



## Merritt Based Medicine

A Medical Student's Tips, Tricks, & Experiences

### Merritt's Block 4, Module 3 (Endocrinology) Study Plan:

Associated YouTube Study Material Playlist Linked [Here](#).

Week #1 Topics
<b>TOPIC 1 GENERAL PRINCIPLES</b> + Pawlina Ch. 13 (pp. 116-117) + (452-454) + Ch. 21 (784-787) + Boron Ch. 47 (pp. 974 – 989) + BB Signaling Pathways Video + Intro to Endo LG @8:00 – 10AM (03/10) + YouTube Video: Ninja Nerd – Endocrinology – Receptors Pathways (~ 30 min.) + YouTube Video: The Noted Anatomist – Endocrine System Overview (~ 18 min.)
<b>TOPIC 2: ENDOCRINE PANCREAS – EMBRYOLOGY</b> + Klatt PPT (on Canvas)
<b>TOPIC 3: ENDOCRINE PANCREAS – HISTOLOGY &amp; CELL BIOLOGY</b> + Pawlina Ch. 18 (pp. 687-691) + Ch. 17 (pp. 619-623) + Plate 68 (pp. 700-701) + Endo Week #10 Histology PPT (on Canvas) + BB Endocrine Pancreas + YouTube Video: Ninja Nerd – Endocrinology – Pancreas Overview (~ 9 min.) + YouTube Video: Histology Wizard – Endocrine System – Endocrine Basics (~ 10 min.)
<b>TOPIC 4: ENDOCRINE PANCREAS – PHYSIOLOGY &amp; BIOCHEMISTRY</b> + Marks Ch. 19 (pp. 376 – 393) + Ch. 32 (pp. 566 – 589) + Boron Ch. 51 (pp. 1035-1053) + BB Insulin Video + Osmosis – Glucagon + Osmosis – Insulin + Pixorize – Protein Hormones + Pixorize – Insulin + Pixorize – Glucagon + Pixorize – Cortisol + Pixorize – Epinephrine + Picmonic – Pancreas + Picmonic – Insulin Synthesis + YouTube Video: Ninja Nerd – Endocrinology – Pancreas: Glucagon Function (~ 25 min.) + YouTube Video: Ninja Nerd – Endocrinology – Pancreas: Insulin Function (~ 31 min.)
<b>TOPIC 5: DIABETES MELLITUS</b> + Boron Ch. 51 (pp. 1045; Box 51-5) + Chapel Ch. 15 (pp. 294 – 297) + Robbins Ch. 20 (pp. 722-783; Table 20-5) + Jorde Ch. 12 (pp. 257 – 258) + Katzung Ch. 41 (pp. 747 – 770) + Thomas – Endo Pharm PPT (on Canvas) + BB Diabetes Video + BB Treatment of Diabetes Video + Pathoma – Endocrine Pancreas + Sketchy Pharm- GI & Endocrine - Diabetes 2.1 – Insulin, sulfonylureas ( <b>glimepiride, glipizide, glyburide</b> ), meglitinides ( <b>repaglinide, nateglinide</b> ), GLP-1 agonists ( <b>exenatide, liraglutide</b> ), DPP-4 inhibitors ( <b>sitagliptin, saxagliptin</b> ) + Osmosis – Diabetes Mellitus + Pixorize – Diabetes + Sketchy Pharm – GI & Endocrine – Diabetes 2.2 - Metformin, thiazolidinediones ( <b>rosiglitazone, pioglitazone</b> ), <b>pramlintide</b> , SGLT2 inhibitors ( <b>canagliflozin, dapagliflozin, empagliflozin</b> ) + YouTube Video: Dirty Medicine – Endocrinology – Diabetes Drugs (~ 33 min.) + Sketchy-Less Drugs: alpha-glucosidase inhibitors ( <b>acarbose, miglitol</b> ) + bile acid binding resins ( <b>colesevelam</b> ) + Picmonic – Proliferative Diabetic Retinopathy + Picmonic – Diabetic Ketoacidosis Signs & Symptoms + Picmonic – Diabetic Ketoacidosis Diagnosis & Labs + Picmonic – Diabetic Ketoacidosis Treatment + Picmonic – Diabetic Glomerulonephropathy + Picmonic – Dawn Phenomenon + Picmonic – Nonproliferative Diabetic Retinopathy

