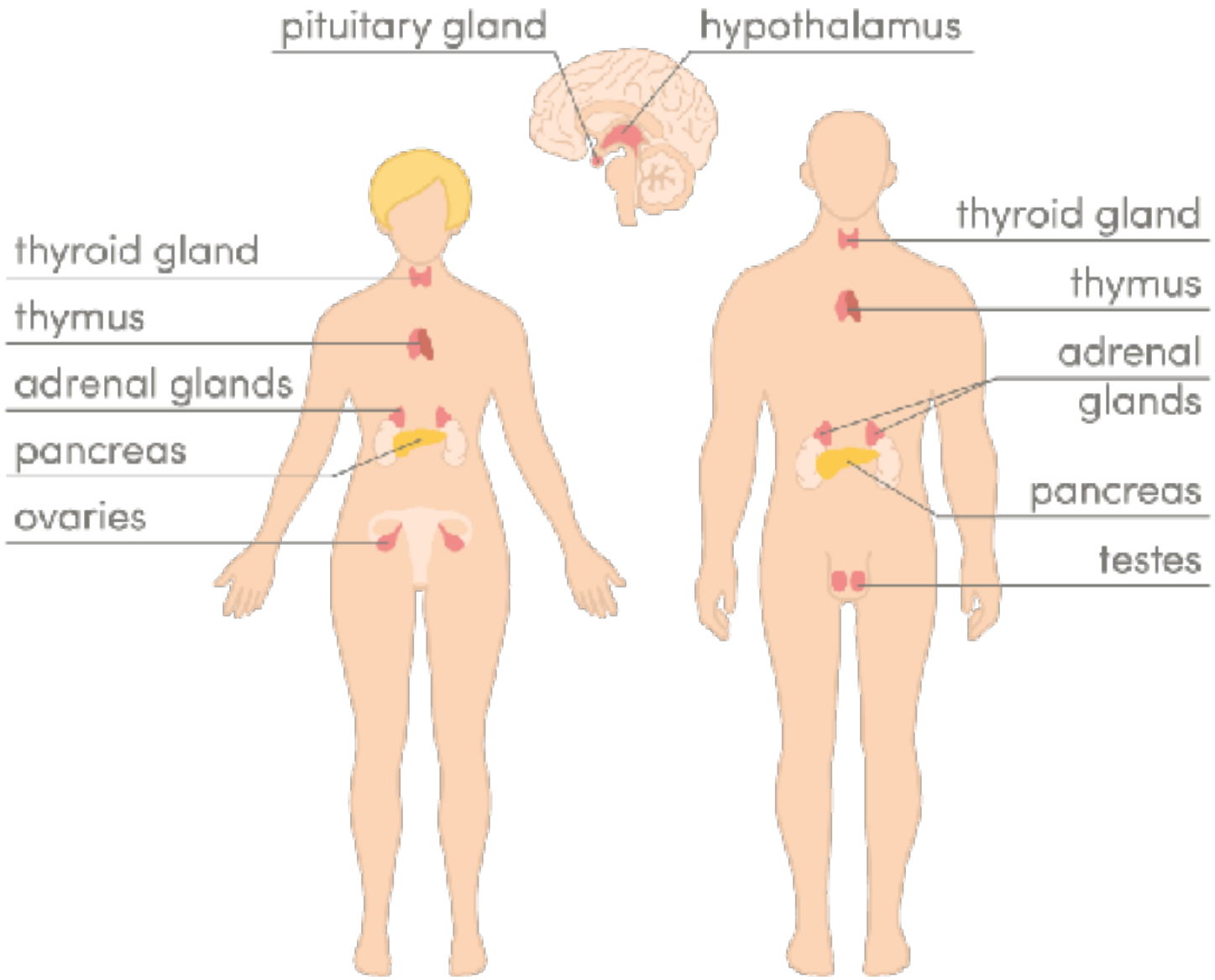
Module 1

Endocrine System Basics, Stress and the HPA Axis

Lesson 1

NOURISH & FLOURISH with Maria

The Endocrine System



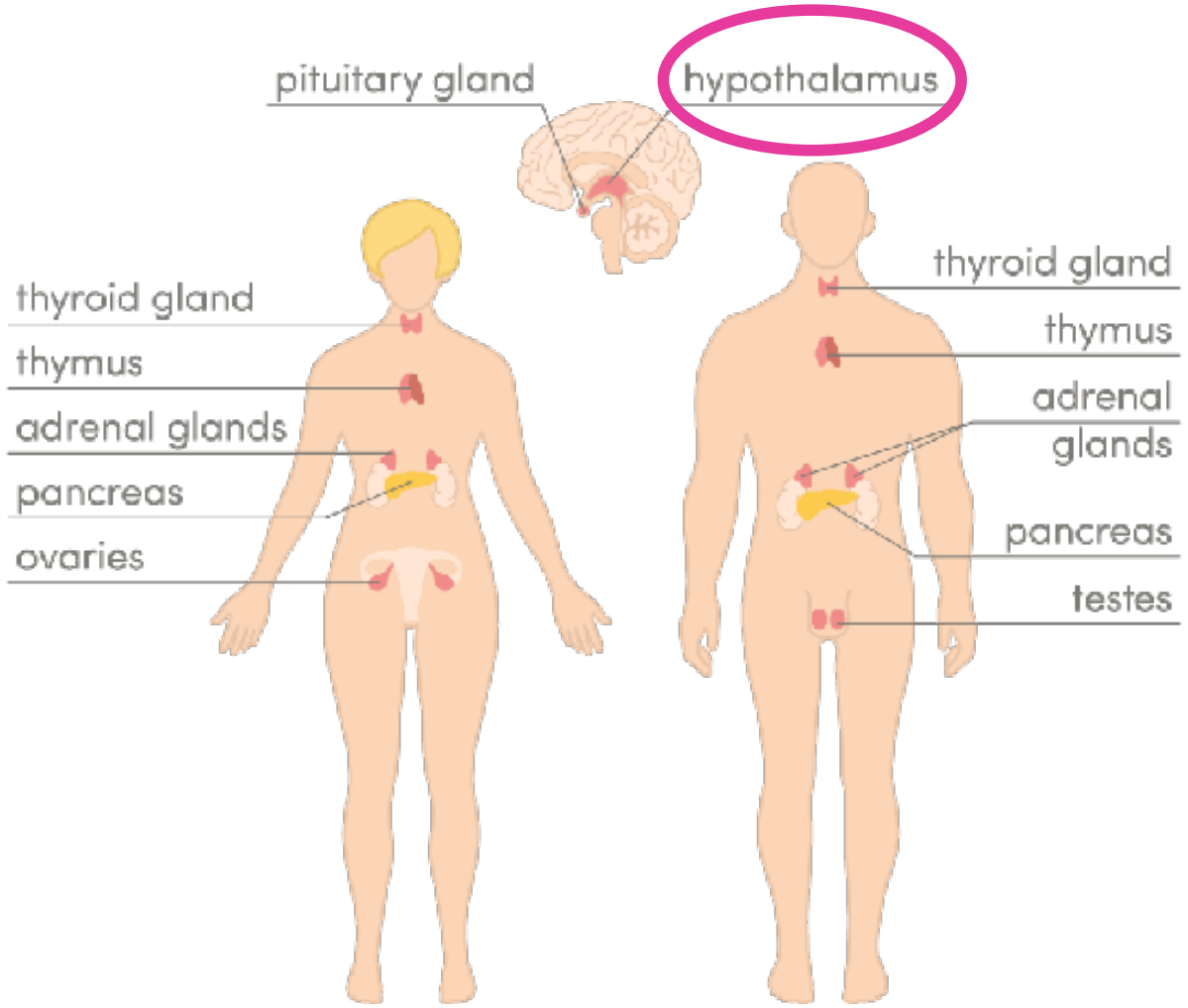
The endocrine system is made up of:

Glands

Hormones

Receptors

Glands of The Endocrine System



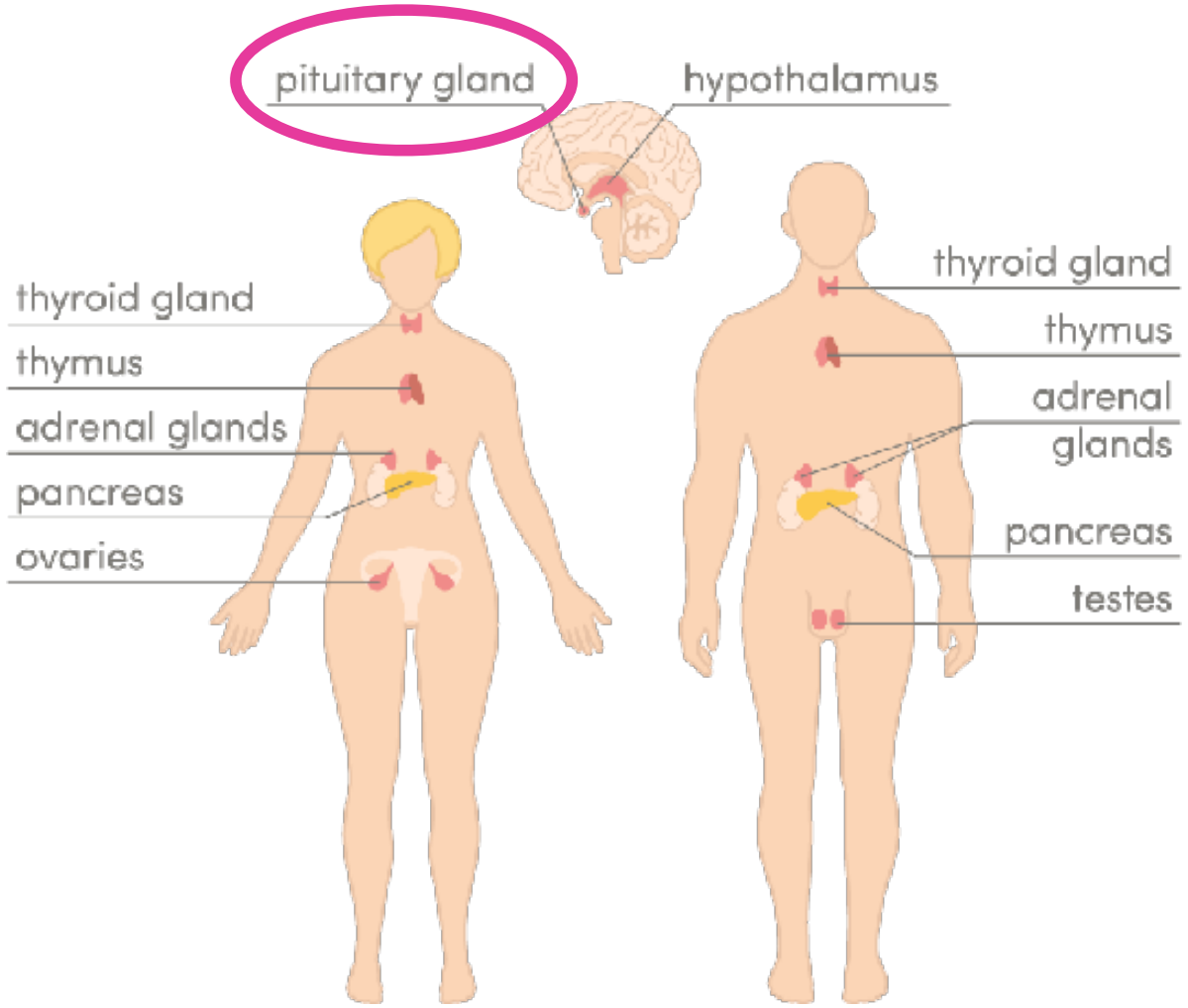
HYPOTHALAMUS

The link between the endocrine & nervous systems

In control of pituitary gland

Think of the hormones it secretes as **releasing** hormones

Glands of The Endocrine System



PITUITARY

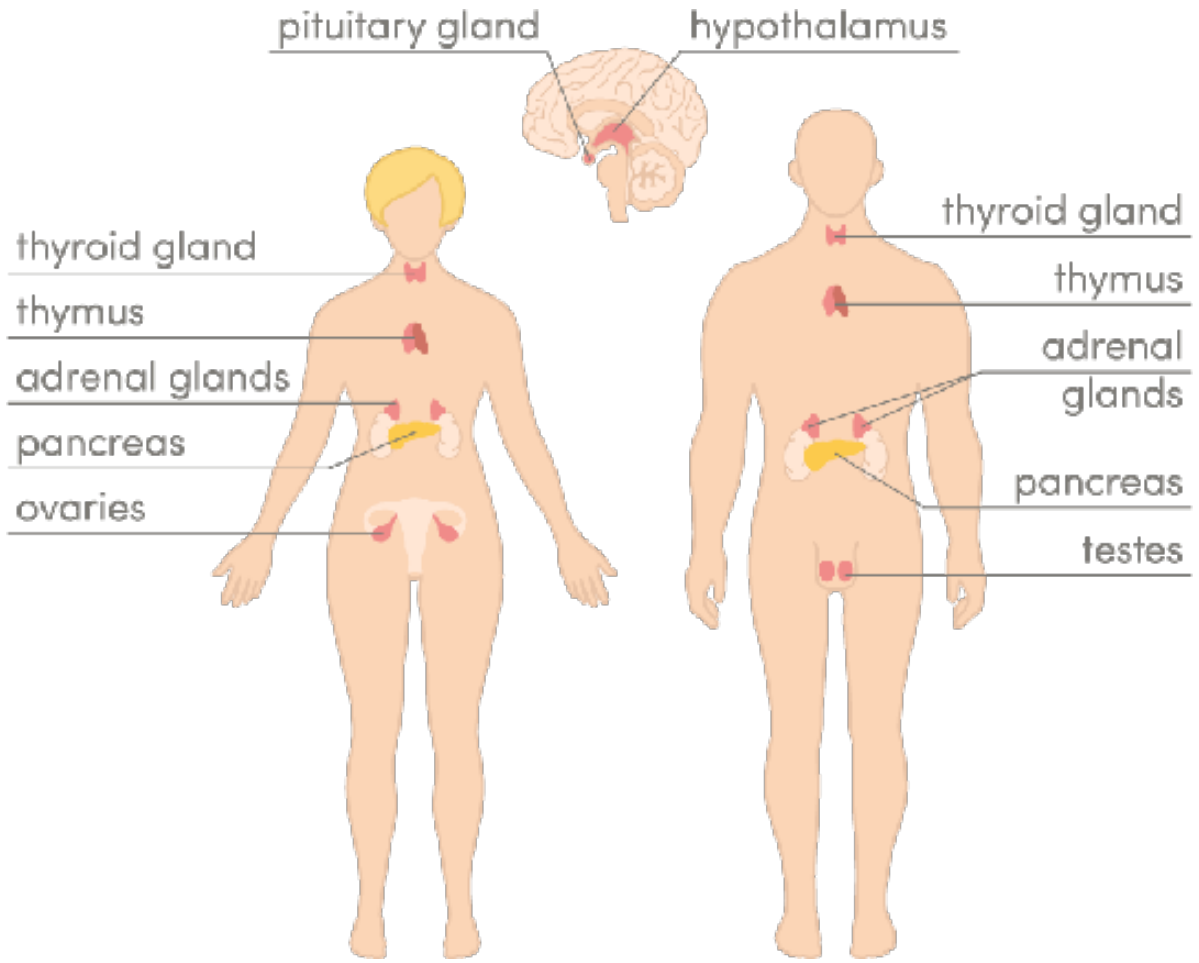
Has 2 parts (anterior and posterior lobes) that have 2 very separate functions

Often called the **Master Gland**

Controls other parts of the endocrine system, namely the thyroid gland, adrenal glands, ovaries, and testes

