

# STANDARD OPERATING PROCEDURE FOR WORKING WITH BIOHAZARDOUS MATERIALS IN THE DEPARTMENT OF HUMAN BIOLOGY AND NUTRITIONAL SCIENCES

**Purpose:** To inform and educate all members of HBNS that work with biohazards

Effective Date: February 1, 2003
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## **Facts and definitions:**

The University Safety Manual has several sections relevant to biosafety. Members of the department are encouraged to access the Safety Manual on the Environmental Health and Safety web site.

This SOP describes work carried out in the HBNS department in ANNU and JTP. “HTL” is used to indicate all the relevant laboratories throughout the SOP.

This SOP includes work carried out as part of graduate and undergraduate courses in student teaching laboratories and any work with biohazardous materials in research laboratories.

Approval for all projects dealing with biohazardous materials must be obtained from the University Biosafety Committee before a project is begun.

Biological hazards are present in all human and animal tissues and body fluids. The “normal” research activities carried out in the HTL expose workers to human blood, urine, sweat, semen, saliva and muscle tissue.

For the purpose of assessing risk, we assume that all volunteers to our clinical studies are not normal healthy individuals, and take appropriate precautions.

We remain aware at all times that increased knowledge of disease transmission and occupational hazards may result in situations currently considered safe to be reclassified as having risk.

“Universal Precautions” describes a set of procedures for dealing with subjects based on the assumption that they are positive for blood borne pathogens. Other precautions are necessary to prevent exposure to potential respiratory diseases.

The HTL is a shared facility. Personal safety of all the workers is paramount and the shared responsibility of all.

## **Educational requirements:**

The Occupational Health & Safety Act requires that all workers in Ontario are trained in the WHMIS system.

All personnel responsible for performing procedures and obtaining samples from human subjects must be familiar with the department guidelines and have had the appropriate training and departmental approval before participating in a research study.

All workers will receive training in routine procedures, personal safety equipment, risk assessment and emergency procedures from the Technician in Charge of the HTL before beginning experimentation.

A worker's signature after training, will signify their understanding of their personal responsibility to work safely.

All users of the HTL must be known to the Technician in Charge, and must have met all medical and educational requirements before commencing their project.

### **Medical requirements:**

Routine personal medical assessments are advised at regular intervals (yearly) for all personal exposed to potential biohazards.

Immunization for Hepatitis B is recommended for everyone who is taking blood samples or dealing with human blood or bodily fluids. Employees should contact Giselle MacNeil, Occupational Health ext. 52133 for immunization. Students receive immunizations through Student Health Services ext. 52131.

### **GENERAL LABORATORY PRACTICES:**

The laboratory is a shared facility, it must be booked in advance with the Technician in Charge. All users must follow all Departmental Safety Guidelines and University of Guelph Biosafety Policy. ([www.uoguelph.HR/ehs](http://www.uoguelph.HR/ehs))

Each user must provide the equipment and supplies necessary to carry out the procedures of their experiments.

Each user is responsible to leave a clean, disinfected and tidy work place.

All biohazard waste must be properly disposed.

### **SPECIFIC LABORATORY PRACTICES AND REQUIREMENTS:**

#### **Aerosols:**

The main opportunities for the formation of biological aerosols are during centrifugation and sample decanting.

#### Centrifuging:

All personal should ensure that they have been instructed in the proper use of the centrifuge.

Universal Precautions dictate that all specimens be kept capped for centrifugation.

Wear gloves when opening blood tubes and remove the stopper away from your face.

Samples broken while centrifuging should be left to settle for 30 minutes before the centrifuge is opened for cleaning.

Due to the danger from small shards of glass, very heavy rubber gloves and forceps should be used to clean up after a centrifuge accident. Disinfect gloves after use.

**All accidents must be reported to the Technician in Charge.**

#### Sample Decanting:

The use of personal protective equipment (lab coat, gloves, eye protection) is required for any operation dealing with biohazardous specimens. If possible, the use of a biocontainment cabinet is recommended for decanting blood samples.