+ Optional Review: Histology B4M3 Week #10 Practice Questions (on Canvas)

#### Color Code Key:

Required Materials  
Optional Recourses

Picmonic / Pixorize  
Boards & Beyond

Pathoma Videos  
Sketchy Pharm

Osmosis  
YouTube Videos

## Week #2 Topics

### TOPIC 6: ENDOCRINE PANCREAS – NEOPLASMS

- + Robbins Ch. 20 (pp. 784; 795) + Pathoma– Endocrine Pancreas
- + BB MEN Syndrome Video + Osmosis – Pancreatic Neuroendocrine Neoplasms
- + Tumors of the Endocrine Pancreas LG (Optional) @8:00 – 10AM (03/16)

### TOPIC 7: PSYCHIATRIC ASPECTS OF DIABETES, HYPOGLYCEMIA

- + Sterenson Ch. 55 (pp. 1159-1162) + Ch. 52 (pp. 1089; 1092)

### TOPIC 8: PITUITARY, HYPOTHALAMUS – GROSS ANATOMY AND EMBRYOLOGY

- + Gross Anatomy Pituitary PPT (on Canvas) + Klatt PPT (on Canvas)
- + BB Pituitary Gland Video
- + YouTube Video: The Noted Anatomist – Pituitary & Hypothalamus (~ 18 min.)

### TOPIC 9: PITUITARY, HYPOTHALAMUS – HISTOLOGY & CELL BIOLOGY

- + Pawlina: Ch. 21 (pp. 787-797) + (pp. 798-799) + Ch. 17 (pp. 622) + Plates 80-83 [pp. 820-827]
- + Endo Week #11 Histology PPT (on Canvas) + Pixorize – Prolactin + Pixorize – FSH + Pixorize – LH + Pixorize – GH
- + YouTube Video: Histology Wizard – Endocrine System – The Pituitary Gland (~ 11 min.)

### TOPIC 10: PITUITARY, HYPOTHALAMUS – PHYSIOLOGY

- + Boron Ch. 48 (pp. GH: 991-992) + Ch. 50
- + YouTube Video: Ninja Nerd – Endocrinology – Hypothalamus: Anterior Pituitary (~ 17 min.)
- + YouTube Video: Ninja Nerd – Endocrinology – Hypothalamus: Posterior Pituitary (~ 15 min.)
- + Pituitary Gland LG (Optional) @10AM – 11AM (03/16) + Picmonic – Endocrine Glands – Hypothalamus
- + Picmonic – Endocrine Glands – Ant. Pituitary + Picmonic – Endocrine Glands – Post. Pituitary
- + Pixorize – Anterior Pituitary + Pixorize – Posterior Pituitary

### TOPIC 10 SUBTOPIC: Neuroendocrine Causes of Amenorrhea

- + Fourman & Fazeli article (on Canvas)
- + BB Reproductive Hormones Video + BB Female Reproductive Hormones Video + BB Menstrual Cycle Video

### TOPIC 10 SUBTOPIC: Endocrine Regulation of Growth and Body Mass

- + Boron Ch. 48 (pp. 990 – 1005)
- + YouTube Video: Ninja Nerd – Endocrinology – GH (~ 25 min.)
- + Osmosis – Growth Hormone & Somatostatin + Osmosis – Growth Hormone Deficiency
- + Pixorize – Leptin + Pixorize – Ghrelin

### TOPIC 10 SUBTOPIC: Diabetes Insipidus and Syndrome of Inappropriate ADH (SIADH)

- + Boron Ch. 38 (pp. 819 – 820)
- + YouTube Video: Ninja Nerd – Endocrinology – ADH (~ 18 min.)
- + Osmosis – SIADH + Osmosis – Diabetes Insipidus
- + Picmonic – Hypothalamic & Pituitary Disorders – SIADH
- + Picmonic – Hypothalamic & Pituitary Disorders – SIADH Pharmacologic Interventions



Merritt Based Medicine

A Medical Student's Tips, Tricks, & Experiences

## Week #2 Topics

### TOPIC 10 SUBTOPIC: Biochemistry (overlapping with Physiology):

+ Marks Ch. 46 (pp. 963 – 964)

+ YouTube Video: Ninja Nerd – Endocrinology – Pineal Gland (~ 12 min.)

