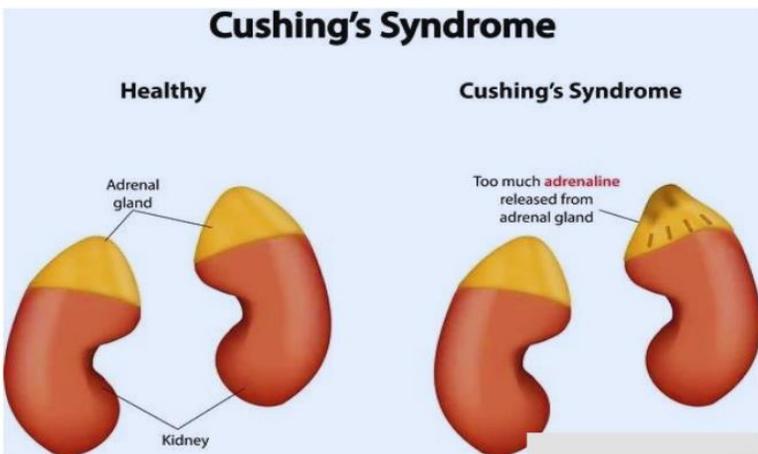


STUDY GUIDE- FIRST YEAR MBBS

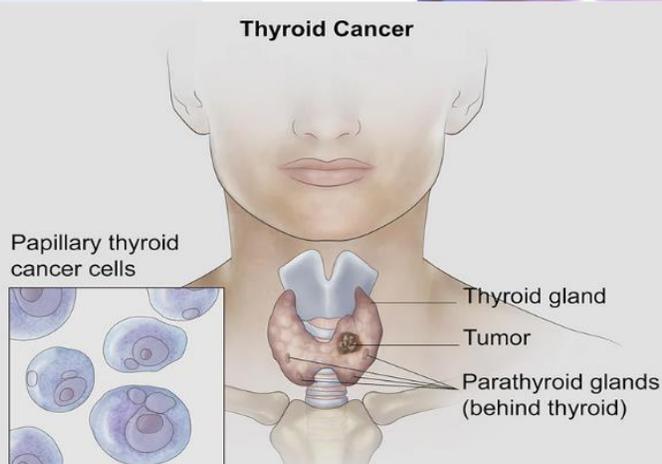
- 4th July- 4th August 2022
- Duration: 4 Weeks

ENDOCRINE MODULE II

Cushing's Syndrome



Thyroid Cancer



STUDY GUIDE FOR ENDOCRINE 2 MODULE

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Module name: **Endocrine System-II**

Year: **Four** Duration: **4 weeks (July-Aug 2022)**

Timetable hours: **Interactive Lectures, Case-Based Learning (CBL), Clinical Rotations, Tutorial, Skills, Practicals, Self-Directed Learning**

MODULE INTEGRATED COMMITTEE

MODULE COORDINATOR:	<ul style="list-style-type: none"> • Dr. Aqiba Sarfraz (Endocrinology)
CO-COORDINATORS:	<ul style="list-style-type: none"> • Dr. M. Aitmaud Uddolah Khan (Pharmacology) • Dr. Sana Shah (DHPE)

DEPARTMENTS' & RESOURCE PERSONS' FACILITATING LEARNING

BASIC HEALTH SCIENCES	CLINICAL AND ANCILLARY DEPARTMENTS
COMMUNITY MEDICINE <ul style="list-style-type: none"> • Dr. Saima Zainab 	ENDOCRINOLOGY <ul style="list-style-type: none"> • Dr. Aqiba Sarfraz
PATHOLOGY <ul style="list-style-type: none"> • Professor Naveen Faridi 	NEUROSURGERY <ul style="list-style-type: none"> • Dr. Aamir Saghir
PHARMACOLOGY <ul style="list-style-type: none"> • Professor Tabassum Zehra 	PEDIATRICS <ul style="list-style-type: none"> • Professor Mehnaz Atiq Ahmed
PHYSIOLOGY <ul style="list-style-type: none"> • Professor Syed Hafeezul Hassan 	
DEPARTMENT of HEALTH PROFESSIONS EDUCATION	
<ul style="list-style-type: none"> • Professor Nighat Huda • Professor Sobia Ali • Dr. Afifa Tabassum • Dr. Sana Shah 	
LNH&MC MANAGEMENT	
<ul style="list-style-type: none"> • Professor K.U. Makki, Principal LNH&MC • Dr. Shaheena Akbani, Director A.A & R.T LNH&MC 	
STUDY GUIDE COMPILED BY:	
Faiza Ambreen, Department of Health Professions Education	

INTRODUCTION

WHAT IS A STUDY GUIDE?