Stimulating hormones

Glands of The Endocrine System



PINEAL

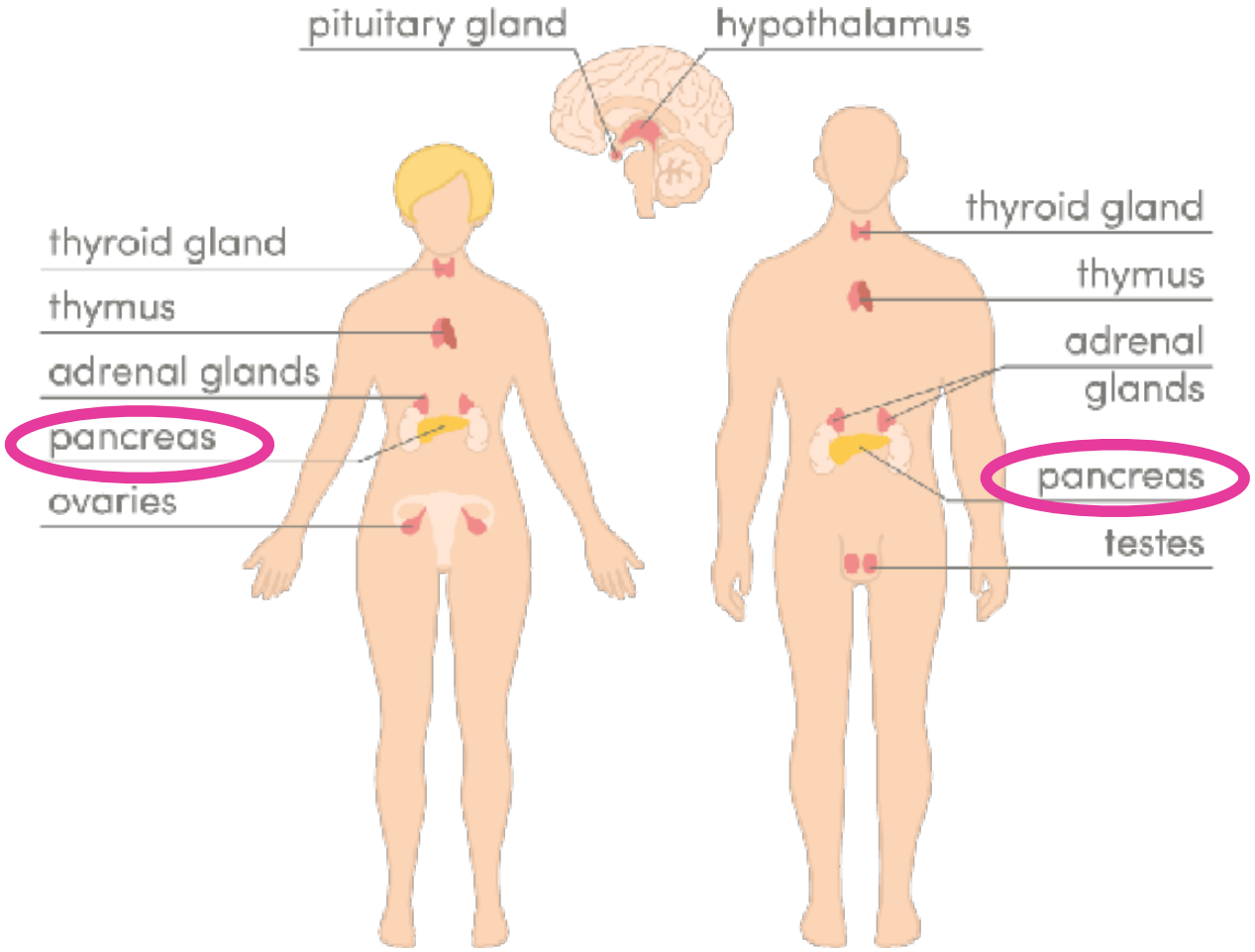
Shaped like a pine cone and is 1/3” long

The only hormone it secretes is melatonin

Influenced by light and dark

Melatonin helps control your circadian (biological) rhythm, regulating certain reproductive hormones

