



Division of Laboratory Medicine



OPHTHALMIC PATHOLOGY USER GUIDE

Cellular Pathology



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1 INTRODUCTION

Ophthalmic Pathology forms part of the Adult Histopathology department and provides a diagnostic service in Ophthalmic Histopathology and Cytopathology. It is one of four laboratories within England that make up the National Specialist Ophthalmic Pathology Service (NSOPS).

NSOPS laboratories are designated Highly Specialised Services and are centrally funded by NHS England. This means that NHS cases submitted to NSOPS laboratories for examination are seen without charge to the referring clinician for patients in England.

The laboratory aims to provide a high quality and efficient service with provision of expertise in diagnosis using a range of techniques including histology, cytology, immunofluorescence, immunohistochemistry, and electron microscopy as appropriate.

The NSOPS team consists of two Consultant Histopathologists (one full-time and one part-time), a Lead Biomedical Scientist in Ophthalmic Pathology and a PA.

This user guide has been developed to meet the needs and requirements of our users, and also includes useful information, guidance and advice to enable you to make the most efficient use of our service.

2 CONTACT US

Ophthalmic Pathology forms part of Adult Histopathology, Clinical Sciences Building 1(CSB1)

2.1. POSTAL ADDRESS

For correspondence and specimens:
Ophthalmic Pathology-Histopathology
1st floor Clinical sciences building 1
Manchester University NHS Foundation Trust
Oxford Road
Manchester
M13 9WL

2.2. LABORATORY OPENING TIMES

08.00 – 17.00 hours
Monday - Friday, excluding Public/Bank Holidays (England)
NB: There is no out of hours or weekend service.



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2.3. KEY CONTACTS

General Enquiries:

Specimen Reception:

(Inc. Frozen section requests)

Tel: 0161 276 8808

Histology Reports:

Tel: 0161 701 1615

Email: mft.adult.histosecs@nhs.net

Halima Ali

Secretary to Dr Luciane Irion and Dr Joe Shaw

Tel: 0161 276 6924

Email: jean.schofield@mft.nhs.uk

Technical Enquiries:

Miss Anna McEwen

Lead BMS Ophthalmic Pathology

Tel: 0161 276 5806

Email: anna.mcewen@mft.nhs.uk

Clinical Enquiries:

Dr Luciane Irion

Consultant Ophthalmic Pathologist

Tel: 0161 276 6924

Email: luciane.irion@mft.nhs.uk

Dr Joe Shaw

Consultant Ophthalmic Pathologist

Tel: 0161 276 6924

Email: joseph.shaw@mft.nhs.uk



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3. QUALITY

The department is fully accredited by UKAS in conformance with ISO 15189:2012. Our UKAS Medical Laboratory Reference Number is 8648. The department participates in regular exhaustive assessments to maintain its accreditation status. The department is licensed by the Human Tissue Authority (HTA). The department is committed to delivering a quality service to our users and strives for continual improvement. A quality management system is utilised to ensure all documents, processes, quality records and clinical material are controlled to DLM (Directorate of Laboratory Medicine) policy. Processes and systems are regularly audited to identify non-conformities and quality improvements. The department is committed to the safe and secure handling and disposal of confidential information and accurately reporting results of investigations in a timely, confidential and clinically useful manner.

For further information regarding quality, including technical EQA schemes that the department participates in please see the Adult Histopathology User guide via <https://mft.nhs.uk/the-trust/other-departments/laboratory-medicine/histopathology/>

4. REQUESTING OF INVESTIGATIONS

The Division of Laboratory Medicine (DLM) guidelines for specimen acceptance must be followed to ensure that all samples are correctly and unambiguously identified. The policy provides an overarching process to specimen rejection to help balance the requirement to process against the risk to patient safety. Clinical governance issues may arise from errors in specimen identification and/or insufficient clinical information being given with a specimen. To ensure that specimens are linked to the correct patient, adequate identifiers are essential. Due to the difficulty in repeating a tissue specimen, different criteria are used in Adult Histopathology.

