CJD Specimen Handling
(Unofficial In house procedures)

• Gloves, Apron, Lab Coat and Face Protection
• Post fixation in 98% Formic Acid for 1 hr followed by 48 hrs in 10% Formalin;
• Tissue cassettes processed manually or dedicated equipment;
• Embedding in disposable cassettes;
• All dry waste in biohazard bag and clean
• Knife stage wiped off with 2N NaOH;
• Staining procedures in disposable specimen cups or in disposable petri dishes;
• Soaking for 1 hr in 2N NaOH coverslipped and dried slides before filing.
Decontamination
(Unofficial In house procedures)

• Wear gloves, apron, disposable gowns, and face protection
• Collect liquid waste is in 4 L bottle containing 600 ml 6N NaOH
• Collect dry waste in biohazard bags and incinerate
• Soak instruments that are not delicate immediately after finishing using them in 2N NaOH for at least 1 hr, rinse in water and autoclave
Autopsy Suite Decontamination
(Unofficial In house procedures)

- Soak instruments immediately after finishing using them in 2N NaOH for at least 1hr, rinse in water and autoclave at 132° C for 4.5 hrs
- Stryker saw is cleaned by thoroughly wiping and wetting with 2 N NaOH for 1hr followed by rinsing in water
- Disposable dry waste is double bagged and incinerated
- Wipe contaminated surface repeatedly with paper towel soaked in 2N NaOH over surface and maintain it wet for 1hr
Precautions for Autopsies of Patients with Prion Diseases
(Unofficial In house procedures)

• Use septic room when available
• Include a waterproof gown in attire
• Cut-resistant gloves over two pairs of surgical gloves
• Use respirator if possible
• Use waterproof backing pad underneath all contact with body, tissue and instruments
Autopsy precautions (cont.)
(Unofficial In house procedures)

To reduce aerosols

1) Skull is sawed while head is enclosed in a plastic bag
2) Weigh brain inside plastic bag
3) Place brain for dissection on cutting board enwrapped in plastic sheet
Decontamination: Microtome
(Unofficial In house procedures)

• Keep all solutions away from the inside gears of the microtome. The reagents are very corrosive and will cause irreversible damage to the microtome.
• Wipe paraffin ribbons with gauze from all the areas of the microtome.
• Disassemble the blade holder and place gauze soaked with 2N NaOH (Sodium Hydroxide) for 1 hour.
• Place soaked gauze on the block holder and any areas on the outside microtome where there has been contact with tissue.
• Wipe off NaOH and clean with water until all traces of NaOH have been removed.
• Wipe all areas with 100% alcohol and wipe until completely dried.
• Assemble blade holder and make sure it is well lubricated.
• Follow the CDC protocol to dispose of dry and liquid waste.
Infectivity: Precautions and decontamination (Unofficial in-house procedures)

- CJD Specimen Handling
- Decontamination: General
- Autopsy Suite Decontamination
- Precautions for Prion Diseases Autopsies
- Decontamination: Microtome
- Aerosol

Comments on aerosol contamination:
Potential aerosol exposure in prion research rather than treatment as prion infectivity is not detected in blood and urine of sCJD patients
Danger of aerosol exposure in autopsy and in research but respirator, mask and biosafety cabinets and other precautions are required
Recent studies showing no detectable scrapie prion protein or prion infectivity in blood and urine from patients with sporadic CJD

Detection of prion infection in variant Creutzfeldt-Jakob disease: a blood-based assay

Julie Ann Edgeworth, Michael Farmer, Anita Sicilia, Paul Tavares, Jonathan Beck, Tracy Campbell, Jessica Lowe, Simon Mead, Peter Rudge, John Collinge, Graham S Jackson

ASSESSING PRION INFECTIVITY OF URINE IN SPORADIC CREUTZFELDT-JAKOB DISEASE

Silvio Notari1*, Liuting Qing1*, Maurizio Pocchiari2, Ayuna Dagdanova1, Kristin Hatcher1, Arend Dogterom3, Jose F. Groisman4, Ib Bo Lumholtz5, Maria Puopolo2, Corinne Lasmezas6, Shu G. Chen1, Qingzhong Kong1#, Pierluigi Gambetti1#

(Submitted for publication)
Conclusions (Cont.)

• As infectious agents, prions are characterized by low infectivity but high resistance to disinfectants;
• Compared to other infectious diseases, in prion diseases special attention must be paid to limit contamination and carefully identify contaminated areas;
• Decontamination is a demanding procedure different from those used for other infectious diseases; It includes robust treatment with NaOH along with autoclaving for longer time and at higher temperature or incineration whenever possible;
• working with prion disease-contaminated tissue is as safe (or even less risky) as working with tissues from other infectious diseases if appropriate biosafety rules are followed.
Take home message...

working with prion disease-contaminated tissue is as safe as working with tissues from other infectious diseases if appropriate biosafety rules are followed.
CJD Websites and Other Information

- www.cjdsurveillance.com
- www.cdc.gov
- www.who.int
- www.mad-cow.org
- www.cjd.ed.ac.uk
- Neurosurgical biosafety procedures available on demand