HISTOPATHOLOGY DEPARTMENT

USER MANUAL

HISTOPATHOLOGY DEPARTMENT
Institute of Orthopaedics,
Royal National Orthopaedic Hospital NHS Trust
Brockley Hill, Stanmore
Middlesex HA7 4LP
Tel: 020 8909 5354
Fax: 020 8954 5908
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The master of this document is stored on Q-Pulse

This manual is intended to provide an easy reference to the Musculoskeletal Histopathology Service provided by the Histopathology Department. If you are unable to find the details you require please contact us by Tel. 020 8909 5354 or email rno-tr.Histopathology@nhs.net

LOCATION
The Histopathology Department is situated within the Institute of Orthopaedics building on the RNOHT, Stanmore site. Its position relative to other facilities is given below:

GOVERNANCE AND QUALITY
The department is CPA accredited (number 2316) and this can be confirmed by accessing the CPA web site: www.cpa-uk.co.uk The department has a licence for tissue banking from the Human Tissue Authority, Licence Number 12325. Further information about our biobank resource can be found on RNOH website - Histopathology Research and Development www.rnoh.nhs.uk/our-services/cellular-and-molecular-pathology

We participate in external quality assurance schemes and, confirmation of our scores is available on request -- rno-tr.Histopathology@nhs.net and on our website - Histopathology Research and Development www.rnoh.nhs.uk/our-services/cellular-and-molecular-pathology
AIM AND PURPOSE OF DEPARTMENT
The Histopathology department aims to provide a high quality service that is responsive to users.

The department provides a comprehensive musculoskeletal histopathology service, using a wide variety of techniques including:

- Paraffin processing of tissues
- Cutting and staining of tissue sections
- Cutting and staining of frozen tissue sections
- Enzyme histochemistry
- Immunohistochemistry
- Molecular genetic investigations, for diagnostic and research purposes [DNA-specific mutation detection, FISH, gene amplification and gene rearrangement]
- Joint fluid cytology

RESEARCH SERVICE
The department offers a service for research projects and provides access to biobanked tissue for ethically approved projects. Please send an email outlining your project to rno-tr.Histopathology@nhs.net after which you will be contacted by the Biobank co-ordinator who will discuss your requirements for research and/or advice.

*Haematology, chemical pathology, microbiology and blood transfusion services are not provided from this unit.

HEAD OF DEPARTMENT
Professor Adrienne Flanagan MB, FMedSci, FRCPath PhD is the laboratory director and has the responsibility for, including but not limited to, professional, scientific, consultative or advisory, organisational, administrative, educational, activities relevant to the services provided and medical direction and clinical governance. She maintains overall control and responsibility for the delivery of the service and has the necessary competence, authority and resources to fulfil the requirements of The International Standard.

USEFUL TELEPHONE NUMBERS
<table>
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<tr>
<th>Secretariat</th>
<th>Main Office</th>
<th>020 8909 5354</th>
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<tr>
<td></td>
<td>Fax (safe haven)</td>
<td>020 8954 5908</td>
</tr>
<tr>
<td>Laboratory Manager</td>
<td>Sharon Roche</td>
<td>020 8909 5354</td>
</tr>
<tr>
<td>Deputy Manager</td>
<td>Fitim Berisha</td>
<td>020 8909 5354</td>
</tr>
<tr>
<td>Biobanking / access to research tissue</td>
<td>020 8909 5347</td>
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When dialling from within the Trust please use only the last four digits.

DEPARTMENTAL WORKING HOURS
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<th>Office</th>
<th>Monday to Friday</th>
<th>08:30-17:30</th>
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<tbody>
<tr>
<td>Laboratory</td>
<td>Monday to Friday</td>
<td>08:30-17:30</td>
</tr>
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These are also the hours when clinical advice for ordering examinations (tests) and interpretation of examination results are available. A routine service is not provided during weekends and Bank Holidays although this can be arranged if requested in advance for clinically relevant cases. In an emergency, consultant histopathologists and the laboratory manager/deputy manager may be contacted via the switchboard [Tel. 020 8954 2300] for urgent queries and requests. Where
possible, any request for work to be done outside of the normal hours of service should be arranged as far in advance as possible so that there is adequate time for arrangements to be made to facilitate such a service.

