Animal Contact Program Handbook, August 2017 Edition

Contents

1. OVERVIEW OF ANIMAL CONTACT PROGRAM

The Animal Contact Program includes a medical monitoring and an educational component for individuals with animal contact, defined as those that:

- Handle or work with live animals, or
- Handle unfixed animal tissues or body fluids, including animal waste, or
- Are listed on an Institutional Animal Care and Use (IACUC) protocol, or
- Access Animal Care Services (ACS) managed facilities or vivaria

Individuals that do not meet the criteria above, but who may have incidental or infrequent exposure due to their work near animals or observing animals in the field are not required to part participate in the program. They should however:

- Read this Animal Contact Program Handbook, and
- Be advised that some persons are at increased risk from animal-associated disease:
    - Women who are pregnant or planning to become pregnant
    - Immune compromised persons
    - Individuals with known animal allergies
- Contact the Occupational Medicine Clinic, 352-294-5700, for additional information

Medical monitoring is based on the type and frequency of exposure to animals and consists of a risk assessment, follow-up assessments and, tests/immunizations as needed. It is part of the University's Occupational Medicine Program.

Program requirements are based upon those outlined in the Public Health Services document, Guide for the Care and Use of Laboratory Animals and the National Research Council's Occupational Health and Safety in the Care and Use of Research Animals, as well as the recommendations of the Association for Assessment and Accreditation of Laboratory Animal Care (AAALAC).

The educational component, the Animal Contact Program Handbook, provides individuals with health information specific to animal contact and promotes safe working practices. Program participants are provided with a link to this handbook and verify they are familiar with the contents as part of the initial and recurrent medical clearance process.

---

2. MEDICAL MONITORING PROGRAM FOR ANIMAL CONTACT

The University of Florida's occupational medicine program is a comprehensive program for individuals having animal contact in association with University-sponsored activities. Program requirements are based on the type of exposure to animals, as determined by a risk assessment completed by individuals with animal contact and their supervisor or principal investigator.

Risk Assessment

An Initial Risk Assessment form will be completed by everyone listed on an IACUC protocol and those with animal contact. This form includes contact information and a health questionnaire and will be evaluated by UF's Occupational Medicine Physician or Licensed Health Care Professionals to assess an individual's risk of exposure and determine whether additional information and/or interaction is necessary.

A Renewal Risk Assessment form is required every three years or when any new species is contacted, when there is a change in personal health status, or there is a change in the type of animal contact (e.g. live animals instead of just body fluids, etc). This update will allow UF's Occupational Medicine Physician or Licensed Health Care Professionals to evaluate and, if necessary, address potential health risks to you resulting from a change to your health status or changes to the type and frequency of your exposure to animals.

The UF IACUC verifies that all personnel listed on new and continuing animal use protocols are included in the Animal Contact Program. It is the responsibility of the Principal Investigator to ensure that all individuals listed on their IACUC protocol or working under their supervision participate in the program, including employees, students, colleagues, collaborators, and volunteers.

Specific requirements

- Tetanus Immunization within 10 years – All participants
- Rabies Immunization Series/Booster or Positive Titer within 2 years – All individuals handling wild/feral/free-roaming, or unvaccinated carnivores
- Respirator Clearance and Fit Test – All individuals required by UF's Q-Fever Policy or as medically necessary to prevent allergic reactions
- Q-fever (*Coxiella burnetii*) serum titer - all who are required by UF's Q-Fever Policy
- Tuberculosis Screening within 12 months – All individuals with non-human primate, elephant, or rhino contact
- Medical consultation – As determined by the Occupational Medicine Physician. Examples are individuals with chronic disease, work-related injuries or illness, environmental or animal allergies

Call the OCCMED Clinic at 352-294-5700 to discuss any personal health issues that may affect your clearance for animal contact.

Exemptions from the program

Individuals working on projects that involve observation of birds or other animals outdoors/in their natural habitat are exempt from the program.

