

Title: York University Biosafety Guideline: Working with Human Blood.			
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This guideline only applies to the handling human blood samples in a research laboratory.

Before any work begins, the following must be completed:

- (1) Complete a Risk Assessment/Biosafety Certificate*. The certificate must also be approved before any work begins.
- (2) All staff and students working with human blood must enroll in the York Hepatitis B Immunization Program. This is particularly important when working with unscreened blood, and where the clinical history of a participant is not known.
- (3) A “Medical Certificate- Form 3” must be completed and submitted to the Occupational Health Coordinator (dkolozsv@yorku.ca, x44745).
- (4) The lab must meet Containment Level 2 lab design and operational requirements as described in the Public Health Agency of Canada (PHAC) Laboratory Biosafety Guidelines. Some additional requirements are outlined below.
- (5) The lab must obtain and post a York Containment Level Two (CL-2) sign.
- (6) Biosafety training and WHMIS II must be completed. For the training schedule, go to www.yorku.ca/dohs/training.

Ensure the following records are kept in the lab. Documentation will be required during lab inspection:

- (1) Copies of Material Safety Data Sheets (MSDSs) for Hepatitis B, Hepatitis C, Human Immunodeficiency Viruses (HIV), and any other relevant MSDSs.
- (2) Documented training for all staff and students (e.g. Record of Laboratory Training*).
- (3) Copies of biosafety training cards provided by the Biosafety Officer (sent to the Supervisor/Principal Investigator after successful completion of biosafety training).
- (4) Copy of an up-to-date Biosafety Certificate.
- (5) Copy of the Laboratory Biosafety Guidelines (copies available through the Biosafety Officer, or online: www.phac-aspc.gc.ca/ols-bsl/lbg-ldmbl/index.html).

Additional lab-specific training requirements:

It is the responsibility of the Supervisor/Principal Investigator (PI) to provide lab-specific training; however the following requirements must be met:

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- (1) Outline what disinfectants should be used, how to prepare them, how long they are effective, and where they are appropriate for use. All work areas where blood is being handled must be decontaminated at the end of each day.
- (2) Samples received in the lab must only be opened by trained staff. Training must include knowledge of how to respond to compromised samples so potential exposure is limited. When not in use, samples are to be stored securely in a locked lab, and in a designated cold-storage area with clear biohazard warning labels. If samples are stored outside the lab (i.e. in a common room), the storage unit must be locked at all times.
- (3) Samples being shipped out of the lab must abide by the Transportation of Dangerous Goods (TDG) Regulations by a person holding a valid TDG certificate.
- (4) All blood-contaminated waste must be disposed according to the York University Biohazardous Waste Disposal Guidelines*. Transportation of biomedical waste from the lab to the biomedical waste storage area requires secondary containment (e.g. waste bag in a tray).
- (5) Technical competence such as good aseptic technique, working in a biological safety cabinet, how to safely operate a centrifuge etc. must be demonstrated and documented.
- (6) Safe handling of human blood, including:
 - a. Lab coats, designated for work with human blood, to be properly worn and decontaminated before sending out for laundering services. Lab coats must also be stored away from non-laboratory clothing.
 - b. Gloves to be worn at all times when handling samples. Gloves are to be removed if they become contaminated or compromised. Hands must always be washed thoroughly after gloves have been removed. Gloves must be removed when lab procedures are not being conducted (e.g. before answering a phone, or using a computer).
 - c. Human blood samples must be handled in a certified biological safety cabinet (BSC). Centrifugation may occur outside a biosafety cabinet, but the centrifuge must have a sealed rotor, or closed buckets. After aerosols have settled (e.g. 5 minutes), samples are then transferred back to the BSC before opening the tubes. An additional spill procedure is also required for incidents (e.g. leaking tube) that may occur during centrifugation.
 - d. The use of sharps (e.g. needles, scalpels, glass pipettes) is to be minimized where possible.
 - e. All incidents (e.g. splash in eye, needle-stick exposure), must be reported immediately to the Lab Supervisor and Biosafety Officer.

*Referenced documents are available at: www.yorku.ca/dohs/biosafety