**CLINICAL ADVICE**
The following consultants provide specific clinical advice:

Professor Adrienne Flanagan MB, FRCPath, PhD  
Cell and molecular pathology of bone and soft tissue tumours and non-neoplastic musculoskeletal disorders.

Dr Fernanda Amary MB, Affiliated to the RCPath, PhD  
Bone and soft tissue pathology. Molecular genetics of sarcoma.

Dr Roberto Tirabosco MD, Affiliated to the RCPath  
Soft tissue and bone pathology.

**HISTOPATHOLOGY REQUESTS**

RNOH Histopathology Requests GENERAL INFORMATION

The following information accompanying a pathology sample is essential for provision of a safe and clinically valuable histopathology report: patient's hospital number, patient's NHS number, patient's full name, date of birth, sex, ward and clinician, date of request, clinical details and site including side from which specimen was obtained.

The time at which a sample is taken should also be documented on the Request Form as this allows the pathologists to assess the likelihood of the success of some tests that may be undertaken.

All requests for histopathology opinions from outside the Trust must come with a letter from the requesting consultant (or delegated person) with the above information. Relevant imaging is also required for issuing a useful report without which turnaround times are likely to be longer than expected.

It is helpful if the laboratory is informed, via the request form, if a patient is involved in a clinical trial. Without this trial-specific protocols cannot be followed.

A contact telephone or fax number of the person to whom the report is to be sent is required, particularly if the consultant does not use the service often and is likely to result in turnaround times longer than expected. An nhs.net email address is preferred for sending reports but where not available, a fax number sited in a safe haven is required.

Failure to submit essential information is likely to result in longer than expected turnaround times as information is critical to deliver a rapid and accurate histopathological diagnosis.

Histopathology request forms are available from the laboratory [Tel: 020 8909 5354], or preferably through email rno-tr.Histopathology@nhs.net Please use this form, where possible. All fields on the form should be completed in a legible manner.
SENDING SPECIMENS TO THE HISTOPATHOLOGY DEPARTMENT
Specimens being sent to RNOH Histopathology must follow the appropriate agreed pathways. The following essential information must be documented in a legible manner on the specimen container: patient’s hospital number, date of birth, patient’s full name and specimen site including side where appropriate. An addressograph label, if available, should be used. Large containers must be labelled on the pot and on the lid. If the minimum data required on the sample container are not provided it may result in a delay in processing the sample and result in a longer turnaround time than expected.

TRANSPORT
Transportation of specimens at RNOH Trust is undertaken by the Trust’s portering service, ISS UK Ltd. UCLH also uses ISS UK Ltd. for transporting samples from UCLH to RNOH. Transport runs between the two sites on a daily basis.

All samples must be delivered directly to the histology laboratory (not to the Pathology Department which provides pathology services for the Trust other than histopathology).

The contact number for the portering services is as follows:

- Central Porters location: 0208 909 5855 (Ext: 5855)
- Porters Bleep: Bleep: 652
- Porter’s Supervisor Bleep: 658

If telephoning internally, the porters can be bleeped on all internal phones.

If telephoning from outside the RNOH, phone the hospital switchboard on 020 8954 2300 and ask for the porter to be bleeped using the numbers above.

Although the portering service operates 24 hours, receipt of specimens by Pathology staff only occurs during opening hours. ISS porters are available outside working hours at RNOH to transport resected specimens to the department where they can be placed in a cold room overnight or over the weekend at which time they will be retrieved by the lab staff and processed. Biopsies must be placed in formalin outside opening hours of the laboratory because desiccation will damage the tissue. These are stored in a secure area in the Operating Theatre Area.

If there are any concerns about how to store tissue over the weekend/overnight please contact the department in advance to source advice – [0208 909 5354]. Outside of laboratory opening hours, please contact the Switchboard [0208 954 2300] who can contact a consultant histopathologist/laboratory manager.

