

# Cytology User Guide

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## Contents

<b>1.</b>	<b>Introduction .....</b>	<b>3</b>
<b>1.1</b>	<b>Purpose and Scope .....</b>	<b>3</b>
<b>1.2</b>	<b>About us .....</b>	<b>3</b>
<b>1.3</b>	<b>Definitions .....</b>	<b>4</b>
<b>2.</b>	<b>Contact Us .....</b>	<b>4</b>
2.1	Hours of opening.....	4
2.2	Order of semen analysis kits .....	4
2.3	Clinical advice and interpretation.....	4
2.4	Staff contact details .....	4
2.5	Consultants and Specialties .....	5
2.6	Section Leads .....	6
2.7	Complaints .....	6
2.8	Protection of patient information.....	6
<b>3.</b>	<b>NON GYNAECOLOGICAL CYTOLOGY .....</b>	<b>7</b>
3.1	Serous Fluids, CSF and all other drained fluids.....	7
3.2	Brushings .....	11
3.3	Fine Needle Aspiration .....	14
3.4	Fine Needle Aspiration (FNA) clinics .....	17
3.5	Quick guidelines for sample requirements.....	18
<b>4.</b>	<b>ANDROLOGY .....</b>	<b>19</b>
<b>5.</b>	<b>References and related information .....</b>	<b>26</b>

## 1. Introduction

### 1.1 Purpose and Scope

This handbook is intended to serve as a user guide to the Synnovis Cytology services, situated at the Guy's and St Thomas's Hospitals (see below for specific service locations). It is aimed for use by all staff groups involved with requesting Cytological investigations.

### 1.2 About us

The Synnovis Analytics Cytology laboratory is a UKAS (United Kingdom Accreditation Service) accredited medical laboratory (No. 9323); accredited to ISO15189:2022 for the scope described in the UKAS Schedule of Accreditation which can be found on the UKAS web-site: <https://www.ukas.com/find-an-organisation>.

#### **Non-Gynaecological Cytology**

This includes evaluation of body cavity fluids and brushings from various sites in the body. The ability to prepare cell blocks and treat fluid specimens like tissue blocks has improved the detection of primary and metastatic cancer and the ability to determine the primary site of origin of metastatic cancer.

As well as a full non-gynaecological cytology service (specimen receipt to reporting) at St Thomas' Hospital, and the department also provides the non-gynaecological laboratory service at King's College Hospital (KCH); reports for all KCH specimens are issued by the KCH Cellular Pathology service.

#### **Fine Needle Aspiration Cytology**

The department supports a comprehensive FNA service for Guy's, St Thomas' and King's College Hospitals. Pathologists and senior BMS staff attend clinics, ward, intra-operative and image guided FNA's to assess adequacy and ensure sufficient material is collected for ancillary testing like microbiology, immunocytochemistry, flow cytometry and cytogenetics. This approach allows for a rapid, confident and complete diagnosis reducing the need for a surgical biopsy in a large number of cases and shortening the overall diagnostic pathway of the patient.

#### **Andrology Testing**

This includes routine analysis for infertility cases and evaluation of post vasectomy specimens.

**Note:** gynaecological/cervical cytology samples are no longer processed or reported by the Synnovis Analytics Cytopathology service at GSTT. This aspect of the service was transferred to CSL (Cervical Screening London) on 2<sup>nd</sup> December 2019. Any queries relating to samples taken after that date should be directed to CSL on Tel: 020 7460 4851.

### 1.3 Definitions

Term	Definition
GSTT	Guy;s and St Thomas' Hospital
FNA	Fine Needle Aspirate

## 2. Contact Us

Cytology Department  
2nd Floor, North Wing  
St. Thomas' Hospital  
Westminster Bridge Road  
London  
SE1 7EH

Cytology Enquiries Tel 0207 188 2915/2916  
FNA and Andrology Appointments Tel 0207 188 2941

### 2.1 Hours of opening

The department is open from 09:00 – 17:00, Monday to Saturday (except bank holidays).

### 2.2 Order of semen analysis kits

To order semen analysis kits (specific sample container & request form):  
Email: [customersupport@synnovis.co.uk](mailto:customersupport@synnovis.co.uk)

### 2.3 Clinical advice and interpretation

Phone the general enquiries number and the secretarial staff will put you through to the Consultant Pathologist reporting the case you require.

