

## **HORMONES RULE: Track 12**

*This song presents each of the endocrine organs along with their function and the hormones they produce. A color is used to highlight hormones from one organ. That color is also involved in the picture of the organ to the right of the lyrics. Some of the hormones are abbreviated to fit them into the song. They are as follows:*

ACTH: adrenocorticotropic hormone

FSH: follicle stimulating hormone

LH: luteinizing hormone

TSH: thyroid stimulating hormone

RH: releasing hormone – stimulates activity, a general term

IH: inhibiting hormone – inhibits activity, a general term

ADH: anti-diuretic hormone

PTH: parathyroid hormone

PP: pancreatic polypeptide

Who's the boss? Tell me who's the boss?  
Philosophers / theologians will argue  
But I know one thing is true  
Slow & steady, hormones rule

Initiate, equilibrate, help create

**Pituitary:** Hangs from the infundibulum

Sets reproduction's beat like a drum

Metabolism & growth highly affected

Extensive capillaries make hormones accepted

**GH / Growth hormone – yeah just like it sounds**

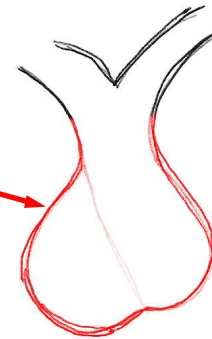
**ACTH / hits adrenal cortex when glucose abounds**

**FSH and LH / Gonadotropins**

**Stimulate release of sex hormones**

**PRL / prolactin - grows breasts and fills em**

**TSH / affects energy use, that's metabolism**



Initiate, equilibrate, help create

**Hypothalamus** in brain: from whence pituitary hangs

She's an endocrine bite with neural fangs

Hypothalamus a Queen who gives orders

Her regulatory hormones carry messages like porters

**RH & IH, release or inhibit**

**Make pituitary either stop or spit**

**Oxytocin / gives reproductive muscle follow through**

**Some motor fibers tell adrenal medulla what to do**

**ADH / our old friend that holds it's water**

**Tells kidneys to keep H<sub>2</sub>O when they oughta**

Initiate, equilibrate, help create

**Thyroid gland:** setting metabolism straight

The body's throttle to sustain and create

**Thyroxine and Triiodothyronine**

Boost production of mitochondrial ATP

**The C cells produce Calcitonin**

Keeps Calcium in bones instead of roam

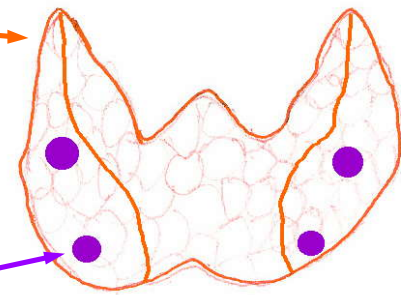
Initiate, Equilibrate, help create

**Parathyroid glands:** 2 pairs posterior

Stuck on the thyroid like 4 little burs

**PTH Stimulates osteoclasts, inhibits osteoblasts**

Releases Calcium from bones real fast



Posterior view

Initiate, Equilibrate, help create

**Kidneys:** lots of news for your blood

Hormones adjust viscosity - like water or mud

**Erythropoietin responds to low O(xygen)**

Makes RBC production get up and go

**Renin sets off a chain of response**

To up blood volume like the thumb of the Fonz

**Calcitriol likes to have Ca<sup>2+</sup> in a glut**

Increases Ca<sup>2+</sup> and Phosphorus absorption in the gut

Initiate, Equilibrate, help create

**Adrenal glands:** poised atop the kidneys

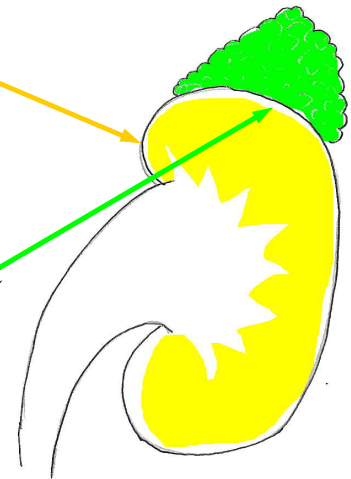
Helps body decide whether it fights or flees

**Epinephrine, norepinephrine in adrenal medulla**

Arm the sympathetic system - fear might fool ya

**Adrenal Cortex has dozens of corticosteroid prescriptions**

Vital for selecting genes for transcription



Initiate, equilibrate, help create

**Pancreas:** Digestive mostly, 1% endocrine

Affects glucose levels, buffers sweet sin

**GH-TH**, slows some digestive actions

**PP**, inhibits gallbladder contractions

**Glucagon** made by alpha cells - help hypoglycemia please

Cause glycogen breakdown - hepatic glucose release

**Insulin from Beta cells increases glucose uptake**

And ups glycogen synthesis - saved for a rainy day

Initiate, Equilibrate, help create

**Pineal gland:** hidden in the ventricle third

Pinealocytes make melatonin, not yet defined by words

Suggested functions for mysterious melatonin

Set circadian rhythm, Inhibit reproduction

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Philosophers, Theologians will argue

But I know one thing is true

Slow and steady hormones rule

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