- All specimen containers must be sealed and clearly labelled. Specimens placed in sterile wrapping must also be placed in a specimen container. The porters are instructed not to collect damaged or leaking containers. If any such containers reach the laboratory, the Risk Management Office (ext.5844/5592) is notified and it is likely that the specimens will be returned to the person who sent the samples.

    ALL SAMPLES MUST REACH THE LABORATORY AS SOON AS POSSIBLE
SPECIMEN TYPES

- **Fresh biopsies** must reach the laboratory as soon as possible. If the transit time between a biopsy being taken from the patient and being received in the lab is more than 2 hours the samples should be placed in formalin, unless it is wrapped in moist gauze and sent by courier to arrive within 4 hours.

- **Fresh resections (without fixative)** must reach the laboratory as soon as possible. If the transit time between a sample being taken from the patient and being received in the lab is more than 2 hours the samples ideally should be kept between 4-6°C as this preserves the tissue morphology and DNA quality. If this is not possible the sample can be placed in formalin, or it can be placed in a fridge for 48 hours and then sent to the lab. Cooling results in preservation of the morphology and constituents for at least 48 hours.

- **Formalin fixed specimens** must be placed in a container large enough to accommodate the specimen easily with sufficient volume of fixative (at least 10x the volume of the specimen). Formalin is a hazardous reagent, and instructions for dealing with it must be followed carefully.

**ANY DEVIATION MAY SIGNIFICANTLY AFFECT THE PERFORMANCE OF THE EXAMINATION OR THE INTERPRETATION OF THE RESULTS**

- **High Risk specimens** - The laboratory must be informed if the specimen may be “High Risk” in terms of infection [TB, HIV, Hepatitis B or C and others]. Such specimens must be sent in formalin. Both the Histopathology Request Form and the specimen must be labelled using the appropriate high-risk label.

- **Frozen sections** require prior arrangements to be made through the department office (Ext 5354) and must be requested as early in advance of the sample being sent. Ideally this should be three days in advance to ensure availability of pathologists and BMS staff. In cases where an unplanned frozen section is required, as much warning as possible must be given to the laboratory, and an effort will be made to provide the service. The clerical staff will provide a Frozen Section Form to be completed in each instance via Form v4 Frozen Section request. For health and safety reasons, it is departmental policy not to perform frozen sections on known cases of TB, hepatitis B or C, or HIV. If there is any doubt about this, please contact the consultant histopathologist via ext. 5354. In such cases it may be possible to arrange rapid processing of the specimen. If such a specimen is inadvertently processed as a frozen section, full decontamination of the equipment is required. Such instances will be recorded as clinical incidents. All samples for frozen sectioning must be hand-delivered to a member of histopathology staff immediately after removal.

*If a frozen section, which has been requested, is delayed or cancelled, please inform the laboratory.*

- It is the responsibility of the individual sending the specimen to ensure that specimens are dispatched in a safe and timely manner.

- If a specimen is received at the laboratory but is not clearly identifiable (e.g. the specimen container is not labelled, or the label does not correspond with the accompanying request form), it will not be processed. Laboratory staff will contact the clinician to clarify details if necessary, and it is likely that the sample will be returned to sender and increase the turnaround time.
TURNAROUND TIMES
The time taken to fix, process and report a specimen depends on its size, degree of mineralisation and the complexity of the pathology. Mineralised specimens require post-fixative decalcification prior to processing. Complex cases generally require special tests to be undertaken (immunohistochemistry, FISH, NGS) and this extends the time of reporting.

Providing a diagnosis on virtually all bone tumours, and many soft tissue tumours, requires radiology correlation prior to a report being issued. Imaging must be provided on a CD or sent via IEP with prior notification. Therefore when imaging is not available, this can result in a delay on issuing a report. The imaging is generally discussed at a multidisciplinary meeting with consultant radiologists, sarcoma surgeons and oncologists, every Friday morning. Therefore most reports are not issued until the radiology is reviewed at this meeting. Clinicians referring to the histopathology unit are welcome to attend this meeting to discuss clinical management if they so wish. To arrange this please contact one of the consultant histopathologists on 020 8909 5354 or through our departmental email rno-tr.Histopathology@nhs.net

Although biopsy reports are usually available in less than one week, the reports for the London Sarcoma Service may not be issued until the case is discussed at the next Friday multidisciplinary meeting.