Visitors entering ACS managed facilities or vivaria to perform maintenance/repairs or observe research are not required to participate in the Animal Contact Program provided all the following are met:

- Visits are 5 times or less within a 30 day period
- The Request for Visitors to Observe Animal Research and ACS Director's Instructions Regarding Associated Health Risks forms are signed and approved; contact ACS at 352-273-9230

- Visitors are escorted at all times and wear their issued visitor badge
- Additional requirements apply for specialized areas:
    - Animal Biosafety Level 3 (ABSL3) areas (BioPath Medical Monitoring Program)
    - Non-human primate facilities (Tuberculosis monitoring)
    - Biomedical research and housing areas for sheep (Respiratory protection)

---

3. OCCUPATIONAL INJURY REPORTING PROCEDURE

When a non-emergency injury or illness occurs and medical treatment is necessary, the individual and/or the supervisor will promptly call the Workers' Compensation Office (now AmeriSys) at 877-455-2079 who will assist in selecting an authorized medical provider and initiate a First Report of Injury or Illness form.

In the event of a medical emergency, call 911. After emergency treatment is received, call AmeriSys as soon as possible.

Any work-related injury or illness or hazardous exposure must be reported at once to the supervisor or principal investigator.

UF Human Resources Worker's Compensation web site has more information: http://hr.ufl.edu/manager-resources/employee-relations/workers-compensation/new/.

An EHS Injury and Incident Investigation Report Form must be completed for all injuries that result in filing of a Workers Compensation Claim. The report should be completed within 7 calendar days of the occurrence/filing of the injury with the Workers Compensation office. The form, when completed, helps the University understand and analyze the causes of accidents and enhance the ability to take action to prevent recurrence.

---

4. FORMS ASSOCIATED WITH THIS PROGRAM

- Risk Assessment for Animal Contact
- Renewal Risk Assessment for Animal Contact

---

5. PROGRAM CONTACTS

Additional information may be obtained from the sources listed below.

- Questions regarding risks associated with animal contact and precautions to be followed should be directed to the Environmental Health & Safety (EHS) Biosafety Office at 352-392-1591.
- Questions regarding a specific situation should be directed to the principal investigator or supervisor.
- Questions regarding the program or forms should be directed to the Division of Environmental Health and Safety (EHS), Occupational Medicine at 352-392-1591.

- Medical consultation, questions and appointments are available from the UF OCCMED Clinic at 352-294-5700.

---

6. HEALTH INFORMATION

The Public Health Service of the U.S. Department of Health and Human Services directs research/teaching institutions to develop programs that promote the health and safety of employees who have animal contact.

This document contains informational material about several specific conditions or practices with which animal workers should be familiar.

Personal Hygiene and "Universal Precautions"

There are a number of personal hygiene issues and good practices which apply to all individuals with animal contact. Attention to personal hygiene safe work practices protects not only the individual, but also prevents zoonotic diseases or allergens from being carried to other animals in the facility or home to family members and pets who may be exposed.

Handwashing

Careful hand washing will prevent the transfer of potentially infectious or hazardous materials to mouth, mucous membranes, or non-intact skin and will limit the spread of allergens to eyes and nose. Hands should be washed as follows:

- after handling animals
- prior to leaving the laboratory or animal facility
- before eating, drinking, applying cosmetics, eye drops, contact lenses, or smoking
- after touching potentially contaminated surfaces or objects
- after removing gloves (if worn)

Wash hands with plenty of soap and water, getting under fingernails and between fingers. Dry with paper towels and if possible, use the paper towel to turn off the faucet and open the door handle.

Protective Clothing and Equipment

Laboratory coats or other protective clothing specified by the animal facility or IACUC protocol should be worn over street clothes when working with animals to minimize contamination of street clothing. Protective clothing should be left in the lab or animal facility and should not be worn in common areas, lavatories, when eating, or in public eating areas.

Additional personal protective equipment (PPE) may be specified as part of the facility requirement, IACUC protocol, or as a work restriction placed by the occupational health provider. This may include a combination of gloves, eye protection, mask, respirator, etc.

- All specified PPE must be worn when, where, and as directed and disposed of appropriately (or cleaned if re-used).
- Those wearing a respirator will be enrolled in the Respiratory Protection Program.
- Safety eyewear is worn when there is a potential of splash with infectious or hazardous materials. Contact lens wearers must wear safety eyewear when working in the laboratory.