### TOPIC 11: PITUITARY ADENOMAS & HYPERPITUITARISM – PATHOLOGY

+ Robins Ch. 20 (pp. 749 – 754) + Pathoma – Anterior Pituitary + Pathoma – Posterior Pituitary

+ Osmosis – Pituitary Adenoma + Osmosis – Pituitary Apoplexy

+ Picmonic – Hypothalamic & Pituitary Disorders – Somatostatinoma

+ Picmonic – Hypothalamic & Pituitary Disorders – Sheehan’s Syndrome

### TOPIC 12: HYPOPITUITARISM – PATHOLOGY

+ Robins Ch. 20 (pp. 754 – 755; 1074 of Big Robins PDF on Canvas)

### TOPIC 13: PHARMACOLOGY – DRUGS & HORMONES RELATED TO THE PITUITARY AND HYPOTHALAMUS

+ Katzung Ch. 37 (pp. 667 – 685) +Thomas – Endo Pharm PPT (on Canvas)

+ Sketchy Pharm– GI & Endocrine – Hypothalamic & Pituitary – 4.1 - ADH, DDAVP (**pitressin and desmopressin**, ADH receptor antagonists)

+ Sketchy Pharm– GI & Endocrine – Hypothalamic & Pituitary – 4.2 – GH (GH analog-**somatropin**), **mecasermin, octreotide, pegvisomant, bromocriptine, cabergoline**)

+ Sketchy-Less Drugs: somatostatin analog- **lanreotide**, vasopressin receptor antagonists (**tolvaptan and conivaptan**)

### TOPIC 14: PSYCHIATRIC ASPECTS OF PITUITARY FUNCTION DISORDERS

+ Sterenson Ch. 55 (pp. 1158-1159)

**Optional Review: Histology B4M3 Week #11 Practice Questions (on Canvas)**

**March 19<sup>th</sup> : Block 4 Module 3 – Mid Mod Exam @ 8:00AM**



Merritt Based Medicine

A Medical Student's Tips, Tricks, & Experiences

## Week #3 Topics

### TOPIC 15: THYROID, PARATHYROID – EMBRYOLOGY

+ Klatt PPT (on Canvas)

+ YouTube Video: The Noted Anatomist – Thyroid & Parathyroid Glands (~ 22 min.)

### TOPIC 16: THYROID – HISTOLOGY & CELL BIOLOGY

+ Pawlina Ch. 21 (pp. 799-806; Plate 83 [pp. 826-827]) + Endo Week #12 Histology PPT (on Canvas)

### TOPIC 17: THYROID – PHYSIOLOGY

+ Boron Ch. 49 (pp. 1006-1017) + BB Thyroid Gland Video + Picmonic – Endocrine Glands – Thyroid Gland

+ YouTube Video: Ninja Nerd – Endocrinology – Thyroid Overview (~ 10 min.) + Pixorize – Thyroid Hormones

### TOPIC 17 SUBTOPIC: Neuroendocrine Causes of Amenorrhea

+ Fourman & Fazeli Article (Thyroid-related paragraphs) + BB Thyroid Disorders Video

### TOPIC 17 SUBTOPIC: Biochemistry (overlapping with Physiology):

+ Marks Ch. 41 (pp. 856 – 859)

+ YouTube Video: Ninja Nerd – Endocrinology – Synthesis of Thyroid Hormone (~ 25 min.)

+ YouTube Video: Ninja Nerd – Endocrinology – Target Organs of the Thyroid (~ 35 min.)