Cytology Enquiries:  
Tel 0207 188 2915/2916

### 2.4 Staff contact details

**Cytology Clinical Lead**  
Dr Ashish Chandra [ashish.chandra@gstt.nhs.uk](mailto:ashish.chandra@gstt.nhs.uk) Ext 82946/58362

## 2.5 Consultants and Specialties

Consultants	Speciality	Extension
Dr Ashish Chandra	Urology, Non-gynae Cytology	82946/58362
Dr Maria Buttice	Gastrointestinal, Non-gynae Cytology	57067
Dr Giuseppe Culora	Gynaecology, Non-gynae Cytology	82925
Dr Baljit Gill-Barman	Gastrointestinal, Non-gynae Cytology	88507
Dr Ula Mahadeva	Gastrointestinal, Infectious/Tropical disease, Non-gynae Cytology	82934
Dr Anu Malhotra	Breast/Non-Gynae	83085
Dr Emma McLean	Respiratory, Non-gynae Cytology	82926
Dr Padma Menon	Gynaecology, Breast, Non-gynae Cytology	82935
Dr Yurina Miki	Haematopathology, Non-Gynae Cytology	56514
Dr Martina Munonyara	Gynae/Non-Gynae	56514
Dr Benita Stevenson	Gastrointestinal, Non-gynae Cytology	
Dr Mary Varia	Urology, Non-gynae Cytology	89371
Dr Holly White	Gynae, Non-gynae Cytology	

## 2.6 Section Leads

### 2.6.1 Operations Service Director – Tissue Sciences

Khadijah Owusu-Ansah [khadijah.owusu-ansah@synnovis.co.uk](mailto:khadijah.owusu-ansah@synnovis.co.uk) Ext: 33042

### 2.6.2 Deputy Operational Service Director - Tissue Sciences

Getnet Demissie [getnet.demissie@synnovis.co.uk](mailto:getnet.demissie@synnovis.co.uk)

### 2.6.3 Operations Manager:

Manel Perera [manel.perera@synnovis.co.uk](mailto:manel.perera@synnovis.co.uk) Ext: 82955

### 2.6.4 Quality Manager

Karen Boniface [karen.boniface@synnovis.co.uk](mailto:karen.boniface@synnovis.co.uk) Ext: 54607

### 2.6.5 Quality Lead:

Cytology: Rana Ebadi-Askari [rana.ebadi-askari@synnovis.co.uk](mailto:rana.ebadi-askari@synnovis.co.uk) Ext: 82904

### 2.6.6 Training Officers

Cytology: James Valiente [james.valiente@synnovis.co.uk](mailto:james.valiente@synnovis.co.uk) ext: 82904

### 2.6.7 Health and Safety Officer

Cytology: Lina Tasama [lina.tasama@synnovis.co.uk](mailto:lina.tasama@synnovis.co.uk) Ext: 82904

## 2.7 Complaints

Complaints may be made directly to the department, via PALS or via Synnovis Customer Support. Complaints are handled according to the Synnovis Complaints Policy and Procedure located at <http://www.synnovis.co.uk/customer-service>.

## 2.8 Protection of patient information

All patient information is handled under the terms of the Data Protection Act 2018. All personal information received by Synnovis is dealt with according to the Synnovis Privacy, Data Protection & Cookie Policy which is available at <http://www.synnovis.co.uk/privacy-policy>.

### 3. NON GYNAECOLOGICAL CYTOLOGY

The staff in the laboratory are available to advise on any aspect of sample collection.

#### 3.1 Serous Fluids, CSF and all other drained fluids

**Synonyms:** Serous fluids (Pleural, Pericardial, Ascitic and Peritoneal fluids); Urine, Bronchial Washings, Bronchial alveolar lavage, Sputum and Cyst aspirates.

**Turnaround Time:** **Routine** -The turnaround time for non-gynae reporting is between 7 to 10 working days but this will vary depending on the specimen type and if additional clinical information or ancillary tests are required e.g. immunocytochemistry, flow cytometry, FISH or molecular studies.

FNA specimens received in the laboratory will be reported within 5 working days.

**Urgent** - Specimens marked as 'urgent' will be reported within 24 hours after receipt by the laboratory. However, this may only be a provisional report pending further ancillary tests. **It is recommended that the requesting clinician discusses such specimens in advance with the cytopathologist. Please ensure that appropriate contact details are documented on the request in Epic (internal senders i.e. within Guy's & St Thomas' Hospital), or the request form (external i.e. G.P.) requests.**

#### Patient Preparation/Consent:

**Consent must be gained before any procedure can commence. This is the responsibility of the patient's clinician/consultant to complete.**

The patient will also need to consent to their medical/clinical history being disclosed for their onward care.

#### Specimen collection:

All fresh samples must be sent to the laboratory as soon as possible. (2nd floor, North Wing, STH). If there is a delay between collection and transport, the sample should be kept in the fridge at 4°C as cells will deteriorate rapidly at room temperature. Specimen containers may be ordered via GP Supplies, CSR department (ext 81174).

#### Note :

**General practitioners request for urine and sputum like specimen must be accompanied by the completed paper request form.**

Paper reports are only printed and sent out daily, addressed to the General practitioners who requested the test.

### 5.1.1 Bronchial Washings and Bronchoalveolar lavage:

Bronchial washings and bronchial alveolar lavage samples should be collected in Preservcyt;

If any additional tests such as fat laden macrophages or differential cell count are required, about 2.5mL of the sample should also be sent.

#### Sample Requirement:

##### Volume:

For most cytological assessments, a full universal container is adequate. There is no need to send large volumes of the sample to the laboratory.

Bronchial samples in Preservcyt solution should not exceed the mark on the side of the vial.