- Gloves, if worn, are changed when contaminated, when the integrity has been compromised, or when otherwise necessary and are not worn outside animal areas. Gloves should be removed in a manner that prevents transfer of hazardous materials.

Other Safe Work Practices

- Personnel receive appropriate training from (or arranged by) their supervisor or principal investigator regarding potential hazards and how to work safely.
- There is no eating, drinking, smoking, gum chewing, contact lens handling or applying of cosmetics/eye drops in areas where animals are housed or handled.
- Equipment, furniture, and surfaces in animal areas shall be easily cleanable; all work surfaces should be cleaned daily and after any spill of animal-related material.
- Sharps and needles, if used, will be disposed of in a biomedical sharps container convenient to the work area. Needles will not be removed from the syringe, bent/sheared or recapped before disposal into the sharps container.

Bites, Scratches, Needlesticks, Splashes to Eyes/Nose/Mouth, Cuts & Abrasions

Every person working with animals should be aware of the potential danger from animal bites, scratches, needlesticks, or instances where contamination of mucous membranes or non-intact skin has occurred.

- Immediately wash the affected area with large quantities of soap and water.
- For small wounds – allow to bleed freely and if necessary, control bleeding by applying direct pressure.
- If eyes or mucous membranes are exposed, irrigate the area for at least 15 minutes with water.
- Apply first aid.
- Report the incident to the supervisor/principal investigator right away, even if the incident may not seem serious.
- Seek medical treatment; call the Workers' Compensation Office at 877-455-2079 who will assist in selecting an authorized medical provider.
- Special precautions are needed for exposures involving *non-human primates*, described in this handbook.
- If known infectious agents/hazardous materials/recombinant/synthetic nucleic acids are involved, contact EHS at 352-392-1591.

Allergies to Animals

Allergy to animals or animal products is one of the most important problems for those with animal contact. Approximately one third of individuals working with laboratory animals will develop allergy symptoms and more than 10% will go on to develop asthma. Severe symptoms can affect personal health and potentially prevent someone from working with animals altogether.

Allergic reactions are expressed in a number of ways including allergic rhinitis (a condition characterized by runny nose and sneezing similar to hay fever); by allergic conjunctivitis (irritation and tearing of the eyes); by asthma (wheezing and shortness of breath), or by atopic dermatitis (a skin condition caused by contact with a

substance that the individual is allergic to). Allergy to animals is particularly common in workers exposed to cats, dogs, rabbits, mice, rats, gerbils and guinea pigs.

Exposure to animal allergens occur through direct skin contact or more commonly, by inhalation of dust containing allergens from urine, dander, saliva, hair, feathers, bedding, etc. Individuals become sensitized over a period of months or years and may be allergic to just one type of animal, or multiple species. People who have a prior personal history or family history of animal allergies may be more likely to develop allergies when working with animals or entering animal facilities.

Ways to reduce animal allergy

- Manipulate animals within ventilated hoods or biosafety cabinets when possible.
- House and manipulate animals in a designated animal facility rather than in the general laboratory.
- Empty cages only in ventilated hoods or other ventilation-controlled equipment.
- Move animals or soiled cages only through non-public areas and drape the cages or cart with a cover cloth
- Cover street clothes or avoid wearing street clothes (e.g. wear facility-dedicated scrub suit) while working with animals.
- Leave work clothes at the workplace to avoid potential exposure problems for family members.
- Reduce skin contact with animal products such as dander, serum, and urine by using gloves, lab coats, and face shields.
- Spend as little time as possible in the room where animals are housed.
- Limit animal density where feasible.
- Wear protective clothing and PPE and leave it/dispose of it in the work area.
- Wash hands after handling animals and before leaving the animal area.

Anyone with animal allergy symptoms should consult with the OCCMED Clinic at 352-294-5700.