**Biohazard waste:**

Dispose blood tubes into a biohazard sharps container.

Dispose sharps into a biohazard sharps container.

All other biohazardous waste is to be deposited into an orange biohazard bag.

All biohazardous waste is deposited into the Medical Waste Management (MWM) bin for pick up.

The bins are located in room 382, ANNU and room 212 JTP.

**Decontamination procedures:**Routine:

At the end of each experiment, or each day, disinfect lab benches and any equipment (including centrifuges using a suitable disinfectant. (10% household bleach or a quaternary ammonium product (Omega) for centrifuges and benches, Omega for mouth pieces and breathing valves, Cavicide for flow sensors)

Spills:

Small spills of biohazard material should be treated by first covering them with a absorbent paper to avoid the formation of aerosols. Disinfect the spill by slowly pouring on a disinfecting solution working from the outside to the centre of the spill in a circular motion. Leave the spill long enough for disinfection to take place (check decontaminating instructions on the disinfectant container for time) and then carefully wipe up wearing gloves.

Pick up any glass using forceps.

Larger spills and spills during centrifuging should be left to settle for 30 minutes before clean up to avoid inhalation of aerosols.

Once all the material has been removed disinfect the area thoroughly.

Inform the Technician in Charge of the spill.

**Food:**

No food or beverages will be brought into or consumed in the tissue sampling and processing room of the HTL at any time. No food or beverages will be brought into or consumed in the in the exterior testing room of the HTL unless it is part of an approved experimental protocol.

**Incident reporting:**

All accidents and injuries must be reported within 24 hours to the Technician in Charge, to the Departmental Joint Health and Safety Committee and to the Department of Environmental Health and Safety using an Injury/Incident Report available on the EHS web site ([www.uoguelph.ca/HR/ehs](http://www.uoguelph.ca/HR/ehs)), from the HBNS main office or the Technician in Charge.

**Laboratory access:**

Access to the HTL is limited to persons who are directly involved with the experiments. Children are not permitted in the laboratory unless they are directly involved in the experiments.

A visitor or potential subject is permitted to watch a procedure only with the prior consent of the subject being observed, as well as, the Faculty member who is in charge of the project.

**Personal protective equipment:**

Laboratory personnel are expected to use a laboratory coat while working in the HTL.

University policy requires the use of non-canvas closed-toe shoes wherever there is a potential for foot injury from hazardous materials or from small physical objects.

Personal outer clothing should not be stored in the HTL.

Lab coats worn in the HTL should not be worn outside of the HTL and should not be stored with personal outer clothing, to avoid transfer of contaminants.

Gloves are considered contaminated after one wearing. Avoid contamination of work surfaces with gloves. Dispose of gloves into a biohazard container.

The use of eye protection is advised while performing procedures – phlebotomy, muscle biopsy, processing samples.

Remove and properly dispose of gloves and wash hands before leaving the laboratory.

**Phlebotomy:**

All persons involved in taking blood must:

Provide written evidence of training and demonstrate to the Technician in Charge that they have been properly trained.

Wear gloves when taking blood if they have cuts or abrasions on their hands.

Dispose of used needles and blood tubes holders as one piece into a plastic biohazard sharps container.

The U.S. Department of Labour prohibits the reuse of blood tube holders in order to protect workers from exposure to contaminated needles.

Wash their hands before and after each client.

Keep a log of procedures performed and submit copies of completed log sheets to the Technician in Charge, for the departmental central procedures log file.

**Sharps disposal:**

All sharps, broken glass etc. are to be deposited into a yellow plastic biohazard sharps container.

The containers are deposited in the MWM bin in either room 382 ANNU or 212 JTP.

**Personnel:**

Technician in charge of the HTL: Premila Sathasivam

Biohazard waste ANNU: Andy Huang

Biohazard waste JTP: Mehrnoosh Kashani

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T.E. Graham,  
Department Chair

date

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Premila Sathasivam,  
Technician in Charge of the HTL

date