Our turnaround times for both internal and referred cases exceed the standards set by the Royal College of Pathologists. An up to date record of our reporting times can be accessed on our web site pages at: www.rnoh.nhs.uk/our-services/cellular-and-molecular-pathology

If we anticipate a delay in issuing a report we will endeavour to contact the clinician and provide an explanation and also an expected date for completion.

RESULTS
A typed histopathology report is sent to the destination documented on the request form. Reports are faxed to UCLH, and to all private hospitals and a hard copy sent by post. A PDF report can be sent on request to an NHS.net e-mail address.

RNOH Clinicians are able to access histopathology reports on specific computers in the operating suite and in the outpatients department. The Histopathology system [WWA program-Winpath] is on the PC in the surgeons’ coffee room, adjacent to theatres 9-10, and at the nurses’ station in the outpatients department.

Staff members wishing to use this diagnostic database are required to register on this system. To do this they should e-mail Sharon Roche, Histopathology Laboratory Manager histopathology@rnoh.nhs.uk and copy to IT imtservicedesk@rnoh.nhs.uk

Staff members must have a Trust Outlook account to be able to access this program. Clinicians are welcome to visit the laboratory to discuss their cases and view the slides.

Clerical staff members are not permitted to give verbal reports over the telephone.
SECOND OPINIONS REQUESTED BY RNOH PATHOLOGISTS
In order to provide a safe and high quality service, cases are referred to acknowledged experts for second opinions where appropriate. For a list of the consultant histopathologists to who second opinions are sent: please see - Appendix 1.

MULTIDISCIPLINARY TEAM (MDT) MEETINGS
A range of meetings with clinicians, radiologists and healthcare support staff are held on a regular basis:

1. A MDT tumour meeting is held every Friday morning at RNOH. This includes a videoconference with clinicians and radiologists at University College Hospital – every Friday, Teaching Centre, 08.00 – 11.00am. This MDT meeting is to discuss new diagnoses.
2. There is a MDT tumour meeting held on every second Thursday of each month at UCH, 14.00-17.00pm to discuss the surgical outcome of patients.

We are willing to include specific cases on request. Lists of cases for presentation must be sent to the MDT co-ordinator [Tel. 020 8909 5584]. Please mark your request with the date and name of the meeting, and include a telephone number or bleep where you can be reached. Details of cases to be discussed before the Friday meeting must be submitted before the preceding Wednesday, midday, as preparation us required before the meeting.

MOLECULAR GENETICS INVESTIGATIONS
A number of diagnostic molecular genetics tests are available for bone and soft tissue tumours. This service is continually being developed and is available to hospitals outside RNOH Trust. A list of the tests provided can be found on our website www.rnoh.nhs.uk/clinical-services/cellular-and-molecular-pathology/molecular-pathology by contacting us by phone 020 8909 5354, or by email rno-tr.Histopathology@nhs.net

If you wish to be asked whether the pathologists can proceed with molecular pathology tests to arrive at a diagnosis please document this on the request form and you will be contacted before molecular pathology tests are requested. Costs are available on request.

All molecular tests are performed on formalin-fixed paraffin-embedded material. A tissue block must be submitted with clinical information (see request form section for requirements). Information as to whether a sample has been decalcified is required and if so in the type of acid must be documented. The length of time in formalin is also useful for planning molecular pathology analysis as more than 24 hours can reduce the success of such tests.