##### Specimen Container:

All neat fluids should be placed in a standard universal container and sent unfixated to the lab. If large amounts of fluid are present then mix the whole specimen and submit a suitable quantity of a representative sample in a sterile universal container to the lab. Exudates often tend to clot and cells are trapped within this. If a clot is noticed in a fluid, this must also be sent along with the fluid.



(a) Preservcyt (b) Sterile Universal Container

#### Internal Requests (i.e. GSTT):

A request must be made in Epic for every sample that is being sent to the laboratory, accurately with all patient sender and clinical details. The specimen type e.g. 'Pericardial Fluid' must also be recorded. (if Epic is unavailable the Synnovis Histopathology/Cytology downtime paper request may be used). When requesting via Epic, ensure that the Epic label is attached to the specimen container.

**External Requests (i.e. GP Practices):**

All samples must be accompanied by a request form that is completed legibly and accurately with all patient, sender and clinical details. The specimen type e.g. 'Pericardial Fluid' must also be recorded. Synnovis forms should be used.

**Specimen Acceptance:**

Each specimen pot and request must have at least 3 of the following Identifiers and there should be no discrepancy between the form and specimen pot.

- Full name of patient
- Hospital No
- Date of birth
- Type of sample
- Date & time of collection

**Specimen Handling:**

The labelled sample container must be placed in a plastic 'biohazard' bag. If there is a request form, then the request form must be placed in a plastic 'biohazard' bag ensuring that the form and sample are in separate sections of the bag. This will prevent contamination of the request form if the sample container leaks.

**Store at 2-5°C until the sample is prepared.**

**Interferences:**

- Failure to refrigerate sample may result in poorly preserved specimen.
- Cells that are contained in heavily blood-stained fluids may degenerate very quickly.
- Incorrectly completed requests, incorrectly labelled samples (or incomplete request forms, when used) will delay the processing of the sample and impact on patient management, however the department endeavours to process all samples if possible.

### **Specimen Transport:**

Specimens should be transported as soon as possible after collection to:

Synnovis Central Specimen Reception  
4<sup>th</sup> Floor Southwark Wing  
Guy's Hospital  
02071887188 ext. 81169

Or

Synnovis Central Specimen Reception  
5<sup>th</sup> Floor, North Wing  
St. Thomas' Hospital  
02071887188 ext. 81167

### **Results:**

Non-gynae results are available on Epic and in the time frames as stated above

Where required for external users, PDF reports are created and sent out daily via secure email, addressed to the consultant or clinical team who requested the test.

**To discuss a cytology report with a consultant cytopathologist, contact the department between 9.00 and 5.00 pm on 020718 82915 / 89189**

### **Laboratory Locations:**

Cytopathology Department  
2<sup>nd</sup> Floor, North Wing  
St. Thomas' Hospital

Tel: 02071887188 ext 82904

## 3.2 Brushings

**Synonyms:** Bronchial brushings, Biliary Brushings and any material obtained by brushing.

**Turnaround Time:** **Routine** -The turnaround time for non-gynae reporting is between 7 to 10 working days but this will vary depending on the specimen type and if additional clinical information or ancillary tests are required e.g. immunocytochemistry, flow cytometry, FISH or molecular studies.

FNA specimens received in the laboratory will be reported within 5 working days.

**Urgent** - Specimens marked as 'urgent' will be reported within 24 hours after receipt by the laboratory. However, this may only be a provisional report pending further ancillary tests. **It is recommended that the requesting clinician discusses such specimens in advance with the cytopathologist. Ensure that appropriate contact details are documented in the request on Epic or where required on the request form.**

### Patient Preparation/Consent:

**Consent must be gained before any procedure can commence. This is the responsibility of the patient's clinician/consultant to complete.**

The patient will also need to consent to their medical/clinical history being disclosed for their onward care.

### Specimen collection:

#### 5.2.1 Bronchial Brushing:

Bronchial brushing in PreservCyt: Rinse the brush in PreservCyt and send the sample to the laboratory.

Fixed slides: It is not necessary to send fixed slides if you have all the material collected in the PreservCyt solution.

If sending a fixed slide: Material is spread along the length of the slide and immediately wet fixed using an alcohol spray fixative to prevent air drying.

The brush and fixed slides (in a plastic slide mailer) should be sent to the laboratory. Specimen containers (and request forms) may be ordered via GP Supplies, CSR department (ext 81174).

**5.2.1 Biliary brushing and any other materials obtained by brushing:**

**Brushings in cytolyt:** Rinse the brush in cytolyt and send the sample to the laboratory.

**Fixed slides:** It is not necessary to send fixed slides if you have all the material collected in the cytolyt solution.

If sending a fixed slide: Material is spread along the length of the slide and immediately wet fixed using an alcohol spray fixative to prevent air drying.

