

PROGRAM POLICY ON RESIDENT SAFETY

The safety of trainees in the Neuropathology Program in Schulich School of Medicine & Dentistry is dictated by the 3 following policies:

1. Policy set by Postgraduate Medical Education, Schulich School of Medicine & Dentistry
2. Policy for all pathology residents, Department of Pathology and Laboratory Medicine
3. Additional policy for all neuropathology residents and fellows handling Handling of Surgical and Autopsy Tissue from Suspected Transmissible Dementia/Neurodegenerative Cases

1. **Resident Health and Safety Policy** for all Residents at Schulich School of Medicine & Dentistry Postgraduate Medical Education (PGME) is found at the following link:

<http://www.schulich.uwo.ca/medicine/postgraduate/docs/Policies%20for%20Website/2012-Resident-Health-and-Safety-Policy.pdf>

2. **Anatomical Pathology Residency Program Resident Safety Policy (includes Neuropathology) General Resident Health and Safety Issues**

There is a comprehensive Schulich School of Medicine & Dentistry Postgraduate Medical Education (PGME) **Resident Health and Safety Policy (see above)** that outlines general situations and requirements applicable to all residency programs, accessible on the Schulich School of Medicine & Dentistry website - Postgraduate Education – Students and Learners - Policies. Pathology residents should familiarize themselves with this policy, as the information therein applies to them in several areas.

Resident Health and Safety Issues Specific to Anatomical Pathology

2.1 Handling of Chemicals

For personnel working in London health sciences Centre hospitals Workplace Hazardous Materials Information System (WHMIS) certification is mandated. This is particularly relevant to laboratory personnel and residents are required to remain familiar with information relayed in WHMIS signage pertaining to use, handling, storage and disposal of common chemicals used within used in the laboratory for preservation and processing of body tissues.

Formalin, used for tissue fixation, is the chemical pathology residents will have most contact with. In times of formalin exposure, most frequently when handling tissue specimen fixed in formalin, this handling should be performed under a fume hood or, if not available, in a well-ventilated area, with gloved hands. Specimens should be washed in water to reduce formalin concentration prior to gross examination. Excess formalin fluid should not be disposed of in sinks or hoppers. Laboratory technical personnel are to be consulted when there are questions regarding handling and disposal of any laboratory chemicals. Residents who are pregnant and have concerns should discuss these with the program director.

2.2 Handling of Known or Suspected Infectious Cases

Universal precautions apply to the handling of all surgical and autopsy cases, as outlined in the PGME Resident Health and Safety Policy. In particular, laboratory residents must take care to avoid scalpel lacerations, through judicious wearing of correct-sized gloves, and careful application of blades, use of the scalpel, and removal of blades, the blade facing away from the resident's hand/body. Blades must be disposed of in designated sharps disposal containers that are present in all areas where scalpels are used. Sharps (needles, blades, broken slides) should never be disposed of in the garbage. In the event of a laceration where the resident has come into any contact with a patient's or patients' blood or body fluids, this must be formally documented in an Incident Report (forms are available in the lab, contact a chief technologist); this also involves reporting to Occupational Health, a full investigation of the relevant patient or patients clinical information, and appropriate serological testing and immunizations for the resident (particular attention being paid to Hepatitis B and C, and HIV status). For tissue from patients with known or suspected airborne transmissible infection, e.g. Mycobacterium Tuberculosis, masks must be worn while handling exposed fresh or minimally fixed tissue. This scenario occurs during frozen section/intraoperative consultation,

and at autopsy. With respect to frozen sections, the cryostat and any non-disposable equipment used during the tissue processing needs to be disinfected following the procedure, by the laboratory technologist. There is a laboratory technology protocol for this procedure, which is carried out when there has been a known or suspected exposure, as well as routinely on a weekly basis for the cryostat.

2.3 Radiation exposure

Pathology residents have minimal occupational radiation exposure. However, occasionally during autopsies, imaging technicians perform x-rays on deceased bodies, and the residents should remember to remove themselves from the room during these events. Occasionally, breast lumpectomies come to the gross room with localizing radiation seeds within them. So far, residents have not been handling these specimens as they are few. If residents will have to have such specimens in the future, they will be required to complete an online training module for handling of radioactive chemicals.

3. Specific Safety Policy for Neuropathology Residents on: Handling of Surgical and Autopsy Tissue from Suspected Transmissible Dementia / Neurodegenerative Cases (Including Jacob-Creutzfeldt, Gertmann-Straussler, Kuru, and Familial Alzheimer's)

Formalin does not destroy the infectious agent. Tissue is to be fixed for a minimum of 48 hours, treated with concentrated (greater than 96%) formic acid for 1 hour, and transferred to fresh formalin for another 48 hours. This protocol is effective for tissue 4-5 mm thick.

3.1 Procedure

- 3.1.1** Alert the Neuropathologist on call for autopsies.
- 3.1.2** No Neuropathology resident (career or rotating) should handle these cases alone without the presence of a qualified pathology assistant who is specifically trained to handle and remove brains with suspected CJD.
- 3.1.3** Fix whole brains with suspected transmissible dementia in formalin for a minimum of 10 days. Fix any surgical tissue for 2 to 7 days.
- 3.1.4** Blocking should be done with minimal handling in as small a space as possible.
- 3.1.5** Cover cutting board with disposable incontinent pad.
- 3.1.6** Get all instruments, containers, glutaraldehyde, freshly opened undiluted bleach, cassettes, etc., ready before starting.
- 3.1.7** Wear disposable gown, safety glasses, mask, and double gloves.
- 3.1.8** Block tissue into sections thinner than 5 mm. Autopsy brain sections should include at least one section from each cortical lobe, basal ganglia, and cerebellum.
- 3.1.9** Place tissue cassettes into concentrated formic acid (>96%) for one hour with agitation.
- 3.1.10** After blocking, soak instruments and cutting board in bleach for 1 hour. Note - Prolonged exposure to bleach will destroy steel instruments.
- 3.1.11** Sterilize the outside of containers with bleach, label with biohazard stickers, and place in plastic bag.
- 3.1.12** Place all disposables (gowns, masks, gloves, pads, paper towels, etc.) in double autoclave bags and send for autoclaving.
- 3.1.13** After the cassetted tissue has been treated for one hour in formic acid, transfer to a **fresh** plastic container of 20% formalin, double bag the container, leave for an additional 48 hours, and then take to lab for processing.

3.2 Processing

- 3.2.1** Tissue must not be processed until treated as above. Process treated blocks on the usual Neuro block process schedule.
- 3.2.2** Because materials are rendered safe, no further special precautions are required and tissues can be processed, cut, stained, and filed in the usual manner.

References

Neurology 40, June 1990 pages 887-890. (Brown, MD, Wolff, DVM and Gadjusek, MD)

Internet: CAP reprint: Creutzfeldt-Jakob Disease Safety tips for anatomic studies of possible CJD, Barbara J. Crain, MD, PhD. URL-<http://www.cap.org/html/publications/cjd.html#decontissue>

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