UCL Institute of Neurology

THE NATIONAL HOSPITAL FOR NEUROLOGY AND NEUROSURGERY

BOX 126

QUEEN SQUARE

LONDON

WC1N 3BG

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|  | For contact details see website <https://www.ucl.ac.uk/ion/clinical-divisions/division-neuropathology> |

**PROTOCOL FOR INTERNAL MUSCLE BIOPSY REQUEST**

To ensure that you obtain the best results possible from the muscle biopsy, please follow the protocol below as closely as possible.

A biopsy must be taken early enough in the day to arrive in our laboratory no later than 3pm Monday – Friday.

When muscle has been excised the quality of the histochemistry results and biochemistry rapidly deteriorate after a few minutes and therefore immediate transfer to the laboratory is essential.

**Three** samples of muscle are required. (The first piece for electron microscopy and 2 for histochemistry).

* Anaesthetise skin and subcutaneous tissue only; do **not** inject local anaesthetic into the muscle.
* Open the fascia overlying the muscle and excise muscle tissue from beneath the fascia. Fascia should **not** be included in the biopsy.

# 1. Electron Microscopy

The **FIRST** piece of muscle removed should be that for electron microscopy. The first specimen for electron microscopy should measure 0.2x1.0cm (similar in width to a match stick). The long axis of the specimen should be in the direction of muscle fibre axis.

1 cm

 0.2cm

 0.2cm

This specimen must be pinned at each end to the cork provided and immersed immediately in the glutaraldehyde fixative provided. Very gently extend the piece of muscle slightly before pinning.

* **Immediately** immerse the sample in the fixative provided (3% EM grade glutaraldehyde in 0.1M sodium cacodylate buffer with 5mM CaCl2 pH 7.4).

**2. Histochemistry**

* For histochemistry on frozen sections **TWO** samples of muscle must be taken
* 2 identical pieces of muscle measuring 1x1.5cm (similar in width to a biro). The long axis of the specimen should be in the direction of muscle fibre axis. Smaller samples than this may prove to be insufficient for a definite result.

 1cm

1.5 cm (longitudinal axis)

* The samples should be placed in a sealed sterile container without fixative.
* General points:
	+ Always handle muscle tissue with great care and in particular never squeeze with forceps as this produces artefacts.
	+ Never immerse the fresh muscle specimen in any liquid such as saline.
	+ Muscle biopsies must be transported to the lab by porter **immediately.**
	+ Always include the request form with the biopsy.

### PLEASE INFORM US IF THERE IS ANY RISK OF INFECTION

**Neuropathology Laboratory**

**Division of Neuropathology**

## UCL Institute of Neurology

**Queen Square**

**London WC1N 3BG**

If you contact

Andrew Theodoulou 020 344 84236 or andrew.theodoulou@nhs.net

or Mike Groves on 020 344 84220 or michael.groves1@nhs.net

We can arrange for a small vial of fixative and a pinning kit to be sent to you. Please state whether the patient is an NHS or private case.

If you have any further queries, please do not hesitate to contact us.