### TOPIC 18: HYPOTHYROIDISM AND HYPERTHYROIDISM (PATHOLOGY)

+ Robbins Ch. 20 (pp. 755 – 763) + BB Thyroid Disorders Video

+ Pathoma – Hyperthyroidism + Pathoma – Hypothyroidism

+ Thyroid Gland (thyroid nodules, thyroid imaging, thyroiditis, thyroid cancer) LG \*recording on canvas\* (03/22)

+ Picmonic – Hypothyroidism Assessment + Picmonic – Hypothyroidism Intervention

+ Picmonic – Hyperthyroidism Assessment + Picmonic – Hyperthyroidism Intervention

### TOPIC 19: THYROID NEOPLASMS

+ Robbins Ch. 20 (pp. 763 – 768) + Big Robbins PDF (pp. 745) (on Canvas)

+ BB Thyroid Cancer Video + Pathoma – Thyroid Neoplasia + Picmonic – Anaplastic Thyroid Cancer

+ Picmonic – Papillary Thyroid Carcinoma + Medullary Carcinoma + Picmonic – Follicular Carcinoma

### TOPIC 20: IMMUNOLOGIC ASPECTS OF THYROID DISEASE

+ Chapel Ch. 15 (pp. 289-294) + BB Thyroid Disorders Video + Pathoma – Thyroiditis

+ Picmonic – Subacute Lymphocytic Thyroiditis + Picmonic – Hashimoto's Thyroiditis

+ Picmonic – Thyroid Storm Causes + Picmonic – Thyroid Storm + Picmonic – Graves' Disease Characteristics



Merritt Based Medicine

A Medical Student's Tips, Tricks, & Experiences

## Week #3 Topics

### TOPIC 21: PHARMACOLOGY- ANTITHYROID DRUGS AND THYROID HORMONES

- + Katzung Ch. 38 (pp. 687-701) + Greenspan Ch. 7 (pp. 229 – 236)
- + Thomas – Endo Pharm PPT (on Canvas) + Picmonic – Graves' Disease Labs & Treatment
- + Sketchy Pharm– GI & Endocrine – Thyroid, Parathyroid & Adrenal – 3.1 – **Propylthiouracil, methimazole, levothyroxine** + Sketchy Pharm– Neuro & Psych – Mood Stabilizers – 4.1 – **Lithium**
- + Sketchy-Less Drugs: **liothyronine, liotrix, thiocyanate, perchlorate, fluoborate, iodide**

### TOPIC 22: PSYCHIATRIC ASPECTS OF THYROTOXICOSIS, HYPOTHYROIDISM

- + Sterenson Ch. 55 (pp. 1155-1156) + Lithium-induced Hypothyroidism and Effects of Depression on Tests of Thyroid Functioning (pp. 124) + Neuropsychiatric Signs and Symptoms Associated with Hypothyroidism and Hyperthyroidism (pp. 121)

### TOPIC 23: PARATHYROID & C-CELLS OF THE THYROID – HISTOLOGY & CELL BIOLOGY

- + Pawlina Ch. 21 (pp. 806-808) + Plate 83 (pp. 826-827) + Endo Week #12 Histology PPT + Picmonic – Parathyroid

### TOPIC 24: CALCIUM, PHOSPHATE, VITAMIN D, PTH, CALCITONIN & OTHER HORMONES AFFECTING CALCIUM & PHOSPHATE METABOLISM (PARATHYROID PHYSIOLOGY WITH BIOCHEMISTRY)

- + Pawlina Ch. 21 (pp. 1054-1069) + Ch. 36 (pp. 785-789) + Pixorize – Calcitonin + Pixorize – Parathyroid Hormone
- + YouTube Video: Ninja Nerd – Endocrinology – Parathyroid Gland | Calcitonin (~ 35 min.)
- + Mineral homeostasis (parathyroid, vitamin D) (Optional) LG @8AM – 10AM (03/23) + BB Parathyroid Glands Video

### TOPIC 25: HYPERPARATHYROIDISM AND HYPOPARATHYROIDISM (PATHOLOGY)

- + Robbins Ch. 20 (pp. 769 – 772) + Grennspace (pp. 269 – 270)
- + Pathoma – Parathyroid Gland + Picmonic – Hypoparathyroidism + Picmonic – Primary Hyperparathyroidism

