CARE AND USE OF LABORATORY NON-HUMAN PRIMATES

Occupational Health
ENVIRONMENTAL HEALTH AND SAFETY
UNIVERSITY OF COLORADO
DENVER | ANSCHUTZ MEDICAL CAMPUS

The following is general information for those involved in the care and use of laboratory non-human primates. Contact occupational.health@cuanschutz.edu if you have any questions.

POTENTIAL RISKS

Non-human 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. 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.

Potential non-human primate zoonoses

Tuberculosis (TB)

- Caused by a bacterium called *Mycobacterium tuberculosis*
- Can be found in birds, livestock, and non-human primates
- Transmission
  - Aerosolization of infective bacilli
    - Found mainly in sputum and other body fluids
  - When handling animals, contact with body fluids during necropsy may be a major mode of transmission
- Symptoms
  - Bad cough that lasts 3 weeks or longer
  - Pain in the chest
  - Coughing up blood or sputum (phlegm from deep inside the lungs)
- Pulmonary TB is most common
  - Other organs may also be involved

B Virus (herpes B virus, Cercopithicine herpesvirus 1)

- Macaque monkeys major source of infection
- Rare in humans, but if contracted, is fatal or causes permanent neurological disease
- Most macaques are asymptomatic carriers or display mild oral lesions that are difficult to detect
  - <u>All macaques should be presumed to be shedding B virus</u>
- Transmission
  - Percutaneous exposure to infected oral or genital secretions via
    - Bites and scratches
    - Needle stick injuries
    - Direct contact with macaque tissue
    - Splashes to the eyes, mouth, or open skin lesions from infected body fluids
- ***Use NHP exposure kit if exposure occurs***
  - **Includes medical alert card and further instructions on NHP exposure**
- Incubation period: 5-21 days
- Symptoms (start within one month of being exposed; could appear in as little as 3-7 days)
  - First indications of infection
    - Fever and chills
    - Muscle aches
    - Fatigue
    - Headache
  - Small blisters may develop in area of body that had contact with monkey
    - Other symptoms include: shortness of breath, nausea and vomiting, abdominal pain, hiccups
  - As disease progresses, the virus spreads to and causes inflammation of the brain and spinal cord

Simian Immunodeficiency Virus (SIV)

- Animals with naturally occurring and experimental SIV infections and associated primate tissues (including blood and blood products) constitute potential infectious hazards to personnel
- Transmission
  - Splashes of infectious material onto mucous membranes
  - Contamination of open cuts on skin
  - Needle stick injuries
- Post-exposure prophylaxis include antiviral agents

Shigellosis

- Caused by *shigella* (non-motile, Gram-negative bacteria)
- Transmission
  - Fecal-oral route
- Symptoms start 1 to 2 days after contact
  - Diarrhea that can be bloody or prolonged (lasting more than 3 days)
  - Fever

- Stomach pain
- Feeling the need to pass stool even when the bowels are empty

- Some people will not have any symptoms

Other diseases associated with contact with non-human primates:

- Salmonellosis, Hemorrhagic Fever viruses, Filoviruses, Mpox viruses

ALLERGIC REACTIONS TO NON-HUMAN PRIMATES

- No known allergens associated with non-human primates
  - Environment may have common allergens
    - e.g. dust from bedding
- Contact Occupational Health if you develop allergic symptoms

HOW TO PROTECT YOURSELF

Wash your hands

- Single most effective preventative measure
- Regular, thorough hand washing
- Wash hands and arms after handling any animal
- Never drink or eat in the animals rooms or before washing your hands

Wear gloves

- When working with non-human primates, wear appropriate gloves for the task
- Wash your hands after removing gloves

Wear respiratory protection

- Respiratory protection should be worn when there is risk of aerosol transmission of zoonotic agents
- Respiratory protection should be worn when there is a medical history or symptoms of allergies
- Initial Medical Evaluation for respiratory clearance is performed through Occupational Health
- Fit testing is performed through Industrial Hygiene once clearance is complete through Occupational Health

Wear other protective clothing

- Disposable gowns are required to be worn in the vivarium
- Consider changing clothing before leaving work. Place dirty clothing in a bag and launder clothes at home before wearing again.

Follow proper exposure reporting protocols

- If you are injured on the job, promptly report the incident to your supervisor
  - Go to the nearest emergency department
  - Call or email Occupational Health (303) 724-9145 on your way to notify of exposure
  - **Take the NHP Exposure Document and the NHP Exposure Medical Alert Card (included in exposure kit) with you to the emergency department**
- Fill out incident report for exposure to biological hazards
- File a claim with University Risk Management
  - https://www.cu.edu/risk/file-claim
- Minor cuts and abrasions should be immediately cleansed with antibacterial soap
  - Protect injuries from exposure

Tell your physician you work with non-human primates

- Whenever you are ill, mention to your physician that you work with non-human primates
- Many zoonotic diseases have flu-like symptoms

For more information, refer to the Occupational Health website
https://research.cuanschutz.edu/ehs/home/divisions/occupational-health

or contact Occupational Health at occupational.health@cuanschutz.edu