Glands of The Endocrine System



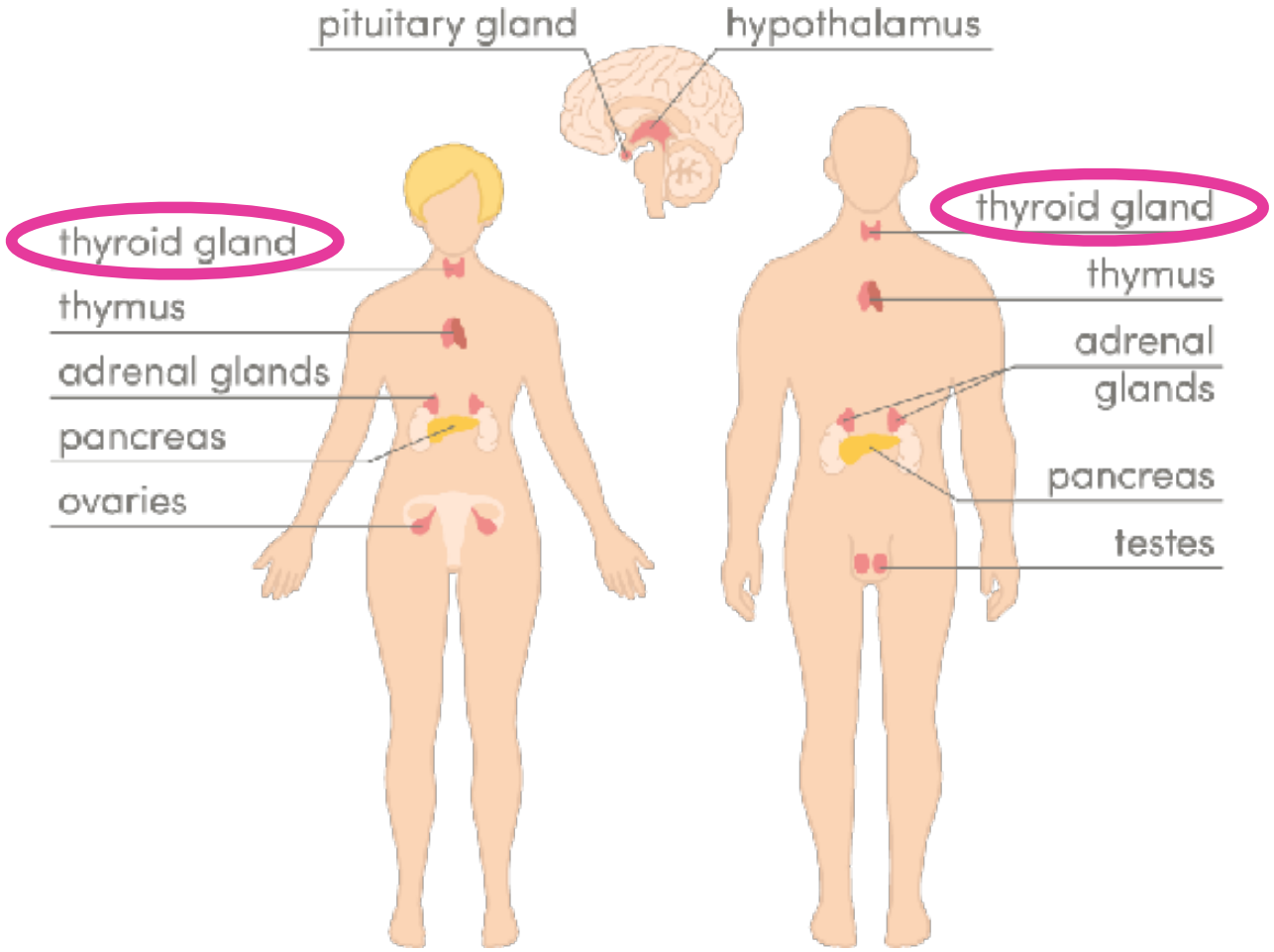
PANCREAS

6 inch-long gland

Lies deep within the abdomen

Maintains sugar balance in the body through insulin and glucagon

Glands of The Endocrine System



THYROID

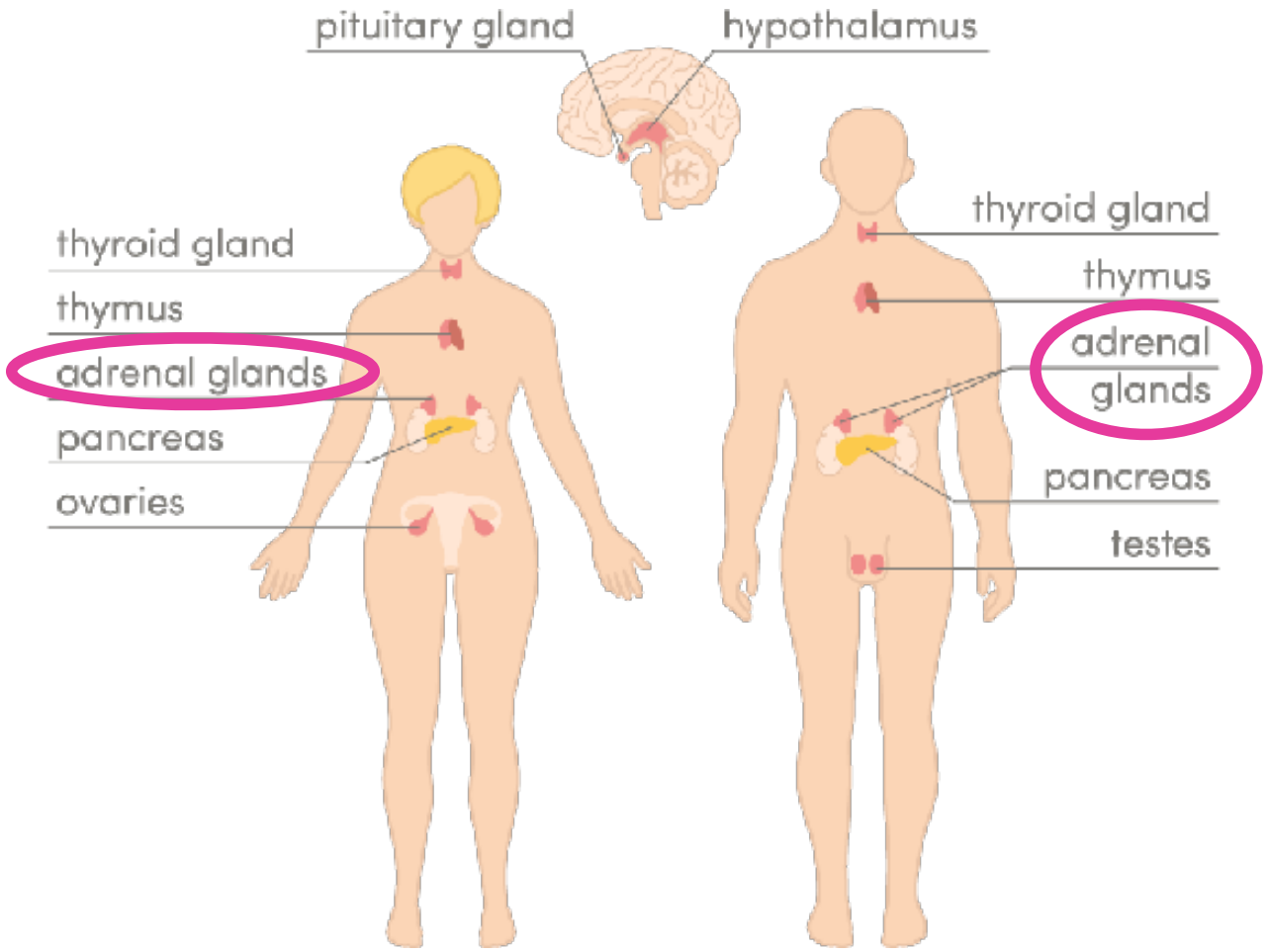
Butterfly-shaped gland

At the base of the neck

Regulates your metabolism, your body's ability to break down food into energy

