



2023

# BAQAI MEDICAL COLLEGE 4TH YEAR MBBS



## STUDY GUIDE

## ENDOCRINOLOGY MODULE

**SPIRAL II – INTEGRATED CURRICULUM**  
**STUDY GUIDE FOR THE STUDENTS OF**  
**4<sup>th</sup> YEAR MBBS SESSION 2023- 2024**



**BAQAI MEDICAL COLLEGE**  
**BAQAI MEDICAL UNIVERSITY**

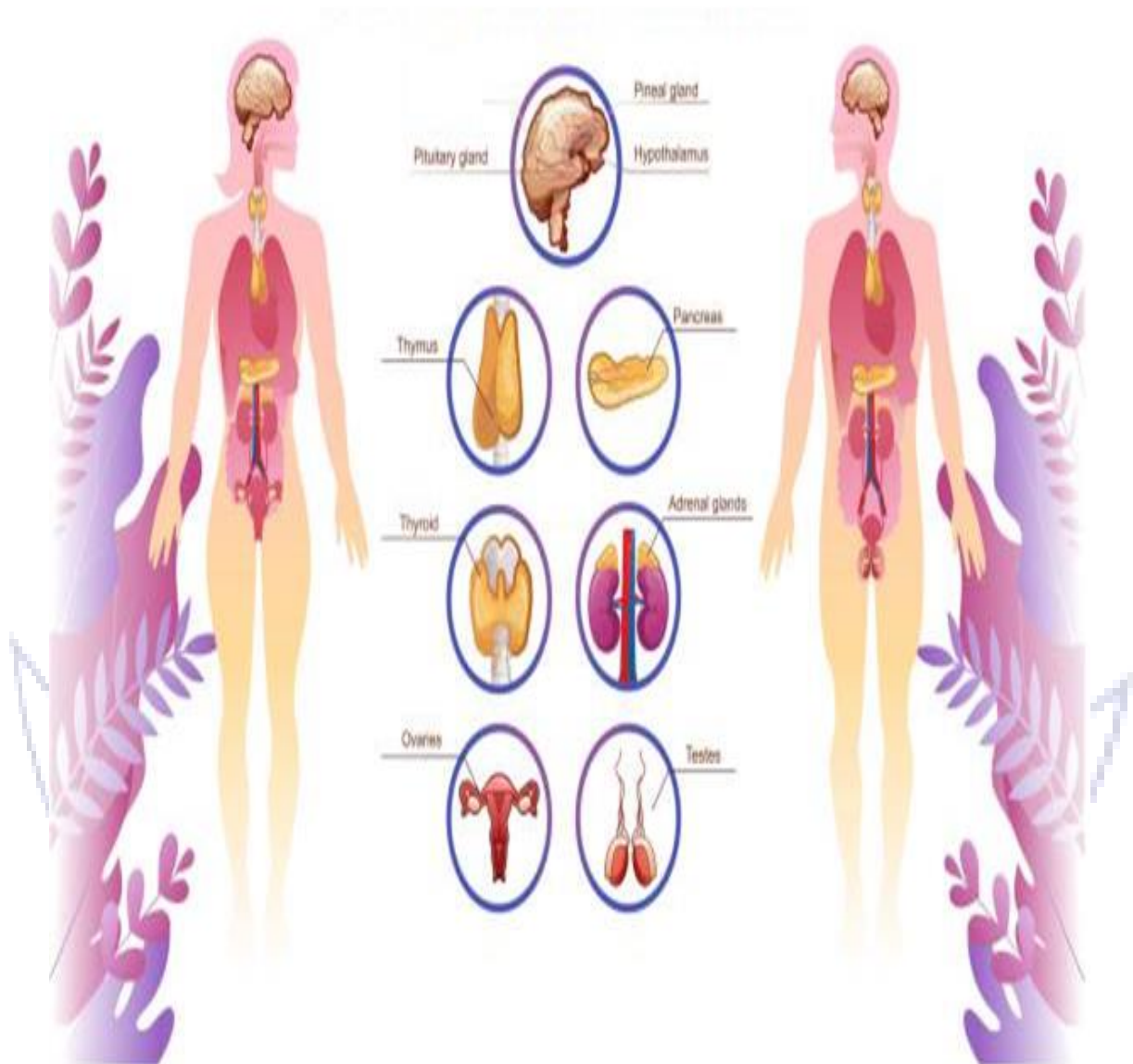
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# INTEGRATED MODULAR COURSE STUDY GUIDE



# ***ENDOCRINOLOGY***

## Table of Contents

S No	Details	Page No
1.	Preface	4
2.	Vision & Mission of BMU & BMC	5
3.	Curriculum Integration Committee (CIC ) Spiral II	6
4.	Teaching Methodologies	7
5.	Introduction to Module – III	9
6.	Learning Objectives of Pathology	10
7.	Learning Objectives of Pharmacology & Therapeutics	18
8.	Learning Objectives of Community Medicine	24
9.	Learning Objectives of Medicine	27
10.	Learning Objectives of Surgery	28
11.	Learning Objectives of Pediatrics	30
12.	Learning Objectives of Obstetrics & Gynecology	30
13.	Learning Objectives of Bioethics & Research	31
14.	Assessment Method	32
15.	Suggested Reading Books	33
16.	Suggested Website & Search Engine	36





The recent developments in the field of medical education globally have brought about major changes in the traditional paradigm of learning and teaching. The shift from teacher-centered to student-centered learning has an impact on both undergraduate and postgraduate learners.

This study guide for the integrated modular system is developed to keep pace with these changes. This guide is based on the SPICES model of curriculum development.

