Pathology curriculum
The High Committee of Medical Specialties and the Pathology Scientific Council worked collaboratively and closely to make this curriculum available for trainees’ guidance and support.

Postgraduate medical education worldwide are now governed by sets of academic standards that describe the qualities and abilities of graduates. In addition, there are standards for the training processes, trainers’ selection and assessment systems. Standards ensure transparency and clarify expectations.

The High Committee of Medical Specialties has already defined and published its standards for the general and professional competencies expected from our graduates in different specialties upon successful completion of training. These expectations are clearly reflected in the pathology curriculum.

The curriculum describes knowledge, skills, attitudes and behaviors that trainees will possess upon successful completion of training. In addition, methods of teaching and learning needed to deliver the curriculum are outlined. The curriculum also describes in details, expectations from trainees during their rotations in “The training rules and regulations section”. Methods of assessment and examination regulations are also available in the last section of the curriculum.

All topics covered during practical and theoretical study are outlined. This will help trainees to guide their readings and their choice of learning activities. In addition, all required pathology and autopsy procedures are listed together with expected performance at various stages of training.

The pathology council representatives defined mandatory learning opportunities that must be attended by trainees and the Egyptian Fellowship administration will work closely with the council to ensure proper organization and implementation of these courses.

We hope that all our trainees, trainers and educational supervisors will follow the guides provided in the curriculum and cooperate with The High Committee of Medical Specialties and the Pathology Scientific Council to implement the curriculum in the best ways.

Esmat Ahmed Sheba

General Secretary

The High Committee of Medical Specialties

Ministry of Health and Population
Acknowledgement

The Pathology curriculum has been created through collaboration between the pathology scientific council and the Egyptian fellowships’ curriculum committee. The High Committee of Medical Specialties would like to acknowledge the significant efforts and the substantial contribution of

- **Professor Dr Sohier Mahfouz**, Head of Pathology Department, Cairo University and head of the pathology scientific council
- **Dr Sahar Talaat**, Associate Professor of Pathology, Cairo University and member of the scientific council
- **Dr Samia Gabal**, Associate Professor of Pathology, Cairo University and member of the scientific council

The Committee in charge of curriculum preparation consulted international and national curricula in pathology. The external references for the development of this curriculum are:

1. The Royal College of Pathologists curriculum for histopathology approved by Postgraduate Medical Education and Training Board UK 2007
2. Kasr Alainy School of Medicine Pathology curriculum for postgraduate training
3. Egyptian Fellowship Guidelines for curriculum development issued June 2007
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Introduction

Pathology in Egypt encompasses Surgical/histology Pathology, Autopsy, Cytopathology and the subspecialties of Forensic, Liver, GIT, Pediatric, Gynecological, and Renal Pathology (Cytopathology may also be practiced as a subspecialty).

The award of the Certificate of Fellowship will require evidence of satisfactory completion of training in the core aspects of Pathology, which are outlined in this curriculum. The curriculum complies with the guidelines for Curriculum Development issued by the High Committee of Medical Specialties & PMETB standards for curricula.

The curriculum is integrated with and supported by a logbook; together they will represent a coordinated training package. All examinations and assessments undertaken during and at the end of training will be clearly linked to the content of the curriculum.

Entry requirements

Entry to the Pathology training program in Egypt can be directly following the satisfactory completion of: M.B.B.Ch. with a minimum grade of good in Pathology and successful completion of the pre-registration house officer training period.

Duration of training

The minimum duration in Pathology **training is 4 years** to obtain the fellowship certification.

The Fellowship certificate will be awarded on the recommendation of the Egyptian Fellowship of Pathology Board (EFPB), which will award the trainee with a certificate of completion.

The stages of training are clarified as follows:

- **Stage A**: 1st year training: General pathology- Immunohistochemistry-Technical and laboratory sciences – Autopsy.
- **Stage B**: 2 years Specialty training for Surgical i.e. histopathology, autopsy and cytology.
- **Stage C**: One year. Candidate may choose to carry on their training in the general specialty of pathology or choose a subspecialty training program in any of the following subspecialties: Forensic –Liver – Pediatric – Gynecological - Cytology – Renal, Pediatric & GIT pathology.
**Subspecialty training (elective)**

It is possible for trainees to undertake advanced subspecialty training in Cytopathology, Forensic, Liver, Gynecological, GIT, Renal pathology and Pediatric pathology after satisfactory completion of stages A and 2 years of stage B. Subspecialty training should normally be undertaken during stage C as an elective course of 1 year duration.

The candidate may practice the subspecialty after a minimum of one year training in a recognized subspecialty-training program and satisfactory completion of the subspecialty curriculum exam stage C.

**Rationale statement**

The purpose of the curriculum for fellowship training in Pathology and related subspecialties, is to provide the trainees with comprehensive knowledge and skills that must be gained in order to practice independently and safely. Graduates will be fully prepared to provide high quality level of services at the specialty level.

The curriculum also describes teaching, learning and assessment methods that will be used to ensure that trainees have attained the required competencies. The scientific board has constructed the curriculum based on contents of National and International Pathology postgraduate curricula, Experts in pathology Consensus as well as taking into consideration the standards set by PMETB and the Egyptian Fellowship Curriculum Committee. Using this method of curriculum development has ensured that the curriculum is up to the International accepted standards of practice in Pathology education.

During training, trainees will be able to use the curriculum to monitor their progress towards their learning and training goals. Formal assessments and examinations will be based on curricular intended learning outcomes. The curriculum will also facilitate regular assessment of trainee's progress by their trainers.
The histopathology-training program aims to equip the trainees with:

1. **Appropriate attitudes** in order to be able to work as a specialist/consultant
2. **Good working relationships** with colleagues and the appropriate communication skills required for the practice of histopathology
3. **The knowledge, skills and attitudes** to act in a professional manner at all times
4. **The management skills** required for the running of a histopathology laboratory.
5. **The health and safety regulations**, as applied to the work of a histopathology lab.

This curriculum was developed by the Pathology Scientific Council with input from the Specialty Advisory Committees (SACs) in Surgical Pathology, and other subspecialty disciplines.

One of the external references for development of this curriculum is the current Kasr El Aini School of Medicine Program in Surgical Pathology. Educational supervisors and trainers of that particular program have been involved in the fellowship program development via their representation in the Pathology Scientific Council.

The present curriculum will allow trainees to take control of their own learning and to measure achievement against objectives. It will help in the formulation of a regularly updated education plan in conjunction with an educational supervisor and the local specialty training committee.

The curriculum was agreed on by the scientific council on January 2009.

The following are the proposed guidelines of **minimal requirements according to workload**:

- **Surgical (histo) pathology**: 500 cases per year (2,000) by the end of the specialist training period
- **Autopsy attendance**: 10 per year, and 5 per year of neonatal and adult cases respectively (40 neonatal and 20 adult autopsies by the end of the specialist-training period)
- **Cytopathology**: 300 cases per year i.e. 900 by the end of the training period

Detailed procedures observed by the educational supervisor and judged satisfactory will be recorded in the trainee’s logbook. A correctly maintained and up to date logbook will be used as evidence for satisfactory progress.
Teaching, Training and Learning

The models of learning can be applied to any stage of training in varying degrees.