The brushings (in cytolyt) and fixed slides (in a plastic slide mailer) should be sent to the laboratory. **Sample Requirement:**

**Specimen**

**The Slide** must be placed in a plastic slide mailer

**Bronchial brushings** should be rinsed in a Preservcyt pot

**Biliary brushings** and any other material obtained by brushing should be rinsed in a sterile universal pot containing cytolyt contained in a sterile universal container



(a) Preservcyt (b) Sterile Universal Container (c) Microscope glass slide

**Request Form:**

A request must be made in Epic for every sample that is being sent to the laboratory, completed accurately with all patient, sender and clinical details. The specimen type e.g. 'Bronchial Brushing' must also be recorded. Histology/Cytology Epic downtime request forms must be used if Epic is unavailable. When requesting via downtime forms, ensure that the Epic label is attached to the specimen container.

### **Specimen Acceptance:**

Each specimen pot, slide and request form must have at least 3 of the following Identifiers and there should be no discrepancy between the form and specimen pot/slides.

- Full name of patient
- Hospital No
- Date of birth
- Type of sample
- Date & time of collection

### **Specimen Handling:**

The sample and slide (in a mailer) must be placed in a plastic 'biohazard' bag to contain any leaking sample and prevent contamination of the sample in transit to the laboratory.

**Laboratory handling: Store at 2-5°C until the sample is prepared.**

### **Interferences:**

- Failure to refrigerate sample may result in poorly preserved specimen.
- Cells that are contained in heavily blood-stained fluids may degenerate very quickly.
- Incorrectly labelled samples or incomplete requests in Epic will delay the processing of the sample and impact on patient management, however the department endeavours to process all samples if possible.

### **Specimen Transport**

Specimens should be transported as soon as possible after collection to:

Synnovis Central Specimen Reception  
4<sup>th</sup> Floor Southwark Wing  
Guy's Hospital  
02071887188 ext. 81169

Or

Synnovis Central Specimen Reception  
5<sup>th</sup> Floor, North Wing  
St. Thomas' Hospital  
02071887188 ext. 81167

## Results

Non-gynae results are available on the Epic and in the time frames as stated above

**To discuss a cytology report with a consultant cytopathologist, contact the department between 9.00 and 5.00 pm on 020718 82915 / 89189**

## Laboratory Locations

Cytopathology Department  
2<sup>nd</sup> Floor, North Wing  
St. Thomas' Hospital

Tel: 02071887188 ext 82904

Cytopathology Department  
2<sup>nd</sup> Floor, Bessemer Wing  
Kings College Hospital

Tel: 02032999000 ext 34035

## 3.3 Fine Needle Aspiration

**Synonyms:** FNA /any material obtained by aspiration

**Turnaround Time:** **Routine-**The turnaround time for non-gynae reporting is between 7 to 10 working days but this will vary depending on the specimen type and if additional clinical information or ancillary tests are required e.g. immunocytochemistry, flow cytometry, FISH or molecular studies.

FNA specimens received in the laboratory will be reported within 5 working days.

**Urgent-** Specimens marked as 'urgent' will be reported within 24 hours after receipt by the laboratory. However, this may only be a provisional report pending further ancillary tests. **It is recommended that the requesting clinician discusses such specimens in advance with the cytopathologist. Ensure that appropriate contact details are documented in Epic.**

## Patient Preparation/Consent:

**Consent must be gained before any procedure can commence. This is the responsibility of the patient's clinician/consultant to complete.**

The patient will also need to consent to their medical/clinical history being disclosed for their onward care.

### Specimen collection:

Material is spread along the length of one slide using another slide. A second slide is prepared in a similar manner to the first. One of the slides is immediately wet fixed using an alcohol spray fixative to prevent air drying, while the other is rapidly air dried. The used needle is then rinsed (washings) in a pot containing saline preferably balanced salt solution. The Washings and slides (in a plastic slide mailer) should be sent to the laboratory. The test must be requested in Epic.

### Sample Requirement:

#### Specimen

The Slide must be placed in a plastic slide mailer while the washings must be collected in sample sterile universal pot containing saline or balanced salt solution.



(a) *Sterile Universal Container*

(b) *Microscope glass slide*

### Request Form:

A request must be made in Epic for every sample that is being sent to the laboratory, which is completed accurately with all patient, sender and clinical details. The specimen type e.g. 'FNA' must also be recorded. (if Epic is unavailable, the Synnovis Histopathology/Cytology Epic Downtime paper request forms may be used). When requesting via Epic, ensure that the Epic label is attached to the specimen container.

### Specimen Acceptance

Each specimen pot, slide and Epic request must have at least 3 of the following Identifiers and there should be no discrepancy between the form and specimen pot.

- Full name of patient
- Hospital No
- Date of birth
- Type of sample
- Date & time of collection

## Specimen Handling

The Washings, slides (in a mailer) and the request form must be placed in a plastic 'biohazard' bag ensuring that the form and sample are in separate sections of the bag. This will prevent contamination of the request form if the sample container leaks.