1. The course organization, content, and activities are mainly student-centered.
2. we have incorporated case-based learning in our modules to make students problem-oriented learners.
3. Integration of the basic sciences content with pre-clinical and clinical subjects has been done explicitly.
4. Field visits are arranged at Baqai Medical University satellite clinics and other community healthcare centers to enlighten the students about community-related health problems.
5. Students are allowed to opt for Electives in the parent as well as other institutes for enhancement in learning.
6. It is a structured program, which starts with the basic concepts of medicine and incorporates all components of medical sciences in horizontal as well as vertical form.

This study guide provides content-related information in the form of learning resources, a guide to learning and curriculum for the management of learning, and an outline of students' activities. In this way, it may be considered as a multidimensional guide for an undergraduate program of MBBS.

<i>Vision</i>	<i>Mission</i>
	
<i>Baqai Medical University</i>	
<p>To evolve as a nucleus for higher learning with a resolution to be socially accountable, focused on producing accomplished health care professionals for services in all spheres of life at the national and global level”.</p>	<p>The mission of Baqai Medical University is to be recognized as a center of excellence in education, research, patient care, and community services by producing highly capable and knowledgeable professionals.</p>
<i>Baqai Medical College</i>	
<p>Our vision is to enhance access and excellence in medical education and research, with the aim of capacity building of students and faculty through innovations, and science and technology competencies, to achieve rapid and sustainable health. The medical graduate thus produced, will be informed, and trained enough to serve the community better, and to be an advisor to the national and international health organizations.</p>	<p>The mission of the Baqai Medical College is to produce medical graduates, who are responsible and accomplished individuals and have skills for problem-solving, clinical judgment, research, and leadership for a medical practice at the international level and are also aware of the health problems of the less privileged rural and urban population of Pakistan.</p>

## CURRICULUM INTEGRATION COMMITTEE (CIC)

Name	Designation
<b>Prof. Dr. Nazia Jameel</b>	Head CIC Spiral II
<b>Dr. Sarah Azhar</b>	Head CIC Spiral II
<b>Dr. Maeesa Sajeel</b>	Member, 4th-year MBBS Class Coordinator
<b>Prof. Dr. M.S. Fahmi</b>	Member, Department of Ophthalmology
<b>Dr. Abdul Ghaffar</b>	Member, Department of Surgery & Allied
<b>Dr. Amara Altaf</b>	Member, Department of Community Medicine
<b>Dr. Dania Faisal</b>	Member, Department of Medicine & Allied
<b>Dr. Faraz Saleem</b>	Member, Department of Pharmacology
<b>Dr. Hina Amjad</b>	Member, Department of Pharmacology
<b>Dr. Nasima Iqbal</b>	Member, Department of Pathology
<b>Dr. Nikhat Ahsan</b>	Member, Department of Obstetrics & Gynecology
<b>Dr. Rehana Babar</b>	Member, Department of ENT
<b>Dr. Saadia Akram</b>	Member, Department of Obstetrics & Gynecology
<b>Dr. Tahira Saeed</b>	Member, Department of Pediatrics
<b>Dr. Zulfiqar H. Naqvi</b>	Member, Department of Community Medicine
<b>Ms. Maria Rahim</b>	Member, Department of Research

## TEACHING METHODOLOGIES

		
<p><b>Interactive Lectures</b></p>	<p><b>Case-based Learning</b></p>	<p><b>Student's Presentations</b></p>
		
<p><b>Flipped Classroom</b></p>	<p><b>Small group discussions</b></p>	<p><b>Practical demonstration</b></p>
		
<p><b>Hands-on practice of clinical skills in a simulated environment</b></p>	<p><b>Virtual teaching sessions</b></p>	<p><b>Self-directed learning</b></p>



# *Module III*

# *Endocrinology*

# INTRODUCTION TO MODULE – III



<i>Module – III</i>	
<i>Endocrinology</i>	
System	Endocrine System
Duration	8 Weeks (From 19 <sup>th</sup> September 2023 to 2 <sup>nd</sup> November 2023)
Assessment Dates	*Friday 3 <sup>rd</sup> November 2023
Assessment Pattern	MCQs, SEQs & OSPE

\*The Assessment pattern and dates are tentative (Subject to change)

## Pathology

At the end of these 1-hour interactive lectures, the students of 4th year MBBS will be able to:

Topic	Teaching Strategy	Duration	Learning Objectives
<b>Introduction to Endocrine Pathology &amp; Hyperpituitarism</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Classify Endocrine disorders.</li> <li>2. Classify Pituitary adenomas.</li> <li>3. Explain the genetic alterations in pituitary tumors.</li> <li>4. Describe the morphology and clinical features of pituitary adenomas.</li> <li>5. Differentiate between Acromegaly and Gigantism.</li> </ol>
<b>Hypopituitarism</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. List the causes of hypopituitarism.</li> <li>2. Explain the pathophysiology and clinical features of Sheehan's syndrome.</li> <li>3. Discuss the pathophysiology and clinical features of Dwarfism.</li> <li>4. Describe the pathophysiology and clinical features of Diabetes Insipidus and SIADH.</li> <li>5. Summarize the pathophysiology and morphology of Suprasellar hypothalamic tumors.</li> </ol>
<b>Hyperthyroidism</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Define Thyrotoxicosis</li> <li>2. List the disorders associated with Thyrotoxicosis.</li> <li>3. Discuss the causes, pathophysiology, clinical features, and laboratory diagnosis of Hyperthyroidism.</li> <li>4. Describe the pathophysiology, clinical, and morphological features of Graves' disease.</li> <li>5. Describe the investigations required for the diagnosis of hyperthyroidism.</li> </ol>

## Pathology

At the end of these 1-hour interactive lectures, the students of 4th year MBBS will be able to:

Topic	Teaching Strategy	Duration	Learning Objectives
<b>Hypothyroidism &amp; Goiter</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>List the causes of Hypothyroidism.</li> <li>Explain the pathophysiology and clinical features of Cretinism.</li> <li>Discuss the pathophysiology, clinical features, and laboratory diagnosis of Myxedema.</li> <li>Differentiate between Diffuse (Non-toxic) and Multinodular Goiter based on their causes, pathophysiology, morphology, clinical features, and laboratory diagnosis.</li> </ol>
<b>Inflammatory disorders of the thyroid gland</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>Define and classify thyroiditis.</li> <li>Discuss the pathophysiology, clinical course, and morphology of Hashimoto's Thyroiditis.</li> <li>Comprehend the pathophysiology, clinical features, and morphology of Subacute Lymphocytic Thyroiditis.</li> <li>Describe the pathophysiology, clinical features, and morphology of Granulomatous (de Quervain) thyroiditis.</li> </ol>
<b>Neoplasms of the thyroid gland</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>Classify the neoplasms of the thyroid gland.</li> <li>Describe the pathophysiology, clinical features, and morphology of the Follicular adenoma.</li> <li>Comprehend the causes, pathogenesis, morphology, and clinical features of Papillary Carcinoma.</li> <li>Discuss the causes, pathogenesis, morphology, and clinical features of Follicular Carcinoma. Summarize the causes, pathogenesis, morphology, and clinical features of Anaplastic and Medullary Carcinoma.</li> </ol>

## Pathology

At the end of these 1-hour interactive lectures, the students of 4th year MBBS will be able to:

Topic	Teaching Strategy	Duration	Learning Objectives
<b>Diabetes Mellitus</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Define and classify Diabetes Mellitus.</li> <li>2. Explain the morphological changes in the pancreas that occur in Diabetes Mellitus.</li> <li>3. Differentiate between Type 1 &amp; 2 Diabetes Mellitus based on the causes, pathogenesis, morphology, and clinical features.</li> <li>4. Discuss the diagnostic criteria of Diabetes Mellitus and impaired glucose tolerance.</li> </ol>
<b>Complications of Diabetes Mellitus</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Classify the complications of Diabetes Mellitus.</li> <li>2. Discuss the precipitating factors, pathophysiology, and clinical features of Diabetic Ketoacidosis (DKA).</li> <li>3. Comprehend the pathophysiology, morphology, and clinical features of the chronic complications of Diabetes Mellitus.</li> </ol>
<b>Pancreatic Neuroendocrine Tumors</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Classify Pancreatic Neuroendocrine tumors.</li> <li>2. Discuss the etiology, pathology &amp; morphology of Hyper-insulinoma.</li> <li>3. Describe the pathology &amp; clinical features of Zollinger-Ellison Syndrome.</li> <li>4. Summarize the causes, pathogenesis, and clinical features of rare Pancreatic Endocrine tumors.</li> </ol>

## Pathology

At the end of these 1-hour interactive lectures, the students of 4th year MBBS will be able to:

Topic	Teaching Strategy	Duration	Learning Objectives
<b>Adrenocortical insufficiency</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. List the causes of Adrenocortical insufficiency.</li> <li>2. Discuss the causes, pathophysiology, morphology, and clinical features of Primary acute adrenocortical insufficiency.</li> <li>3. Comprehend the causes, pathophysiology, morphology, and clinical features of Addison's disease.</li> <li>4. Differentiate between Primary and Secondary Adrenocortical insufficiency based on their causes, pathophysiology, clinical features, morphology, and diagnostic findings.</li> </ol>
<b>Neoplasms of the Adrenal gland</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Classify the neoplasms of the adrenal gland.</li> <li>2. Describe the causes, pathophysiology, clinical features, and morphology of Adrenocortical adenoma.</li> <li>3. Discuss the predisposing factors, pathophysiology, clinical features, and morphology of Adrenocortical carcinoma.</li> <li>4. Comprehend the causes, pathophysiology, morphology, and clinical features of Pheochromocytoma.</li> </ol>

Pathology			
At the end of these 1-hour interactive lectures, the students of 4th year MBBS will be able to:			
Topic	Teaching Strategy	Duration	Learning Objectives
<b>Disorders of the Parathyroid gland</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Classify the disorders of the parathyroid gland.</li> <li>2. Comprehend Primary Hyperparathyroidism based on its causes, pathophysiology, clinical course, and morphology.</li> <li>3. Explain the pathogenesis, clinical course &amp; and morphology of secondary hyperthyroidism.</li> <li>4. Discuss the causes, pathophysiology, and clinical and morphological features of hypoparathyroidism.</li> <li>5. Summarize the pathophysiology and clinical features of pseudo-hypoparathyroidism.</li> </ol>
<b>Multiple Endocrine Neoplasia Syndrome</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Define and classify Multiple endocrine neoplasia (MEN) syndrome.</li> <li>2. List the distinct features of MEN syndrome.</li> <li>3. Differentiate between the causes, pathophysiology, clinical features, and morphology of MEN-1 &amp; MEN-2 syndrome.</li> </ol>

## Pathology

At the end of these 2 ¼ hours practical sessions, the students of 4th year MBBS will be able to:

Topic	Teaching Strategy	Duration	Learning Objectives
<b>Pituitary Adenoma</b>	<b>Practical (Task-based learning)</b>	2 ¼ hours	<ol style="list-style-type: none"> <li>1. Identify the gross and microscopic features of Pituitary adenoma with their points of identification.</li> <li>2. Summarize the classification, pathophysiology, morphological &amp; clinical features of Pituitary adenoma.</li> </ol>
<b>Disorders of the Thyroid gland</b>	<b>Practical (Task-based learning)</b>	2 ¼ hours	<ol style="list-style-type: none"> <li>1. Identify the gross and microscopic features of Graves' disease with their points of identification.</li> <li>2. Identify the gross and microscopic features of multinodular goiter with their points of identification.</li> <li>3. Identify the gross and microscopic features of Hashimoto's thyroiditis with their points of identification.</li> </ol>
<b>Neoplasms of the Thyroid gland</b>	<b>Practical (Task-based learning)</b>	2 ¼ hours	<ol style="list-style-type: none"> <li>1. Identify the gross and microscopic features of Follicular adenoma.</li> <li>2. Identify the gross and microscopic features of Papillary Carcinoma.</li> <li>3. Identify the gross and microscopic features of Follicular Carcinoma.</li> <li>4. Identify the gross and microscopic features of Medullary Carcinoma.</li> </ol>
<b>Complications of Diabetes Mellitus</b>	<b>Practical (Task-based learning)</b>	2 ¼ hours	<ol style="list-style-type: none"> <li>1. Identify the microscopic features of Severe Renal hyaline arteriosclerosis.</li> <li>2. Identify the microscopic features of diffuse nodular Diabetic glomerulosclerosis.</li> <li>3. Identify the gross features of Diabetic Nephrosclerosis.</li> </ol>



## Pathology

At the end of these 2 ¼ hours practical sessions, the students of 4th year MBBS will be able to:

Topic	Teaching Strategy	Duration	Learning Objectives
<b>Adrenocortical Neoplasm</b>	<b>Practical (Task-based learning)</b>	2 ¼ hours	<ol style="list-style-type: none"> <li>1. Identify the gross and microscopic features of Adrenocortical adenoma with their points of identification.</li> <li>2. Identify the gross and microscopic features of Adrenocortical carcinoma with their points of identification.</li> </ol>
<b>Waterhouse-Friderichsen syndrome and Pheochromocytoma</b>	<b>Practical (Task-based learning)</b>	2 ¼ hours	<ol style="list-style-type: none"> <li>1. Identify the microscopic features of Waterhouse-Friderichsen syndrome with its points of identification.</li> <li>2. Identify the gross and microscopic features of Pheochromocytoma with their points of identification.</li> </ol>
<b>Parathyroid adenoma and Pancreatic endocrine tumor</b>	<b>Practical (Task-based learning)</b>	2 ¼ hours	<ol style="list-style-type: none"> <li>1. Identify the microscopic features of Parathyroid adenoma with its points of identification.</li> <li>2. Identify the microscopic features of Pancreatic endocrine tumor (Islet cell tumor) with its points of identification</li> </ol>

## Pharmacology

At the end of these 1-hour interactive lectures, the students of 4th year MBBS will be able to:

Topic	Teaching Strategy	Duration	Learning Objectives
<b>Pituitary Hormones and Hypothalamic regulators</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Outline of pituitary hormones and hypothalamic regulators.</li> <li>2. Outline the anterior and posterior pituitary and hypothalamic disorders.</li> <li>3. Classify the drugs used in the management of hypothalamic and pituitary disorders.</li> <li>4. Explain the mechanism of action of somatropin, octreotide, <math>\beta</math>-hCG, Follitropin, bromocriptine, Leuprolide, vasopressin, and oxytocin.</li> <li>5. List the pharmacokinetics of these drugs.</li> <li>6. List the clinical uses of these drugs.</li> <li>7. List the common adverse effects and contraindications of these drugs.</li> </ol>
<b>Drugs used to treat Thyroid Disorders</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Outline thyroid disorders.</li> <li>2. Classify drugs used in the management of thyroid disorders.</li> <li>3. Explain the mechanism of action of the thyroxine drug used in hypothyroidism.</li> <li>4. List the pharmacokinetics of Thyroxine.</li> <li>5. List drug-drug interactions of Thyroxine.</li> <li>6. List common adverse effects and contraindications of Thyroxine.</li> <li>7. Explain the mechanism of action of Methimazole, Iodide, and Propylthiouracil used in hyperthyroidism.</li> <li>8. List the pharmacokinetics of these drugs.</li> <li>9. List drug-drug interactions of these drugs.</li> <li>10. List common adverse effects and contraindications of these drugs.</li> </ol>

## Pharmacology

At the end of these 1-hour interactive lectures, the students of 4th year MBBS will be able to:

Topic	Teaching Strategy	Duration	Learning Objectives
<b>Oral Hypoglycemics 1</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Discuss the types of diabetes mellitus.</li> <li>2. Outline the pathophysiology of diabetes mellitus.</li> <li>3. Classify the drugs used in diabetes mellitus.</li> <li>4. Explain the mechanism of action of Glibenclamide and Metformin.</li> <li>5. List the pharmacokinetics of Glibenclamide and Metformin.</li> <li>6. List common adverse effects and contraindications of Glibenclamide and Metformin.</li> </ol>
<b>Oral Hypoglycemics 2</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Classify the drugs used in diabetes mellitus.</li> <li>2. Explain the mechanism of action of Acarbose, Rosiglitazone, and Sitagliptin</li> <li>3. List the pharmacokinetics of Acarbose, Rosiglitazone and Sitagliptin</li> <li>4. List common adverse effects and contraindications of Acarbose, Rosiglitazone, and Sitagliptin.</li> </ol>
<b>Insulin Therapy</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Classify insulin preparations according to their duration of action.</li> <li>2. Explain the mechanism of action of insulin.</li> <li>3. List the pharmacokinetics of Insulin (ultra-short-acting insulin, short-acting insulin, intermediate-acting insulin, and long-acting insulin).</li> <li>4. List the indications of insulin in a diabetic patient.</li> <li>5. List the common adverse effects and contraindications of Insulin.</li> </ol>

## Pharmacology

At the end of these 1-hour interactive lectures, the students of 4th year MBBS will be able to:

Topic	Teaching Strategy	Duration	Learning Objectives
<b>Pharmacological Management of Diabetic Emergencies</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Classify diabetic emergencies.</li> <li>2. Explain the pathophysiology of diabetic ketoacidosis.</li> <li>3. List the drugs used in diabetic ketoacidosis.</li> <li>4. Explain the mechanism of action of these drugs.</li> <li>5. List the pharmacokinetics of these drugs.</li> <li>6. List the common adverse effects and contraindications of these drugs.</li> </ol>
<b>Corticosteroids 1 (Glucocorticoids agonist and its antagonist)</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Outline the disorders of the adrenal gland.</li> <li>2. Classify corticosteroids.</li> <li>3. Explain the mechanism of action of glucocorticoid agonist (Prednisone) and antagonist (Mifepristone).</li> <li>4. List the pharmacokinetics of Prednisone and Mifepristone.</li> <li>5. List clinical uses of Prednisolone and Mifepristone.</li> <li>6. List common adverse effects and contraindications of these drugs.</li> </ol>

## Pharmacology

At the end of these 1-hour interactive lectures, the students of 4th year MBBS will be able to:

Topic	Teaching Strategy	Duration	Learning Objectives
<b>Corticosteroids 2 (Mineralocorticoid agonist and its antagonist)</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Recall the disorders of the adrenal gland.</li> <li>2. Classify mineralocorticoid.</li> <li>3. Explain the mechanism of action of mineralocorticoid agonist (Fludrocortisone) and antagonist (Spironolactone).</li> <li>4. List the pharmacokinetics of Fludrocortisone and Spironolactone</li> <li>5. List clinical uses of Fludrocortisone and Spironolactone.</li> <li>6. List common adverse effects and contraindications of these drugs.</li> </ol>



## Pharmacology

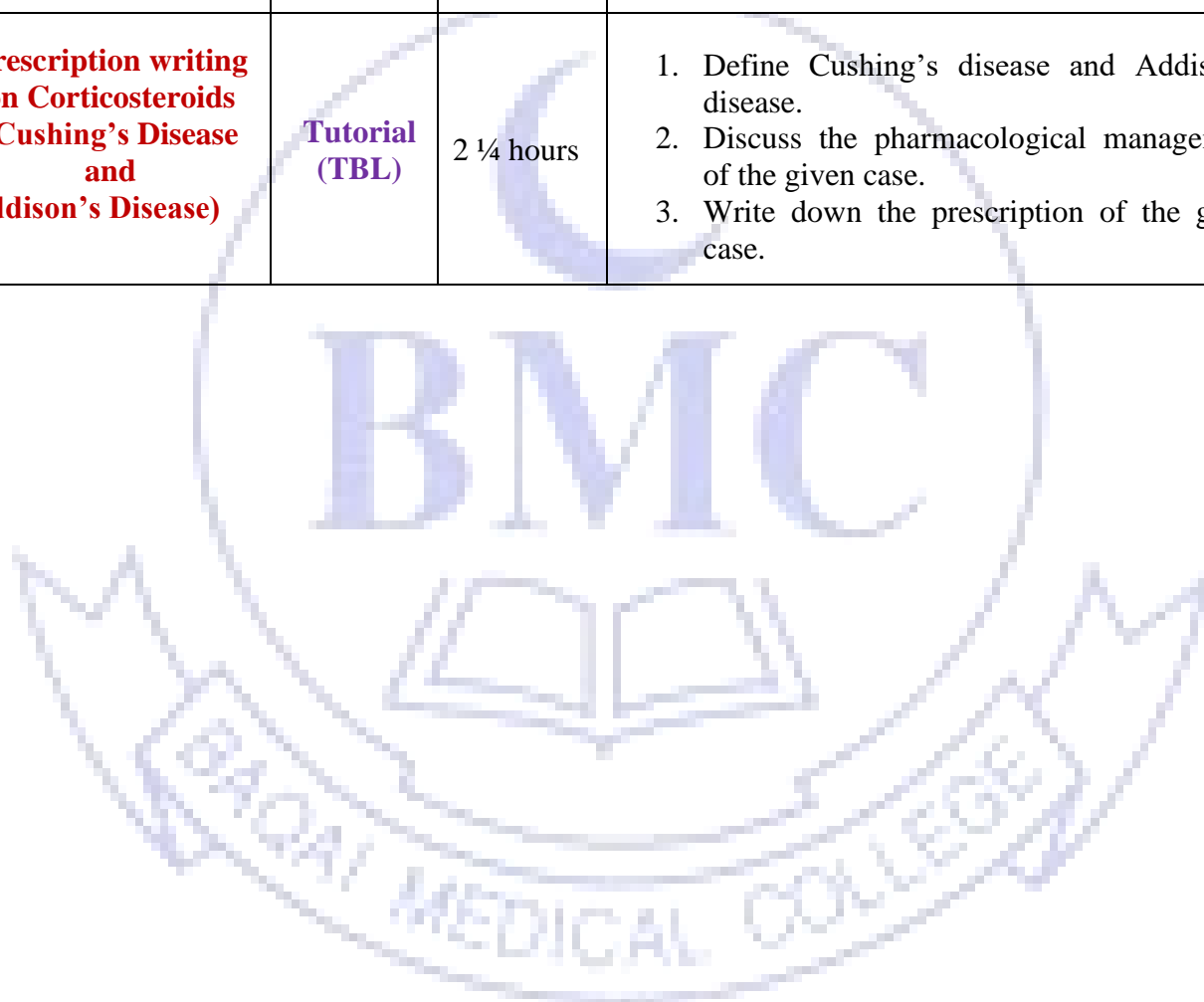
At the end of these 2 ¼ hours small group discussion sessions, the students of 4th year MBBS will be able to:

Topic	Teaching Strategy	Duration	Learning Objectives
<b>Prescription writing on Hyperprolactinemia</b>	<b>Tutorial (TBL)</b>	2 ¼ hours	<ol style="list-style-type: none"> <li>1. Define Hyperprolactinemia.</li> <li>2. List the causes of hyperprolactinemia.</li> <li>3. Explain the pharmacokinetics and pharmacodynamics of Bromocriptine and Cabergoline.</li> <li>4. Write down the prescription of the given case.</li> </ol>
<b>Prescription writing on Hyperthyroidism and Hypothyroidism</b>	<b>Tutorial (TBL)</b>	2 ¼ hours	<ol style="list-style-type: none"> <li>1. Define hyperthyroidism and hypothyroidism.</li> <li>2. List the signs and symptoms of hyperthyroidism and hypothyroidism.</li> <li>3. Discuss the pharmacokinetics and pharmacodynamics of Lugol's solution, Propranolol and Levothyroxine.</li> <li>4. Write down the prescription of the given case.</li> </ol>
<b>Prescription writing of various types of insulin, and hypoglycemia</b>	<b>Tutorial (TBL)</b>	2 ¼ hours	<ol style="list-style-type: none"> <li>1. Define Insulin and Hypoglycemia.</li> <li>2. List the types of Insulin.</li> <li>3. Discuss the pharmacokinetics and pharmacodynamics of Insulin.</li> <li>4. Discuss the pharmacological management of the given case.</li> <li>5. Write down the prescription of the given case.</li> </ol>
<b>Prescription writing on Diabetic Ketoacidosis</b>	<b>Tutorial (TBL)</b>	2 ¼ hours	<ol style="list-style-type: none"> <li>1. Define Diabetic Ketoacidosis.</li> <li>2. Discuss the pharmacological management of the given case.</li> <li>3. Write down the prescription of the given case.</li> </ol>

## Pharmacology

At the end of these 2 ¼ hours small group discussion sessions, the students of 4th year MBBS will be able to:

Topic	Teaching Strategy	Duration	Learning Objectives
<b>Prescription writing on Corticosteroids (Cushing's Disease and Addison's Disease)</b>	<b>Tutorial (TBL)</b>	2 ¼ hours	<ol style="list-style-type: none"> <li>1. Define Cushing's disease and Addison's disease.</li> <li>2. Discuss the pharmacological management of the given case.</li> <li>3. Write down the prescription of the given case.</li> </ol>



## Pharmacology

At the end of these 2 ¼ hours practical sessions, the students of 4th year MBBS will be able to:

Topic	Teaching Strategy	Duration	Learning Objectives
<b>Preparation and dispensing of Dextrose solution</b>	<b>Practical (Task-based learning)</b>	2 ¼ hours	<ol style="list-style-type: none"> <li>1. To prepare and dispense dextrose in normal saline.</li> <li>2. Write down the composition of the dextrose solution.</li> <li>3. List the uses of dextrose solution.</li> <li>4. Draw the label of the dextrose solution.</li> </ol>
<b>Unit calculation, identification, and administrative techniques of Insulin</b>	<b>Practical (Task-based learning)</b>	2 ¼ hours	<ol style="list-style-type: none"> <li>1. Identify different types of insulin.</li> <li>2. List the types of insulin administrative techniques.</li> <li>3. Interpret the unit calculation of insulin therapy.</li> </ol>



## Community Medicine

At the end of these 1-hour interactive lectures, the students of 4th year MBBS will be able to:

Topic	Teaching Strategy	Duration	Learning Objectives
<b>Introduction to Communicable Diseases</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Define communicable diseases.</li> <li>2. Discuss important definitions associated with communicable diseases.</li> <li>3. Discuss common communicable diseases prevalent in Pakistan</li> </ol>
<b>Mode of transmission of Communicable diseases</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Describe the mechanism and modes of transmission of communicable diseases.</li> <li>2. Discuss the environmental factors associated with communicable diseases.</li> <li>3. Explain briefly the continuous or viscous cycle of communicable diseases</li> </ol>
<b>Major Communicable diseases</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. List major communicable diseases which are prevalent worldwide.</li> <li>2. Discuss the burden of communicable diseases globally and nationwide</li> </ol>
<b>Immunization-I</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Define immunization.</li> <li>2. Explain types of immunization</li> <li>3. Discuss briefly the launching of EPI in Pakistan</li> <li>4. Describe those infectious diseases included in the EPI schedule</li> </ol>
<b>Immunization-II</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Discuss other major communicable diseases which are not included in EPI.</li> <li>2. Explain the prevention and management of communicable diseases.</li> </ol>

## Community Medicine

At the end of these 1-hour interactive lectures, the students of 4th year MBBS will be able to:

Topic	Teaching Strategy	Duration	Learning Objectives
<b>Introduction to Non-communicable Diseases</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Differentiate b/w communicable diseases and non - communicable diseases.</li> <li>2. Define the concepts related to non-communicable diseases.</li> <li>3. Explain the risk factor and relative risk.</li> </ol>
<b>Major Non-Communicable Diseases- I</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Describe the importance of non-communicable diseases.</li> <li>2. Explain the risk factors of non-communicable diseases.</li> <li>3. Discuss the prevention strategies of Diabetes Mellitus and Rheumatic Fever</li> </ol>
<b>Major Non-Communicable Diseases- II</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Discuss the prevention strategies of hypertension and heart diseases.</li> <li>2. Discuss the prevention strategies of stroke and obesity.</li> </ol>
<b>Parasitology</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Define the basic definitions related to parasitology.</li> <li>2. Describe the classification of parasites.</li> <li>3. Explain the modes of transmission for different parasites.</li> </ol>
<b>Parasite Life Cycles</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Describe the life cycle of common parasitic diseases like malaria and dengue</li> </ol>
<b>Epidemiology and prevention of parasitic diseases</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Describe the epidemiology of major parasitic diseases.</li> <li>2. Describe preventive strategies for major parasitic infections</li> </ol>

