

Revision Number	5.0	Document Number	TP-1326
Author/Reviewer	A Creaney	Authoriser	M Ingram
Active Date	25/01/2024	Page Number	Page 1 of 4
Effective Date	25/01/2024	Document Type	Laboratory Instruction
On-Site Muscle Biopsy Advice			

On-Site Muscle Biopsy Advice

- Contact the Neuropathology Laboratory in advance by telephone (**02896 150216**) or e-mail to the following address:
DL-Neuropath-Lab@belfasttrust.hscni.net
This is important to:
 - Arrange the supply of Electron Microscopy fixative and Liquid Nitrogen.
 - Ensure staff are available to receive the specimens.**A minimum of 24hours notice is preferable.**
- On contacting the laboratory, please provide patient details as well as contact details for whoever is taking the biopsy.
- If the biopsy carries a known infection risk (HIV, Hep C, COVID-19, etc.) this information must be communicated to lab staff, as this will change the way the biopsy can be handled and stored.
- Three separate specimens are required from each muscle biopsy:
 - **Enzyme Histochemistry** - Specimen should be approx. 0.3 x0.3x 0.3 cms. Place Specimen on piece of tongue depressor and wrap in saline dampened gauze (NOT WET) and place in a dry sterile container.
 - **Storage/further work** – Wrap a similar sized piece of muscle in the Parafilm supplied by the lab, and drop the wrapped specimen into the nitrogen immediately after removal from patient.
 - **Electron Microscopy** – The piece of tissue required for EM can be smaller than that for Enzyme Histochemistry. Place muscle on piece of tongue depressor and place in EM fixative (3% Glutaraldehyde).
- Please do not use excessive heat whilst taking the biopsy (cautery, diathermy, etc.). This destroys the enzymes in the biopsy and causes severe artefact which will limit analysis.
- It is important that the biopsy is with us within 1-2 hours of removal from the patient, and is **ready for collection before 3pm at the latest.**
- **Please call the lab to inform us when the biopsy is ready for collection, or if the procedure is cancelled, otherwise we may have to follow up with you.**
- See following pages for Health and Safety information, and a photographic guide to the equipment used.

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Health and Safety Information

Liquid Nitrogen



An extremely cold liquid (196 °C) which on contact may produce frostbite and freeze burns on exposed skin. Liquid Nitrogen is supplied in a stainless steel thermos flask which has a safety release mechanism built into the lid to prevent pressure build up.

Do not keep or open in a confined space including lifts and ensure the container is kept upright as the liquid can vaporize into large amounts of gas at room temperature i.e. 1 litre of liquid becomes 0.7 cubic meters of gas. In a confined space this may reduce oxygen levels and give rise to short term asphyxiation.

In the event of spillage evacuate staff from immediate vicinity until the gas dissipates and contact Lab staff who will supply another container of Liquid Nitrogen.





Gluteraldehyde



A cider apple smelling clear colourless solution supplied at 3% concentration which is harmful if swallowed. It may cause sensitisation by inhalation, skin contact and lachrymal irritation due to vapours. As a 25% solution it is toxic by inhalation and may cause burns. It is also classified as a possible cause of asthma. In the event of spillage: dilute greatly with running water, otherwise absorb on an inert absorbent and transfer to container for specialist disposal. Ventilate area to dispel any residual vapours. Always use appropriate personal protection i.e. goggles and gloves, when handling.


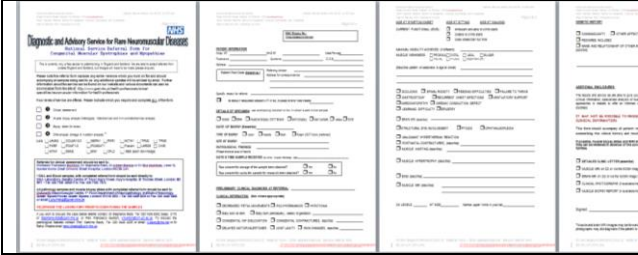
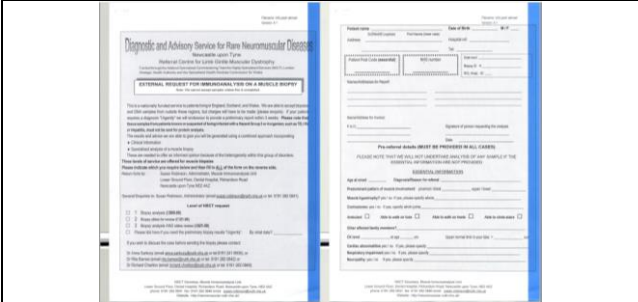


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Routine Muscle Biopsy Equipment (RVH SITE ONLY)

Pot or form	What it is/is for	What to put in/on it
	General histopathology request form. For light microscopy and electron microscopy.	One form per patient, include as much clinical detail as is relevant.
	Empty sterilin. For light microscopy and enzyme histochemistry.	One piece of muscle measuring 3x3x3mm.
	3% glutaraldehyde in glass bottle. For electron microscopy.	One piece of muscle measuring 3x3x3mm. Request and use a second glut bottle if sending an additional skin biopsy (optional).
	Liquid nitrogen in metal canister and Parafilm. For additional tissue for external referral/storage.	One piece of muscle measuring 3x3x3mm, wrapped in plastic part of Parafilm and dropped into liquid nitrogen.

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Optional Additional Muscle Biopsy Equipment (Diagnosis Dependent)

	<p style="text-align: center;">Newcastle Mitochondrial Diagnostic Service request form. For mitochondrial analysis.</p>	<p style="text-align: center;">One form per patient.</p>
	<p style="text-align: center;">Dubowitz Neuromuscular Centre request form. For myopathy and dystrophies.</p>	<p style="text-align: center;">One form per patient.</p>
	<p style="text-align: center;">Limb Girdle Muscular Dystrophy request form. For Limb Girdle dystrophies.</p>	<p style="text-align: center;">One form per patient.</p>
	<p style="text-align: center;">Genetics request form. For culturing fibroblasts.</p>	<p style="text-align: center;">One form per patient, if fibroblast culture is required. Please send this specimen directly to Genetics, BCH.</p>
	<p style="text-align: center;">Transport medium for cytogenetics. For use if fibroblast culture is required.</p>	<p style="text-align: center;">1x skin biopsy. Please send this specimen directly to Genetics, BCH.</p>