### TOPIC 26: DRUGS & HORMONES RELATED TO PARATHYROID GLANDS (PHARMACOLOGY)

- + Katzung Ch. 42 2-5 (pp. 772 - 790) + Thomas – Endo Pharm PPT (on Canvas)
- + Sketchy Pharm– GI & Endocrine – Thyroid, Parathyroid & Adrenal – 3.3 – **Teriparatide, vitamin D (analogs: cholecalciferol, ergocalciferol, calcifediol, calcitriol), cinacalcet, sevelamer**
- + Sketchy Pharm– GI & Endocrine – Thyroid, Parathyroid & Adrenal – 3.2 – Bisphosphonates (**etidronate, pamidronate, alendronate, risedronate, tiludronate, zoledronate, ibandronate**), raloxifene, **denosumab, calcitonin**
- + Sketchy Pharm– GI & Endocrine – Thyroid, Parathyroid & Adrenal – 3.4 – **Corticosteroids**
- + Sketchy Pharm– Cardio & Renal – Diuretics – 3.3 – **Thiazide Diuretics**
- + Sketchy-Less Drugs: **lanthanum carbonate, sodium phosphate, fluoride**

### TOPIC 27: PSYCHIATRIC ASPECTS OF HYPERCALCEMIA AND PRIMARY HYPERPARATHYROIDISM

- + Sterenson Ch. 55 (pp. 1157-1158)

**Optional Review: Histology B4M3 Week #12 Practice Questions (on Canvas)**



Merritt Based Medicine

A Medical Student's Tips, Tricks, & Experiences

## Week #4 Topics

### TOPIC 28: ADRENAL GLAND – EMBRYOLOGY

- + Klatt PPT (on Canvas) + Picmonic – 17 Alpha-Hydroxylase Deficiency
- + Picmonic – 11 Beta-Hydroxylase Deficiency + Picmonic – 21 Hydroxylase Deficiency
- + YouTube Video: The Noted Anatomist – Adrenal Gland (~ 20 min.)

### TOPIC 29: ADRENAL GLAND/CORTEX – HISTOLOGY & CELL BIOLOGY

- + Pawlina Ch. 21 (pp. 808-809; 812-817) + Plate 84 (pp. 786-787) + Endo Week #13 Histology PPT (on Canvas)
- + YouTube Video: Ninja Nerd – Endocrinology – Adrenal Gland Overview (~ 11 min.)
- + YouTube Video: Histology Wizard – Endocrine System – The Adrenal Gland (~ 8 min.)

### TOPIC 30: ADRENAL CORTEX – PHYSIOLOGY AND BIOCHEMISTRY

- + Boron Ch. 50 (pp. 1018-1030 \* except Figure 50-2\*) + Kacsoh's Steroidogenesis Monograph (on Canvas)
- + Kacsoh's GRA Monograph (on Canvas) + Kacsoh & Yang's Adrenal Cortex (Pre-Recorded) LG - (03/24)
- + BB Adrenal Glands Video + BB Adrenal Glands Disorders Video
- + YouTube Video: Ninja Nerd – Endocrinology – Adrenal Gland: Aldosterone (~ 25 min.)
- + YouTube Video: Ninja Nerd – Endocrinology – Adrenal Gland: Cortisol (~ 30 min.)
- + YouTube Video: Ninja Nerd – Endocrinology – Adrenal Gland: Gonadocorticoids (~ 14 min.)
- + YouTube Video: Ninja Nerd – Endocrinology – Adrenal Gland: Catecholamines (~ 26 min.)
- + Pixorize – Steroid Hormones
- + Picmonic – Endocrine Glands – Adrenal Gland (Basic) + Picmonic – Endocrine Glands – Adrenal Gland (Advanced)

### TOPIC 30 SUBTOPIC: Neuroendocrine Causes of Amenorrhea

- + Fourman & Fazeli Article (Adrenal-related paragraphs) + Kacsoh's Steroidogenesis Monograph (on Canvas)
- + Kacsoh & Yang's Adrenal Cortex Large Group PPT (on Canvas)
- + Picmonic – Endocrine Glands – Peptide Hormones + Picmonic – Endocrine Glands – Steroid Hormones
- + Picmonic – Cushing Syndrome Characteristics + Picmonic – Cushing Syndrome Symptoms & Diagnosis

### TOPIC 31: ADRENAL GLAND/CORTEX (PATHOLOGY)

- + Robbins Ch. 20 (pp. 785 – 793) + Pathoma – Adrenal Cortex
- + BB Congenital Adrenal Hyperplasia Video + BB Adrenal Glands Disorders Video
- + Picmonic – Waterhouse – Friderichsen Syndrome + Picmonic – Primary Hyperaldosteronism

