

**Histopathology**

***Histopathology User Manual***

**SOR 007**

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Signed:

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## ***Histopathology User Manual***

### **Useful Contact Numbers**

**Direct Line:** 020 7829 8663  
**Fax:** 020 7829 7875

Pneumatic Tube, 031  
Histopathology Laboratory 5476/5475

#### **Consultants**

Dr Michael Ashworth, Clinical Lead 5471  
Prof. Neil Sebire 5461  
Dr Liina Palm 5470  
Dr Samantha Levine 5473  
Dr Thomas Jacques (Neuropathology) 6950  
Dr Thivya Sekar 5486

#### **Laboratory Medicine Lead Lab Manager**

Mrs Christine Morris 8664

#### **Laboratory Manager**

Mr Toby Hunt Chief BMS 5466

### **REPORTING ROOM**

#### **Clinical Electron Microscopist**

Mr. Glenn Anderson 7907

#### **Advanced Practitioner**

Ms Dyanne Rampling 5444

### **LABORATORY**

Reception 5476/5475

#### **Main Laboratory**

5475/5476

#### **Electron Microscopy**

Dr Monika Balys, Senior BMS 5462

### **MORTUARY**

7906 or Bleep 0608

Ms Lakiesha Ward Mortuary Manager

5484/7906

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**OFFICE**

8663 6108

**On call out of hours**

Duty Pathologist

Mobile phone  
via GOS Switchboard

Duty Biomedical Scientist

07712403978  
via GOS Switchboard

## **GENERAL COMMENTS**

### **DIAGNOSTIC SERVICES**

The department provides a diagnostic histopathology service, including neuropathology and post-mortems to Great Ormond Street Hospital for Children. An emergency intraoperative frozen section service is available. Immunohistochemistry, enzyme histochemistry and electron microscopy techniques are routinely used.

Both surgical and autopsy material for second opinion is received from hospitals within and outside the UK. An on-call out-of-hours service is provided for the emergency diagnosis and treatment of Hirschsprung's disease and for urgent transplant biopsies where appropriate until 9pm Monday to Friday, and from 08:30am to 9pm at weekends and on national and statutory holidays by arrangement with the duty pathologist .

A prenatal diagnostic service for Batten's disease and other metabolic disorders is provided in conjunction with the Enzyme Laboratory.

### **TRAINING**

Specialist Registrars in paediatric pathology train in the department under the supervision of the reporting consultants.

### **CLINICOPATHOLOGICAL MEETINGS**

Members of the department are involved in regular joint clinico-pathological meetings with the departments of Paediatric Surgery, Haematology & Oncology, Dermatology, Gastroenterology, Immunology, Neuro-oncology, Rheumatology, Neurology and the Nephrology. The department also contributes to clinic-pathological meetings in Metabolic Medicine, Respiratory Medicine, Cardiac Intensive Care, Urology, Vascular Surgery and Fetal and Perinatal Medicine.

### **RESEARCH**

Members of the department, including trainees, are encouraged to pursue research projects, both individually and in collaboration with colleagues within the hospital and in other institutions.

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### **SITUATION**

The department has accommodation on level 3 and level 0 in the Camelia Botnar Laboratories. The main laboratory and consultant office are located on Level 3. The mortuary is located on level 0 in the basement of the laboratory complex.

Full Postal Address:

Histopathology Department  
Level 3  
Camelia Botnar Laboratories  
Great Ormond Street Hospital NHS FT  
85 Lamb's Conduit Street  
London  
WC1N 3NN

## **SERVICES AND FACILITIES PROVIDED**

A routine surgical and post-mortem service is provided Monday to Friday 09.00 am to 5.30 pm. The department is closed on Saturday, Sunday and national and statutory holidays.

### **ROUTINE**

A diagnostic histopathological service is provided for all surgical and biopsy specimens. This includes specialised areas such as ENT, Dermatology, Neuropathology, Oncology, Ophthalmology, Orthopaedic, Placentas as well as biopsies taken for the diagnosis of metabolic disorders.

Special stains, immunohistochemistry and electron microscopy are undertaken where the need is indicated by histopathological considerations. Histochemistry is routinely performed in rectal suction biopsies, muscle biopsies and all cases of metabolic interest.

Pathologists are available for discussion of cases by telephone, and , clinicians are welcome to visit the department to discuss cases.

The Department aims to achieve the stated RCPATH KPI guidelines on turn around times:

80% in 7 days or less

90% in 10 days or less

100% in 20 days or less (with the exception of complicated cases or for technical reasons eg de-calcification).