It is an aid to:

- Inform students how student learning program of the module has been organized
- Help students organize and manage their studies throughout the module
- Guide students on assessment methods, rules and regulations

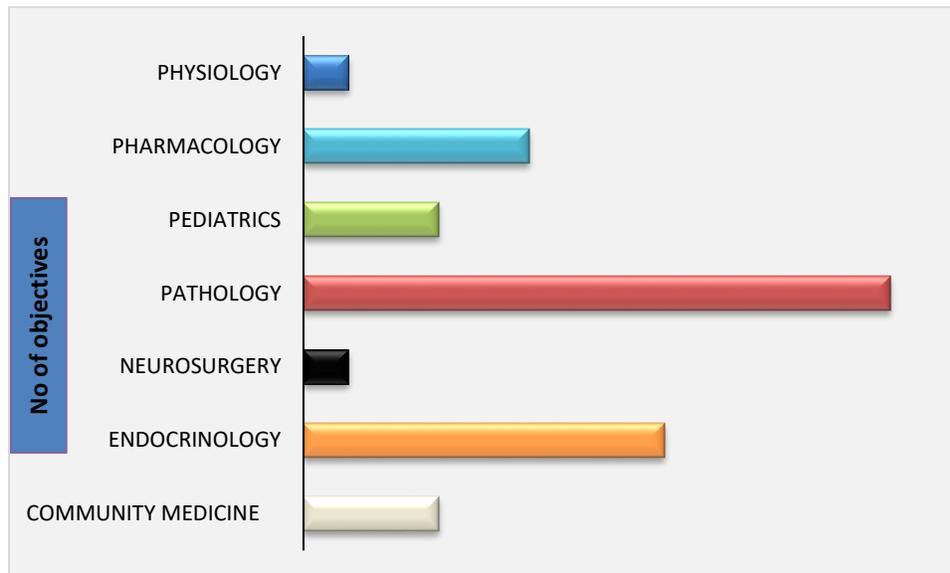
THE STUDY GUIDE:

- Communicates information on organization and management of the module. This will help the student to contact the right person in case of any difficulty.
- Defines the objectives which are expected to be achieved at the end of the module.
- Identifies the learning strategies such as lectures, small group teachings, clinical skills, demonstration, tutorial and case based learning that will be implemented to achieve the module objectives.
- Provides a list of learning resources such as books, computer assisted learning programs, web- links, journals, for students to consult in order to maximize their learning.
- Highlights information on the contribution of continuous on the student's overall performance.
- Includes information on the assessment methods that will be held to determine every student's achievement of objectives.
- Focuses on information pertaining to examination policy, rules and regulations.

INTEGRATED CURRICULUM comprises system-based modules such as Eye/ENT, Orthopedics, Dermatology, Genetics and Reproductive System-II which links basic science knowledge to clinical problems. Integrated teaching means that subjects are presented as a meaningful whole. Students will be able to have better understanding of basic sciences when they repeatedly learn in relation to clinical examples.

LEARNING EXPERIENCES: Case based integrated discussions, Task oriented learning followed by task presentation, skills acquisition in skills lab, computer-based assignments, learning experiences in clinics, wards.

INTEGRATING DISCIPLINES OF ENDOCRINE SYSTEM II MODULE



LEARNING METHODOLOGIES

The following teaching/learning methods are used to promote better understanding:

- Interactive Lectures
- Small Group Discussion
- Case- Based Learning (CBL)
- Clinical Experiences
 - Clinical Rotations
- Practicals
- Skills session
- Self-Directed Learning

INTERACTIVE LECTURES: In large group, the lecturer introduces a topic or common clinical conditions and explains the underlying phenomena through questions, pictures, videos of patients' interviews, exercises, etc. Students are actively involved in the learning process.