**Store at 2-5°C until the sample is prepared.**

## Interferences

- Failure to refrigerate sample may result in poorly preserved specimen.
- Failure to rapidly fix slides may result in poor cellular presentation and difficulty in interpretation.
- Cells that are contained in heavily blood-stained fluids may degenerate very quickly.
- Incorrectly labelled samples or incomplete requests in Epic will delay the processing of the sample and impact on patient management, however the department endeavours to process all samples if possible.

## Specimen Transport

Specimens should be transported as soon as possible after collection to:

Synnovis Central Specimen Reception  
4<sup>th</sup> Floor Southwark Wing  
Guy's Hospital  
02071887188 ext. 81169

Or

Synnovis Central Specimen Reception  
5<sup>th</sup> Floor, North Wing  
St. Thomas' Hospital  
02071887188 ext. 81167

## Results

Non-gynae results are available in Epic and in the time frames as stated above

**To discuss a cytology report with a consultant cytopathologist, contact the department between 9.00 and 5.00 pm on 020718 82915 / 89189**

## Laboratory Locations

Cytopathology Department  
2<sup>nd</sup> Floor, North Wing  
St. Thomas' Hospital

Tel: 02071887188 ext 82904

### 3.3.1 EUS FNA – Fine Needle Biopsies

All Fine Needle Biopsies of anything other than lymph node; suspected lymphoma or infection must go directly into formalin – NOT saline. All Fine Needle Biopsies not going directly into formalin must be sent to the laboratory immediately to avoid deterioration.

### 3.4 Fine Needle Aspiration (FNA) clinics

Fine needle aspiration is a reliable method of determining the nature of lumps and bumps. This involves aspirating a lump using a fine needle and then testing the material removed.

In addition to the Palpable FNA Clinics run by Consultant Cytopathologists, there are also One Stop clinics where a diagnosis/provisional diagnosis is determined while the patient is in clinic. This allows material to be collected in one setting for ancillary testing (microbiology, cell blocks, flow cytometry, cytogenetics and molecular diagnostics). A joint one stop clinic (Ultrasound guided FNA) is also run between pathology and dental radiology for head & neck cancer and thyroid patients.

**Guy's and St Thomas's FNA clinics:** There are several FNA clinics per week that are attended by Cytology laboratory staff; these are listed in:

#### **CPC-USER-2 List of Guy's and St Thomas's FNA Clinics supported by Cytology**

In addition to the clinics listed in CPC-USER-2, the following support is also available from the Cytology laboratory at Guy's and St Thomas's:

- **Ward based FNA service:** This is a routine service provided by the cytopathologists with a BMS assistance during working hours (9-5 pm). Please ring FNA appointments (ext 82941) to arrange this.
- **Intra-operative FNA service:** This is a routine service provided by the cytopathologists with BMS assistance during working hours (9-5 pm). Please ring FNA appointments (ext 82941) to arrange this.
- **On-site assessment for image guided FNA:** USG guided FNA is provided by radiology and clinical departments across both hospital sites. These are routinely supported by biomedical scientists (BMS) who assess specimen adequacy during the procedure.
- If a cytopathologist is required for a case, please ring FNA appointments (ext 82941) to arrange this.

### 3.5 Quick guidelines for sample requirements

Sample Type	Sample collection	Container
BAL (not for PCP), Bronchial Washings, sputum and induced sputum	In PreservCyt solution	PreservCyt Vial
BAL, Bronchial Washings, respiratory samples ( <b>for Fat Laden Macrophages or Interstitial Lung Disease, or Differential Cell Count requests</b> )	<ul style="list-style-type: none"> <li>About 2.5mL, Neat sample</li> <li>Remaining sample in PreservCyt solution</li> </ul>	<ul style="list-style-type: none"> <li>30mL sterile universal container</li> <li>PreservCyt Vial</li> </ul>
Bronchial Brushings	Brushings in PreservCyt solution	PreservCyt Vial
Biliary Brushings	Brushings in CytoLyt solution	40mL sterile universal container containing CytoLyt
Other materials obtained by brushing	Brushings in CytoLyt solution	40mL sterile universal container containing CytoLyt
CSF Vitreous fluid	Fresh neat sample	40mL sterile universal container
Cyst aspirates	Fresh neat sample	40mL sterile universal container
FNA	<ul style="list-style-type: none"> <li>Air dried and wet Fixed material on slides</li> <li>Needle washings in normal saline/balanced salt solution</li> <li>Needle washings in formalin (<b>only for some EUS samples</b>)</li> </ul>	<ul style="list-style-type: none"> <li>Plastic slide mailer</li> <li>30mL sterile universal container containing normal saline/balanced salt solution</li> <li>Yellow topped formalin pots</li> </ul>
Urine (Routine)	<ul style="list-style-type: none"> <li>Unfixed</li> <li>Fixed</li> </ul>	<ul style="list-style-type: none"> <li>30mL sterile universal container</li> <li>UroCyt Vial</li> </ul>
Urine (casts, dysmorphic cells)	Fresh neat sample- sent to the lab immediately	30mL sterile universal container
Urine with clinical history haematuria	Fresh Neat sample	30mL sterile universal container
Urine for dysmorphic red blood cells and history of haematuria	Fresh Neat sample	30mL sterile universal container
Synovial fluid	Fresh Neat sample	30mL sterile universal container
Peritoneal Washing/ Peritoneal Dialysis	Fresh Neat sample	30mL sterile universal container

## 4. ANDROLOGY

**Synonyms:** Semen Infertility, Semen Post vasectomy, semen analysis

**Clinical Indication:** Semen analysis is carried out for sub-fertility investigation, retrograde ejaculation and for post vasectomy checks.