Reference: Preventing Asthma in Animal Handlers, NIOSH

Zoonotic Diseases

Diseases that are transmissible from animals to humans are termed zoonotic. All persons with animal contact, including those working only with animal tissues, body fluids, or waste should be familiar with the diseases associated with the species they handle. The following references are informative:

- https://www.cdc.gov/healthypets/diseases/index.html, Diseases That Can Be Spread From Pets to People, CDC, Healthy Pets healthy People
- https://www.nap.edu/read/4988/chapter/6#101, Chapter 6, Zoonoses, in Occupational Health and Safety in the Care and Use of Research Animals (1997), National Academies press
- http://www.phac-aspc.gc.ca/lab-bio/res/psds-ftss/index-eng.php, Pathogen Safety Data Sheets, Health Canada
- http://www.cfsph.iastate.edu/?lang=en, Zoonotic Diseases, Center for Food Security & Public health, Iowa State University

Work with wild animals or animals of unknown health status presents the greatest risk for infection from zoonotic diseases.

Personal Health Status, Pre-existing Conditions, and Reproductive Considerations

Personal health status is another risk factor for transmission of zoonotic disease.

Immune compromised individuals are at greater risk. Immune suppression can occur as a result of splenectomy, a chronic illness such as cancer, HIV, or diabetes, or immune suppressing drugs (steroids, chemotherapy). Open wounds, burns, in-dwelling catheters, etc. also increase the risk of infection. Licensed health care professionals at the OCCMED Clinic can answer questions regarding personal health status related to their animal contact.

Pregnant and nursing women may be at increased risk for development of infectious diseases, pregnancy complications or fetal birth defects due to their exposure to animals. All individuals with questions or concerns about reproductive health and their work environment should contact the licensed health care professionals at the OCCMED Clinic, 352-294-5700.

Several key zoonotic disease are outlined below.

Tetanus

Tetanus is caused by the anaerobic bacteria *Clostridium tetani*. The bacteria release a potent neurotoxin that interferes with neurotransmission, causing muscle contractions and spasms. The bacteria may be present in animal feces, as well as soil and dust. The Public Health Service Advisory Committee on Immunization Practices recommends immunization against tetanus every 10 years. An immunization is also recommended if a particularly tetanus-prone injury occurs in an employee where more than five years has elapsed since the last immunization. All individuals in the Animal Contact Program must have up-to-date tetanus immunizations. The current tetanus immunization given by the UF OCCMED Clinic, Tdap, protects against tetanus, diphtheria and pertussis. See https://www.cdc.gov/tetanus/index.html and https://www.cdc.gov/vaccines/hcp/vis/vis-statements/tdap.html for additional information.

Toxoplasmosis

Toxoplasmosis is a disease which is caused by a parasitic protozoal organism called *Toxoplasma gondii*. Approximately 1/3 of the United States population has had this disease at some time. Usually this disease is quite mild and may be mistaken for a simple cold or viral infection. Swollen lymph nodes are common. In addition, it is common to have a mild fever, general tired feelings and mild headaches. People acquire this disease by eating meat which is raw or has not been cooked properly or by contact with feces of an infected cat or other mammal. At any one time, about 1% of all cats will be shedding the toxoplasmaoocyst in their feces. In addition, this organism can be passed on to the fetus of a pregnant woman if she becomes infected during her pregnancy. There are two situations in which toxoplasmosis can be extremely serious. A person whose immune system is not working properly can contract a very severe form of the disease. This would include people with AIDS or a positive blood test for HIV, people on medications which suppress their immune systems, and people who have some other serious illness which affects their immune system in the same way. In addition, an infection with toxoplasma can severely damage an unborn child if the mother is infected during pregnancy. This can result in miscarriages, still births, or various congenital defects. Pregnant women should be cautioned about

working with cats in an occupational or laboratory setting. See https://www.cdc.gov/parasites/toxoplasmosis/disease.html

Q Fever (Coxiellosis)

An intracellular bacteria called *Coxiella burnetii* is the causative agent of Q Fever. Large numbers of bacteria (up to 10^9 per gram of tissue) may be present in placenta, birth tissues and the amniotic fluids of infected animals. Sheep, goats and cattle, as well as wildlife infected with *Coxiella burnetii* usually shed the agent with no outward signs of disease, although Q Fever sometimes causes abortion in these animals (as well as pregnant women). The bacteria may persist in the animal and be shed intermittently. In addition to birthing products, the organism may be shed in milk, feces, urine and can be present in blood. Human infection most commonly results from exposure to the amniotic fluid of infected ruminants, especially sheep.