Every other cell depends on thyroid to energize it

Glands of The Endocrine System



ADRENALS

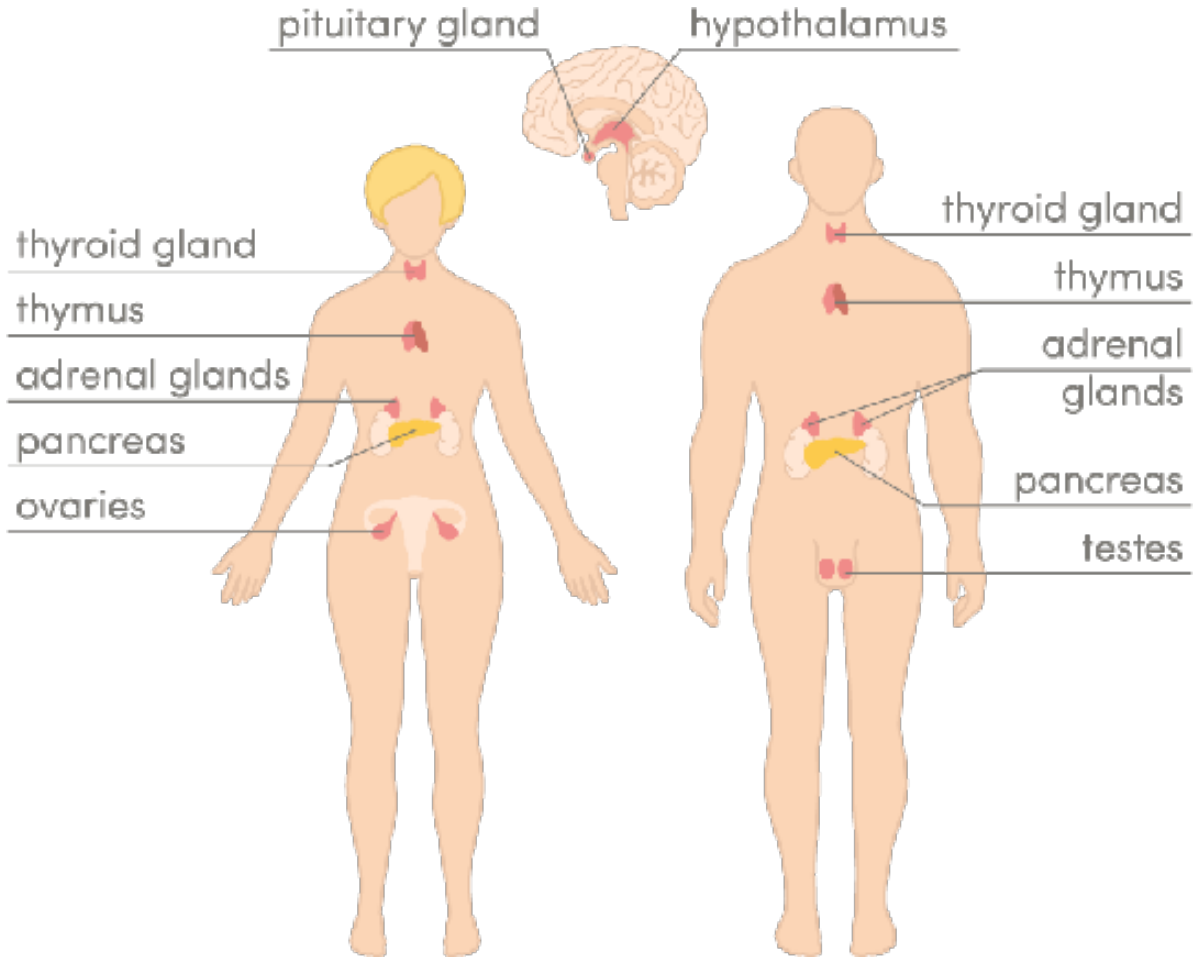
Pair of walnut-sized glands

Sit atop the kidneys

Produce hormones of stress, namely adrenaline and cortisol

Also produce some of women's testosterone

Glands of The Endocrine System



PARATHYROID

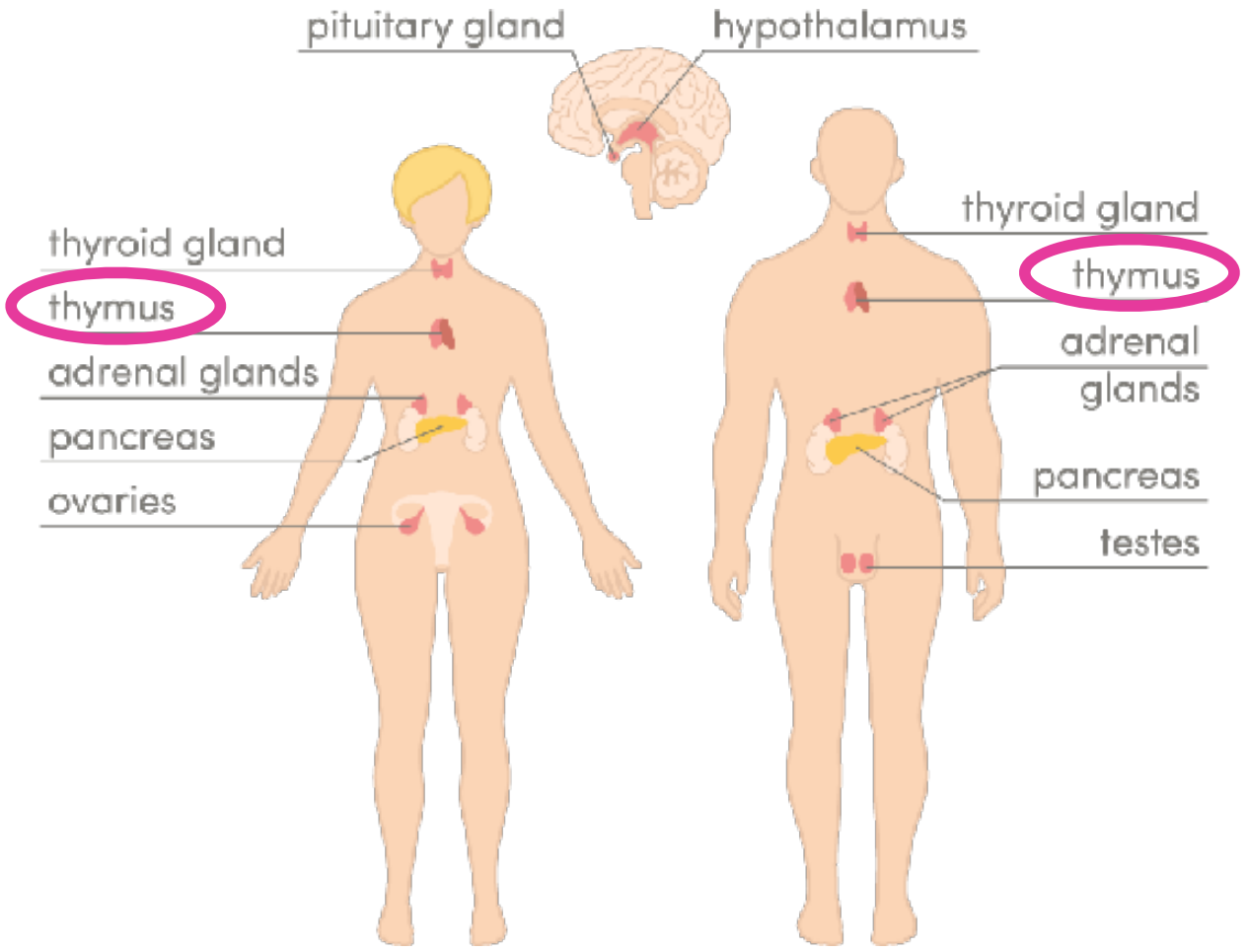
4 tiny glands

Located on the back of the thyroid

Sole purpose of secreting parathyroid hormone