The majority of the curriculum will be delivered through work-based experiential learning, but the environment within the department should encourage independent self-directed learning and make opportunities for relevant off-the-job education by making provision for attendance at local, National and, where appropriate, International meetings and courses. Independent self-directed learning should be encouraged by providing reference textbooks.

Learning for knowledge, competence, performance and independent action will be achieved by assessment and graded responsibility for reporting, allowing trainees at various stages of training to acquire responsibility for independent reporting. The following teaching/learning methods will be used.

a) Routine work: The most important learning experience will be day-to-day work. Trainees will be closely supervised during training. This close supervision allows for frequent short episodes of teaching.

b) Textbooks: Histopathology departments have reference texts available. These allow trainees to ‘read around’ routine cases that they are reporting.

c) Private study: More systematic reading of textbooks and journals will be required in preparation for examinations.

d) Departmental teaching sessions: These occur on a regular basis in most departments.

e) Training workshops: These are valuable learning opportunities. Trainees should be released from service duties to attend.

f) Condensed courses: These are particularly helpful during preparation for the Parts 1&2 examination. In addition to providing specific teaching, they also allow trainees to identify their position in relation to the curriculum and their peers.

g) Scientific meetings: Trainees should be encouraged to attend and present their work at relevant meetings.

i) Multidisciplinary team meetings (MDTs): Attendance at and contribution to MDTs and clinicopathological conferences offers the opportunity for trainees to develop an understanding of clinical management and appreciate the impact of histopathological diagnosis on patient care. The MDT is also an important arena for the development of interprofessional communication skills.

Curriculum management

It is the responsibility of the Scientific Council of Pathology to quality assures the training program.

It is the responsibility of the educational supervisors and trainers to ensure that the training delivered meets the curriculum requirements. They must undertake regular evaluation of their trainees to ensure structured delivery of training.
Supervision & feedback

Supervision has more than one meaning in histopathology. During the training period, training will be supervised by the departmental consultants on a day-to-day basis under the direction of a designated educational supervisor.

Trainees will work under consultant supervision in the Histopathology, Cytology, Immunohistochemistry and Autopsy services, gradually widening their knowledge and experience in each area so that by the time they have passed the Part 2 examination they are able to work largely independently. The day-to-day supervised training will be supplemented by more formal teaching sessions and organized training courses.

If a histopathology report generated by the trainee states that they have been supervised by a consultant, this is usually taken to mean that the consultant has examined that report with the trainee. It also implies that the consultant accepts not only the microscopic but also any macroscopic description as accurate, even if the supervisor has not personally reviewed the specimen.

However, there is also a more general level of supervision in day-to-day work. A trainee may ask for assistance at any time if a specimen with whom they are dealing is unfamiliar or unusual.

Supervision also extends to working relationships and communication within and beyond the Pathology department. The close relationship between trainers and trainees in histopathology facilitates frequent feedback.
Intended Learning Outcomes

I-Knowledge and Understanding

By the end of training, graduates of the pathology fellowship should be able to:

1. Define and discuss the main disease categories that may affect the body (General pathology) as well as the basic mechanisms underlying these disorders (etiology, pathogenesis & natural history)
2. Determine the outcome & complications of each particular disease.
3. Discuss the principles of laboratory processing within surgical pathology particularly the principles of specimen dissection, macroscopic description and block selection in neoplastic and non-neoplastic disease.
4. Explain methods of preparation and staining techniques for common specimen types as well as be able to identify principles of ‘special’ histochemical and immunohistochemical methods and principles of common molecular pathology techniques and know when to resort to them. The candidate should also be able to list the panels of antibodies for particular diagnostic applications, e.g. mesothelioma.
5. Describe the microscopic features within tissues as well as the major common pathological processes and patterns of disease.
6. Recognize available molecular techniques in Pathology.
7. Explain the principles of evidence-based pathology and display an eagerness to use evidence in the support of patient care and own decisions.
8. Outline the medico-legal aspects of the practice of pathology and autopsy.
9. Describe relevant strategies to ensure confidentiality and be aware of situations when confidentiality might be broken.

II-Professional and Practical skills

10. Diagnose malignancy with confidence in specimens from breast, GI tract, respiratory tract, urinary tract, head and neck, lymphoreticular system, and serous fluids.
11. Develop the ability to solve complex clinical problems by applying sound knowledge of basic science principles.
12. Write an accurate report that gives clinicians the information they need.
13. Recognize histological features of histochemical and immunohistochemical stains in normal and diseased tissues.
15. Possess sufficient manual dexterity to perform dissection safely and accurately, without damage to tissues.
16. Use computers for producing pathology reports and laboratory statistics, to search databases and to access e-mail and internet services.
17. **Use appropriate research evidence** in the support of patient care and own decisions.

18. **Communicate effectively** with other members of the pathology department, other departments and clinical teams.

### III-Attitude

19. **Appreciate the importance** of accuracy and requirement for attention to detail during specimen description and block selection and during surgical reporting and the need for correlation with the clinical situation.

20. **Recognize the increasing need** to combine morphological opinions with data from molecular analysis in diagnostic surgical pathology.

21. **Realize the importance** of ensuring that the request form and specimen identification is accurate and the requirement to identify and resolve any errors or discordance.

22. **Demonstrate an understanding** of the importance of surgical pathology to clinicians and patients [e.g. timeliness and accuracy of reporting].

23. **Recognize cost-benefit** issues when considering the use of additional techniques.

24. **Respect the work** of the technical staff in preparing slides for viewing.

25. **Beware of their own limitations** & be willing to consult supervisors as well as be able to admit mistakes.

26. **Develop the habit** of lifelong learning by building on previous undergraduate and general medical training experience.

27. **Be aware of the requirements** of the Egyptian Ministry of Health and of the Medical syndicate regulations, concerning laboratory ethics and practice of the profession and **Act with honesty, sensitivity and promptly**.

28. **Communicate in an ethical manner** with patients and inform them in an honest way about the diagnosis and prognosis of the disease.

29. **Respect the confidentiality** of the patient as regards the diagnoses of the condition.
Pathology Curriculum Contents

A-Basic Histopathology (General Pathology) St A

Trainees should be familiar with the major disease categories (cell injury-inflammation, infection & repair – circulatory disturbances-growth disturbances-nutritional disorders – environmental pathology including radiation injury) in addition to the pathophysiology and molecular basis of such disorders.

B-Principles of Laboratory Practice St A

1. Basic Health and safety aspects of working in a laboratory and postmortem room environment.
2. Training in the Laboratory aspects of the preparation, cutting and staining of histological sections.
3. The use of departmental protocols for the handling of specimens including identification, documentation, entering patient data on to computer and measures to prevent specimen mix-ups.
4. Laboratory management: Trainees should take an interest in the management issues occurring in their departments and avail themselves of any opportunity to attend departmental meetings where such issues are discussed.
5. Information technology This is a rapidly advancing field and trainees need to become sufficiently familiar with computers to use routinely in pathology reporting, general word processing, preparation of teaching and presentational materials, literature searches, e-mail communications and Internet access as well as e-learning.
6. Quality assurance: Trainees should become familiar with the principles of both technical and professional quality assurance, and be aware of how assurance schemes are applied within the departments to which they are attached. Throughout their training, candidates should show that they have an awareness of their own limitations and know when it is appropriate to seek help.
7. Scientific and medical literature: Trainees should develop the habit of frequent referral to bench books in relation to their diagnostic work. Encountering rarer entities will necessitate wider consultation of the medical literature including the use of electronic searches.
8. Relevant statistical methods & advances in laboratory techniques trainees should have a sound knowledge of statistical methods used in Pathology & have an over all idea on the ancillary diagnostic techniques in histo & cytopathology.
9. Clinical correlations: Trainees should discuss cases with clinicians on a regular basis, attend as many clinico-pathological meetings as possible.
1. **Specimen reception and booking:** Candidates should acquire full familiarity with procedures for transportation, reception and booking in of surgical and biopsy specimens including identification measures taken to prevent any mix-up of specimens.