Coxiella burnetii is highly resistant to heat, drying, many common disinfectants, and can persist for months in contaminated soils. Inhalation of contaminated dusts and aerosols generated by infected animals, their waste products, placental tissues and fluids, and contaminated bedding are typical routes of infection. Only a single inhaled organism may be sufficient to cause infection. Ingestion of contaminated material, contamination of wounds, or needle sticks are other routes of infection.

In most individuals, the disease manifests itself as an acute flu-like illness. Fevers are accompanied by general malaise, muscle aches and pains, and very frequently by a cough. Pneumonia, hepatitis, or endocarditis may result, but in most patients, the disease is self-limited and will resolve on its own after ten days to two weeks. Pregnant women and people with congenital heart disease, a history of valvular heart disease, or who are immunocompromised are at highest risk for complications from Q Fever. It is extremely important that individuals who work with sheep or goats and develop an influenza type infection mention to their physician the possibility of Q fever.

UF has a comprehensive Q-Fever Policy designed to lower the risks to animal workers. Animal testing, quarantine, housing facilities, personal protective equipment, disinfectants, and work practices are described. In addition, all individuals working with sheep and goats or entering sheep and goat housing/procedure areas will be required to give a sample of blood for Q fever titer at the OCCMED Clinic. If a Q fever positive animal is identified during the course of a research or teaching project or a clinical workup, all potentially exposed individuals shall undergo further medical evaluation that may include Q fever titer testing. Q fever seronegative animals can still shed the bacteria but serologic testing to exclude known positives can reduce the risk of disease transmission.

When sheep or goats are housed indoors, used for biomedical research, or where invasive surgical or obstetrical procedures are performed, additional personal protective equipment and waste disposal precautions are in place. Exposure to pregnant sheep or goats, or performing procedures, surgery, or necropsy on pregnant sheep or goats will require clearance from the OCCMED Clinic for a filtering face piece respirator (e.g. N95 mask) and completion of a filtering face piece respirator medical questionnaire. To wear this type of respirator, you must be fit tested by EH&S Occupational Medicine. Fit tests are required on an annual basis.

For more information, see the Q Fever Policy or https://www.cdc.gov/mmwr/preview/mmwrhtml/rr6203a1.htm

Rabies

Rabies is a relatively rare and devastating viral disease resulting in severe neurological problems and death. Most cases of rabies occur in wild carnivores, although any mammal can contract the disease. The disease is virtually unheard of in common laboratory animals. Vaccinated carnivores of known health status are also considered low risk. Contact the OCCMED Clinic to discuss risks associated with closed colonies of un-vaccinated dogs, cats, and ferrets for biomedical research. Regardless, all bites of any type should be reported immediately to the supervisor or principal investigator.

Rabies is an endemic disease in Florida, especially in skunks, raccoons, foxes, and bats. Note that up to 30% of the bats found on the ground are positive for rabies. Sporadic cases have been documented in other species of wildlife, as well as domestic animals. Animals and animal tissues field-collected in Florida should be handled with care. Precautions should take into account the fact that infected animals may shed the virus in the saliva before visible signs of illness appear and that rabies virus can remain viable in frozen tissues for an extended period.

Persons handling wild/feral/free-roaming carnivores and their neurologic tissues are at greatest risk. Disease transmission occurs by a bite, a sharps injury, or contamination of mucous membranes or non-intact skin with saliva or fluid from the central nervous system of infected animals. There is a human vaccine, available at the OCCMED Clinic, that offers protection for persons working with high risk animals or associated material. Vaccine titers are checked periodically, based on a risk assessment by OCCMED medical providers, to ensure adequate vaccine protection. See https://www.cdc.gov/rabies/

Leptospirosis

A variety of animals carry *Leptospira interrogans* and shed the bacteria in their urine. Human infection occurs from contact of non-intact skin or mucous membranes with infected urine or urine-contaminated surfaces. Ingestion of urine-contaminated food or water is another route of infection. Clinical symptoms may be severe, mild or absent and may cause a wide variety of symptoms including fever, jaundice and general discomfort. The disease can usually be treated successfully with antibiotics. Dogs, domestic livestock and rodents are commonly implicated. See https://www.cdc.gov/leptospirosis/index.html