### **SUBMISSION OF SPECIMENS**

#### ***General Comment***

A pathological report is an opinion, and, like all consultant opinions, depends on the clinical information supplied to the reporting pathologist by their clinical colleagues. Any complicated case should be discussed in advance of the biopsy with the pathologist so that the tissue can be handled in the most appropriate way.

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### ***Filling out of the specimen request form***

Request forms for referred tests are available upon request.

This should be done by a doctor who is fully familiar with the case. Please, make sure when filling in the patient demographic details on the PIMS request form that they refer to the correct patient. Please, fill in the clinical differential diagnosis and the reason for the biopsy. Where a biopsy is being performed on a medical case by a surgeons on behalf of the physician, the request form should be completed by a doctor on the medical team and include the bleep number of a doctor who will be familiar with the case, and who is likely to be on duty to discuss the case, and the form should accompany the patient to the theatre.

### ***The specimen pot***

When a specimen is routinely fixed in 10% buffered formalin, please make sure that it is placed in a pot of adequate size, and in an adequate amount of formalin (X10 the volume of the specimen). The pot should be one specifically for histopathology with a secure lid. The pot must be labelled properly according to Trust Labelling Policy with the patient's name, hospital number, consultant and the nature of the specimen. All pots containing formalin must also carry a COSHH hazard label. All pots supplied by Histopathology are pre-labelled with COSHH information and individual stickers are also supplied by the department.

If a specimen is likely to be infectious, and particularly if the specimen is sent fresh, it must have a biohazard label and the possibility of infection should be clearly indicated (i.e. Hepatitis B positive).

**NOTE:** Specimens that are inadequately labelled or in which the request form is inadequately completed will be returned to source and kept unprocessed until the error has been rectified.

see: *Unlabelled or Mislabeled Samples by Paediatric Laboratory Medicine Policy*

[http://goshweb.pangosh.nhs.uk/document\\_library/Corporate%20Library/Accepting%20Unlabelled%20or%20Mislabeled%20Samples%20by%20Paediatric%20Laboratory%20Medicine%20Policy.doc](http://goshweb.pangosh.nhs.uk/document_library/Corporate%20Library/Accepting%20Unlabelled%20or%20Mislabeled%20Samples%20by%20Paediatric%20Laboratory%20Medicine%20Policy.doc)

### ***Transport of specimens to the laboratory***

Routine specimens are collected with their request forms from the operating theatres, wards, and out-patient clinics. They are delivered to the laboratory by a porter, nurse or clinician present during procedure. Occasionally samples are delivered to laboratory via the pneumatic tube system (No 031).

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Urgent intra-operative frozen section specimens should be booked at least one half day in advance. The specimen is brought to Histopathology specimen reception, with a request form. Please **DO NOT** send fresh specimens by the pneumatic tube system.

When an un-booked frozen section is required, one of the doctors of the surgical team should telephone the consultant pathologist to give warning of the imminent arrival of the tissue and to discuss the operative findings, and the reason for the frozen section.

Other specimens requiring urgent handling should be discussed in advance with a pathologist, and should be taken to the Histopathology department by one of the team and handed to the pathologist.

Specimens from operations performed out of hours and which do not require urgent pathological examination should be left for collection in the operating theatres in the normal way. In any circumstances **DO NOT** leave out of hours fresh specimens in the histopathology reception fridge.

### ***Fresh Specimens***

It is recommended that the following specimens to be sent 'fresh' to the laboratory (i.e. in a sterile specimen pot with no formalin):-

This is only a guide and if in doubt advice should be sought from either the pathologist or Biomedical Scientist. Full clinical details are always essential.

- **Rectal Suction Biopsies – for suspected Hirschsprung's disease.**  
Send fresh on saline moistened filter paper in a sterile pot.  
Clearly mark the level of the biopsy on the specimen pot.
- **Any biopsy where the differential diagnosis includes a metabolic disorder.**  
Send fresh in saline soaked gauze or on saline moistened filter paper in a sterile pot.  
These specimens must be discussed with consultant pathologist prior to sending.
- **Skin biopsy requiring immunofluorescence or Electron microscopy.**  
Send fresh on saline soaked gauze and in a sterile pot
- **Tumour biopsies and tumour resection specimens.**  
Send fresh, in a sterile pot of saline for biopsies and dry for resection specimens.
- **Any biopsy where a bacterial or viral infection** is in the differential diagnosis (the specimen can be divided in Microbiology Department and some sent to the Histopathology Department). A request form for



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both departments should be printed on PIMS. Send fresh in a sterile pot and clearly mark nature of possible infection.