All urgent and specimens on a cancer tracking pathway (HSC205) should be clearly labelled as such. The date and time the specimen was taken is important information that should be included on all requests to determine the length of fixation of the tissue specimen.



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4.1 SPECIMEN ACCEPTANCE POLICY

All Ophthalmic specimens sent for histology and /or cytology **must** comply with our specimen acceptance requirements. If the correct information is not present then the specimen may unnecessarily be delayed. All fields on the Ophthalmic Pathology request card/ICE request should be completed to ensure efficient and effective investigation of the specimen. The following mandatory information **must** be provided for us to accept the specimen:

Essential Patient Identifiers:

- **Surname**
- **Forename**
- **Unique identification number** – MRN for MFT cases, NHS or external hospital number for external cases
- **Date of birth**
- **Address**

Essential Clinical Details:

- **High risk status** – to ensure health and safety of all staff
- **Specimen site** – must match on specimen pot and request card
- **Relevant clinical information**
- **Reconstruction date if urgent processing required**
- **Date/time taken** – essential to ensure proper fixation of high risk specimens

Essential Sender Details:

- **Ward/department** – required for return of reports
- **Consultant or GP** – required for return of reports and contact in case of any errors/discrepancies
- **Contact number/bleep** – for verbal reports, and frozen section

Each specimen container, no matter how small, must also be labelled with the appropriate patient identification data (minimum of 3 identifiers e.g. first and last name, date of birth/age, gender and preferably patient's NHS/Hospital No). The information must be consistent with the request form, to prevent errors in specimen and patient identification. Multiple specimens from the same patient should also identify the specimen type/site.

Specimens that do not contain the required information or have discrepancies between the request card and specimen pot will not be processed in the laboratory until the necessary information has been obtained. The sender will be contacted to attend the laboratory to complete any missing information or correct any mistakes. The person correcting the patient or specimen details should be of appropriate seniority and able to take responsibility for the labelling of the specimen. This will result in a delay to specimen processing and reporting.

For some external users we will accept corrections to patient detail discrepancies via email.



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4.2 SPECIMEN STORAGE

Prior to transport to the laboratory, it may be necessary to temporarily store specimens. All specimens that are placed into Formalin should be kept at room temperature until transported to the laboratory. Specimens in Formalin should not be placed into the fridge as this will have a negative impact on fixation and therefore preservation of the tissue.

Specimen	Storage
Formalin	Room temperature
Dry unfixed	Fridge
Transport medium	Fridge

All dry specimens and specimens in transport medium ideally should be transported to the laboratory immediately.

4.5 TRANSPORT OF SPECIMENS

All specimens should be transported in the relevant fixative or transport medium as indicated below in section 5. All specimen pots should be tightly sealed and transported using specimen bags, where appropriate. The request card should be placed in the pocket of the specimen bag, and the pot inside the sealed bag to ensure the safety of all staff.

Specimens can be delivered to the Adult Histopathology specimen reception throughout the day.

If a porter brings specimens from the theatres and clinics from the Manchester Royal Eye Hospital the samples will be signed for. For samples from external users any confirmation of receipt forms will be filled in and emailed back.

Please can all urgent specimens be clearly labelled as such to ensure that they are dealt with in the appropriate manner. This is particularly important for temporal arteries and specimens requiring urgent processing for delayed reconstruction.

All specimens sent in the post should adhere to the packaging guidance available on the Royal Mail website. It is the responsibility of the sender to ensure that specimens are appropriately labelled and packaged.



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4.6 REQUESTING FORMALIN POTS/GEL TUBES

Any requests for formalin pots or zeus for immunofluorescence specimens should be made to Adult Histopathology specimen reception on 0161 276 8808 (68808 internal).

4.7 HANDLING FORMALIN

The department uses 10% neutral buffered Formalin (4% formaldehyde) and this should be handled with care at all times.

