deliver relatively minor wounds. Larger species like cats, dogs and nonhuman primates are capable of inflicting severe wounds. Bite and scratch wounds can become infected because of the normal bacterial flora of the animal's mouth or toenails, or from the bacterial flora of the individual's skin.

### In case of a bite or scratch the following should be done:

1. As soon as possible wash the wound with plenty of soap and water;
2. If the wound is bleeding, cover with gauze, facial tissue, or a paper towel; and
3. Proceed to Occupational Health Services located on Harkness Pavilion 1 South; 305-6780

If a cat, or dog bites you, the Institute of Comparative Medicine (ICM) must be notified (305-3823). A clinical veterinarian will then examine the animals and institute appropriate follow-up measures (i.e. quarantine and animal observation for 10 days). Nonhuman primate users should follow the ICM Human Exposure to Herpes Virus Simiae (Herpes B) SOP's upon exposure, which are located within the nonhuman primate holding area.

The animals that pose greatest risk to humans within the laboratory animal resources are dogs (rabies) and macaque monkeys (B-virus). Both viruses can cause fatal encephalitis in humans if left undiagnosed and not promptly treated.

**ALL ANIMAL BITES SHOULD BE IMMEDIATELY REPORTED TO YOUR  
SUPERVISOR & AN INCIDENT REPORT COMPLETED.  
IF BITTEN BY AN ANIMAL, GO TO THE OCCUPATIONAL HEALTH SERVICE  
FOR EVALUATION & TREATMENT**

### III. Allergies Due to Animal Contact

#### Introduction:

Allergies to animals are among the most common health problems affecting personnel who care for and use animals in research. Laboratory animal allergies are associated with the inhalation of allergens, such as animal dander and urinary proteins, into the lungs. Although allergies may be associated with any species of animal, at the Health Sciences most cases are due to contact with small rodents (mice and rats). Preexisting allergies to dust mites, pollens and molds, and tobacco smoking are risk factors for the development of laboratory animal allergies.

#### Symptoms:

Laboratory animal allergy symptoms are sneezing, tearing, watery nasal discharge, congestion, skin rashes, asthma (shortness of breath and wheezing) and rarely, anaphylaxis.

#### Prevention:

1. Reduce exposure to mouse urinary aeroallergens significantly by using filter-topped cages, change-out hoods and/or ventilated racks.
2. Reduce the duration and/or frequency of exposure through job rotation.
3. Use Personal Protective Equipment such as half-face air-purifying particulate filter respirators (N95). These disposable masks provide at least 95% filter efficiency. Disposable surgical or dust masks do not provide effective protection.
4. If you have allergic symptoms associated with exposure to mice, rats or any other species, report this to your Supervisor or Principal Investigator immediately and contact the Occupational Health Service.

### IV. Zoonotic Diseases

#### **A. Rodents:**

The occurrence of zoonotic infections in laboratory mice, rats, hamsters and guinea pigs is highly unlikely because all commercial sources that are used as vendors for these species are routinely tested for the presence of zoonotic viruses and bacteria. However, rodents, like other animals, will harbor *Staphylococcus aureus* and other normal flora that can induce infections through a bite wound. Pathogens that have been rarely reported in humans through animal contact include the following:

1. Rat Bite Fever (*Streptobacillus moniliformis*, *Spirillum muris*)
  - Clinical signs (humans)
    - Fever, inflammation at site, enlarged regional lymph nodes.
    - Headache, malaise, possible rash, arthritis. Spontaneous resolution within 14 days in 50% of cases
  - Clinical signs (rats)
    - None
  - Prevention/Precautions
    - Be well trained for restraining rats. Contact Occupational Health if clinical signs occur.
2. Lymphocytic Choriomeningitis (LCM) Virus Infection

Clinical signs (humans)

Flu-like signs (fever, myalgia, headache, malaise), lymphadenopathy, neurological signs. Can induce serious congenital infections in fetuses

Clinical signs (mice)

None

Clinical signs (hamster)

None, wasting disease

Transmission

Contact with blood, secretions, feces, urine of infected mice or hamsters. Contact with contaminated mouse/hamster cell or tumor lines. Also via aerosol or fomites.