2. **Macroscopical examination:** Training in the performance of the examination, description and macroscopic sampling of surgical and biopsy specimens (the cut-up). Candidates should widen their experience of handling different types of specimen, including the use of cancer resection protocols so that by the end of the training period they are confident to deal with any type of submitted specimen. They should be able to carry out macroscopic photography and be able to handle both fixed and unfixed material using appropriate safety precautions. They should appreciate the need for and be able to implement alternative processing schedules, such as decalcification, rapid processing, plastic embedding and frozen sections.

   **The trainee should be able to:**
   - **Describe and measure** a gross specimen accurately and successfully ink or otherwise mark resection margins.
   - **Select appropriate blocks** to show lesions in relevant planes of section.
   - **Request special processing** e.g. decalcification, frozen sections, rapid processing, electron microscopy, etc, for appropriate types of specimens.
   - **Handle different types of specimens** appropriately according to the degree of clinical urgency.

3. **Microscopical examination:** Candidates should continue to widen their histological experience to include all the major specimen types submitted as biopsies or surgical resections. This would normally include dermatopathology, gastro-intestinal and liver, gynecological and urological, renal, breast, cardio-respiratory, lymph nodes, endocrine, ENT, oral, orthopaedic and soft tissue tumors together with basic neuropathology. All types of specimen received in a training department should be available to the candidates. It is preferable for trainees to be allowed to examine the slides first and draft their own reports before discussing the cases with the consultant specialist. Slide collections should be used to remedy any gap of experience and rotations to other centers may be needed to cover particular specialist areas. This must include: the use of double or multi headed microscopes so that trainees and supervisors can observe the histological sections simultaneously and discuss the findings.
In Addition, trainees should be able to:

- Accurately describe microscopic appearances and discriminate the important from the unimportant
- Recognize the difference between normal and abnormal tissues
- Recognize common pathological conditions, e.g. common tumors and inflammatory processes
- Use a suitable diagnostic approach to more difficult cases
- Write a clinically useful report on straightforward cases
- Fully check and correct the final typed reports

4. **Frozen sections**: Candidates should take every opportunity to participate in the handling and reporting of specimens submitted for frozen section. They should show that they are aware of the limitations of the technique and in what situations it is appropriate to use it. They should be given the chance to examine the sections with the consultant on a double-headed microscope and become accustomed to being in the "hot-seat" by their own opinion before the verbal report is transmitted to the surgeon.

5. **Special techniques**: Candidates should develop a methodical approach to dealing with histopathological cases. They should demonstrate that they understand the situations in which further sampling or deeper sections are needed and learn the appropriate selection of special stains and immunocytochemical techniques for cases where a diagnosis is not attainable on initial hematoxylin and eosin sections. They should show that they understand in what circumstances more complex techniques such as electron microscopy and molecular biology may be used and should be acquainted with the basic principles of the use of special stains and immunostain.

6. **Writing reports**: Practice in writing histopathology reports including advice on their content and composition. Training will include guidance in the development of a clear style of reporting including appropriate observations and deductions, an appropriate amount of detail, and an indication of the degree of confidence with which any suggested diagnosis is made. Checking and correcting errors in typed reports.
**D– Diagnostic Cytology St B+/−C**

**General:** This cytopathology training should be carried out in the department supervised by a consultant cytopathologist or a histopathologist with a special interest in cytopathology. Introduction of the trainee to the principles of cytology including the methods of collection and preparation of adequate specimens for both cervical screening and Diagnostic Cytopathology should be stressed.

**Specimen collection and handling** The training should include experience in methods of collection of different types of cytological specimen and participation in fine needle aspiration. Trainees should be able to recognize when a specimen is inadequate, understand the possible reasons for such inadequacy and know how these may be overcome.

**Cervical screening:** Trainees should be involved in all aspects of cervical cytology screening, gradually building up their experience so that by the time they take the Part 2 exam (written papers) they can describe the requirements and features of such a program, problems which may occur in the running of a national screening programs including the concepts of specificity and sensitivity, the significance of false positive and false negative: results and ways of auditing the performance of a screening laboratory. They should also know the principles of management of women with abnormal smears and procedures for follow-up.

**Supervised reporting of cervical screening.** This must also include the use of double or multi headed microscopes so that trainee and supervisor can observe the slides simultaneously and discuss the appearances. They should be fully familiar with the day-to-day involvement of the cytopathology laboratory in cervical screening and be able to carry out both primary screening of unmarked slides and assessment of smears which have been marked by a primary screener.

They should be confident in identifying a negative smear and be familiar with the known pitfalls in defining the borderline between benign reactive changes and dyskaryosis in both squamous and glandular cells and in the assessment of grades of squamous dyskaryosis.

The trainee should be able to carry out primary screening of a cervical smear and should be able to recognize:

- A normal cervical smear including cyclical and post-menopausal variations
- Typical appearances of common infections in cervical smears (Candida, Trichomonas, Human papilloma virus and Herpes viruses)
- Typical examples of dyskaryosis of squamous, endocervical cells and malignant endometrial cells
Diagnostic cytopathology: Trainees should become familiar with both direct and cyto spin types of preparation and with both Papanicolaou and Giemsa type staining. They should have access to material from all the common types of samples (serous fluids, urine, sputum, cyst fluids, and endoscopic brushings from sites such as bronchus and esophagus) and to FNAs from a variety of sites including breast, lymph node, thyroid, salivary gland, intrathoracic and intra-abdominal masses.

As far as is possible, trainees should examine slides first and draft their own report before having the findings checked by a consultant supervisor and discussed by examination on a double or multi headed microscope. Any deficiencies in the overall range of material can also be remedied by examinations of slide collections & computer image galleries, but this should not replace the day-to-day involvement in the diagnosis of material coming through the laboratory.

There should be regular correlations between the opinion given on cytological preparations and subsequent histological specimens and an appreciation of the significance of this form of audit. Trainees should also become familiar with the role of FNA in relation to the breast screening program and in the triple assessment of breast lesions and should attend and participate in multidisciplinary cancer and other clinico-pathological conferences at which there is discussion of cytological findings in relation to clinical features and other investigations.