SMALL GROUP SESSION: This format helps students to clarify concepts, acquire skills or desired attitudes. Sessions are structured with the help of specific exercises such as patient case, interviews or discussion topics. Students exchange opinions and apply knowledge gained from lectures, tutorials and self-study. The facilitator role is to ask probing questions, summarize, or rephrase to help clarify concepts.

CASE-BASED LEARNING (CBL): A small group discussion format where learning is focused around a series of questions based on a clinical scenario. Students' discuss and answer the questions applying relevant knowledge gained previously in clinical and basic health sciences during the module and construct new knowledge. The CBD will be provided by the concerned department.

CLINICAL LEARNING EXPERIENCES: In small groups, students observe patients with signs and symptoms in hospital wards, clinics and outreach centers. This helps students to relate knowledge of basic and clinical sciences of the module and prepare for future practice.

- **CLINICAL ROTATIONS:** In small groups, students rotate in different wards like Medicine, Pediatrics, Surgery, Obs & Gyne, ENT, Eye, Family Medicine clinics, outreach centers & Community Medicine experiences. Here students observe patients, take histories and perform supervised clinical examinations in outpatient and inpatient settings. They also get an opportunity to observe medical personnel working as a team. These rotations help students relate basic medical and clinical knowledge in diverse clinical areas.

PRACTICAL: Basic science practicals related to pharmacology, microbiology, forensic medicine, and community medicine have been schedule for student learning.

SKILLS SESSION: Skills relevant to respective module are observed and practiced where applicable in simulated-learning environment such as skills laboratory.

SELF-DIRECTED LEARNING: Students' assume responsibilities of their own learning through individual study, sharing and discussing with peers, seeking information from Learning Resource Center, teachers and resource persons within and outside the college. Students can utilize the time within the college scheduled hours of self-study.

MODULE 4: ENDOCRINE 2**INTRODUCTION**

The endocrine system is made up of glands that produce and secrete hormones, chemical substances produced in the body that regulate the activity of cells or organs. These hormones regulate the body's growth, metabolism (the physical and chemical process of the body) and sexual development and function. The hormones are released into the bloodstream and may affect one or several organs throughout the body. The major glands of the endocrine system are the hypothalamus, pituitary, thyroid, parathyroid, adrenals, pineal body and the reproductive organs (ovaries and testes)

MODULE OBJECTIVES AND STRATEGIES

By the end of Endocrine 2 module students should be able to:

COMMUNITY MEDICINE

TOPICS & OBJECTIVES	LEARNING STRATEGIES
1. Diabetes Mellitus (DM) & its prevention	Tutorial
· Describe Diabetes mellitus	
· Explain the risk factors and complications of DM	
· Discuss preventive measures of Diabetes Mellitus	Interactive Lecture
2. Iodine deficiency disorders & their prevention	
· Describe iodine deficiency	
· Explain the effects of iodine deficiency	
· Discuss the preventive measures of iodine deficiency	Tutorial
· Explain the fortification of iodine in food	
3. Obesity & its prevention	
· Describe Obesity	
· Discuss the epidemiology of Obesity	Tutorial
· Enumerate the different methods to measure Obesity	
· Explain control measures of Obesity	

ENDOCRINOLOGY

TOPICS & OBJECTIVES	LEARNING STRATEGIES
1. Hypopituitarism	Interactive Lecture/ Tutorial
· Discuss etiology, pathophysiology, risk factors and clinical features	
· List the differential diagnoses.	
· Interpret the relevant investigations.	
· Discuss the plan of management for the condition	Interactive Lecture
2. Hyperpituitarism and Acromegaly	
· Discuss etiology, pathophysiology, risk factors and clinical features	
· List the differential diagnoses.	
· Interpret the relevant investigations.	
· Discuss the plan of management for the condition	
3. Hyperthyroidism	
· Discuss etiology, pathophysiology, risk factors and clinical features	
· List the differential diagnoses.	Interactive Lecture
· Interpret the relevant investigations.	
· Discuss the plan of management for the condition	
· Explain the complications of the condition	