Regulates calcium level in blood

Glands of The Endocrine System

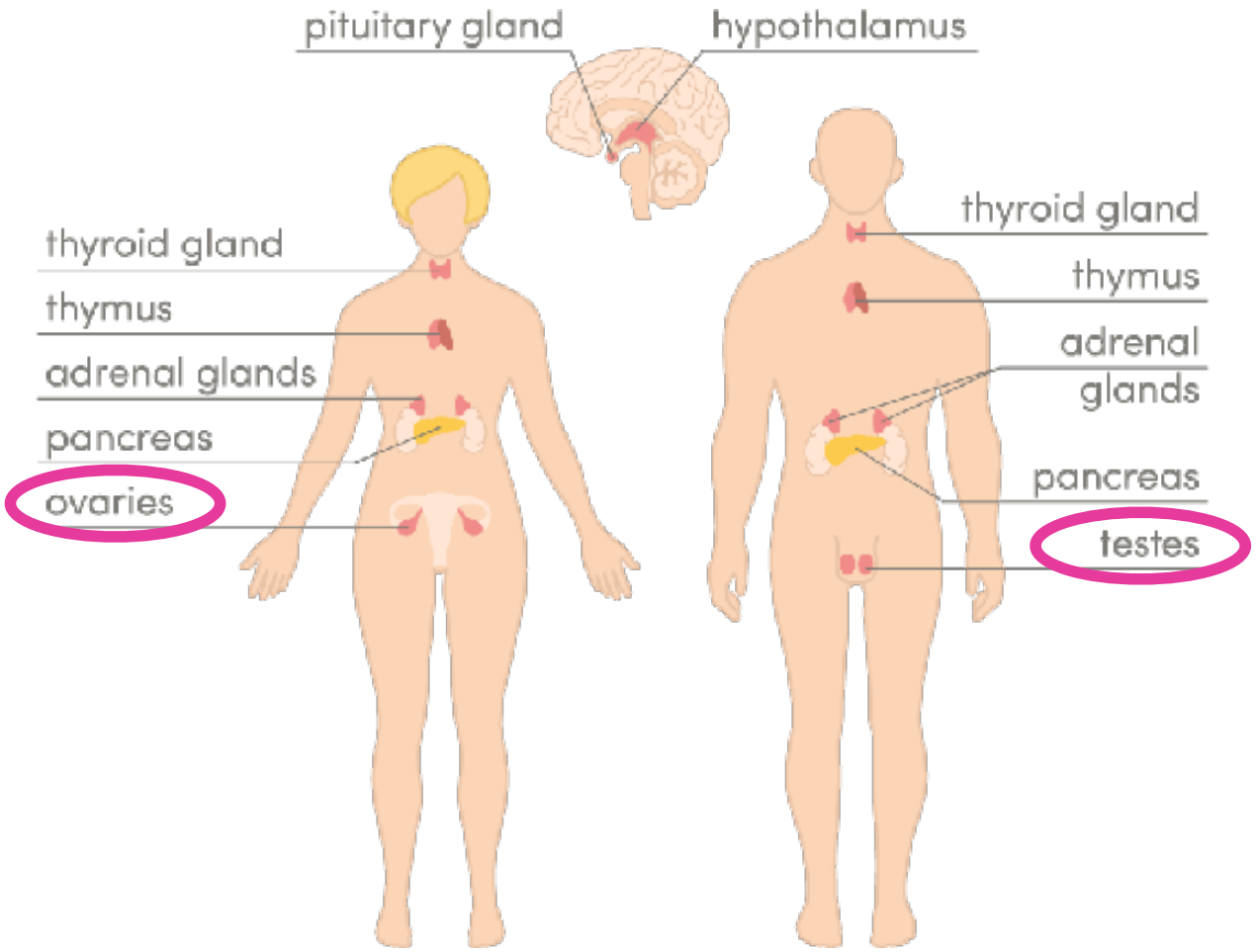


THYMUS

Produces a type of white blood cells

Helps guard against autoimmunity

Glands of The Endocrine System



GONADS

Ovaries in women, Testes in men

The main ovarian hormones are estrogen and progesterone

Ovaries also make testosterone

Men make estrogen from their testosterone and progesterone in their adrenals and testes

Neuroendocrine Systems

- 3 major systems in the body with hypothalamus and pituitary glands in control.
- These systems integrate the nervous system and the endocrine system.
  - The HPA Axis
  - The HPG Axis
  - The HPT Axis
- These systems are not separate but all interact with each other.

Your clients will need a clinician who is able to assess the adrenals, thyroid and sex hormone production.