10% Formalin

Acute Toxicity	Category 4 - Harmful if inhaled
Skin Sensitizer	Category 1 - May cause an allergic reaction
Carcinogen	Category - 1B May cause cancer
Mutagen	Category 2 - Suspected of causing genetic defects

All solutions containing formalin are suspected carcinogens, mutagens and sensitisers. The solutions should be handled with care, minimising skin contact. Safety equipment including gloves should be worn and any spill on the skin should be washed as soon as possible.

In general, formalin solution, like any other chemical should be treated with respect. Handle with care and avoid any situations which could potentially result in formalin spillage.

Formalin can be disposed of down a sink suitable for clinical waste with copious amounts of running water in a well-ventilated room.

In a hospital environment formalin is mostly handled in very small containers with less than 100ml of 10% formalin solution. A spill of this size is unlikely to contaminate the air to dangerous levels if dealt with promptly. The spill can be wiped up with absorbent material by staff members wearing suitable impervious gloves such as nitrile gloves. The contaminated material should be sealed in plastic bags for disposal and removed from the room as soon as possible. It is important not to simply dispose of the contaminated material in an open bin as the formaldehyde will continue to contaminate the air. The area should be rinsed with water.

For more information on Formalin and spillages please see the Adult Histopathology User guide via <https://mft.nhs.uk/the-trust/other-departments/laboratory-medicine/histopathology/>



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5. SPECIMEN REQUIREMENTS

The NSOPS service examines specimens either diagnostic or excisional, of any tissue from the eye or its adnexal structures. Specimens for cytological investigations are also accepted which include surface impression cytology and cytology of fluid such as tears, aqueous, vitreous, or fluid from cystic lesions.

Guidance on which specimens should be submitted for examination may be found at:

<https://www.rcophth.ac.uk/wp-content/uploads/2016/07/Ocular-Pathology-July-2016.pdf>

Some specimens may be referred to other departments/centres for expert opinion or for techniques not performed here such as PCR (on tissue sections), molecular studies, and impression cytology. For a list of our main referral centres see section 7.

The department does not arrange or provide any other pathology services e.g microbiology, or fresh virology samples. If these investigations are required, the requesting clinician must submit a separate specimen to an appropriate service.

It is not possible for this laboratory to split a specimen under sterile conditions.

5.1 HIGH RISK SPECIMENS/DANGER OF INFECTION

It is the responsibility of the requesting clinician to indicate on the request card if the patient is known or suspected to be within a “High Risk/Danger of Infection” category eg HIV, TB, Hepatitis B, Hepatitis C, (this list is not exhaustive) to facilitate appropriate handling. These specimens need to be formalin fixed for a longer period of time to ensure the health and safety of the staff.

Frozen sections (including specimens for immunofluorescence) will NOT be carried out on high risk specimens.

5.2 ROUTINE HISTOPATHOLOGY

Specimens for routine histopathology are required to be placed into 10% neutral buffered Formalin, which is available on request from the laboratory. Formalin is used to fix the specimen and preserve the tissue in as life-like state as possible. If there is a delay between the removal of the tissue and fixation in Formalin, this can adversely impact the specimen integrity and therefore report. **NB:** In cases where sebaceous carcinoma is suspected specimens should still be submitted in formalin.



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The choice of methodology and appropriateness of the investigation are at the discretion of the consultant pathologist who is guided by details on the clinical request form and knowledge of laboratory methods and current "best practice". Ophthalmologists are free to discuss the methods employed for any given specimen, but the final decision remains the remit of the Consultant Pathologist.

5.2.1 FAST PARAFFIN PROCESSING

In urgent cases (often eyelid tumour surgery where a lesion is being excised, and subsequent reconstruction depends on knowledge of whether the margins are tumour free) a "fast paraffin" approach may be considered.

If the specimen can be delivered to the laboratory on the morning of the initial surgery, it can be processed overnight and an opinion will be available by midday on the next working day.

NB: This service is labour-intensive and must be booked in advance by contacting laboratory staff in advance to ensure both technical and clinical staff are available. This service is only available to MFT ophthalmologists.