4. Hypothyroidism	
· Discuss etiology, pathophysiology, risk factors and clinical features	
· List the differential diagnoses.	
· Interpret the relevant investigations.	
· Discuss the plan of management for the condition	
· Explain the complications of the condition	
5. Thyroid Disorders	
· Discuss in detail the classification and clinical presentation of benign and malignant goiters	
· Suggest the diagnostic modalities for these conditions	
· Enumerate the treatment options for goiter	
· Propose a management plan for goiter and its complications	
6. Cushing's Syndrome	
· Discuss etiology, pathophysiology, risk factors and clinical features	
· List the differential diagnoses.	
· Interpret the relevant investigations.	
· Discuss the plan of management for the condition	
· Explain the complications of the condition	
7. Addison's disease	
· Discuss etiology, pathophysiology, risk factors and clinical features	
· List the differential diagnoses.	
· Interpret the relevant investigations.	
· Discuss the plan of management for the condition	
· Explain the complications of the condition	
8. Diabetes Mellitus	
· Discuss etiology, pathophysiology, risk factors and clinical features	
· List the differential diagnoses.	
· Interpret the relevant investigations.	
· Discuss the plan of management for the condition	
9. Grave's Disease	
· Discuss the structure and functions of thyroid gland	
· Recognize the mechanism of action of thyroid Hormones and regulation	
· Relate the clinical picture with the presentation of such clinical condition.	
· Identify the anatomical structures of the endocrine gland in front of the neck	
· Discuss the synthesis of T3 T4	
· Interpret thyroid function tests.	
· Manage the patient of thyroid dysfunctions.	Case-Based Learning

NEUROSURGERY

TOPICS & OBJECTIVES	LEARNING STRATEGIES
Surgical Management of Pituitary Tumors	Interactive Lecture
· Describe indication of surgery and different surgical techniques	
· Discuss Pre & post management of pituitary surgery	
· Describe complication related to pituitary surgery	

PATHOLOGY

TOPICS & OBJECTIVES	LEARNING STRATEGIES
1. Overview of pituitary pathology	Interactive Lecture
· Discuss the pituitary gland function and hormone secretion	
· Discuss the hypothalamus pituitary axis	
· Discuss the clinical manifestations of Pituitary diseases	
· Discuss the etiology, clinical manifestations of hypopituitarism	
· Discuss the posterior pituitary syndrome including Diabetes Insipidus & SIADH	Tutorial
2. Tumors of Pituitary	
· Classify anterior pituitary tumors.	
· Discuss etiology, genetic alterations, morphology, and clinical manifestations of different types of adenomas	Interactive Lecture
· Discuss Hypothalamic suprasellar tumors	
3. Hyperthyroidism, Graves' disease & Goiters	
· Define hyperthyroidism & thyrotoxicosis	
· Discuss important causes of thyrotoxicosis	
· Classify disorders associated with thyrotoxicosis	
· Discuss clinical features and lab diagnosis of thyrotoxicosis	
· Define Graves' disease	
· Discuss the pathogenesis, morphology and clinical course of Graves disease	
· Define Goiters	
· Classify Goiters	
· Discuss the etiology, pathogenesis and clinical aspects of diffuse and multinodular goiters	
4. Hypothyroidism & Thyroiditis	
· Define hypothyroidism	
· Discuss congenital, autoimmune and iatrogenic hypothyroidism	
· Differentiate between cretinism & myxedema with regards to etiology, pathogenesis, clinical features & lab diagnosis	
· Define thyroiditis and list different types of thyroiditis	
· Discuss the etiology, pathophysiology, morphology & clinical features of various types of clinically significant thyroiditis	

