

	Number:	OH&S 18.01.1
	Revision Date:	03.10.2014
Animal Health Lab Safety		

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1. PURPOSE






- 1.1. To provide guidelines on the risks associated with working with animals and how the risks can be minimized.

2. SCOPE

- 2.1. This procedure applies to all Thompson Rivers University (TRU) employees and students working in Animal Health laboratories.

3. PRECAUTIONS

POTENTIAL HEALTH & SAFETY HAZARDS

⊗ HAZARD		TO PROTECT YOURSELF
ANIMAL SCRATCHES/ BITES		Take care around unfamiliar animals and in a situation which scare animal(s).
LIFTING		Large domestic animals must be lifted by at least 2 people
EXPOSURE to zoonotic, allergens		Wear the recommended PPE, even for short duration tasks
EXPOSURE to hazardous chemicals		Wear PPE and read the MSDS before use. <i>MSDSs are available on-line</i>
NEEDLESTICK INJURY		Safely dispose of sharps in the containers provided.

4. ASSOCIATED DOCUMENTATION

<u>Doc. Number</u>	<u>Doc. Title</u>
OH&S 8.04.1	Incident Investigation Form

5. PROCEDURES AND RESPONSIBILITIES

INSTRUCTORS

- 5.1. For this procedure the term Instructor includes all faculty and staff who supervise students in a laboratory.
- 5.2. The Instructor of a laboratory has overall responsibility for safety in the laboratory.
- 5.3. It is the Instructor's responsibility to ensure that students and new employees are aware of safety rules and follow them and that the following training has been provided:
 - 5.3.1. an appropriate safety orientation when individuals are first working in the laboratory,
 - 5.3.2. generic and specific WHMIS training as needed for chemicals encountered in AHT,
 - 5.3.3. Radiation Safety Training,
 - 5.3.4. WHMIS training,
 - 5.3.5. training on special or unusual hazards in the lab, and
 - 5.3.6. training in the use of laboratory specific emergency equipment and emergency response.
- 5.4. Records of training must be kept on file at AHT and a copy sent to OHS.
- 5.5. Additionally Instructors will complete incident investigation reports for every incident or injury that occurs in his/her lab. After the report is complete a copy will be sent to the OHS Department. Incidents to be investigated include, but not limited to:
 - 5.5.1. spills,
 - 5.5.2. fires,
 - 5.5.3. incidents requiring first aid or medical attention, and
 - 5.5.4. near misses.

STUDENTS

- 5.6. When in the laboratory students are responsible to:
 - 5.6.1. follow all applicable safety rules and practices,
 - 5.6.2. use and wear the required PPE,

- 5.6.3. report all incidents,
- 5.6.4. report all unsafe conditions, and
- 5.6.5. complete recommended occupational health screening programs.

GENERAL LABORATORY HEALTH AND SAFETY REQUIREMENTS

- 5.7. No eating or drinking in the laboratory. Consume food and drink only in properly designated areas.
- 5.8. Applying cosmetics and handling contact lenses is not allowed in laboratories.
- 5.9. Use the appropriate personal protective equipment (PPE) at all times. Refer to the PPE procedure for more information.
- 5.10. Use laboratory equipment for its designated purpose.
- 5.11. Confine long hair and loose clothing.
- 5.12. Use a proper pipetting device – **absolutely no pipetting by mouth.**
- 5.13. Avoid exposure to gases, vapors, aerosols and particulates by using properly functioning laboratory fume hoods.
- 5.14. Wash hands upon completion of laboratory work and removal of protective equipment including gloves and laboratory coats. A vigorous hand washing with mild soap for 20 seconds is appropriate.
- 5.15. Fix unsafe conditions (employees) or report to the lecturer conducting the laboratory (students).
- 5.16. Know the location and correct use of all available safety equipment.
- 5.17. Determine potential hazards and appropriate safety precautions before beginning new operations and confirm that existing safety equipment is sufficient for this new procedure.
- 5.18. Avoid disturbing or distracting other workers while they are performing laboratory tasks.
- 5.19. Ensure visitors to the laboratory are equipped with appropriate safety equipment.
- 5.20. All hazardous chemicals must be correctly and labeled correctly according to Workplace Hazardous Materials Information Systems (WHMIS) requirements.
- 5.21. Drugs must be stored and dispensed according to the requirements set by the Veterinary Drugs Directorate of Health Canada.

- 5.22. The Material Safety Data Sheet (MSDS) will be consulted before using an unfamiliar chemical.
- 5.23. Proper waste disposal procedures will be followed.
- 5.24. Refer to the on-line Work Alone procedure on the action to be taken if working alone in the building.
- 5.25. Unattended laboratory work should be kept to a minimum. It must be visited periodically with a sign posted adjacent to the equipment outlining the procedure being done alone with the name and phone number of a contact person. The sign will indicate the date and time the work was started, when it is expected to be completed and when it was last checked.
- 5.26. When using needles, glass pipettes, glass slides and cover slips, scalpels and appropriate precautions should be taken to avoid percutaneous injuries. These items should be disposed of immediately after use by placing them in an appropriate puncture-resistant container. Bending, recapping or clipping of needles is prohibited. If recapping is absolutely necessary, a mechanical device or the one handed scoop method must be used. Plastic ware should be used whenever possible, such as plastic graduated cylinders, funnels, aspirators, etc.