They should also be able to show that they understand:

- The rationale and administration of the cervical screening program, including patient recall mechanisms
- The numerical system of cervical screening reporting and the implications of a report of each grade
- They should be able to know the difference between normal cells in common diagnostic cytology specimens (breast, fine needle aspirations (FNAs), sputum, bronchial brushings, serous effusions, urine) and typical examples of malignancy
- The role of cytology in the breast screening program and the implications of a report of each type of diagnosis
## Lectures of Surgical Pathology, stage A&B

<table>
<thead>
<tr>
<th>Topic</th>
<th>Number of hours</th>
<th>Lectures &amp; IL</th>
<th>Week</th>
<th>Day</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General Pathology stage A</strong></td>
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<tr>
<td>11 day course over 2 wks in first year</td>
<td>34 hrs</td>
<td>22+18hrs</td>
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<td></td>
</tr>
<tr>
<td>1. ORIENTATION</td>
<td>1</td>
<td>1st</td>
<td>1st</td>
<td></td>
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<tr>
<td>2. Technical pointers on sample handling, sending, processing &amp; reporting &amp; quality control of surgical biopsy material</td>
<td>3</td>
<td>2+1</td>
<td>1st</td>
<td>1st</td>
</tr>
<tr>
<td>3. INFLAMMATION &amp; REPAIR</td>
<td>6</td>
<td>4+2</td>
<td>1st</td>
<td>2nd&amp;3rd</td>
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<tr>
<td>4. CELL INJURY, ACCUMULATIONS DEPOSITIONS &amp; DISEASES OF AGEING</td>
<td>3</td>
<td>2+1</td>
<td>1st</td>
<td>4th</td>
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<tr>
<td>5. FLUID &amp; HEMODYNAMIC DISTURBANCES</td>
<td>3</td>
<td>2+1</td>
<td>1st</td>
<td>5th</td>
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<tr>
<td>6. GROWTH DISTURBANCES &amp; NEOPLASIA</td>
<td>6</td>
<td>4+2</td>
<td>2nd</td>
<td>1st&amp;2nd</td>
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<tr>
<td>7. IMMUNE RESPONSE &amp; NON SPECIFIC &amp; VIRAL INFECTION</td>
<td>3</td>
<td>2+1</td>
<td>2nd</td>
<td>3rd</td>
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<tr>
<td>8. SPECIFIC INFECTIONS - GRANULOMA, &amp; MYCOTIC DISEASES</td>
<td>6</td>
<td>4+2</td>
<td>2nd</td>
<td>4th&amp;5th</td>
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<tr>
<td>9. GENETIC, ENVIROMENTAL, NUTRITIONAL DISORDERS &amp; IONIZING RADIATION EFFECTS</td>
<td>3</td>
<td>2</td>
<td>2nd</td>
<td>6th</td>
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<tr>
<td>Topic</td>
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<td><strong>Special Pathology stage B+/C</strong></td>
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<td><strong>Special Pathology stage B+/C</strong></td>
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<tr>
<td>4 weeks course 3 hrs lectures and 2 hrs interactive learning 2\textsuperscript{nd} &amp; 3\textsuperscript{d} years</td>
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<td>1. CARDIOVASCULAR (heart &amp; blood vessels)</td>
<td>3 2+1 1st 1st</td>
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<td>2. RESPIRATORY</td>
<td>6 4+2 1st 2nd &amp; 3rd</td>
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<td>3. GASTROINTESTINAL</td>
<td>6 4+2 1st 4th &amp; 5th</td>
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<td>4. HEPATOBILIARY &amp; PANCREATC</td>
<td>6 4+2 2nd 1st &amp; 2nd</td>
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<td>5. URINARY TRACT &amp; KIDNEY</td>
<td>6 4+2 2nd 3rd &amp; 4th</td>
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<td>6. MALE GENITAL</td>
<td>3 2+1 2nd 5th</td>
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<td>7. FEMALE GENITAL &amp; BREAST</td>
<td>6 4+2 3rd 1st &amp; 2nd</td>
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<td></td>
<td></td>
<td>8. ENDOCRINE</td>
<td>3 2+1 3rd 3rd</td>
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<td>9. SKELETAL SYSTEM, SOFT TISSUE, JOINTS</td>
<td>6 4+1 3rd 4th &amp; 5th</td>
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<td></td>
<td></td>
<td>10. BLOOD &amp; LYMPHORETICULAR</td>
<td>3 2+1 4th 1st</td>
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<td></td>
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<td>11. PERIPHERAL &amp; CENTRAL NERVOUS SYSTEMS</td>
<td>3 2+1 4th 2nd</td>
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<td>12. HEAD &amp; NECK</td>
<td>3 2+1 4th 3rd</td>
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<td>13. DERMATOPATHOLOGY</td>
<td>3 2+1 4th 4th</td>
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<tr>
<td></td>
<td></td>
<td>14. CYTOLOGY</td>
<td>6 4+2 4th 5th &amp; 6th</td>
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</tbody>
</table>
### Practical of Surgical Pathology
(During the whole period of training)