**Turnaround Time:** Semen analysis reports should be issued within 10 working days

### 6.1 Instructions to GP

#### 4.1.1 Semen analysis (SEMA) kit orders:

- For more kits please continue using the online ordering portal
- Details may be found from [customerservices@synnovis.co.uk](mailto:customerservices@synnovis.co.uk) or telephone 0204 513 7300
- Each SEMA kit consists of a request form and a toxicity-tested sample container.
- Please note that the sample **must** be produced into the container from the SEMA kit as they have been toxicity tested. Therefore, samples produced in any other container **will be rejected** (as results would be **invalid**).

#### 4.1.2 Requests and appointments:

- Please email the completed request form to [synnovis.semenanalysis@nhs.net](mailto:synnovis.semenanalysis@nhs.net)
- Thereafter hand the completed form and the sample container to the patient.
- **IMPORTANT:** Semen analysis is by **appointment only and the patient will need to telephone the laboratory for an appointment 48 hours after the form has been emailed.**

#### Patient test results

The semen analysis results are sent via email to the requesting clinician/GP practice. If the clinician has not received the results, email: [synnovis.semenanalysis@nhs.net](mailto:synnovis.semenanalysis@nhs.net)

## 6.2 Patient Preparation

*Note: Information for patients is also given on CPC-FORM-75 Semen Analysis Request Form. This is provided to all patients by the referring GP/clinician*

### **6.2.1 Producing a semen sample:**

*Entire sample must be collected by masturbation into the sample pot (toxicity tested) provided.*

1. The patient should not have intercourse or masturbate for 2-7 days before producing the sample - this helps obtain more accurate results.
2. The hands and genitalia should be clean and clear of any substance such as soap lubricant or normal condoms (see 6.1.3 for exceptional circumstances). The sample must be produced by masturbation (stimulation by hand) and the entire specimen collected in the specimen container provided.

**The sample container must be from the SEMA kit that has been sent to clinician from Synnovis. This has a silver metallic lid with the weight and batch number recorded on a Synnovis label. Any other container will be rejected.**

3. If the patient has opted to produce the sample at home, the specimen should be **handed to the Semen Analysis Clinic staff in person** (Sample delivery location 'A' map-section 6.4) **at the appointment time and within 50 minutes of producing**. The container should be kept warm (close to body temp, e.g. in trouser pocket or in an inside jacket pocket). The following should be recorded on the container:
  - a. Patient name
  - b. Date of birth
  - c. Date & Time of production.

If the patient is unable to deliver his sample within 50 minutes from the time of production, the lab/office staff booking the appointment should be informed. **The option for the patient to produce his sample on-site** in a private room is available (Gassiot house building site 'B' Location in map- section 6.4), but this **must be requested & booked at the time of arranging the appointment.**

4. Patient will be expected to arrive at the clinic on the appointed time. All samples will be checked before acceptance at the lab and therefore an appointment is necessary. **The patient must have an appointment for the day they arrive at the laboratory.**
5. Results should be available within 10 working days of receipt of the sample.
  - a. For external requests (GP): Results are sent by email to the requesting clinician/GP practice.

- b. For Internal requests (e.g. Urology dept): results are accessible through the Trust's electronic patient information system 'Epic'.

Patients must liaise with the referring clinician directly for test results or clinical advice.

See map in section 6.4 below for sample delivery locations: **please do not leave sample at CSR. It must be given to the cytology department in person.**

**\*\*Please be aware that this pathway is not the same for microbiological investigation which is separate\*\***

#### 4.1.3 Exception- using non-toxic condom:

Synnovis laboratory **does not currently provide** these items and so should be requested/sourced through the requesting clinician.

In rare cases due to objections to the WHO recommended production method (e.g. cultural, religious or other grounds), special condoms for fertility investigations may be an alternative under exceptional circumstances, **but** the entire ejaculate will not be available for examination, and the specimen is likely to be contaminated by contact with the skin of the penis and to some extent also vaginal fluid and cells on the outside of the condom.

The lab should be informed that this method of collection has been requested and as the sample will be marked as incomplete, results should be interpreted accordingly.

### **6.2.2 Producing urine sample for retrograde ejaculation investigation**

Two specimen containers (one for urine sample and the other for semen sample) are required when producing samples for a retrograde assessment. The patient should:

**Step 1:** produce an ejaculate (semen) by masturbation into the first specimen container.

**Step 2:** urinate after into a second specimen container.

### **6.2.3 Notes to Patients for Post Vasectomy Semen Analysis**

1. The test must take place after:

- a minimum of 12 weeks after surgery, **and**
- a minimum of 20 ejaculations.