Prevention

Use only approved vendors for purchasing of mice and hamsters. Include LCM testing for all mouse and hamster cell lines.

## B. Dogs and Cats

### 1. Rabies

Clinical signs (animals and humans)

Changes in behavior, unable to swallow, progressive neurological signs (paresis/paralysis, convulsions, coma). Death within 10 days after onset of clinical signs. Incubation time (time from exposure to clinical signs) is typically 1 to 3 months, can be longer.

Transmission

Usually via bite wound, but may be associated with virus-contaminated saliva of animal that comes in contact with an abrasion or scratch on an individual.

Prevention/Risks

All individuals who handle dogs or cats are offered prophylactic rabies immunization by the Occupational Health Department. If an individual is bitten or otherwise exposed, their Supervisor, Occupational Health, and an ICM veterinarian must be notified immediately. If the animal is alive, it will be quarantined for 10 days to ensure that it was not shedding virus at the time of the incident (dogs/cats shed virus for less than 10 days prior to dying due to rabies). If the animal is not alive, the head will be sent by the ICM veterinary staff to the NYC Health Department for viral-antigen detection testing. To avoid contact with saliva during intubation of a dog, one should wear exam or surgical gloves.

Risk in laboratory dogs/cats: All dogs and cats used at the University have been immunized for rabies. However, it is possible, but very unlikely, that a dog could have been exposed to a rabid animal prior to immunization, making the immunization ineffective.

### 2. Cat Scratch Disease (*Bartonella hensela*)

Clinical signs (humans)

Many cases lack recognizable symptoms. Most cases resolve within 2 months without treatment. When present, signs include mild fever, erythematous pustule at site of bite or scratch (50% of the time), regional lymphadenitis. Occasionally, severe sequelae such as encephalitis and osteolytic lesions may occur.

Clinical signs (cats)

None

Transmission

Via cat bite or scratch

Via flea bite

Precautions

Thorough cleansing of cat bites/scratches

Flea control

3. Leptospirosis

Clinical signs (humans)

Varies from asymptomatic to severe disease.

Phase 1: Sudden illness with weakness, headache, myalgia, malaise, chills and fever

Phase 2: Rash, abnormal renal, hepatic, pulmonary GI function

Transmission

Contact with infected urine from animal or inhaling aerosolized organisms during husbandry duties. All secretions of infected animals should be considered infectious.

Precautions/Risks

Practice good personal hygiene, wear protective garments, gloves that minimize exposure to infectious urine or other infected tissues. All dogs and cats are purchased from licensed dealers are immunized for leptospirosis and are monitored for signs of infectious diseases. Accordingly, the risk of human infection at the HSD is very low. *Leptospira* spp. are not present in commercially obtained rats and mice. Wild rodents are a source for human infection.

4. Pasturellosis (*Pasteurellas spp.*)

Clinical signs (humans)

Pain, erythema, purulent exudates, and cellulitis at site of bite wound

Clinical signs (animals)

None, carried in oronasal microflora

Transmission

Bite wound

Precautions/Risks

Careful cleansing/antiseptics of bite wounds. All bite wounds should be reported to the Occupational Health Service.

5. Ringworm (Dermatomycosis) (*Microsporum canis, gypseum or Trichophyton mentagrophytes*)

Clinical signs (humans)

Lesions usually on the extremities. They are focal, annular, scaling, erythematous skin lesions with central clearing resembling a ring.

Clinical signs (dogs)

Lesions often on head or legs. Lesions characterized as annular, crusting patches with loss of hair resembling a ring.

Clinical signs (cats)

Often lesions are not readily apparent or are mild. Lesions most likely to be observed in kittens on head as crusting, erythemic focal lesions.

Transmission

Direct contact with infected animals, contaminated bedding or caging equipment

Precautions/Risks

Wear protective garments and gloves, practice effective personal hygiene. Screen, isolate and treat affected animals. Since clinical signs in animals may

not be present or only mild, dogs and cats used by investigators at the HSD could be infected, but the infection and detected.