<table>
<thead>
<tr>
<th>System</th>
<th>Gross pathology 4h/week Able to describe and take appropriate blocks from</th>
<th>Microscopy 6h/week Report data for cancer report with staging data</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General</strong></td>
<td>- Correct specimen orientation.</td>
<td>- Know how to set up a microscope correctly.</td>
</tr>
<tr>
<td></td>
<td>- Open fresh specimen.</td>
<td>- Recognize normal histology and normal variations of common tissue types</td>
</tr>
<tr>
<td></td>
<td>- Know when and how to obtain fresh tissue for touch preparation, freezing, etc.</td>
<td>- Knowledge of appropriate histochemical stains for glycogen, fat, mucins and amyloid.</td>
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<tr>
<td></td>
<td>- Inking of excision margins.</td>
<td>- Familiarity with basic immunohistochemical markers for major tissue and tumors types</td>
</tr>
<tr>
<td></td>
<td>- Lymph node anatomy and dissection in cancer specimens.</td>
<td>- Interpretation of a basic panel of immunohistochemical markers on undifferentiated tumors.</td>
</tr>
<tr>
<td><strong>Breast</strong></td>
<td>- Lumpectomy &amp; Mastectomy.</td>
<td>- Diagnose benign &amp; malignant in a biopsy.</td>
</tr>
<tr>
<td></td>
<td>- Wide local excision for macroscopic tumors.</td>
<td>- Report mastectomy or wide local excision specimens.</td>
</tr>
<tr>
<td></td>
<td>- Axillary lymph node dissection.&amp; sentinel LN</td>
<td>- Frozen section reporting</td>
</tr>
<tr>
<td></td>
<td>+/- screening specimen for microcalcification.</td>
<td></td>
</tr>
<tr>
<td><strong>Upper gastrointestinal tract</strong></td>
<td>- Radical esophagectomy.</td>
<td>- Recognize Helicobacter associated gastritis; oesophageal and gastric malignancy on biopsy.</td>
</tr>
<tr>
<td></td>
<td>- Radical gastrectomy.</td>
<td>- Report oesophageal and gastric malignancy resection specimens.</td>
</tr>
<tr>
<td></td>
<td>- Antrectomy.</td>
<td>- Report benign &amp; malignant lesions in endoscopic biopsies</td>
</tr>
<tr>
<td></td>
<td>- Endoscopic biopsy orientation</td>
<td></td>
</tr>
<tr>
<td><strong>Lower gastrointestinal tract</strong></td>
<td>- Colectomy/proctectomy for cancer or inflammatory bowel disease.</td>
<td>- Recognize normal, benign &amp; malignant lesions on biopsy.</td>
</tr>
<tr>
<td></td>
<td>- Appendicectomy.</td>
<td>- Identify presence of IBD and attempt to classify type on biopsy.</td>
</tr>
<tr>
<td></td>
<td>- Polypectomy.</td>
<td>- Distinguish types of polyps.</td>
</tr>
<tr>
<td></td>
<td>- Endoscopic biopsy orientation</td>
<td>- Recognize dysplasia.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Report colorectal carcinoma resection specimens.</td>
</tr>
<tr>
<td>System</td>
<td>Gross pathology 4h/week</td>
<td>Microscopy 6h/week</td>
</tr>
<tr>
<td>------------------------</td>
<td>----------------------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Respiratory</strong></td>
<td>- Open biopsy of lung.</td>
<td>• Recognize presence of cancer in biopsies.</td>
</tr>
<tr>
<td></td>
<td>- Pneumonectomy or lobectomy.</td>
<td>• Identify patterns of interstitial lung disease.</td>
</tr>
<tr>
<td></td>
<td>- Pleural biopsy</td>
<td>• Report lung cancer resection specimens.</td>
</tr>
<tr>
<td></td>
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</tr>
<tr>
<td><strong>Skin</strong></td>
<td>- Accurate gross description of skin lesions.</td>
<td>• Diagnose basic skin cancer types.</td>
</tr>
<tr>
<td></td>
<td>- Appropriate handling of orientated or complex skin specimens.</td>
<td>• Recognize presence of severely atypical features in naevi.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Adequate morphological description of features seen in an inflammatory skin biopsy.</td>
</tr>
<tr>
<td><strong>Lymph node pathology</strong></td>
<td>- Lymph node for neoplastic and non-neoplastic disease.</td>
<td>• Screen lymph node dissections for metastatic tumors.</td>
</tr>
<tr>
<td></td>
<td>- Taking tissue for supplementary techniques (e.g. flow cytometry etc).</td>
<td>• Recognize common reactive node patterns.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Detect high-grade lymphoma in lymph node specimen.</td>
</tr>
<tr>
<td><strong>ENT</strong></td>
<td>- Mucosal biopsy.</td>
<td>• Recognize reactive changes in tonsils;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Nasopharyngeal neoplastic and reactive lesions</td>
</tr>
<tr>
<td><strong>Head and neck</strong></td>
<td>- Tonsillectomy.</td>
<td>• Lymphoma vs reactive</td>
</tr>
<tr>
<td></td>
<td>- Nasal polypectomy.</td>
<td>• Identify main types of salivary gland tumors &amp; lesions</td>
</tr>
<tr>
<td></td>
<td>- Salivary gland tumors.</td>
<td>• Identify nature of polyps</td>
</tr>
<tr>
<td>System</td>
<td>Gross pathology 4h/week Able to describe and take appropriate blocks from</td>
<td>Microscopy 6h/week Report data for cancer report with staging data</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>---------------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| Female genital tract        | • Hysterectomy and/or salpingo-oophorectomy for malignant or benign disease.  
                               • Cervical cone biopsy.  
                               • Endometrial curettage                                                      | • Recognize leiomyomata, secretory and proliferative endometrium, endometrial and cervical carcinoma.  
                               • Report hysterecctomy and/or salpingo-oophorectomy.                        |
| Liver and gall bladder      | • Open biopsy of liver.  
                               • Resections for metastatic tumors.                                             | • Report cholecystectomies.  
                               • Value of special stains.  
                               • Identify presence of cirrhosis, hepatitis or metastatic tumors in needle biopsy. |
| Cardiovascular system       | • Blood vessel orientation  
                               • Valves & endomyocardial biopsies-thrombectomies                             | • Recognize vasculitis  
                               • Report infective endocarditis                                                 |
| Male genital tract          | • Vas deferens.  
                               • Prostate biopsies and chippings.  
                               • Orchidectomy and prostatectomy specimens.  
                               • Testicular biopsies                                                         | • Report normal vas deferens.  
                               • Recognize presence of cancer in prostatic needle biopsies.  
                               • Report orchidectomy.  
                               • Recognize seminoma, embryonal carcinoma.  
                               • Determine male infertility                                                   |
| Endocrine pathology         | • Thyroidectomy.  
                               • Parathyroidectomy.  
                               • Suprarenal biosis                                                          | • Recognize normal thyroid and parathyroid.  
                               • Recognize benign nodular goitre.                                             
                               • Recognize benign & malignant lesions                                         |
| Soft tissue                 | • Soft tissue tumors resection, simple (i.e. lumpectomy).                       | • Recognize morphological features suggestive of main subtypes of tumors     |
| Neuro-pathology             | • Neurosurgical tumors resection and biopsy specimens.  
                               • Stereotactic biopsies  
                               • Nerve biopsies                                                              | • Distinguish intrinsic from metastatic tumors of the brain.  
                               • Recognize benign tumors of the meninges, brain and peripheral nerves.       |
<table>
<thead>
<tr>
<th>System</th>
<th>Gross pathology 4h/week</th>
<th>Microscopy 6h/week</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Able to describe and take appropriate blocks from</td>
<td>Report data for cancer report with staging data</td>
</tr>
<tr>
<td>Renal and urological pathology</td>
<td>• Renal biopsies.</td>
<td>• Assess deviation from normal histology.</td>
</tr>
<tr>
<td></td>
<td>• Bladder biopsies.</td>
<td>• Recognize presence of inflammatory lesions &amp; cancer in bladder biopsies.</td>
</tr>
<tr>
<td></td>
<td>• Nephrectomy specimens.</td>
<td>• Recognize glomerular changes that might indicate glomerulonephritis, e.g. hypercellularity, crescent formation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Report nephrectomy.</td>
</tr>
<tr>
<td>Osteoarticular pathology</td>
<td>• Handling a trephine bone-biopsy.</td>
<td>• Normal bone.</td>
</tr>
<tr>
<td></td>
<td>• Use of calcified versus de-calcified sections.</td>
<td>• Normal synovium.</td>
</tr>
<tr>
<td></td>
<td>• Synovectomy samples</td>
<td>• Benign and malignant lesions</td>
</tr>
<tr>
<td>Cytology</td>
<td>• Specimen handling: fixation &amp; processing</td>
<td>• Recognize inadequate samples</td>
</tr>
<tr>
<td></td>
<td>• FNAC taking</td>
<td>• Differentiate between benign &amp; malignant cells</td>
</tr>
<tr>
<td></td>
<td>• Staining</td>
<td>• Proper reporting</td>
</tr>
</tbody>
</table>
I-Principles of Laboratory Practice
Two weeks during Stage A.

I-Knowledge

By the end of training, trainees should have adequate knowledge and deep understanding of:

1. The Basic Health and safety aspects of working in a laboratory environment.
2. The principles of laboratory processing.
3. The basics of preparation and staining techniques.
4. The available molecular techniques in surgical pathology.
5. The statistical methods used in pathology & the supplementary diagnostic techniques in histo & cytopathology.

<table>
<thead>
<tr>
<th>ILOs</th>
<th>Method of learning</th>
<th>Method of Assessment</th>
<th>Expected year of achievement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laboratory processes</td>
<td>Understand the principles of laboratory processing within surgical pathology and cytopathology.</td>
<td>Lectures &amp; independent study</td>
<td>Stage A</td>
</tr>
<tr>
<td>Special techniques</td>
<td>Understand principles of ‘special’ histochemical methods. Understand principles of common molecular pathology techniques. Understand principles of electron microscopy.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Laboratory management</td>
<td>Understand the basic principles of laboratory management &amp; quality assurance issues.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

II-Skills

The trainees should be able to

6. Perform preparation, cutting and staining of histological sections by routine & different special stains.
7. Recognize histological features of histochemical stains in normal and diseased tissues in addition to being able to interpret data from molecular analyses in the context of the clinical situation and morphological appearances when undertaking diagnostic surgical pathology.
8. Assess the quality of routine & different special stains.
9. Choose and interpret sections stained with different special stains.