## Community Medicine

At the end of these 1-hour interactive lectures, the students of 4th year MBBS will be able to:

Topic	Teaching Strategy	Duration	Learning Objectives
<b>Introduction to entomology</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Describe the basic taxonomy and classification of insects.</li> <li>2. Explain the role of insects as vectors in the transmission of human diseases.</li> </ol>
<b>Epidemiology and prevention of vector-borne diseases</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Describe the epidemiology of vector-borne diseases.</li> <li>2. Describe methods and strategies used to control disease vectors</li> </ol>

**For Ophthalmology & ENT, please refer to their respective Study guides.**

## Medicine

At the end of these 1-hour interactive lectures, the students of 4th year MBBS will be able to:

Topic	Teaching Strategy	Duration	Learning Objectives
<b>Introduction to Endocrinology &amp; Pituitary Disorders</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Identify the signs and symptoms of Pituitary disorders.</li> <li>2. Interpret the relevant lab investigations and discuss them with the facilitator.</li> </ol>
<b>Introduction to Thyroid Disorders</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Identify the signs and symptoms of Thyroid disorders.</li> <li>2. Interpret the relevant lab investigations and discuss them with the facilitator.</li> </ol>
<b>Diabetes Mellitus</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Identify the signs and symptoms of Diabetes Mellitus.</li> <li>2. Make differential diagnosis.</li> <li>3. Discuss and formulate the treatment plan.</li> </ol>
<b>Cushing Syndrome</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Identify the signs and symptoms of Cushing Syndrome.</li> <li>2. Make differential diagnosis.</li> <li>3. Discuss and formulate the treatment plan</li> </ol>

## Surgery

At the end of these 1-hour interactive lectures, the students of 4th year MBBS will be able to:

Topic	Teaching Strategy	Duration	Learning Objectives
<b>Benign Thyroid diseases</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Comprehend the development and anatomy of the thyroid gland.</li> <li>2. Explain the pathophysiology of thyroid gland enlargement.</li> <li>3. Describe the causes of Benign thyroid swelling (Goiter).</li> <li>4. Explain the features of the thyroid gland with hyper and hypothyroid functions.</li> <li>5. Discuss how to select the appropriate investigations of the thyroid gland.</li> <li>6. Discuss when to operate on benign thyroid swelling.</li> <li>7. Describe thyroidectomy.</li> </ol>
<b>Hyperthyroidism</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Define Hyperthyroidism</li> <li>2. Enumerate the causes of Hyperthyroidism.</li> <li>3. Describe the signs and symptoms of Hyperthyroidism.</li> <li>4. Summarize the drugs used in Hyperthyroidism.</li> <li>5. Name the surgical options available for these cases.</li> </ol>

## Surgery

At the end of these 1-hour interactive lectures, the students of 4th year MBBS will be able to:

Topic	Teaching Strategy	Duration	Learning Objectives
<b>Clinical aspects of Hyperparathyroidism and Hypoparathyroidism</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Describe the development and anatomy of the parathyroid glands</li> <li>2. Discuss the role of the parathyroid gland in calcium regulation.</li> <li>3. Enlist the causes of hypercalcemia.</li> <li>4. Describe the etiology and clinical presentation of various types of hyperparathyroidism.</li> <li>5. Order appropriate investigations for parathyroid swellings</li> <li>6. Describe tetany.</li> </ol>
<b>Diabetic foot</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Describe the epidemiology and complications of diabetes.</li> <li>2. Define diabetic foot, diabetic lesions, and diabetic foot ulcer (dfu).</li> <li>3. Discuss the etiology and risk factors contributing to the development of diabetic foot ulcers.</li> <li>4. Enlist the investigations required in a sequential manner.</li> <li>5. Identify the correct procedures for the appropriate management of diabetic foot.</li> <li>6. Describe briefly the main therapeutic strategies and multidisciplinary approaches necessary for diabetic foot ulcers treatment.</li> </ol>

## Pediatrics

At the end of this 1-hour interactive lecture, the students of 4th year MBBS will be able to:

Topic	Teaching Strategy	Duration	Learning Objectives
<b>Congenital Hypothyroidism</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Define Hypothyroidism.</li> <li>2. Discuss the risk factors, prevalence, association, and consequences of Hypothyroidism in neonates and children.</li> <li>3. List the clinical features of Congenital Hypothyroidism.</li> <li>4. Describe the diagnosis and management of Hypothyroidism.</li> <li>5. Explain the importance of a neonatal screening program for congenital Hypothyroidism.</li> </ol>

## Gynecology and Obstetrics

At the end of this 1-hour interactive lecture, the students of 4th year MBBS will be able to:

Topic	Teaching Strategy	Duration	Learning Objectives
<b>Endocrine disorders in the menstrual cycle</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Appreciate the role of the hypothalamic-pituitary-ovarian axis in normal reproductive health.</li> <li>2. Classify the endocrine disorders affecting the menstrual cycle.</li> <li>3. Discuss the clinical approach in evaluating different endocrine disorders affecting the menstrual cycle.</li> </ol>

## Bioethics

At the end of these 1-hour interactive lectures, the students of 4th year MBBS will be able to:

Topic	Teaching Strategy	Duration	Learning Objectives
<b>Childcare</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Define and classify Pediatrics Bioethics.</li> <li>2. Discuss the specific case scenario.</li> <li>3. Explain their role as caregivers.</li> </ol>

## Research

At the end of these 1-hour interactive lectures, the students of 4th year MBBS will be able to:

Topic	Learning Objectives
<b>Synopsis approval by DRC</b>	<ol style="list-style-type: none"> <li>1. Prepare the synopsis for submission to the Departmental Research Committee.</li> <li>2. Implement the comments given by DRC</li> </ol>
<b>Data Collection</b>	<ol style="list-style-type: none"> <li>1. Utilize the study tool to collect data.</li> <li>2. Implement the process of data collection.</li> </ol>



## ASSESSMENT METHODS

### 1. Formative Assessment

- Assignment
- Quiz (face-to-face or online)
- Student Presentation
- Class participation in small group discussions and case-based learning sessions
- Project / Poster

\* 4<sup>th</sup> Year MBBS Students are directed to maintain their practical journals and logbooks for formative assessment.