5. Tumors of Thyroid gland	
· Classify Thyroid tumors	
· Discuss the etiology, pathogenesis, genetic alterations, morphology and diagnostic features of follicular, papillary, anaplastic and medullary thyroid carcinomas	
6. Pathology of Parathyroid gland	
· Discuss the functions of parathyroid gland	
· Discuss primary hyperparathyroidism with reference to parathyroid adenoma, primary hyperplasia and parathyroid carcinoma	
· Discuss the causes, pathogenesis, morphology and clinical features of primary hyperparathyroidism	
· Discuss the causes of hypercalcemia with relation to parathyroid levels	
· Discuss the diagnostic features of asymptomatic and symptomatic hyperparathyroidism	
· Discuss the causes, pathogenesis, morphology and clinical features of secondary hyperparathyroidism	
7. Pathogenesis of Diabetes Mellitus (DM)	
· Define Diabetes Mellitus (DM)	
· Classify DM	
· Discuss the diagnostic criteria of type I & II Diabetes Mellitus	
· Differentiate between salient features of type I & II Diabetes Mellitus	
· Discuss glucose homeostasis & regulation of insulin release	
· Explain the pathogenesis of Type I & type II diabetes, related to beta cell dysfunction, genetic susceptibility, environmental factors	
· Discuss Diabetes in pregnancy	
8. Diabetes Mellitus: Pathogenesis of complications	
· Discuss the morphology & clinical features of type I & II Diabetes including classic triad & chronic manifestations	
· Elaborate the acute metabolic complications & Ketoacidosis.	
· Explain the morphology and clinical features of chronic complications of Diabetes, including lesions of Pancreas, diabetic macrovascular disease, diabetic microangiopathy, nephropathy, neuropathy, diabetic ocular complications & susceptibility to infections	
9. Adrenal gland- I	
· Discuss the function and hormone secretion of adrenal cortex and medulla	
· Discuss the etiology, pathophysiology and histopathology of hypercortisolism, hyperaldosteronism and adrenal adenoma	
· Discuss adrenogenital syndrome	
10. Adrenal gland- II	
· Discuss etiology, pathophysiology and histopathology of adrenocortical insufficiency including Primary acute adrenocortical insufficiency, Waterhouse-Friderichsen syndrome & Addison disease & secondary adrenocortical insufficiency.	
· Discuss pathogenesis, morphology, clinical presentation of tumors of adrenal cortex and adrenal medulla.	
· Discuss MEN syndrome Type I & Type II	
	Case-Based Learning/ Tutorial/ Interactive Lecture

11. Histopathology of Thyroid	Tutorial
· Discuss morphological aspects of different types of goiters, cretinism, myxedema, thyrotoxicosis, Graves' disease, thyroiditis and Thyroid tumors	
12. Lab evaluation of endocrine diseases	Interactive Lecture
· Interpret the lab tests associated with diseases of Hypothalamus, Thyroid, Parathyroid, Pancreas and adrenal glands	
13. Hyperpituitarism	Interactive Lecture
· Discuss the clinical manifestation of pituitary diseases	

PEDIATRICS

TOPICS & OBJECTIVES	LEARNING STRATEGIES
1. Diabetes Mellitus (DM) & Diabetic KetoAcidosis (DK)	Interactive Lecture
· List the causes of diabetes mellitus in infants and children	
· Describe the etiology, risk factors, sign and symptoms, investigations, management and complications of DM in infants and children	Interactive Lecture
2. Hypo & hyperthyroidism	
· Describe the etiology, clinical presentation, investigations, management and complications of hyperthyroidism and hypothyroidism in infants and children	Case-Based Learning
3. Short stature & stunting	
· Define short stature and stunting	Case-Based Learning
· Describe the etiology, risk factors, sign and symptoms, investigations, management and complications of short stature and stunting	

PHARMACOLOGY

TOPICS & OBJECTIVES	LEARNING STRATEGIES
1. Pharmacology of Hypothalamic and Pituitary hormones	Tutorial
· Discuss the basic & clinical aspects of the relevant drugs, leading to clarification of the concepts	
2. Drugs used to treat hyper and hypothyroidism	Case-Based Learning
· Classify anti-thyroid drugs.	
· Discuss basic & clinical pharmacology of the anti-thyroid drugs	
· Explain kinetics & dynamics of the drugs used to treat hypothyroidism	Interactive Lecture/ Tutorial
3. Pharmacology of Adrenocorticoids	
· Classify corticosteroids	
· Explain their functions	Interactive Lecture/ Tutorial
· Distinguish kinetics and dynamics of glucocorticoids and mineralocorticoids	

· Discuss their inhibitors of glucocorticoids and mineralocorticoids	
· Discuss the basic & clinical aspects of the relevant drugs	
4. Pharmacology of Oral Anti-Diabetic Drugs	Interactive Lecture
· Classify Anti-Diabetic drugs	
· Explain basic & clinical pharmacology of the Anti-Diabetic drugs	
5. Insulin preparations	
· Discuss basic and clinical pharmacology of insulin preparations including new ones	