6. Toxoplasmosis (*Toxoplasma gondii*)

Clinical signs (humans)

Congenital infections result in severe neuropathological changes

Unless immunodeficient, postpartum humans infrequently have any clinical symptoms of infection. Infection is widespread; based upon serological testing of adults in the U.S., it is estimated that one-third of the population has been infected. Approximately 10% of AIDS patients are infected with *Toxoplasma* and develop neurological symptoms.

Clinical signs (cats)

None

Transmission

Via inhalation/ingestion of infectious oocyst-infested dust. Oocysts shed in cat feces need 1-5 days sporulation time in the environment to develop into infectious particles. Cats shed oocysts for 1 or 2 weeks after infection.

Precautions/Risks

Daily cleaning of cat litter pans to prevent accumulation of infectious oocysts.

Wear gloves when handling litter pans and wash hands before eating. Pregnant women and immunosuppressed individuals should avoid contact with cat feces and potentially contaminated sites.

7. Sarcoptes Infection/Mange (*Sarcoptes scabiei, var. canis*)

Clinical signs (humans)

The skin lesions, located on sites exposed to infected dogs, are associated with intense itching, papular eruption, and vesicles. Human infection heals spontaneously in several weeks because the mite does not reproduce on the heterologous human host.

Clinical signs (dogs)

The lesion usually first appear on the dog's head, ears and legs. Like humans, the mite causes intense itching and the formation of papules and vesicles. The vesicles open and become scabby. Hair loss is frequent.

Transmission

Direct contact with infected animals

Precautions/Risks

Is infrequently seen in dogs obtained from licensed dog vendors. If clinical signs seen in dogs, animal is quarantined and treated. Personnel can help prevent infection by use of gloves when handling dogs.

**C. Non-human Primates**

1. Herpes B Virus (*Cercopithecine Herpesvirus 1*) CHV-1 - Incubation time can be as short as 2 days, but typically is 2-5 weeks. Initial signs are skin vesicles at site of exposure, fever, myalgia, headache followed by neurological signs such as hyperesthesia, ataxia, confusion, and ascending flaccid paralysis. The disease is usually fatal unless individual is promptly given antiviral therapy.

Clinical signs (macaques)

Lingual or labial vesicles or ulcers that heal in several weeks, and/or conjunctivitis. Only macaque monkeys harbor the virus

Transmission

Primary means of transmission is virus-containing saliva via bites and scratches from macaque monkeys. Other important means include virus in conjunctiva, feces, blood, needle stick injuries. Aerosol transmission has also been suggested.

#### Precautions/Risks

Many macaque monkeys used at the Health Sciences are serologically positive for Herpes B Virus. Accordingly, all macaques should be considered to be infected and **EXTREME CAUTION SHOULD BE TAKEN WHEN HANDLING MACAQUE MONKEYS, THEIR TISSUES, BLOOD AND SECRETIONS**. Protective clothing should always be worn when handling monkeys, their caging, and tissues, etc. This includes, face mask/shield, eye protection, gloves (leather if handling animals), and long sleeve garments and gowns. Attached is the protocol to be followed should an individual be potentially exposed to the virus via a bite, scratch, etc.

## 2. Measles (*Morbillivirus*)

#### Clinical signs (monkeys)

Signs in monkeys are similar to those occurring in humans. There is an incubation period of about 10 days followed by fever, conjunctivitis, coryza, cough and Koplik's spots on the bucal mucosa. Then a rash occurs, first on the face and then becoming generalized on the body. Complications due to the virus and secondary bacterial infections can include bronchopneumonia, otitis media, diarrhea or encephalitis.

#### Transmission

Transfer is via infectious aerosols, contact with nasal or throat secretions or contact with fomites that have been freshly contaminated with secretions. The primary risk is to monkeys via exposure to humans, however, monkey to human transmission can occur.

#### Precautions/Risks

All persons in contact with nonhuman primates should be immunized against measles virus. Nonhuman primates may be immunized with a modified live vaccine.