10. Detect Pitfalls in processing, sectioning & staining.

11. Use departmental protocols for the handling of specimens including identification, documentation, entering patient data on to computer and measures to prevent specimen mix-ups.

12. Quality assurance: Trainees should become familiar with the principles of both technical quality assurance.

13. Understand the increasing need to combine morphological opinions with data from molecular analyses in diagnostic surgical pathology.

14. Understand cost-benefit issues when considering the use of additional techniques.

<table>
<thead>
<tr>
<th>ILOs</th>
<th>Method of learning</th>
<th>Method of Assessment</th>
<th>Expected year of achievement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lab processes: Trainees should master routine processing of pathological &amp; cytological specimens.</td>
<td>Video Demo Supervised practice in Pathology lab</td>
<td>Log Book OSPE</td>
<td>The candidates are expected to achieve learning outcomes related to laboratory practices by the end of stage A (1st yr).</td>
</tr>
<tr>
<td>Special techniques: Know when to resort to special techniques. Be able to recognize histological features of histochemical stains in normal and diseased tissues.</td>
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</tr>
<tr>
<td>Lab management: Trainees should participate efficiently in management &amp; quality assurance of their institutes’ labs.</td>
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</tbody>
</table>

III-Attitude

15. Respect the work of the technical staff in preparing slides for viewing.

16. Be aware of the requirements of the Egyptian Ministry of Health and regulations of the Medical syndicate, concerning laboratory ethics and practice of the profession and Act with honesty, sensitivity and promptly.

Duration of training

The theoretical basis will be included within the General Pathology curriculum.

Practical work: Trainees should attend regularly for a period of at least one month within their institutes’ Pathology lab.

Evidence of completion:

- The trainees should process at least 10 different tissue cases, passing through all stages of processing, embedding, cutting & H&E staining.

- The trainees should handle at least 10 different cytology cases, passing through all stages of preparation and staining with different stains (Giemsa, PAP, & H&E).

- Special stains: The trainees should stain at least one slide with different common special stains (PAS, Masson trichrome, Congo Red, Giemsa ….
II-Immunohistochemistry

I-Knowledge

Trainees should have adequate knowledge in:
1. The basics of preparation and staining techniques for common specimen types
2. The principles of immunohistochemical methods and the principles of common molecular pathology techniques and when to resort to them.
3. The panels of antibodies for particular diagnostic applications
4. The pitfalls in diagnosis & limitations

II-Skills

Trainees should be able to:
1. Diagnose malignancy with confidence in specimens from breast, GI tract, respiratory tract, urinary tract, head and neck, soft tissue, lymphoreticular system, and serous fluids.
2. Integrate clinical information and histology or other investigations into diagnosis.
3. Write an accurate report that gives clinicians the information they need.
4. Recognize histological features of immuno histo-chemical stains in normal and diseased tissues in addition to being able to interpret this data in the context of the clinical situation and morphological appearances when undertaking diagnostic surgical pathology.
5. Choose the most cost effective & reliable battery necessary for diagnosis
6. Recognize the increasing need to combine morphological opinions with data from molecular analyses in diagnostic surgical pathology
7. Realize cost-benefit issues when considering the use of additional techniques.

Duration of training

At least 1 Month during Stage A : Lectures & interactive learning and hands on laboratory work daily

Time plan

<table>
<thead>
<tr>
<th>Immunohistochemistry</th>
<th>1 month Stage A</th>
<th>Lectures &amp; IL: 4 hour 2Xweek</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Basic principles</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hands on laboratory work daily</td>
</tr>
</tbody>
</table>
III Autopsy

General Guidelines for Teaching Autopsy Module

1. **Documents**: Trainees should become familiar with the Guidelines for Post Mortem Reports and Retention of Tissues at Post Mortem Examination.

2. **Health and safety**: The awareness of potential health hazards is particularly important in post mortem room and both trainers and trainees should always ensure that safe practices are employed.

3. **Supervision**: Training in autopsy practice must always be under the direct supervision of a consultant pathologist & Forensic consultant, who should, be present during the conduct of the autopsy.

4. **Pre-examination case assessment**: Trainees need to have a clear understanding of consent procedures and the rights of relatives in relation to post mortem examinations. Trainees must acquire the ability to perform a pre-examination "risk assessment" of an autopsy case so that they can make an appropriate judgment regarding risks of infection or any other potential hazard or problem.

5. **Numbers and types of autopsies**: Supervised performance and reporting of at least 10 per year, and 5 per year of neonatal and adult cases respectively (40 neonatal, performed and 15 adult, attended autopsies by the end of the training period).

6. **Reports**: Trainees must develop the ability to present their autopsy findings to clinicians in an understandable and helpful manner, both in face-to-face presentations and in clear written reports.

7. The trainee should **maintain their own log of autopsy cases** with a record of the degree to which they were involved in each case and an account of the techniques used and the lessons learned from each case.

8. **In the post mortem room**, the trainee should be able to:
   - Ensure that special dissections are made in appropriate circumstances.
   - Describe the appearances accurately and successfully interpret the findings in the light of the clinical information available.
   - Present the findings to clinicians.
   - Write a final gross and microscopic report with suitable summaries.
### A-Adulthood Autopsy
(Intended learning outcome)

#### I-Knowledge

By the end of the training program, trainees must have adequate knowledge & deep understanding of:

1. The pathological basis of disease and the macroscopic/microscopic pathology of various types of death.
2. The anatomy, macroscopic features of major disease processes and common tissue dissection techniques relevant to autopsy practice.
3. The use of clinical information and the health record in autopsy examination and the limitations on dissemination of autopsy examination information to third parties.
4. The autopsy appearances of various common fatal conditions.
5. The current policies in relation to consent for autopsies and for organ retention, and the circumstances in which consent is not required.
6. The relevant protocols and documentation of departmental working practices, and the practicalities of mortuary practice.
7. The regulatory aspects of health and safety issues.
8. The regional documents relating to the production of autopsy reports.
9. The medico-legal aspects of the practice of pathology and autopsy.
## II-Skills

### Intellectual and professional skills

Trainees should be able to:

10. **Advise** as to when an autopsy is not necessary or when its aims might be fulfilled by a limited examination.

11. **Interrogate** the clinical records and understand the utility and limitations associated with various types of investigation including imaging, microbiology and biochemistry. All these investigation modalities and others can provide useful positive or negative clues in the diagnostic process.

12. **Identify** issues to be addressed by the autopsy examination.

13. **Describe** correctly the different forms of injury, look for external signs of natural and unnatural death and distinguish between genuine lesions and post-mortem artifacts, both macroscopically & microscopically.

14. **Describe** the appearances accurately and succinctly and interpret the findings in the light of the clinical information available.

15. **Obtain** consent for autopsies and for further investigation of whole organs.

16. **Work** in the mortuary in a safe manner.

17. **Write** a final gross and microscopic report with suitable summaries & produce finished reports in a timely way.
III - Attitude

18. **Appreciate** the importance of accuracy and requirement for attention to detail during specimen description and block selection and during surgical reporting and the need for correlation with the clinical situation.