PHYSIOLOGY

TOPICS & OBJECTIVES	LEARNING STRATEGIES
Feedback, control and regulation of hormones	Tutorial
· Difference between hormone and enzyme	
· Describe the properties of hormones	
· Describe the Regulation of secretion of hormones	

Apart from attending daily scheduled sessions, students too should engage in self-study to ensure that all the objectives are covered



LEARNING RESOURCES

SUBJECT	RESOURCES
ENDOCRINOLOGY	<u>TEXTBOOKS</u> <ol style="list-style-type: none"> 1. Davidson's Principles and Practice of Medicine 2. Kumar and Clark's Clinical Medicine, Edited by Parveen Kumar, 9th Edition
COMMUNITY MEDICINE	<u>TEXTBOOKS</u> <ol style="list-style-type: none"> 1. Community Medicine by Parikh 2. Community Medicine by M Ilyas 3. Basic <i>Statistics</i> for the Health Sciences by Jan W Kuzma
PEDIATRICS	<u>TEXT BOOK</u> <ol style="list-style-type: none"> 1. Nelson Textbook of Pediatrics, 19th Edition 2. Textbook of Pediatrics by PPA, preface written by S. M. Haneef 3. Clinical Pediatrics by Lakshmanaswamy Aruchamy, 3rd Edition
PATHOLOGY/MICROBIOLOGY	<u>TEXTBOOKS</u> <ol style="list-style-type: none"> 1. Robbins & Cotran, Pathologic Basis of Disease, 9th edition. 2. RapidReviewPathology, 4th edition by Edward F. Goljan MD
	<u>WEBSITES:</u> <ol style="list-style-type: none"> 1. http://library.med.utah.edu/WebPath/webpath.html 2. http://www.pathologyatlas.ro/
PHYSIOLOGY	<u>TEXTBOOKS</u> <ol style="list-style-type: none"> 1. Textbook Of Medical Physiology by Guyton And Hall 2. Ganong's Review of Medical Physiology 3. Human Physiology by Lauralee Sherwood 4. Berne & Levy Physiology 5. Best & Taylor Physiological Basis of Medical Practice



ASSESSMENT METHODS:

- **Best Choice Questions(BCQs)** also known as MCQs (Multiple Choice Questions)
- **Objective Structured Practical/Clinical Examination (OSPE or OSCE)**

Internal Evaluation

- Students will be assessed comprehensively through multiple methods.
- 20% marks of internal evaluation will be added to JSMU final exam. That 20% may include class tests, assignment, practicals and the internal exam which will all have specific marks allocation.

Formative Assessment

Individual department may hold quiz or short answer questions to help students assess their own learning. The marks obtained are not included in the internal evaluation

For JSMU Examination Policy, please consult JSMU website!

More than 75% attendance is needed to sit for the internal and final examinations



LNH&MC EXAMINATION RULES & REGULATIONS

- Student must report to examination hall/venue, 30 minutes before the exam.
- Exam will begin sharp at the given time.
- No student will be allowed to enter the examination hall after 15 minutes of scheduled examination time.
- Students must sit according to their roll numbers mentioned on the seats.
- Cell phones are strictly not allowed in examination hall.
- If any student is found with cell phone in any mode (silent, switched off or on) he/she will be not be allowed to continue their exam.
- No students will be allowed to sit in exam without University Admit Card, LNMC College ID Card and Lab Coat
- Student must bring the following stationary items for the exam: Pen, Pencil, Eraser, and Sharpener.
- Indiscipline in the exam hall/venue is not acceptable. Students must not possess any written material or communicate with their fellow students.

SCHEDULE:

WEEKS	4TH YEAR	MONTH
8 WEEKS	NEUROSCIENCES II MODULE	February 14, 2022
		April 6, 2022
6 WEEKS	REPRODUCTIVE II MODULE	April 11, 2022
		May 28, 2022
4 WEEKS	URINARY II MODULE	June 1, 2022
		June 23, 2022
Mid Term Examination July 2 nd , 2022		
4 WEEKS	ENDOCRINE II MODULE	July 4, 2022
		August 4, 2022