- **Liver Biopsies.**  
Send fresh in saline in a sterile pot.
- **Lymph node biopsies.**  
Send fresh in a sterile pot. Clearly indicate differential diagnosis.
- **Neuropathology Specimens**  
All Neuropathology specimens except out of hours, high risk and infectious sample.
- **Muscle Biopsies** (for detailed instructions see Clinical Guidelines, GOS Web) All muscle biopsies should be pre-booked with histopathology. Open biopsies for histopathological investigation should be fresh on saline dampened gauze.

If the tissue is for Respiratory Chain Enzymes Assay then you need to contact the Neurometabolic Unit at the National, Queen Square. Tel 02034483818

Please discuss the specimen requirements directly with them to arrange for liquid nitrogen to be brought to the theatre to freeze a separate piece of muscle "For GOSH internal patients: if tissue is for Respiratory Chain Enzymes Assay, please request mitochondrial respiratory chain enzymes on PIMS and follow the Sample Handling instruction on the request form". If further clarification is required, please call 7874.

- **Renal biopsies**  
Collected by laboratory BMS staff. These should be pre-booked (5475/5476). Urgent Renal Biopsy should be discussed in advance with by clinician with a consultant pathologist.
- **Blood for metabolic screen**  
Send at least 2ml of EDTA blood.  
Blood samples may be sent via haematology.
- **Non-Gynae Cytology (in a paediatric pathology context)**

CSF, fresh in a sterile container (universal) minimum volume of 0.6 ml  
BAL, fresh in a sterile container (universal) minimum volume of 0.6 ml  
Urine, fresh in a sterile container (universal) minimum volume of 0.6 ml

### **AVAILABILITY OF CLINICAL ADVICE**

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### ***Paraffin sections - same day result***

These cases must be discussed with a pathologist by a consultant from the clinical team. In cases of genuine clinical urgency, a small specimen may be rapidly processed. For a large tumour specimen, this means one representative block. For a small specimen, if it is received in the laboratory by 12 noon, a section will be available for microscopic examination later the same day; a report will be telephoned and entered on the laboratory information system. A specimen arriving later will be available for reporting by 10 am the following morning.

### ***Frozen sections***

#### **Diagnostic rectal biopsies: suspected Hirschsprung's disease**

These must be discussed with a pathologist by a member of the clinical team of, consultant level. In cases of genuine clinical urgency (i.e. Hirschsprung's disease is diagnosed, the case will proceed to a colostomy on the same day) a rapid frozen section of a rectal suction biopsy will be performed and, provided the biopsy is adequate, an answer will be phoned through within an hour.

#### **Booked intra-operative frozen section service**

This is provided for the management of Hirschsprung's disease and the result is telephoned within 20 minutes of receipt of the specimen in the laboratory.

#### **Intra-operative frozen sections of pancreas for persistent hyperinsulinemic hypoglycaemia of infancy**

These cases are discussed in advance by the medical and surgical team and the pathologists and a clear strategy is agreed by all before the operation. Intra-operative biopsies are discussed with the surgeon, and an appropriate surgical strategy agreed.

#### **Intra-operative frozen sections in other clinical situations.**

A surgeon may request an intra-operative frozen section for diagnosis or guidance in resection of a tumour. This is carried out at the discretion of the pathologist after discussion with the surgeon as regards expectation of the procedure.

#### **Intra-operative brain smears/frozen sections**

Please notify neuropathology consultant of a smear one day before surgery or in case of emergency as soon as possible. Specimen to be placed in a labelled universal bottle containing a small quantity of saline to keep sample

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moist. A properly completed request form should accompany the specimen. Sample should be sent to laboratory immediately after removal. The result will be phoned through to the theatre.

### **Routine cases**

A report is issued within two working days of receipt of the specimen. Where special techniques are performed on the sections, an interim report is issued, with an indication of when the final report can be expected. A consultant pathologist is available for clinical advice between 8.30 am and 6.30 pm during the working week. Clinical advice is given by telephone, or by direct consultation.

### **OUT OF HOURS SERVICE**

An out of hours on call service is provided from Monday to Friday until 9pm, and on weekends, national and statutory holidays from 8.30am to 9pm. A consultant and BMS are contactable via the GOS switchboard. The switchboard has a copy of the consultant and BMS rota.

For Neuropathology samples see instructions bellow.