## 3. Tuberculosis (*Mycobacterium tuberculosis, and other spp.*)

#### Clinical signs (humans)

Can be asymptomatic for months/years. Signs include dyspnea, malaise, loss of weight.

#### Transmission

Acquired by nonhuman primates via direct/indirect contact with infected humans or other monkeys. Also, transmission may be via aerosol transfer, contaminated fomites (shared caging items, gloves of handlers, etc.).

#### Risk to humans

Sources of greatest exposure to animal facility personnel include exposure when treating or handling infected animals, sanitizing contaminated caging and performing necropsies on such animals. The prevalence of tuberculosis in nonhuman primates used in research is very low today. This is due to a number of factors including the use of only domestically raised macaque monkeys, improved preventive medicine programs for monkeys, and improved occupational health testing programs for personnel. The most frequent source of *M. tuberculosis* in monkeys is infected humans.

#### Precautions/Prevention

Purchase of animals from only sources that have an effective preventive medicine program, appropriate quarantine of incoming animals, tuberculin

testing of all animals at least semiannually, and an effective occupational health program that provides for at least annual tuberculin testing.

4. Campylobacter Infection (*C. jejuni*, *C. coli*, *C. upsaliensis*, *C. helveticus*)

Clinical signs (humans or nonhuman primates)

Acute gastrointestinal illness characterized by diarrhea, sometimes watery with or without blood; abdominal pain and fever. Generally signs are brief and self-limiting.

Transmission

Transfer is by handling infected animals with diarrhea. Young monkeys tend to be more susceptible and more likely to transmit infection.

Precautions

Practice good hygiene, wear gloves and masks while handling monkeys and their excreta.

5. Salmonellosis

Clinical signs (humans and nonhuman primates)

Monkeys may be asymptomatic shedders. Signs include acute, sudden gastroenteritis, abdominal pain, diarrhea, nausea and fever. Usually mild and self-limiting.

Transmission

Transfer is fecal-oral via direct contact with monkey, or contaminated fomites.

Precautions

Practice good hygiene and eliminate contact with feces, etc. by use of protective clothing.

6. Shigellosis (*S. flexneri*, *S. sonnei*, *S. dysenteriae*)

Clinical signs

Usually asymptomatic in monkeys. Signs associated with dysentery (blood and mucous in the feces, abdominal cramping), weight loss and inappetance.

Transmission

Direct contact with monkeys with dysentery and contaminated fomites.

Precautions

Practice good personal hygiene and wear protective clothing.

**D. Ungulates – sheep, goats and cattle**

1. Q Fever (*Coxiella burnetti*)

Clinical signs

*C. burnetti*, an obligate intracellular rickettsia, is a major cause of late abortion in sheep, otherwise, infection in ruminants is usually asymptomatic. In humans, infection is usually asymptomatic, but flu-like symptoms may occur. Untreated with antibiotics, infections are usually self-limiting in several weeks. However, *C. burnetti* – induced endocarditis may occur in individuals with preexisting valvular heart disease, and similarly, serious hepatitis may occur in individuals with preexisting hepatitis. Others at risk to serious disease are pregnant women and individuals who are immunosuppressed.

Transmission

The agent is extremely resistant to environmental changes and disinfectants. It may persist in the environment for up to 1 year. The organism is very concentrated in placental tissues; accordingly, pregnant or peri-parturient sheep, goats or cattle are particularly likely to pose a risk to research. The organism

may also be shed in milk, urine and feces. Humans acquire the infection by inhaling infectious aerosols and dusts in which only 10 inhaled organisms may be sufficient to cause infection.

#### Precautions

Although serological tests exist to detect infections, false-negative tests are frequent, particularly in pregnant animals. All ruminants should be housed in rooms that have a negative air-pressure to the corridor. All personnel should wear protective clothing to help prevent infection while working with ruminants or performing husbandry tasks in their holding rooms. Pregnant sheep are particularly hazardous, and their housing and use should be restricted to BSL2 biohazard facilities. Currently, no facilities exist at the University to safely house pregnant ruminants; accordingly, none may be used.