Molecular Request Forms must be completed with as much relevant clinical information as possible. Those are available from the laboratory upon request [Tel: 020 8909 5354]. Incorrectly or insufficiently labelled requests may delay processing and or reporting of cases. Patient details (name, date of birth), sample details (Surgical Pathol No., Block No., tissue type) a summary of the clinical history, referral details (pathologist/clinician, hospital, contact telephone/fax number) and test required must be provided. Clinical information is required to interpret the pathology results in the context of the clinical findings. The contact details are required in case there is a need to make contact in order to obtain or provide urgent information. Absence of information is likely to delay receipt of a report.
PRIVATE HISTOPATHOLOGY SERVICE
The department offers a pathology service to the private sector. Slides, tissue blocks and wet specimens can be sent to the address below for the attention of Professor Adrienne M Flanagan. Please reference previous section SENDING SPECIMENS TO THE HISTOPATHOLOGY DEPARTMENT for guidance. For international procedure please reference UN3373 for the transportation of biological substances Category B. For a rapid service please supply a contact telephone number and, if at all possible, submit the relevant imaging on a CD with the case. These will be reviewed when required by our musculoskeletal radiology, and surgical colleagues. Prices for the service are available on request. You may be required to pay for this service in advance.

If material is sent by courier or post, please ensure they are directed to the Institute of Orthopaedics and provide them with our telephone number: [Tel. 0208 909 5354].

Address:
Royal National Orthopaedic Hospital NHS Trust
Institute of Orthopaedics
Histopathology Department
Brockley Hill
Stanmore
Middlesex HA7 4LP
United Kingdom

THE MORTUARY SERVICE
Please refer to the Trust Clinical Policy & Procedures Folder [1], ‘Care of the Dying Policy’ Section Three C - ‘Practical Procedures’.

The customer care manager can be contacted on 020 8909 5717 or through the switch board on 0208 954 2300 bleep 749.

PROTECTION OF PERSONAL INFORMATION
The laboratory takes all necessary measures to protect personal information supplied on patients, and observes all confidentiality and data protection guidance. To ensure that the Trust fulfils this expectation, Information Governance training is mandatory yearly for all staff. Breaches would be logged and reported to the Caldicott Guardian.

COMPLAINTS
In the event of the service not meeting the user’s expectation, complaints can be made by letter, email and telephone to the contact details given at the beginning of this manual. All complaints are taken seriously and a full investigation is ensured. A response to any complaint will be given within 2 weeks of a complaint be received. A user survey is undertaken every 2 years and we endeavour to improve our services in response to the feedback we receive.

USER SURVEY
The Histopathology department maintains a high standard and strives to improve continuously the service to its users at the RNOH and elsewhere. As part of this process, an annual User Survey is conducted seeking ways of improving the service. An anonymised questionnaire, designed for specific users/areas, is circulated along with a covering letter detailing the purpose of the survey. Consistent improvement of the histopathology service at the Royal National Orthopaedic Hospital NHS Trust is dependent on being responsive to user needs. The survey findings are discussed within the department and where relevant, acted upon.
**Appendix 1**

Consultant histopathologists to whom second opinions are sent and laboratories to which material is sent for specialist test are listed below: tests:

### Haematological neoplasms

**Haematopathology Team**  
University College Hospital  
Rockefeller Building  
University Street  
London WC1E 6JJ  

Tel: 0207 679 6045  
Fax: 020 7387 3674  
CPA status: Accredited. Ref. no. 1445

### Urological diseases

**Uropathology Team**  
University College Hospital  
Rockefeller Building  
University Street  
London WC1E 6JJ  

Tel: 0207 679 6045  
Fax: 020 7387 3674  
CPA status: Accredited. Ref. no. 1445

### Gastro-intestinal neoplasms

**Gastro-intestinal Pathology Team**  
University College Hospital  
Rockefeller Building  
University Street  
London WC1E 6JJ  

Tel: 0207 679 6045  
Fax: 020 7387 3674  
CPA status: Accredited. Ref. no. 1445
Central Nervous System neoplasms

**Neuropathology Team**
National Hospital for Neurology and Neurosurgery
Institute of Neurology
1st Floor Queen Square House
Queen Square
London, WC1N 3BG

Tel:
Fax:
CPA status: Accredited. Ref. no. 1603

Soft tissue neoplasms

**Professor Cyril Fisher**
Royal Marsden Hospital
Fulham Road
London SW3 3JJ

Tel: 0207 679 6045
Fax: 020 7387 3674
CPA status: Accredited. Ref. no. 811

Bone & Soft Tissue neoplasms

**Professor Nicholas Athanasou**
Nuffield Orthopaedic Centre
Department of Pathology
Windmill Road
Headington
Oxford OX3 7LD