Ringworm (Dermatomycoses)

Many species of animals are susceptible to fungi that cause the condition known as ringworm. The skin lesion usually spreads in a circular manner from the original point of infection, giving rise to the term “ringworm.” The complicating factor is that cats and rabbits may be asymptomatic carriers of the fungi which can cause the condition in humans. In humans, the disease usually consists of small, scaly, semi-bald, grayish patches with broken, lusterless hairs, with itching. Transmission of the disease is by direct contact with an infected animal. Personal hygiene is the best method of prevention. See https://www.cdc.gov/fungal/diseases/ringworm/index.html

Lymphocytic choriomeningitis virus (LCMV)

The lymphocytic choriomeningitis virus is an *Arenavirus* carried in rodents that is shed in saliva, urine, feces, and nasal secretions. Disease symptoms in rodents are typically subclinical. In humans, infection can produce no symptoms, or a self-limiting flu-like illness. In some instances though, meningitis or other serious disease can

result. Very importantly, the virus can cause devastating effects in a developing fetus. Pregnant women should be cautioned about exposure to rodents. Transmission of LCMV to humans occurs through direct contact of non-intact skin or mucous membranes to contaminated materials, rodent bites, inhalation of aerosols, and needle sticks. For more information, see https://www.cdc.gov/vhf/lcm/ and http://www.cfsph.iastate.edu/DiseaseInfo/disease.php?name=lymphocytic-choriomeningitis&lang=en

Diseases of Non-Human Primates

A large number of illnesses can be passed from non-human primates to humans and from humans to non-human primates. Because of this it is extremely important that workers exposed to monkeys and apes exercise particular caution in the handling of the animals. Protective clothing should always be worn. This clothing should not be worn outside the animal areas. Surgical masks which cover the nose and mouth as well as eye protection (safety glasses/face shield, goggles) will be worn in primate areas. Awake animals should be handled only while wearing bite proof gloves. Ideally, animals should be sedated before procedures are done. Persons should not work with monkeys when they are ill since this may cause them to be more susceptible to illnesses transmitted from the monkey and also increases the likelihood that the monkeys could contract illnesses from the worker. Careful personal hygiene must be scrupulously maintained by all those exposed to non-human primates. Any scratch or bite must be immediately reported to the laboratory supervisor.

There are two specific illnesses, which deserve attention, but these are by no means the only illnesses that can be contracted from monkeys. Non-human primates are very susceptible to tuberculosis . All individuals who work with non-human primates must be tested for tuberculosis every year. This involves a tuberculin skin test or blood test (T-spot). Primates are also tuberculosis tested on a regular basis. Tuberculosis is caused by the bacteria *Mycobacterium tuberculosis*. Infection can be asymptomatic, latent, or active and is spread through inhalation of droplets. Infection primarily affects the lungs.

B Virus, (also called Macacine herpesvirus (formerly Cercopithecine herpesvirus 1, CHV-1), herpes B, monkey B virus, herpesvirus simiae, and herpesvirus B causes a very minor illness in old world monkeys (i.e. macaques), but in humans it causes severe neurologic disease which is most frequently followed by death. Fortunately, transmission of this disease to humans is quite rare. As mentioned above, it is mandatory that caution be exercised and that a supervisor be notified regarding any bites or scratches. Medical care and testing must be obtained immediately. Any wound should be carefully cleaned. Once a wound has been acutely managed, any unusual manifestations which 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.

Instructions concerning monkey bites are available in all monkey rooms. There are extra copies for you to take with you when you go to the emergency room. Attending physicians need this information.

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

assure their B virus-free status. The possibility of acquiring and maintaining such a B virus-free colony should be explored by each animal facility.