## 2. Contagious Ecthyma (*Orf Parapoxvirus*)

#### Clinical signs

Signs in sheep and goats include papules vesicles or pustules leading to scabs of the skin on the face, udder, genitals and coronary bands of the feet. Lesions are most commonly seen at the commissures of the mouth in animals less than 1-year old.

In humans, usually there is a solitary pustular lesion on the hand, arm or face that may develop in to a weeping proliferative nodule. The lesions spontaneous regress within 3 to 6 weeks without scarring.

#### Transmission

Transfer is through direct contact with scabs or exudates of infected sheep or goats. Fomite transmission may occur because the virus persists in the environment.

#### Precautions

An effective vaccine is available for use in lambs and kids. Use only sheep and goats from flocks that are immunized and have no history of ORF.

#### References

1. ILAR Journal Laboratory Animal Allergy. National Research Council. Vol. 42, No. 1, 2001.
2. Laboratory Animal Medicine, 2<sup>nd</sup> Edition. Editors Fox et al. Academic Press, 2002.
3. Biosafety in Microbiological and Biomedical Laboratories, 4<sup>th</sup> Edition. CDC, Public Health Service, 1999.
4. Guide for the Care and Use of Laboratory Animals. National Research Council, 1996.

**POLICY:**                    **Human Exposure to Herpes Virus Simiae (Herpes B) Infected Macaque Monkeys\***

\*Herpes B Virus does not infect baboons and accordingly, this policy excludes incidents from baboons.

**PURPOSE:**                    To minimize human exposure to Herpes B virus via contact with the blood, saliva or other secretions of macaque monkeys (rhesus or cynomologus) or through laceration or puncture by a contaminated instrument or needle.

**PROCEDURE:**

1. Stop what you are doing.
2. Immediately soak, irrigate or scrub with any soap solution the bite, scratch or laceration for 10 minutes or the puncture wound for 20 minutes. If splashed in the eyes, rinse immediately with eye-wash for 15 minutes. If the injury is not on your hands, then don protective gloves.
3. Report the exposure to an ICM Veterinarian @ 5-2338 or the ICM Office @ 5-3827 to have a veterinarian paged. Also report the exposure to your supervisor to initiate the Accident Form. Be sure to identify individual animal when reporting by cage card or tattoo number.
4. Report with a copy of this policy to Occupational Health Service (OHS) Harkness Pavilion 1-South, Monday-Friday 8:00 a.m. to 4:00 p.m. or NYPH Emergency Services (E.S.) Area A Vanderbilt Clinic at all other times. If your initial examination is in Emergency Services, you must return to Occupational Health for follow-up examination on the next business day. Inform Occupational Health or Emergency Services if you are immunocompromised.
5. **A physician must evaluate your injury.** It is important that a physician evaluate your injury to appropriately make decisions regarding your treatment.
6. A blood sample **must** be drawn in two red top (serum collection) tubes.
  - During Occupational Health Service hours of operation the specimen is to be returned to the Institute of Comparative Medicine, BB 1810 for processing.
  - At all other times the specimen is to be brought to the Serology Laboratory – Children’s Hospital 3<sup>rd</sup> floor ext. 5-9116. The serum will be separated and frozen in the laboratory. A general requisition requesting Herpes Virus Simiae must be attached to the tubes of separated, frozen serum. On the next business day the specimen must be picked up by the employee-patient and brought to the Institute of Comparative Medicine, BB-1810 for processing. This blood sample testing **must** be repeated 14 days after the incident.
7. If you have symptoms in the days following the incident such as: dizziness, headache, vesicular skin lesions accompanied by intense itching, pain or numbness at the exposure site, you **must report** immediately to the Occupational Health Service (OHS) or Emergency Services. If you are unable to report to OHS or ES, seek medical care immediately.
8. You must return for appointments at Occupational Health Service for follow-up care once a week (for two weeks or longer) as indicated.
9. An infectious disease physician is available for consultation. Call (212) 305-5880 and enter pager #6590 and/or pager #6315.
10. A Veterinarian is available for consultation. Call (212) 305-2338 or (212) 305-3837 to have a veterinarian paged.

**Last update 4/14/2003**