Tel: 01865 227619 direct
Fax: 01865 742348
CPA status: Accredited. Ref. no. 2994

**Prof. Lars Gunner Kindblom**
Royal Orthopaedic Hospital NHS Trust
Dept. of Musculoskeletal Pathology
Robert Aitken Institute of Clinical Research
The Medical School
University of Birmingham
Birmingham B15 2TT

Tel: 0121 414 7641
Fax: 0121 414 7640
CPA status: Accredited. Ref. no 2030
Cutaneous neoplasms

Dr Eduardo Calonje
St Thomas' Hospital
St John's Institute Dermatology &
Histopathology
Lambeth Palace Road
London SE1 7EH

Tel: 0207 1887 188 ext. 86393
(secretary)
CPA status – Accredited. Ref. no 2008

Referral Laboratory for Immunocytochemistry

UCL Advanced Diagnostics*
Department of Pathology
Room 112, 1st Floor
Rockefeller Building
21, University Street
London, WC1E 6JJ

Tel:

Referral Laboratory for Molecular Analysis

UCL Advanced Diagnostics*
Ground Floor
Shropshire House
1, Capper Street
London, WC1E 6JA

Tel: 0207 679 9349
ISO15189:2012 status – awaiting inspection

*UCLAD was part of the joint UCLH Cellular Pathology Department (CPA Ref. 1445). However UCLH’s entry into a joint venture with The Doctor’s Lab forming HSL (Health Services Laboratory) has resulted in UCLAD having to separate from UCLH. UCLH retains its CPA accreditation status and is awaiting inspection under ISO15189:2012.

UCLAD is currently waiting an independent inspection under ISO15189:2012. We continue to use their services, as they are the only local providers of many of the tests we require. UCLAD provides evidence of participation in NEQAS and receives excellent scores: good turn-around times are provided which are available in their website. We have visited the laboratory, and have discussed their governance standards with them.
### HISTOPATHOLOGY REQUEST FORM

**John Cholmeley Histopathology Department, Institute of Orthopaedics, Royal National Orthopaedic Hospital**

Brockley Hill, Stanmore, Middlesex, HA7 4LP

Office Tel: 0208 909 5354
Laboratory Tel: 020 8909 5769
Fax: 020 8954 5908

**Please use ball point pen and write in block capitals**

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<th>NHS Number</th>
<th>Previous Histology YES/NO</th>
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<td>Hospital Number</td>
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<td>Surname</td>
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<td>Size and site of specimen and relevant clinical information / suggested radiological diagnosis.</td>
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<td>Date &amp; time of specimen taken:</td>
<td>This section must be completed by requesting doctor, please tick as appropriate.</td>
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<td>Signature</td>
<td>Please include number of containers and ID e.g. A, B, C etc</td>
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<td>Is the lesion?</td>
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</tr>
<tr>
<td>Probably Benign</td>
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<tr>
<td>Probably Malignant</td>
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<tr>
<td>Do not Know</td>
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<tr>
<td>If arising in soft tissue:</td>
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</tr>
<tr>
<td>Deep</td>
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<tr>
<td>Superficial (to fascia)</td>
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<tr>
<td>If arising in bone: which bone?</td>
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<tr>
<td>Intramedullary</td>
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<tr>
<td>Epiphyseal</td>
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<tr>
<td>Surface</td>
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<tr>
<td>Metaphyseal</td>
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<tr>
<td>Intracortical</td>
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<tr>
<td>Diaphyseal</td>
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<tr>
<td>Does the bone lesion extend into soft tissue?</td>
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<tr>
<td>Yes</td>
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**Laboratory use only**

<table>
<thead>
<tr>
<th>Block nos:</th>
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<tr>
<td>Macro description dictated by</td>
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<tr>
<td>Imprints No taken.</td>
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<tr>
<td>Nitrogen / Location:</td>
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<td>N</td>
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**Note:** All specimens removed at operation should be forwarded for pathological examination with a signed tissue consent form.
Appendix 3

Histopathology Safety outline for Users

Histopathology samples are taken to the laboratory for diagnosis. We cut thin slices of the tissues and look at them under a microscope to see what is wrong with them.