### 2. Summative Assessment

- Modular Exam:

With reference to the Assessment Policy of BMC, dated 14-06-21) (Point 5: Process; Summative assessment points a, b & d); a single modular exam will be conducted at the end of each module which will include all the subjects of basic medical sciences.

\*Module exam will be assessed by any of the following assessment methods:



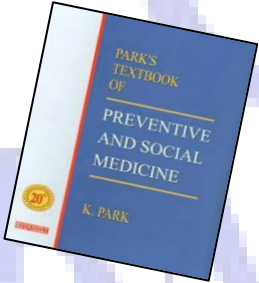
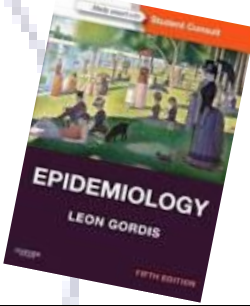
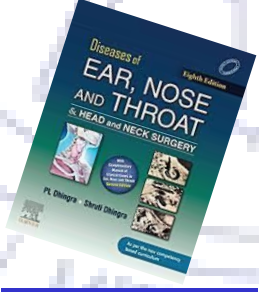
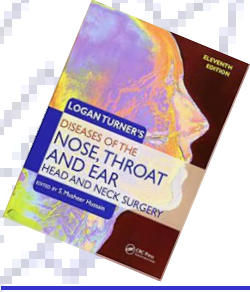
- BCQ
- SEQ
- OSPE
- Annual Exam:
  - Internal Evaluation = 20%
  - Final Exam= 80%Theory: MCQs, EMQs & SAQs  
Practical: Viva & OSPE



## SUGGESTED READING BOOKS

PATHOLOGY			
<p><b>Robbins &amp; Cotran Pathologic Basis of Disease</b> 10<sup>th</sup> Edition Kumar, Abbas &amp; Aster</p>		<p><b>Pathology Illustrated</b> 8<sup>th</sup> Edition Alasdair D. T. Govan</p>	
<p><b>Curran's Atlas of Histopathology</b> 4<sup>th</sup> Edited Edition Robert Curran</p>		<p><b>Rubin's Pathology: Clinicopathologic Foundations of Medicine</b> 6<sup>th</sup> Edition Raphael Rubin &amp; David S. Strayer</p>	
PHARMACOLOGY & THERAPEUTICS			
<p><b>Basic and Clinical Pharmacology</b> 14<sup>th</sup> Edition Bertram Katzung</p>		<p><b>Lippincott's illustrated review of Pharmacology</b> 7<sup>th</sup> Edition Karen Whalen</p>	
<p><b>Katzung and Trevor's Pharmacology Examination and Board Review</b> 14<sup>th</sup> Edition Katzung and Trevor</p>		<p><b>Goodman &amp; Gillman The Pharmacological Basis of Therapeutics</b> 14<sup>th</sup> Edition Laurence L Brunton &amp; Bjorn C. Knollmann</p>	

## SUGGESTED READING BOOKS

COMMUNITY MEDICINE			
<p><b>Public Health &amp; Community Medicine</b> 8<sup>th</sup> Edition M. Ilyas</p>		<p><b>Public Health &amp; Preventive Medicine</b> 13<sup>th</sup> Edition Maxcy- Rosenau-Last</p>	
<p><b>Park's Textbook of Preventive &amp; Social Medicine</b> 20<sup>th</sup> Edition K. Parks</p>		<p><b>Epidemiology</b> 5<sup>th</sup> Edition Leon Gordis</p>	
ENT			
<p><b>Diseases of Ear, Nose and Throat</b> 8<sup>th</sup> Edition P.L. Dhingra &amp; Shruti Dhingra</p>		<p><b>Logan Turner's Diseases of the Nose, Throat and Ear, Head and Neck Surgery</b> 11<sup>th</sup> Edition Musheer Hussain</p>	

## SUGGESTED READING BOOKS

OPHTHALMOLOGY			
<p><b>Clinical Ophthalmology</b> 4<sup>th</sup> Edition Shafi M. Jatoi</p>		<p><b>ABC of Eyes</b> 4<sup>th</sup> Edition P. Shah, P.T. Khaw &amp; A.R. Elkington</p>	
RESEARCH METHODOLOGY			
<p><b>Introduction to Research in Health Sciences-</b> Stephen Polgar, Shane A. Thomas</p>		<p><b>Epidemiology</b> 5th Edition Leon Gordis</p>	

## SUGGESTED WEBSITES & SEARCH ENGINES

	
<p><a href="https://www.medscape.com">https://www.medscape.com</a></p>	<p><a href="https://www.PathologyOutlines.com">https://www.PathologyOutlines.com</a></p>
	
<p><a href="https://pubmed.ncbi.nlm.nih.gov">https://pubmed.ncbi.nlm.nih.gov</a></p>	<p><a href="https://scholar.google.com">https://scholar.google.com</a></p>
	
<p><a href="https://medlineplus.gov">https://medlineplus.gov</a></p>	<p><a href="https://medicine.nus.edu.sg/pathweb">https://medicine.nus.edu.sg/pathweb</a></p>



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