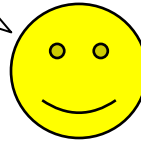


Personal data I can
use for a lifetime!!

Heck yeah!



BI 121 Lecture 11

- I. **Announcements** Blood Chem Lab today! Fun day!!
Personal data!!! If you haven't already done so, please review Lab 5 in LM or on our website. Thanks sincerely!
Lab Manual & Exam I Remaining Returns. Q2 Exam I?
- II. **Safety & Techniques Review for Blood Chem Lab** Q?
- III. **Endocrine Connections** LS ch 17, DC Module 13, SI Fox +...
 - A. Posterior pituitary storage site DC p 108, LS fig 17-4 p 502
 - B. Anterior pituitary hormones DC pp 105-7, LS pp 502-6
 - C. Endocrine feedback + reflexes LS p 540 fig 17-7
 - D. GH: Body builder's dream? Fountain of youth?
LS pp 506-10, fig 17-10, 17-11
 - E. Peripheral endocrine organs DC pp 109-13, LS pp 513-36
 1. Pancreas (insulin – glucagon see-saw!)
 2. Thyroid
 3. Adrenals

No food, drink or gum in lab today! Thanks sincerely!



...Healthy, tasty & fresh, but not in lab!!

PREPARATION



WASH & DRY



ALCOHOL



SAMPLE+TESTS

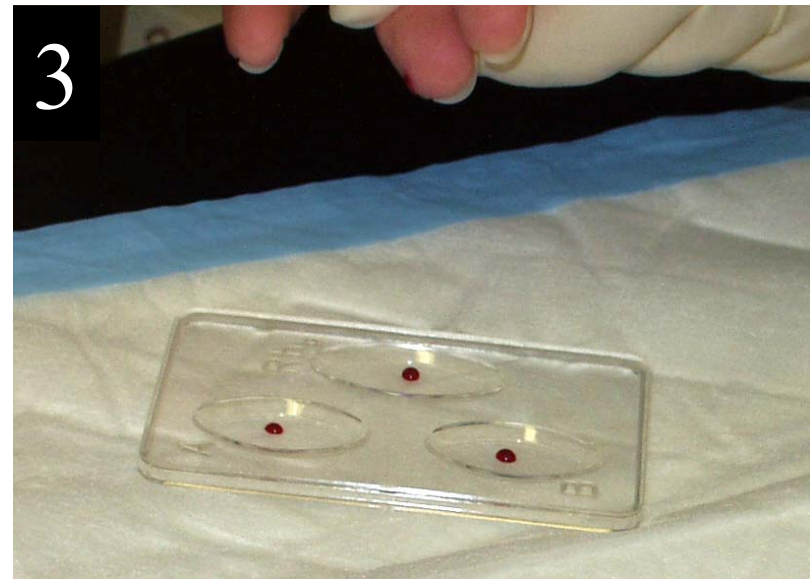


1

OBTAIN μ SAMPLE



BLOOD GLUCOSE



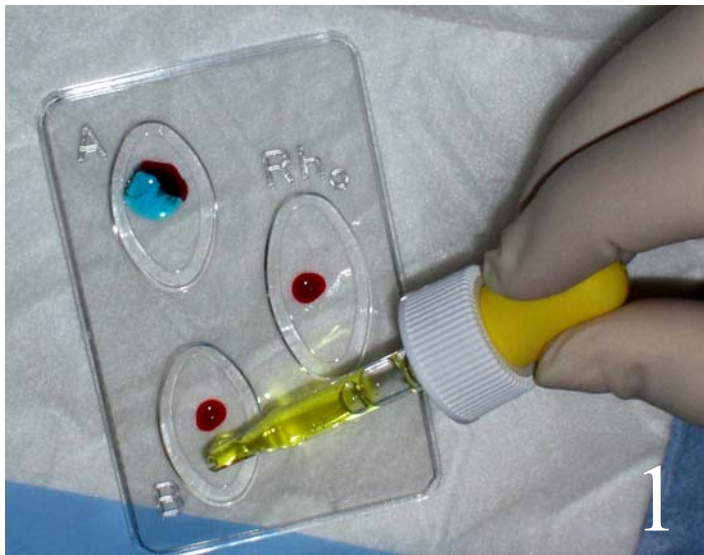
BLOOD TYPING

BLOOD GLUCOSE

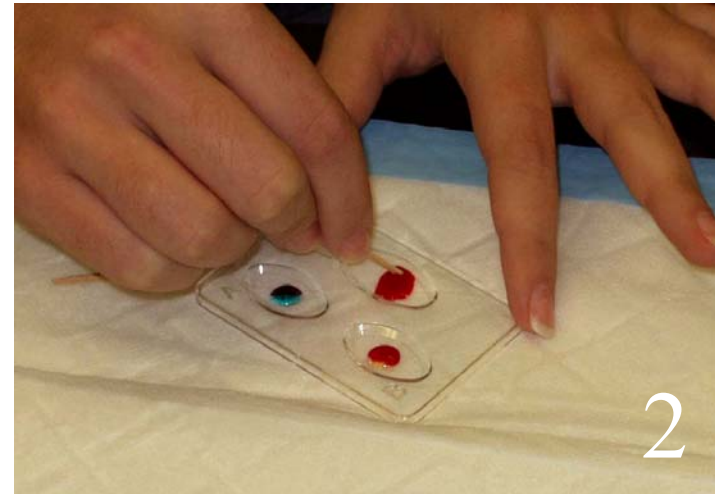


READ & RECORD!!