All samples should be sealed in a bucket or other container and that must be in a watertight polythene bag the samples can be either dry or in formalin.

Dry samples
Samples are sent dry to histopathology so that the samples are in as life-like a form as possible when received. There are few risks to this providing that the samples are sealed in a pot within a sealed polythene bag. If the container is dropped and spills on to the floor contact your manager to arrange for cleaners to clean and disinfect the area.

Rules
All samples containers must be in bags. Do not accept samples for transport if there are blood stains or fluids on the outside of the bag. Do not accept samples to take to histopathology if the request form is blood stained. Do wear gloves when handling samples wash hands after handling samples. Call for help if a container is dropped and spills onto the floor as it will need disinfecting.

Formalin
Formalin is a toxic gas with a strong unpleasant smell; it is dissolved in water and used as a dilute solution. It is toxic if inhaled, irritates eyes and skin and can cause contact dermatitis. Why do we put tissue in formalin? It is used to preserve tissue by killing tissue, fungus and bacteria. It can be hazardous but not if used properly. You must never ingest (drink) formalin. If you get formalin in your eyes it will sting and you must wash it out immediately. It is more likely that you will get formalin on your hands, and get it in your eyes from your fingers. So if you get formalin on your skin you must wash it off at once, both because it is dangerous and to prevent you getting it in your mouth or eyes.

Rules
All samples in containers must be in bags. Always wear gloves when moving samples around, wash hands after handling samples. If pouring formalin wear goggles. If there is a small formalin spill soak up the spill on paper or with absorbent granules and seal them into a yellow polythene bag for disposal as clinical waste. If a sample container falls free of the box during the journey and contents spill on the floor the porter will contact their supervisor by radio. The supervisor will then call histopathology on 5626 or 5354 for advice on the sample and the cleaners to clean and disinfect the area.

Liquid nitrogen
Liquid nitrogen is very cold. Liquid nitrogen is used to freeze small pieces of tissue for research or diagnostic purposes. This must happen as soon as possible after tissue is removed from the patient so the tissue is frozen in a thermos of liquid nitrogen. The nitrogen is not poisonous but as it is at a temperature of -200°C the cold can burn you quite badly. Ordinary clothes will offer no protection and cloths covered in liquid nitrogen will burn you. Rubber gloves will give no protection from the cold. When it changes from liquid to gas it expands 900 to 2000 times so that a large spill can fill the room with gas and cause suffocation. A cup full of nitrogen will produce up to 1000 litres of gas.

Rules
Do not allow liquid nitrogen to get onto skin or clothes. Always seal the cap on the thermos flask with the clips before carrying it to theatre or back to histopathology. Always carry the thermos carefully to avoid spilling nitrogen down the outside of the flask. If the flask is dropped and spills in doors open doors and windows and evacuate the area until the gas has gone.
## MOLECULAR PATHOLOGY EXTERNAL REQUEST FORM

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<th>PATIENT'S AND SAMPLE DETAILS</th>
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<tbody>
<tr>
<td><strong>Surname:</strong></td>
<td><strong>Pathologist:</strong></td>
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<tr>
<td><strong>Forename:</strong></td>
<td><strong>Hospital:</strong></td>
</tr>
<tr>
<td><strong>DOB:</strong></td>
<td><strong>Contact telephone / fax number:</strong></td>
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<tr>
<td><strong>Hosp no:</strong></td>
<td><strong>Date of Request:</strong></td>
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<tr>
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<td><strong>Date/ time of specimen collection:</strong></td>
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<tr>
<td><strong>Tissue type:</strong></td>
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<td><strong>Clinical details:</strong></td>
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<th>TEST(S) REQUESTED</th>
<th>LABORATORY USE ONLY</th>
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<td><strong>Date / time received:</strong></td>
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<tr>
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<th><strong>RNOH ref No:</strong></th>
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<tbody>
<tr>
<td><strong>RNOH consultant pathologist (initials):</strong></td>
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