### TOPIC 32: IMMUNOLOGIC ASPECTS OF ADRENAL GLAND DYSFUNCTION

- + Chapel Ch. 15 (pp. 297-298) + BB Metabolic Acidosis Video
- + Picmonic – Addison's Disease + Picmonic – Addisonian Crisis



Merritt Based Medicine

A Medical Student's Tips, Tricks, & Experiences

## Week #4 Topics

### TOPIC 33: ADRENAL CORTEX – ENDOCRINE HORMONES & PRECURSORS (PHARMACOLOGY)

+ Katzung Ch. 39 (pp. 703 – 719) + Thomas – Endo Pharm PPT (on Canvas)

+ Sketchy Pharm– Blood & Inflammation – Anti-Inflammatory – 3.2 – Gout Drugs (focus on **prednisone**)

+ Sketchy Pharm – Antimicrobials – Anti-Fungal – 5.2 – Azoles (focus on **ketoconazole**)

+ Sketchy-Less Drugs: **corticotropin, cosyntropin, prednisolone, methylprednisolone, triamcinolone, betamethasone, dexamethasone, mitotane, abiraterone, metyrapone, etomidate, mifepristone**

### TOPIC 34: PSYCHIATRIC ASPECTS OF CUSHING'S SYNDROME, ADDISON'S DISEASE, STEROID USE AND STEROID WITHDRAWAL SYNDROMES

+ Sterenson Ch. 6 Clinical Signs and Symptoms of Adrenal Hormone Excess and Deficiency Chart (pp. 125)

+ Sterenson Ch. 6 (pp. 127) + Ch. 54 (pp. 1443) + Ch. 55 (pp. 1156-1157)

+ Kornstein Ch. 49 Anabolic Steroids – (pp. 808; 815)

### TOPIC 35: ADRENAL MEDULLA – HISTOLOGY & CELL BIOLOGY

+ Pawlina Ch. 21 (pp. 809-812) + Plate 85 (pp. 830-831 – 21) + Endo Week #13 Histology PPT (on Canvas)

### TOPIC 36: ADRENAL MEDULLA – PHYSIOLOGY AND BIOCHEMISTRY

+ Boron Ch. 50 (pp. 1030-1034)

### TOPIC 37: ADRENAL GLAND – MEDULLARY NEOPLASMS (PATHOLOGY)

+ Robbins Ch. 7 (pp. 286-289) + Ch. 20 (793-794) + Pathoma – Adrenal Medulla

+ Picmonic – Pheochromocytoma

### TOPIC 38: MULTIPLE ENDOCRINE NEOPLASIA

+ Robbins Ch. 20 (pp. 768; 795)

+ Multiple Endocrine Neoplasia (Pre-Recorded) LG – (03/24)

+ Picmonic – Glucagonoma + Picmonic – MEN 1 + Picmonic – MEN 2A + Picmonic – MEN 2B

**Optional Review: Histology B4M3 Week #13 Practice Questions (on Canvas)**

**March 25th: CBSE @8AM**

**March 31st: Review for the EOM Quiz & the NBME Formative Quiz.**

**April 1st: Block 4 Mod 3 End of Module Exam** – NBME Formative Quiz Directly Following



Merritt Based Medicine

A Medical Student's Tips, Tricks, & Experiences

## Review Opportunities

[Gross Anatomy Review for Endocrine PPT \(on Canvas\)](#)

[Endo Physiology Recording \(on Canvas\)](#)

[MUSM's Endocrine Quiz \(on Canvas\)](#)

[First Aid](#)

[AMBOSS Questions/Outlines](#)

[Web-Path Questions](#)

[U-World Questions](#)

## Links to Free Resources

[Merritt Based Medicine Website – Drug, Disorder, Histology, etc. Charts](#)

[Merritt Based Medicine's Endocrine YouTube Playlist](#)

[Pixorize Mnemonics for USMLE](#)

[Daddy Goljan Lectures \(Spotify\)](#)

[Divine Intervention's Endocrine Podcasts](#)

[University of Wisconsin School of Medicine's Histology Lab Videos](#)



Merritt Based Medicine

A Medical Student's Tips, Tricks, & Experiences





**Merritt Based Medicine**

A Medical Student's Tips, Tricks, & Experiences