The Stress Response

Is the surveillance system of the body for our protection

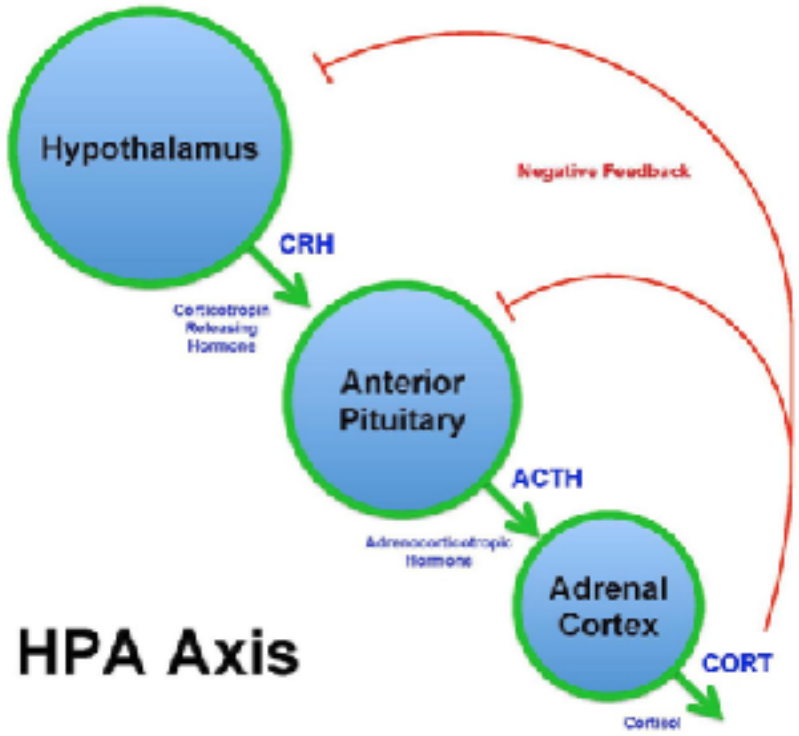
When the brain perceives a threat, it initiates the stress response via 2 systems:

1. Sympathoadrenomedullary system (SAS)
2. HPA Axis

Axis refers to a series of signals

The stress response is initially protective, helping us adapt to stressors

Long-term adaptation comes with a price



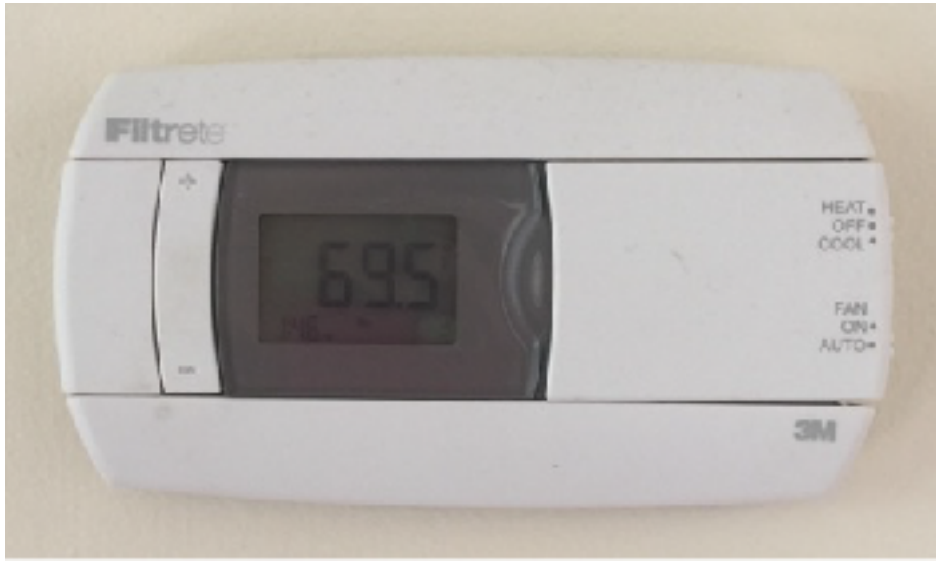
What is a Feedback Mechanism?

What is a Feedback Mechanism?

Similar to the thermostat in your home

Senses the need for more or less heat or air conditioning and either goes up or down

In your body, its the hypothalamus that detects blood levels of hormones and either increases or decreases production



What Causes Our Stress & Symptoms?

Stress is any influence, internal or external that causes or leads to malfunction

-Reed Davis

What Causes Our Stress + Symptoms?

Mental/emotional spiritual

- Lying/cheating
- Negative thoughts
- Fear/excessive worry
- Lack of purpose
- Existential angst
- Bad relationships

Physical/Biomechanical

- Accidents
- Nerve compression
- Poor posture
- Fractures
- Excessive/prolonged exercise

Chemical/environmental

- Foods
- Additives/pesticides/ herbicides, GMOs
- Rx medication
- Recreational drugs
- Parasites/fungi/viruses
- OTC medicines
- Birth control
- Sleep deprivation
- No/extremely limited exercise
- Personal care products

What Causes Our Stress + Symptoms?

IMBALANCES + STRESS (often hidden, occasionally obvious)

If not addressed (or covered up with drugs)

Problems cascade into other areas (hint: the body is one connected whole, not a sum of parts)

Bodily chaos ensues

Why Focus on the HPA Axis & Decreasing Stress?

Why Focus on the HP
& Decreasing Stress?

HPA axis function is command
of the entire body

Glucocorticoids have an ef
on almost every cell

When the HPA axis is not func
optimally, we can have prob
in diverse areas of the bo

HPA Axis function affects everything

- Carbohydrate Metabolism
- Bone Health
- Brain Health and Mood
- Endocrine Function
- Digestive Capability
- Capacity fo Effective Detox

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with

maria

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