The test results may not be reliable if samples are produced earlier.

2. The referring doctor will provide the patient with clinical advice or special clearance.
3. The sample must be produced according to the above guidelines.
4. Results will be sent by email to the requesting clinician

See map in section 6.4 below for sample delivery locations

### 6.3 Patient Test Results

The laboratory always aims to complete every report and have results issued within the stated turnaround time.

**Please note: patients should not be advised to ring the laboratory for their results as the laboratory cannot issue results directly to the patients.**

**The laboratory is a biomedical science department and does not issue clinical advice to patients or service users. Such advice can only come from a clinician such as the GP or suitably qualified urologist.**

The laboratory will issue semen analysis results directly to the requesting GP or hospital.

If the GP/hospital have not received the results by the stated turnaround time, please email [synnovis.semenanalysis@nhs.net](mailto:synnovis.semenanalysis@nhs.net).

### 6.4 Consideration of Measurement Uncertainty for Andrology results

Laboratory tests carried out in any laboratory can be affected by a variety of factors that may invariably have an influence on the results obtained. All semen analysis results are prone to errors due to variations in measurements. There are various sources of variation in semen analysis. The heterogeneous nature of a semen sample coupled with its dependency on environmental factors make the accurate assessment of semen samples difficult and subjective. Other factors such as temperature, variability in operator, performance of reagents, toxicity of the sample container and other consumables, contribute to some level of uncertainty.

Semen analysis has a qualitative and a quantitative aspect to it with the possibility of every measurement being associated with an error. A quantitative statement of the error is necessary to provide a level of confidence that the results produced by the laboratory are credible and do not lack worth.

The BS EN ISO 15189:2022 standard states that: *The laboratory shall determine measurement uncertainty for each measurement procedure in the examination phase used to report measured quantity values on patients' samples. The laboratory shall define the performance requirements for the measurement uncertainty of each measurement procedure and regularly review estimates of measurement uncertainty.*

As the results from semen analysis can be influenced by a variety of factors with no certainty that the same result will be achieved the next time the test is repeated, it is paramount that the clinicians understand the laboratory results by considering the measurement uncertainty for each parameter measured. This will ensure that the clinician is able to more accurately interpret the results.

The laboratory calculates the uncertainty of each parameter yearly using results obtained from External Quality Assessments (Motility, Morphology and Concentration) with the aim to evaluate error or deviation in a measured value from the target value.

The measurement uncertainty is crucial in understanding and interpreting the results and provides the clinician with the range within which the true value is expected to lie.

The measurement uncertainty calculated for each parameter (*valid January 2024-Dec 2024*)