19. **Be aware** of the different religious and cultural guidelines that control autopsy practices & respect cadaver dignity. Identify and address the issues raised by the death.

20. **Be responsible** for identification of the deceased and take ultimate responsibility for this.

21. **Liaise** with clinical colleagues in order to obtain clinical information prior to autopsy. Give explanation to families of the reasons for, and – if requested – details of, the investigations required by an autopsy examination.

22. **Explain** to families when tissue or organs may need to be sent away for expert review and options for funeral, disposal etc.

23. **Take** an active interest in safe working practices for all staff and visitors to the mortuary.

24. **Caution** in reiterating medical histories, especially where sensitive personal information is concerned.

25. **Be aware** of confidentiality issues.

26. **Maintain** an unbiased attitude.
### B-Neonatal Autopsy
(Intended Learning Outcomes)

#### I-Knowledge

By the end of the training program, trainees must have adequate knowledge & deep understanding of:

<table>
<thead>
<tr>
<th>Perinatal autopsy</th>
<th>1. Understand the development of the major systems.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2. Know the changes occurring after death in utero in macerated stillbirths and implications for interpretations of abnormalities identified on macroscopic and histological examination.</td>
</tr>
<tr>
<td></td>
<td>3. Know the major fetal features of the most common chromosomal abnormalities (trisomy 21, 18 and 13) in fetal life.</td>
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<td>4. Be familiar with the most common complications of prematurity (lung disease, necrotizing enterocolitis, CNS complications).</td>
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<tr>
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<td>5. Know the anatomy, macroscopic features of major disease processes in fetal and perinatal life and common tissue dissection techniques relevant to perinatal/pediatric autopsies.</td>
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<tr>
<td></td>
<td>6. Understand the normal growth how it is assessed and of prenatal and postnatal growth restriction and basic pathology of stillbirth.</td>
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<tr>
<td></td>
<td>7. Understand the pathogenesis of malformation syndromes and the identification of those important for genetic counseling.</td>
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<tr>
<td></td>
<td>8. Know the prenatal, perinatal and postnatal infectious diseases.</td>
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<tr>
<td></td>
<td>9. Know the iatrogenic diseases relevant to modern management of pediatric diseases, particularly in the of neonatal intensive care.</td>
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<tr>
<td></td>
<td>10. Be familiar with the pathology of hydrops foetalis &amp; inborn errors of metabolism.</td>
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<tr>
<td></td>
<td>11. Be familiar with the pathology and pathogenesis of intrapartum and early neonatal death of the normally formed infant.</td>
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<tr>
<td></td>
<td>12. Be familiar with the principles of classification of fetal and perinatal deaths.</td>
</tr>
<tr>
<td>Placental autopsy</td>
<td>13. Be aware of the common disorders affecting placenta (inflammatory lesions, infarction and placental insufficiency).</td>
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<tr>
<td></td>
<td>14. Be familiar with the development, normal structure, function and pathology of a singleton and multiple pregnancies (twin placenta).</td>
</tr>
<tr>
<td>Pediatric Autopsy</td>
<td>15. Be familiar with the pathology and other issues (investigations) of sudden unexpected death in infancy, including forensic aspects of perinatal and pediatric pathology (including the investigation of suspected fatal child abuse).</td>
</tr>
<tr>
<td></td>
<td>16. Understand sudden infant deaths.</td>
</tr>
<tr>
<td></td>
<td>17. Understand the pathogenesis of complications relevant to pediatric surgery (including post-operative deaths after cardiac surgery).</td>
</tr>
</tbody>
</table>
## II-Skills

### Intellectual and professional skills

<table>
<thead>
<tr>
<th>Perinatal autopsy</th>
<th>18. Demonstrate manual dexterity sufficient to perform perinatal autopsies, including post-mortem dissection techniques specific to pediatric cases (the examination of the heart and CNS).</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>19. Present and demonstrate the most important macroscopic findings. recognize basic dysmorphic features</td>
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<td>20. Assess gestational age (using published tables and growth charts)</td>
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<tr>
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<td>21. Recognize major features of intrauterine growth restriction.</td>
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<td>22. Appropriately sample internal organs for histological examination.</td>
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<td></td>
<td>23. Recognize signs of maceration and be able to time intrauterine death in stillbirths.</td>
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<td></td>
<td>24. Recognize major features of iatrogenic lesions related to procedures in intensive care unit (e.g. pneumothorax in a premature ventilated baby).</td>
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<tr>
<td></td>
<td>25. Demonstrate manual dexterity and expertise in all specialist techniques used in the performance of the following types of perinatal post mortems: pre-viable fetus, fetus terminated for congenital abnormalities, premature neonate, and stillbirth (premature and full term) and intrapartum death.</td>
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<td>26. Observe carefully and record observations succinctly.</td>
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<tr>
<td></td>
<td>27. Recognize features of intrauterine growth restriction.</td>
</tr>
<tr>
<td></td>
<td>28. Interpret post-mortem histological findings and all supplementary investigations with Recognition of limitations of such investigations.</td>
</tr>
<tr>
<td>Placental autopsy</td>
<td>29. Appropriately examine singleton and twin placenta with sampling for histology.</td>
</tr>
<tr>
<td>Pediatric Autopsy</td>
<td>30. Participate in autopsies on sudden unexpected death in infancy</td>
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</tbody>
</table>
III-Attitude

**Attitudes and behavior**

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Perinatal autopsy</td>
<td>32. Recognize the importance of autopsy findings for genetic counseling, from the parental and clinicians’ point of view.</td>
</tr>
<tr>
<td></td>
<td>33. Realize the importance of accuracy and requirement for attention to detail during dissection, tissue sampling and interpretation of ancillary investigations.</td>
</tr>
<tr>
<td></td>
<td>34. Recognize the importance of accuracy and requirement for attention to detail during dissection, tissue sampling and interpretation of ancillary investigations.</td>
</tr>
<tr>
<td></td>
<td>35. Respect the death and the bereaved and understand the importance and significance of post-mortem examinations to them (including issues of timeliness).</td>
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<tr>
<td></td>
<td>36. Recognize the general principles of law and ethics as applied to perinatal pathology and modern fetal and perinatal medicine.</td>
</tr>
<tr>
<td>Placental autopsy</td>
<td>36. Appreciate the importance of placental examination to clinicians and patients (e.g. timeliness and accuracy of reporting).</td>
</tr>
<tr>
<td>Pediatric autopsy</td>
<td>37. Realize issues related to dual (forensic and pediatric) investigations of suspicious deaths.</td>
</tr>
<tr>
<td></td>
<td>38. Demonstrate awareness of the legal and ethical issues surrounding the cases of non-accidental injury; the limitations of pathological findings in explanation of some of the infant deaths.</td>
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<tr>
<td></td>
<td>39. Be aware of the different religious and cultural issues.</td>
</tr>
</tbody>
</table>