5.2.2 FROZEN SECTIONS

Unfixed histology specimens may be sent for frozen section if other forms of rapid diagnosis are not appropriate. This service is only available to MFT ophthalmologists. Every attempt will be made to provide a frozen section service during working hours. Users are requested to adhere to the following requisites:

Requests for frozen sections should be booked 24 hours in advance wherever possible. Bookings can be made by contacting the Laboratory on **0161 276 8808**. Patient information, clinical information, Clinician's name and the theatre number where the surgery will be taking place will be required at this time.

Frozen sections **WILL NOT** be undertaken on high-risk specimens. Such information **MUST** be disclosed to the Laboratory and included on the request card.

The sample **MUST** be accompanied by a completed request card which must clearly indicate the contact number and name of the person to whom the result is to be conveyed.

Before sending the sample ring **68808** to warn the laboratory it is on the way.

Samples for frozen sections should be transported to the Laboratory in an appropriately labelled dry pot and handed directly to the technical staff as quickly as possible and arrive by 4.30pm.



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5.2.3 IMMUNOFLUORESCENCE

Conjunctival biopsies for immunofluorescence (e.g. samples querying Mucous Membrane Pemphigoid) should be placed directly into transport medium. It is extremely important these specimens are NOT placed in formalin as the technique cannot be carried out on fixed tissue. The sample in transport medium should also be labelled with relevant patient identification details.

These samples need to be sent to the laboratory as soon as possible. If they cannot be sent by 5pm please ensure they are stored in a fridge and delivered first thing the next morning.

Immunofluorescence is not available on high risk specimens.

5.3 CYTOLOGY INVESTIGATIONS

Cytology is the investigation of small samples of dispersed or dissociated cells and other tissue components devoid of natural tissue architecture.

Specimens for cytological investigations include surface impression cytology and cytology of fluid such as tears, aqueous, vitreous, or fluid from cystic lesions.

Cytological investigation provides a preliminary diagnostic impression and should not be regarded as providing a definitive diagnosis. If there is uncertainty about its use in a particular case, it is preferable to discuss the case with the consultant pathologist prior to obtaining the specimen.

5.3.1 Vitrectomy specimens: Please contact the laboratory prior to sending vitrectomy specimens. We prefer to receive a formal pars plana vitrectomy in a cassette or bag. If samples are required for microbiology, virology or PCR please remove these from the cassette/bag first. Samples from MFT should be sent fresh immediately to the laboratory. Fresh samples should be delivered by 2pm. Samples taken on a Friday afternoon can be fixed in an equal volume of 10% neutral buffered formalin. Samples from external hospitals sent by post should be fixed in an equal volume of 10% neutral buffered formalin.

Small volume cytology specimens: The syringe used in the collection of the sample may be submitted with the fluid inside. **Needles must be removed and the syringe capped.** MFT specimen should be sent fresh as soon as taken. Samples taken on a Friday afternoon should be fixed using an equal volume of 10% formalin drawn up into the same syringe. Indication should be made on the request form as to whether the specimen is fixed or not.

Please do not send unfixed specimens from external hospitals unless by same day courier.

If microbiological investigation is required, the requesting clinician must submit a separate specimen to an appropriate microbiology service.



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It is not possible for this laboratory to split a specimen under sterile conditions.

5.3.2 IMPRESSION CYTOLOGY

These samples should be submitted in a pot containing formalin in a manner similar to histology specimens. These samples will be referred by us to the NSOPS service within the UCL Institute of Ophthalmology London.

6. SAMPLES FROM OUTSIDE ENGLAND/PRIVATE PATIENTS

The department is happy to accept specimens or second opinion referral cases from users outside of England or Private Clinics. For these specimens a charge will be made to the referring clinician/hospital.

For information about our charges please contact Anna McEwen anna.mcewen@mft.nhs.uk

7. RESEARCH

The Ophthalmic Pathology department is happy to actively support researchers.