Fast progressive **±4.9%**

Slow progressive **±3.56%**

Concentration **±4.67 million/mL**

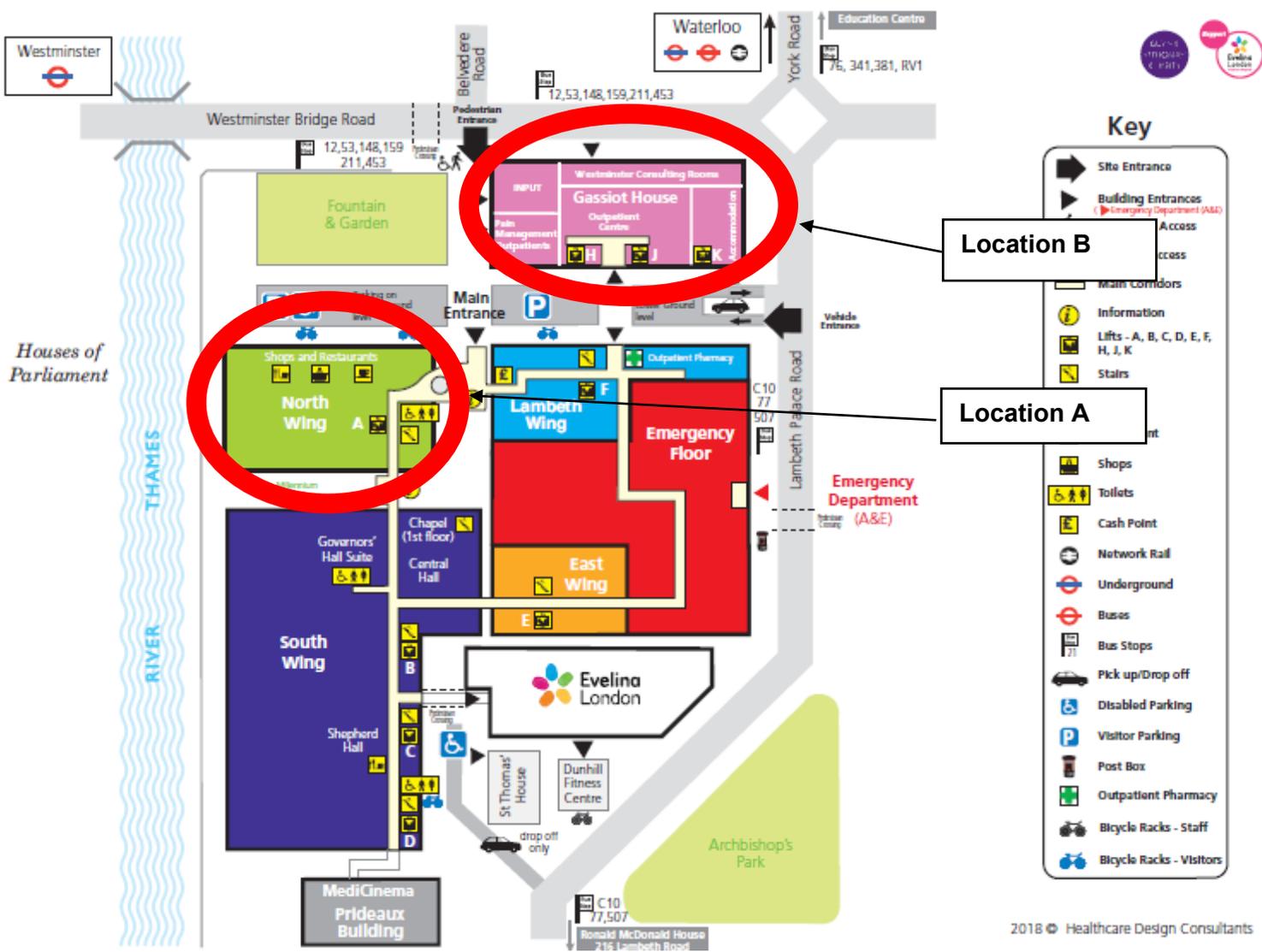
% Normal Morphology **±0.78**

**6.5 Sample production and delivery locations**

**A**  
**Location for sample delivery:**  
  
Semen Analysis Clinic  
Cellular Pathology Department  
2<sup>nd</sup> Floor, North Wing  
St Thomas' Hospital  
Westminster Bridge Road  
London  
SE1 7EH

**B**  
**Location for on-site production:**  
  
Gassiot House  
Outpatients Centre  
Ground Floor, Pink Zone  
St Thomas' Hospital  
Westminster Bridge Road  
London  
SE1 7EH

**6.6 St. Thomas's Hospital site map**



### **Request Form:**

All samples should be accompanied by a request form that is completed legibly and accurately with all patient, sender and clinical details. The nature of investigation e.g. Semen Infertility or Semen Post Vasectomy must also be recorded.

Updated Semen analysis request forms are contained in the kits provided. Please use the latest revision form from the SEMA kits sent. All fields must be completed on the request form.

### **Specimen Acceptance:**

Each specimen pot and request form must have at least 3 of the following Identifiers and there should be no discrepancy between the form and specimen pot.

- Full name of patient
- Date of birth
- Hospital No (if applicable)
- Date & time of collection
- Type of sample
  
- **Specimens left in the reception without an appointment, will be rejected and a communication will be sent to the requesting clinician.**
  
- Sample must not be less than 0.5ml. Samples less than 0.5ml will be rejected
  
- Sample must be in a toxicity-tested Synnovis labelled 60 ml container (metal lid) on which the weight (lab weighed) and batch number is recorded.

### **Specimen Handling:**

Ensure that the sample is kept warm by keeping close to the body (e.g. in pocket) at all times during patients journey to the laboratory.

The sample and the request form should be placed in the small clear plastic sample bag (part of the SEMA kit) provided ensuring that the form and sample are in separate sections of the bag (there is a separate pocket for form in bag). This will prevent contamination of the request form if the sample container leaks.

### **Interferences:**

- Failure to produce sample in toxicity tested sample pot can affect the motility of the sample and the reliability/validity of the results.
- The motility of samples that are over an hour old at the time of arrival at the laboratory, can be affected.

### **Specimen Transport**

- Specimens must be brought into the laboratory by the patient on their appointment day and time.
- Patients will be seen on a one to one basis with one of our collection staff during which time the sample can be accepted for analysis.
- Specimens must not be left in any specimen reception.

### **Results:**

Patients must liaise directly with the referring clinician for test results or clinical advice. The results will be sent directly to the requesting clinician.

Paper reports are printed and sent out daily, addressed to the consultant or clinical team who requested the test.

### **On-site production of Semen sample:**

Gassiot House,  
Outpatient Centre  
Ground Floor  
Pink Zone  
St. Thomas' Hospital

### **Sample Delivery Location:**

Cytopathology Department  
2<sup>nd</sup> Floor, North Wing  
St. Thomas' Hospital

Tel: 02071887188 ext 82904

## **5. References and related information**

1. WHO laboratory manual for the examination and processing of human semen, sixth edition. Geneva: World Health Organization; 2021. Licence: CC BY-NC-SA 3.0 IGO.
2. European Committee for Standardization. Medical Laboratories – Requirements for quality & competence (ISO 15189:2022)