

Health problems for humans working with nonhuman Primates

Susanne Rensing

Münster/Germany

Health and safety program

- PPEs
- Training of personell
- Risk assessment
- Physician, hospital
- Preventive medicine

Nonhuman primate area

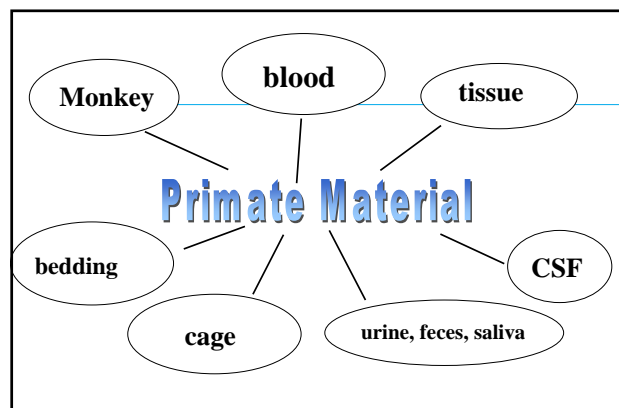
- Private owners
- Zoologic garden
- University
- Primate center
- Industry
- Quarantine,
- breeding facility,
- country of origin

Nonhuman primate area

- = any building, enclosure, vehicle, or designed space in which NHPs are present or that may be contaminated with NHP body fluids or waste
- Cages – indoor/outdoor
- Cage wash area
- Clinical pathology lab
- Necropsy area

Procedures for working in a NHP area

- Feeding
- Handling
- Training
- Restraining
- Cleaning / waste disposal
- Transport
- Maintaining enclosure/facility
- Handling NHP biological samples



Personal Protective Equipment (PPE)

- Rubber boots, dedicated shoes, shoe covers
- Gloves (nitril, latex, leather), double gloving
- Face mask, face shield, disposable
- Head covers
- Long sleeved clothing
- Disinfectant, foot bath, spray bottle
- Nonhuman primate bite kit, eyewash
- First aid kit

PSA Grundinformationen



Haufe...

Grundinformationen PSA 1

Face masks



ACTIVITY	REQUIREMENTS
View animals in the primate room. No contact with the animals or the cages	Mucous membrane protection as appropriate* and street clothes covering; hand-washing should be performed upon leaving the area and after any of the following activities.
Contact with a restraint device holding an awake animal	Mucous membrane protection as appropriate*, street clothes covering and light gloves.
Transfer alert monkey using a stand-off method such as pole-collar technique or transfer cage	Mucous membrane protection as appropriate*, street clothes covering and light gloves.
Handling (e.g. hand catching or restraining) of an alert monkey.	Mucous membrane protection appropriate for high risk situations, street clothes covering and arm length bite protection gloves.
Physical contact with an anesthetized monkey.	Mucous membrane protection as appropriate*, street clothes covering and light gloves.
Cleaning cages.	Mucous membrane protection appropriate for high risk situations, dedicated clothing, dedicated shoes, and light gloves; dust-mist masks, if approved by OSHB, DS.
Physical contact with restrained alert monkey	Mucous membrane protection as appropriate*, street clothes covering and light gloves.
Physical contact with infant monkeys	Mucous membrane protection as appropriate*, street clothes covering and light gloves. As infants mature, heavier gloves may be required.
Perform portions of experiments in a laboratory that do not involve physical contact with monkey or body fluids.	Protection appropriate for non-animal aspects of research.
Handling awake New World Species	Mucous membrane protection as appropriate*, street clothes covering, protective gloves appropriate for the species and size of animal being handled. Larger species such as Cebus should be handled with the arm length bite protection gloves, while very small species such as marmosets may be handled with lighter weight protection.

Risk assessment

- Source of animals (wild caught, purpose bred, SPF)
- Testing of pathogens on a regular scheduled base
- No testing – minimum standards

- Each institution should take it upon itself to assess the level of knowledge about a given infectious agent in a given species when creating institutional guidelines.

- Exposure and injuries (eg. biological hazard)

- Chemical safety (disinfectant, formalin)
- Physical hazard (injuries incl, bites and scratches, back problem)

- Personal hygiene (provide areas to wash and shower, laundry)
- No eating, drinking, smoking, no handling contact lenses or cosmetics in animal facility

Biosafety Levels (BSL) 1,2,3,4

- BSL 3
- containment
- Filtration of suppl and exhaust air
- Sewage decontamination
- Personal exit showers
- Facility integrity testing

Injuries: bite, scratches, back problems

- no direct contact with animals
- only handle sedated animals
- no abilities of animals: quick.....
- broken cages, no sharp edges
- Canines!!!, finger nails

Squeeze back cages



Handling sharp items



Work place

- Safe work practice
- Accessibility of PPEs
- Orderly and clean work area
- Quality of „product“
- Engineering control (renovations, physical changes)
- Training of employees
- Feedback of employees
- Workstress
- Turn over

Safe work practice

- Medical controls
- Vaccinations
- Reporting of injuries
- Follow – up protocol
- first aid kit

- Safety given a priority

Preventive medicine

- Serum banking
- Annual Tb-test
- Annual health check with WBC
- Vaccination against Hep a & B, Tetanus, Measles, Rabies...

Training of employess

- Abilities of animals
- Handling, catching animals
- Restrain devices
- PPEs
- First aid
- Review current training
- retraining

Handling alert animals



Blood Sampling



Monkey bite/ eye splash from a macaque

- Clean the wound in the first 5 minutes
- Soak or scrub wound/exposure with soap/detergent for at least 15 minutes, rinse well with water
- Rinse eyes and mucous membranes with sterile saline/water for at least 10 minutes
- Contact supervisor
- Post cleansing specimen collection
- Contact physician
- Identify animal in enclosure – review animal record

Handling alert animals



Animal allergies

- Repeated exposure
- Animal contact, inhalation
- Latex gloves, medical equipment, fungal spores in bedding, disinfectants
- Asthma – 10%, allergies – 40% of LAWs
- N-95 dust/mite respirator

Zoonotic diseases

- B-Virus
- STLV
- SRV
- SIV
- SFV
- Shigella
- Tuberculosis
- Protozoas

Effective measurements

- Employee injuries/exposure
- Veterinary outcomes
- Employee satisfaction survey, attitude, behaviour
- Subjective/objective measures of safe work practices
- Insurance – medical costs
- Employee turnover

New Housing Concept for Marmosets

⇒ 1,1 m³/cage



ET3 123

- 3,6 m³ / cage for macaques
- Group housing
- Enrichment



Conclusion

There is no such thing as zero risk!

Thank you for your attention!