**Any out of hour specimens should be discussed by consultant clinician and consultant pathologist.**

### **Services Provided Out Of Hours**

The purpose of the service is:

- the rapid frozen section diagnosis of Hirschsprung's disease,
- interpretation of intra-operative frozen sections to guide the placing of a stoma in Hirschsprung's disease.
- processing and reporting of urgent renal transplant biopsies,
- processing and reporting of urgent cardiac transplant biopsies
- processing and reporting of urgent lung transplant biopsies
- processing of other urgent specimens, by negotiation with the consultant in charge of the clinical case (i.e. liver or gut biopsy in bone marrow transplant patient).

### **KEY FACTORS KNOWN TO AFFECT PERFORMACNE OF TEST OR INTERPRETATION OF RESULTS**

- Poor fixation
- Delayed transport of fresh specimens to the laboratory
- Inadequate clinical information

## **Post-Mortems**

An out of hours post-mortem service is **NOT** routinely provided.

### **Children dying out of hours from a suspected metabolic disorder**

In a child dying out of hours from a suspected metabolic disorder, there is a protocol whereby, having obtained appropriate consent, peri-mortem or immediate post-mortem muscle and liver biopsies are taken by the clinical team. The specimen is sent to Chemical Pathology laboratory where the on-call BMS stores the specimens in the freezer, and passes them to the Histopathology Department on the next working day. The consent form used must either be the standard GOSH post mortem consent form or the slightly amended version of the GOSH consent form, which is now available on NICU / PICU (see Protocol for Perimortem Sampling on the Paediatric and Neonatal Intensive Care Units).

**NB If a death certificate cannot be issued, the death needs to be referred to the Coroner and specimens cannot be taken.**

### **Tumour biopsies and muscle biopsies**

The on call service is **NOT** set up for the special handling of tumour and muscle biopsies. Every effort is made to encourage surgeons to carry out these procedures during working hours.

### **Neurosurgical specimens out of hours**

An out of hours neuropathological diagnostic service is provided for neurosurgical emergencies. Contact Consultant Neuropathologist via GOSH Switchboard at least 2 hours before surgery. 9.00 am to 8.00 pm weekday, and 9.00 am to 4.00 pm weekend and bank holidays

## **CLINICO-PATHOLOGICAL MEETINGS**

Clinico-pathological meetings are held regularly (see attached timetable).

Names of patients for discussion at clinic-pathological meetings must be supplied to the Histopathology office by the relevant clinical team at least 2 working days before the date of the meeting.

## **POST-MORTEMS**

It is recommended that the ward booklet 'When a Child Dies' is read for details of death certification, registration and the reporting of cases to HM Coroner.

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The post-mortem service is available Monday to Friday 8.30 to 5pm. Post-mortem examinations are not performed out of hours under any circumstances and are not performed on weekends, national or statutory hospital holidays.

### **Consented post-mortem**

It is recommended that a pathologist be consulted before consent is obtained, particularly for limited post mortem examinations. A consent form must be properly completed, dated and signed and the Mortuary informed that a post-mortem is requested. Verbal or telephoned consent is not normally acceptable. A faxed consent form is acceptable, provided it is countersigned by the doctor who has taken the consent (in the case of a faxed consent form this may be the GP or a doctor from another hospital).

If the family is reluctant to consent to a full post-mortem examination, the option of a partial/limited post-mortem examination may be offered. This option should be discussed with the pathologist before the consent form is signed, to make sure that the examination is capable of answering the questions being asked.

The post-mortem examination is performed as soon as practicable, but it is recommended that families are offered at least a 24 hour cooling-off period before commencing the post mortem examination during which time they can change their minds (unless, for religious or other reasons, the family specifically requests that the post mortem examination be conducted within 24 hours. Please note, however, that this depends on availability and that, if the death occurs during the weekend, the post-mortem will usually be performed on the Monday. Members of the clinical team are encouraged to attend. The final report may take up to 6 weeks to complete, and sometimes longer for more complex cases, such as those requiring full neuropathological examination.

### **Coroners' post-mortems**

Cases in which a death certificate cannot be signed (see the inside cover of the Death Certificate Book for details) should be referred to HM Coroner (St Pancras Coroners Office, 0207 387 4884, Monday to Friday 9 am to 3.30pm). The case may be referred by the Coroner to another hospital for independent post-mortem.

In a Coroner's post-mortem the pathologist acts as the agent of the Coroner: the post mortem report is sent to the Coroner and all enquiries should be directed through the Coroner's Office. The Pathologist is not permitted to discuss the case with the clinical team without the express permission of the Coroner, until the Coroner's enquiry is complete.

**Complaints**

All complaints should be channelled through the Head of Department and will be addressed in accordance to the Departments Complaints Policy AQU 013.