**Adult and Neonatal autopsy courses**

<table>
<thead>
<tr>
<th>Topic</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage A 1st year</td>
<td>2 weeks (Theoretical basis &amp; Data show demonstrations)</td>
</tr>
<tr>
<td>Stage B 2nd year</td>
<td>2 weeks (Attendance of adult &amp; neonatal autopsies + Practicing neonatal autopsies). Concentration on the issues of consent, importance of autopsy &amp; clinicopathological correlation, differentiation between pathological changes &amp; postmortem changes.</td>
</tr>
<tr>
<td>Stage B 3rd year</td>
<td>2 weeks (Attendance of adult &amp; neonatal autopsies + Practicing neonatal autopsies). Concentration on the issues of safety &amp; identification of pathological changes of major disease categories.</td>
</tr>
<tr>
<td>Stage B 4th year</td>
<td>2 weeks (Attendance of adult &amp; neonatal autopsies + Practicing neonatal autopsies). Mastering pathological report writing &amp; communication with clinicians &amp; family.</td>
</tr>
</tbody>
</table>
Suggested Reading Material

- Digital library
- Textbooks and atlases:
  1. Rosai and Ackerman's Surgical Pathology Juan Rosai, Mosby 2004
  2. Sternberg's Diagnostic surgical Pathology 4th edition, Lippincott Williams and Wilkins
  3. Basic Pathology by Kumar, Cotran & Robbins
- Lecture CDs on request
- Periodicals of interest
  1. Histopathology –Blackwell publishing
  2. Human Pathology- Elsevier
  3. Cancer research - American Association for Cancer Research
- Important web sites

Histopathology Web Resources

http://www.pathmax.com/
http://www.medlib.med.utah.edu/WebPath/LABS/LABMENU.html#2
http://www.med.uiuc.edu/PathAtlas/titlePage.html
http://www.medscape.com/pathologyhome
http://www.gwumc.edu/dept/path/2F.HTM
http://path.upmc.edu/cases/index.html
http://tray.dermatology.uiowa.edu/DPT/DPTutor.htm
http://web.med.unsw.edu.au/pathology/Pathmus/pathmus.htm#interactiveImages
http://www.hopkinsbreastcenter.org/library/educational_information/benign.shtml
http://www.thedoctorsdoctor.com/diseases/liposarcoma.htm#histo
http://www.vh.org/adult/provider/radiology/LungTumors/CaseStudies/Patient005/Text/Patient005.html
http://www.path.uiowa.edu/virtualslidebox/
http://www.pathguy.com/
http://www.emedicine.com/oncology/
Cytology Web Resources

http://pathology2.jhu.edu/cyto_tutorial/Index.cfm
http://www.cytopathnet.org/tiki-index.php
http://dpalm.med.uth.tmc.edu/cytopath/cytologyimages.htm
http://www.hoslink.com/cytology.htm
http://www.path.uiowa.edu/cgi-bin-pub/vs/fpx_search.cgi
http://pathology2.jhu.edu/cytopath/welcome.cfm
http://www.bccancer.bc.ca/HPI/Education/CytoSleuthQuiz/default.htm
http://pathed.upstate.edu:8080/cytology/frame.htm
http://pathology2.jhu.edu/cytopath/masterclass/Homepage.htm
http://www.gotpath.com/
http://www.geocities.com/jcprolla/cytopathology_diagnoses.html
http://images.google.com/imgres?imgurl=http://www.images.md/intermedia/imagent/mediaget/getwatermarked/ACNCR01-09-55-001&imgrefurl=http://www.images.md/users/explore_chapter.asp%3FID%3DACNCR01-09-55%26colID%3D3DACNCR01-09%26coltitle%3DBreast%2BBBreast%26start%3D60%26svnum%3D10%26hl%3Den%26lr%3D%26sa%3DN
http://screening.iarc.fr/index.php

Miscellaneous Web Resources with text

http://129.240.38.9/norcyt/index4.html
http://jcp.bmjournals.com/cgi/collection/cytologypathology
http://www.sh.lsuhsc.edu/fammed/OutpatientManual/PapSmear.htm
http://www.gla.ac.uk/faculties/medicine/teaching/MedCALlist.htm
Methods and Regulations of Assessment

The general rules and regulations of assessment approved by the Egyptian fellowship boards and published in the training handbook and the board website applies for the pathology specialty. In addition to the successful completion of the training program, all candidates must successfully pass two written exams, one oral & two practical exams, in order to get the fellowship certificate.

First part Exam

First part Exam: The first part exam is a written exam. Trainees are allowed to sit for the first part exam after one year of training. Each candidate has three chances to pass the exam and one more additional chance may be granted in some special circumstances approved by the Secretary General of the Higher Committee of Medical Specialties.

Pre-requisites for entering the first part exam

Trainees should pass the following courses in order to be eligible for the first part exam

1. Local TOEFL with a score of at least 500
2. Computer courses in word processing, PowerPoint and internet

Second part exam

Second part exam: The second part exam is a written exam. Trainees are allowed to sit for the second part exam after passing successfully the first part and after completion of the training period (four years). In addition, each candidate must submit his logbook for final assessment. The logbook requirements must all be completed and signed by the trainer and educational supervisor.

Each candidate has three chances to pass the exam and one more additional chance may be granted in special approved circumstances.

Third part exam

Practical & Oral Exams (third part): The third part exam is a practical and oral exam. Candidates who pass successfully the second part are allowed to sit for the third part. Again, each candidate has three chances to pass the oral and practical exam and an additional fourth chance may be granted in special approved circumstances.

Holders of The Master degree of pathology are exempted from the first part exam, if no more than five years have passed since they got their degree.
The first part exam aims to test trainee's knowledge in basic and general pathology. The scientific council has made it very clear in the curriculum, which parts must be studied in the first year and these parts will be the subject of assessment in the first part exam.

**The structure of the first part exam:** Part I examination consists of two papers:

- **Paper I (2 hours):** Multiple choice questions with a single best answer format
- **Paper II (2 hours):** short answer questions.

The second part exam aims to test trainees' knowledge and skills in histology & cytopathology as well as the subspecialty if chosen by the candidate. In this exam all, the curriculum will be covered.

Part II examination consists of 2 papers:

- **Paper I (2 hours):** MCQ paper of two hours duration, covering, facts, problem solving and management skills are going to be assessed. You will choose one best answer in each question (If candidate has chosen a subspecialty (elective ) one of the 2 hours of the exam will be MCQ on his chosen elective)
- **Paper II (2 hours):** short essay paper of two hours duration and a clinical scenario is presented and trainees are requested to discuss the case (If candidate has chosen a sub specialty (elective ) one of the 2 hours of the exam will be short questions on his chosen elective)
• **Gross:** the candidate is required to describe six specimens with lesions. In addition, he should mention which areas are to be sampled and how many sections he will be taking. This will be followed by an oral discussion with the examiner. The examiners use an agreed marking system to ensure objectivity and fairness of the exam.

• **Microscopic examination:** Each candidate examines 10 slides (four of them are from his chosen elective) and provide structured comments on them. The examiners use an agreed marking system to ensure objectivity and fairness of the exam.

• **Data show exam,** where candidates watch four cases complete with clinical, gross and microscopic pictures as well as discussion questions relevant to the case. The examiners use an agreed marking system to ensure objectivity and fairness of the exam.

• **VIVA:** The oral exam, which tests the candidates’ ability to diagnose and explores his/her knowledge of making an accurate diagnosis and whether he/she understands the essentials of basic & special pathology. It also assesses communication skills. It is based on a set of topics with opening and supplementary questions. The questions cards are prepared in advance together with the expected ideal answer and allocated marks. This allows a good objective basis for marking.