ALLERGENS

- 5.27. Allergies to animals result from repeated exposure to an animal's dander, urine, saliva, serum, or other body tissues. Symptoms can range from mild (i.e. itchy or runny nose and eyes) to severe (i.e. shortness of breath or red, itchy wheals on skin).
- 5.28. Levels of airborne allergens tend to rise significantly with certain activities such as changing or cleaning animal cages. The uses of dust-free bedding, or filtered caging systems, are good ways of reducing the level of airborne allergens in the kennel areas and cattery at TRU.
- 5.29. If not feasible for particular situations, then personal respiratory protection may be warranted. Contact the Occupational Health and Safety Department if you need to have a respirator fitted.

AUTOCLAVES

- 5.30. To be effective the steam must penetrate the wrapping. The length of time required for sterilization of biological material is determined by the quantity of the load, the volume of liquid in the load and the density of the material.
- 5.31. Read the operating manual carefully.
- 5.32. Post the operation procedures near the autoclave.
- 5.33. After the pressure has been released, open the door only slightly to allow steam to

escape before unloading.

- 5.34. Wear insulated gloves when unloading the material.
- 5.35. Monitor all autoclaves routinely for efficacy and maintain records.

SAFE USE OF ANESTHETIC GASES

- 5.36. Anesthetic gases can present a risk for potential exposure to personnel performing or assisting with surgery.
- 5.37. Anesthetics of concern include: ether, nitrous oxide, and halogenated agents (i.e. halothane, isoflurane, methoxyflurane). As some of halogenated anesthetics have been linked to adverse health effect, such as reproductive and neurological effects anyone concerned with possible exposure should contact the Health Services Clinic.
- 5.38. Emphasis is placed on “capturing” waste gases generated. For anesthetic gas machines this is achieved by:
 - 5.38.1. verifying that proper filtration canisters are installed,
 - 5.38.2. maintaining filter canisters according to the manufacturer’s specifications, and
 - 5.38.3. selecting the most appropriate sized face-piece.

NEEDLESTICK INJURY

- 5.39. A needle-stick injury results from an accidental skin puncture with the needle. There is the potential for needle-stick injuries to transmit infectious diseases, especially blood-borne viruses, or drugs intended for use in animals but are hazardous to humans.
- 5.40. Diseases that can be transmitted include, but are not limited to:
 - 5.40.1. Brucellosis,
 - 5.40.2. Mycobacterium sp.,
 - 5.40.3. Mycoplasma sp.,
 - 5.40.4. Staphylococcus aureus,
 - 5.40.5. Toxoplasmosis,
 - 5.40.6. Tuberculosis,
 - 5.40.7. Psuedomonas sp.,
 - 5.40.8. Blastomyces,

5.40.9. Pasteurella sp., and**5.40.10.** Streptococcus sp.

5.41. An article in the Canadian Veterinary Journal (August 2008; 49(8): 780-784) stated that two-thirds of individuals who experienced a needle-stick reported injection of substances, including antimicrobials (13%), euthanasia agents (11%), sedatives (9%), vaccines (8%), and anesthetics (8%).

5.42. Needle-stick prevention can be achieved by:

5.42.1. training,

5.42.2. using established guidelines,

5.42.3. safe capping procedures - needles should not be bent or broken, where recapping is necessary use an approved device, and

5.42.4. the use of an effective disposal system, e.g. sharps container.

ERGONOMICS

5.43. The risk factors for an ergonomic injury, also known as a musculoskeletal injury (MSI), include awkward postures; high hand force; highly repetitive motions; repeated impact; heavy, frequent, or awkward lifting; and static contraction.

5.44. The following table shows how AHT tasks could cause an MSI due to the risk that the task involves.

Risk factors that could lead to an MSI	Examples tasks relevant to AHT
1) Awkward Postures	
a) Working with the hand(s) above the head, or the elbow(s) above the shoulder, for extended time periods that could cause muscle fatigue and injury.	Stocking shelves
b) Working with the neck, back or wrist(s) bent more than 30 degrees for extended time periods that could cause muscle fatigue and injury.	Venipuncture; grooming; kennel and stall cleaning; data entry
d) Sustained position for extended time periods that could cause muscle fatigue and injury.	Surgery; dentistry; driving a vehicle; tasks that require a static posture, microscopy
2) High Hand Force	
a) Gripping an object and applying more than 10 pounds of force per hand for extended time periods that could cause muscle fatigue and injury.	Patient restraint
3) Highly Repetitive Motion	
a) Repeating the same motion with the neck, shoulders, elbows, wrists, or hands (except for keying) with little or no variation every few seconds for	Administration of injections; grooming/trimming; venipuncture and blood collection

extended time periods that could cause muscle fatigue and injury.	
b) Performing intensive keying for extended time periods that could cause muscle fatigue and injury.	Data entry
4) Heavy, Awkward Lifting	
a) Repeatedly lifting heavy objects until muscle fatigue occurs which could lead to musculoskeletal injuries.	Patient lifting, restraining, and positioning; carrying equipment; carrying feed and other products
b) Frequently lifting heavy objects until muscle fatigue occurs which could lead to musculoskeletal injuries.	Patient lifting, restraining, and positioning; carrying equipment; carrying feed and other products

6. RECORDS/VERIFICATION OF UNDERSTANDING

6.1. Records:

6.1.1. Incident Investigation Records

6.2. Verification of Understanding:

6.2.1. A training master log will be maintained by

7. SUMMARY OF CHANGES

Revision #	Date	Change (include section #)	Issued By
1	03-10-2014	NEW	OHS Officer