Cellular pathology research offers the following services:

- Processing, paraffin embedding and sectioning of fixed tissue
- Electron microscopy (subject to requirements)
- Frozen sectioning of fresh tissue samples
- Immunohistochemistry (IHC) including single and dual staining
- Antibody optimisation for IHC
- Chromogenic in-situ hybridisation (CISH)
- Silver in-situ hybridisation (SISH)
- Standard H&E and special staining techniques
- Pathological review

Please contact the department if you wish to discuss a project.



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8. TRAINING

Both ophthalmologists and histopathologists are welcome to spend time in the department if they wish to learn about ophthalmic pathology, either in preparation for examinations or in order to develop a subspecialist interest.

Please contact the laboratory if you wish to arrange a training placement.

9. REFERRAL CENTRES

Below is a list of the departments we may refer work to:

NSOPS, Department of Eye Pathology
UCL Institute of Ophthalmology
11-43 Bath Street
London
EC1V 9EL

NSOPS, Department of Histopathology
E-Floor
Royal Hallamshire Hospital
Glossop Road
Sheffield
S10 2JF

NSOPS, Department of Histopathology
3rd Floor CSSB

Royal Liverpool Hospital
Mount Vernon Street

Liverpool
L7 8YE

The Christie NHS Foundation Trust
Department of Histopathology
Wilmslow Road
Manchester
M20 4BX

10. COMMUNICATION OF RESULTS

The department aims to provide a timely as well as a high quality service. Reports will be available on ICE once they have been authorised by the Consultant Pathologist.

Typed reports will also be available when all necessary tests have been completed, reviewed and authorised by a Consultant Pathologist. Paper copies of reports will be posted to external users or can be emailed to a secure NHS.net account. Verbal reports or clinical discussions



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can only be provided to qualified medical staff by Consultant Pathologists. All report enquiries should be directed to the secretarial office in the first instance. The scientific staff in the laboratory cannot give out any information regarding results/reports.

Histology Reports

Telephone	0161 701 1615
Email	mft.adult.histosecs@nhs.net

Users are requested to check if final reports are available on Epic/Hive, in hospital notes, clinics or wards before making enquiries. Please note that clerical staff will not give report details over the telephone, but on request, authorised reports can be faxed to dedicated hospital fax numbers and General Practitioners.

Advice to clinicians is readily available at all stages of the diagnostic process, from deciding what material to submit for examination to guidance on interpretation of the final report. Please feel free to contact the Consultant Ophthalmic Pathologist or the Lead BMS with any queries.

10.1 TURNAROUND TIMES

Ophthalmic Pathology works to RCPATH Key Performance Indicators (KPI). The target is to report 80% of diagnostic biopsy cases within 7 days, and 80% of all specimens within 10 days (except those requiring decalcification). Workload figures and turnaround times are reported to NHS England regularly.

Reporting times for all specimens, including urgent and HSC205, may be extended if they are high risk specimens, large resection specimens or calcified or bony samples. Any case requiring specialist techniques such as immunohistochemistry or electron microscopy will also likely have extended reporting times. Some cases may require referral to a specialist referral centre, which can prolong reporting times. However, a preliminary report would be issued beforehand. An appropriate frozen section request will aim to be reported by telephone within 60 minutes. Frozen sections should normally be booked with the laboratory beforehand.



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11. ENQUIRIES AND COMPLAINTS

It is our aim to continually provide, maintain and improve the services of our department so that they most suit the needs and requirements of our users and benefit patient care.

Feedback questionnaires are issued regularly but, in the meantime, we appreciate any comments or suggestions that you consider would improve the quality of services provided. Feedback can be given using any of the contact details above.

The department is committed to fully investigating all complaints regarding the standard and quality of services that we offer. Please contact Lead BMS or Cellular Pathology Manager and we will deal with your complaint as soon as possible.

Lead BMS Ophthalmic Pathology		
Anna McEwen	0161 276 5806	anna.mcewen@mft.nhs.uk

Cellular Pathology Manager		
John Hayes	0161 276 6138	John.hayes@mft.nhs.uk