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 should be minimized as much as possible. Capturing, restraining, or otherwise handling fully awake macaques by hand is not recommended. Rather, such procedures should be accomplished using acceptable physical and chemical restraint methods. Macaques that are handled regularly 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. When feasible, chemical restraining by injection may be used before removing the animal from the cage, particularly for larger animals or for animals that are otherwise difficult to handle. 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 remove physically active animals from cages only with arm-length reinforced leather gloves. Handlers should be additionally protected with long-sleeved garments to prevent scratches and a face shield (or surgical mask and goggles or glasses) to prevent exposure of eyes and mucous membranes to macaque secretions. In warm climates, where use of long-sleeved garments and leather gloves may be uncomfortable, supervisors may wish to rotate work schedules or have workers handle animals at cooler times of the day to minimize such discomfort in the daily work routine. If macaque handlers choose not to handle chemically restrained animals with arm-length leather gloves (not recommended), 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. Also, screening may increase the risk of infection to workers. 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 primate 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. Macaque handlers should also be educated concerning the nature of B virus infection; the need to prevent bites, scratches, and other exposure to macaque secretions; and the need to clean wounds immediately. They should be educated concerning the early symptoms of B virus infection and the need to report injuries and/or symptoms suggestive of B virus infection to supervisors immediately. Animal handlers should be advised that persons who are immunosuppressed because of medication or underlying medical conditions may be at higher risk for B virus infection.
8. Wash hands thoroughly after working with monkeys.
9. Work together with at least one other person when handling primates. Minimize direct handling.
10. Report any observed facial, lip, or oral lesions on primates to the staff veterinarian.

Care of Non-human Primate Bites, Scratches, Cuts, Abrasions, etc.

1. Report bite or scratch injuries, or splashes to face or mucous membranes involving a macaque monkey or scratches with cages or equipment that might be contaminated with their secretions IMMEDIATELY to your supervisor and to the OCCMED Clinic or Shands Hospital Emergency Room. FOLLOW THE PROCEDURES FOR WOUND CARE AS OUTLINED PREVIOUSLY IN THIS DOCUMENT!
2. For small wounds – allow to bleed freely. If necessary, control bleeding by applying direct pressure with a sterile gauze or bandage.
3. Immediately, or within 5 minutes of the injury, disinfect the wound by washing with copious quantities of soap and water. Wash for at least 15 minutes. A chlorhexidine soap such as Nolvasan is recommended. Povidone – iodine or Betadine surgical soap may be used, too, but is more likely to cause skin irritation and cellular damage. Any resulting irritation may cause confusion regarding whether any vesicles are virus related or disinfectant trauma.
4. If eyes or mucous membranes are exposed, irrigate the area for at least 15 minutes with water.
5. Secure medical attention.
    1. Weekdays between 8 a.m. and 4 p.m. call the UF Student Health Care Center at 352-294-5700 and ask to see the “Occupational Medicine Group.” Let them

know you are on your way. Take the monkey bite information with you and show it to the physician.

2. After hours and on weekends go to Shands Emergency Room at 352-265-0111. Take the monkey bite information sheet with you. Inform them of the circumstances and ask them to contact the following physician.

Physician	**Work Telephone**	**Pager**	**Cell**
Dr. Kenneth Rand	352-265-0111 x 44875	888-543-1806	352-222-4613

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, or use prescription drugs for preventative therapy.

The physician directing the care of the patient will contact the Director of Animal Care Services for instructions regarding the need for cultures or serology from the monkey inflicting the injury upon the patient.

Following a bite or scratch, the individual 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 provider:

1. Vesicular (small blister) skin lesions at or near the site of injury.
2. Localized neurologic symptoms such as pain, numbness, or itching near the wound site.
3. Flu-like aches and pains.
4. Fever and chills.
5. Headaches lasting more than 24 hours.
6. Fatigue.
7. Muscular incoordination, and/or
8. Shortness of breath.

If the possibility of B virus illness exists, appropriate diagnostic studies should be performed and specific antiviral therapy should be instituted. The physician should contact the National B Virus Resource Center at GSU, Atlanta, GA (Dr. Julia Hilliard, 404-413-6550; cell: 404-358-8168). See http://www2.gsu.edu/~wwwvir/contactUs.html

For more information on Monkey B virus see https://www.cdc.gov/herpesbvirus/index.html or the National B Virus Resource Center at GSU, Atlanta http://www2.gsu.edu/~wwwvir/VirusInfo/index.html