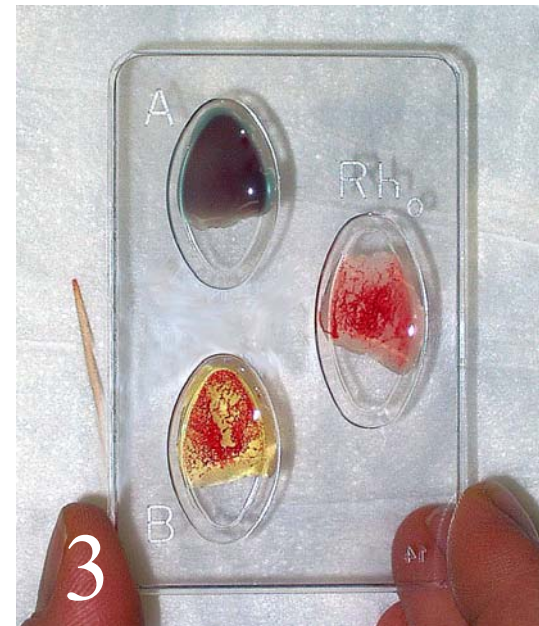
BLOOD TYPING



ADD ANTISERA



MIX W/TOOTHPICKS



READ & RECORD!!

CLEAN-UP!



FOLD DIAPER



BLOOD PRODUCTS

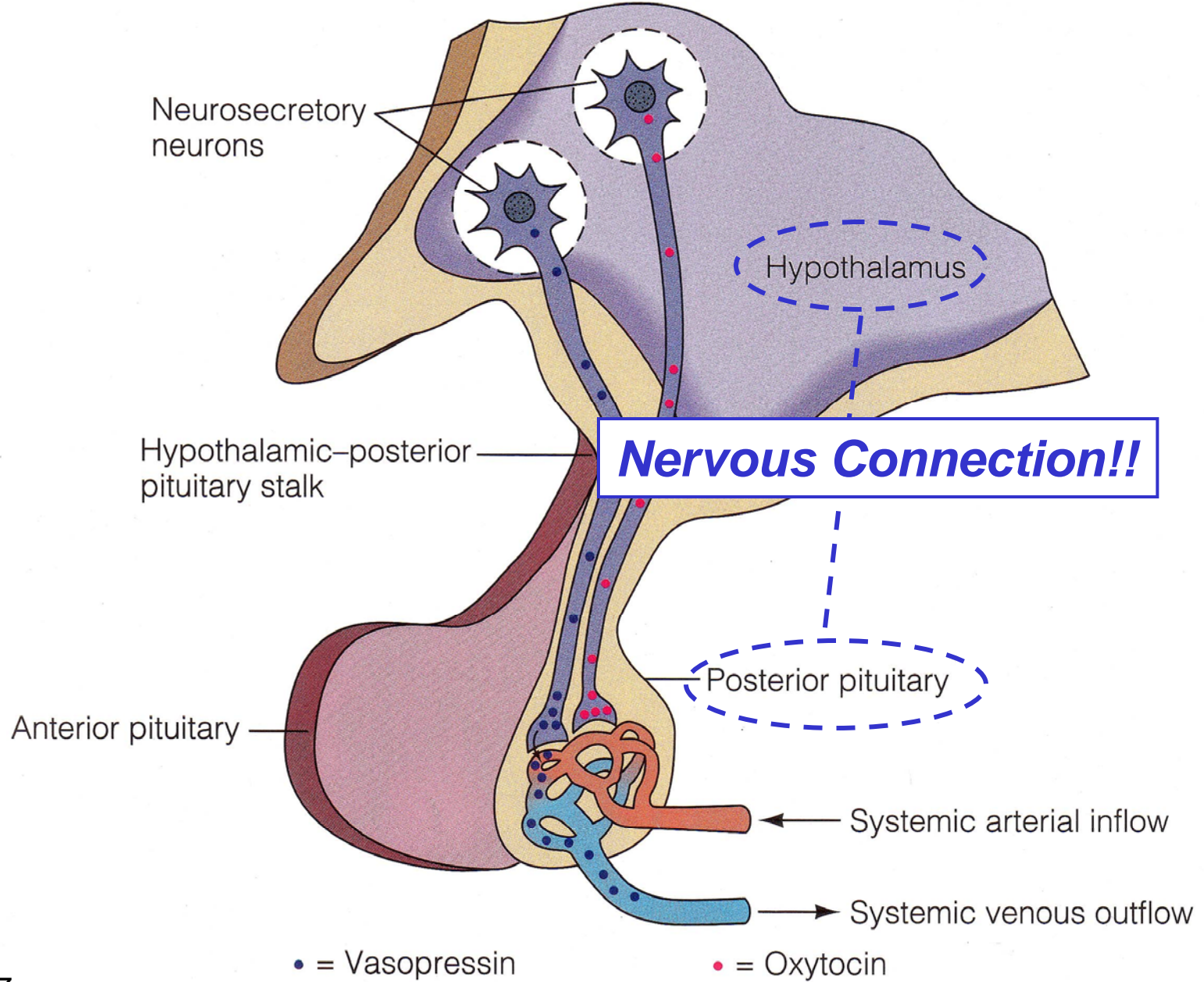


REWASH!!

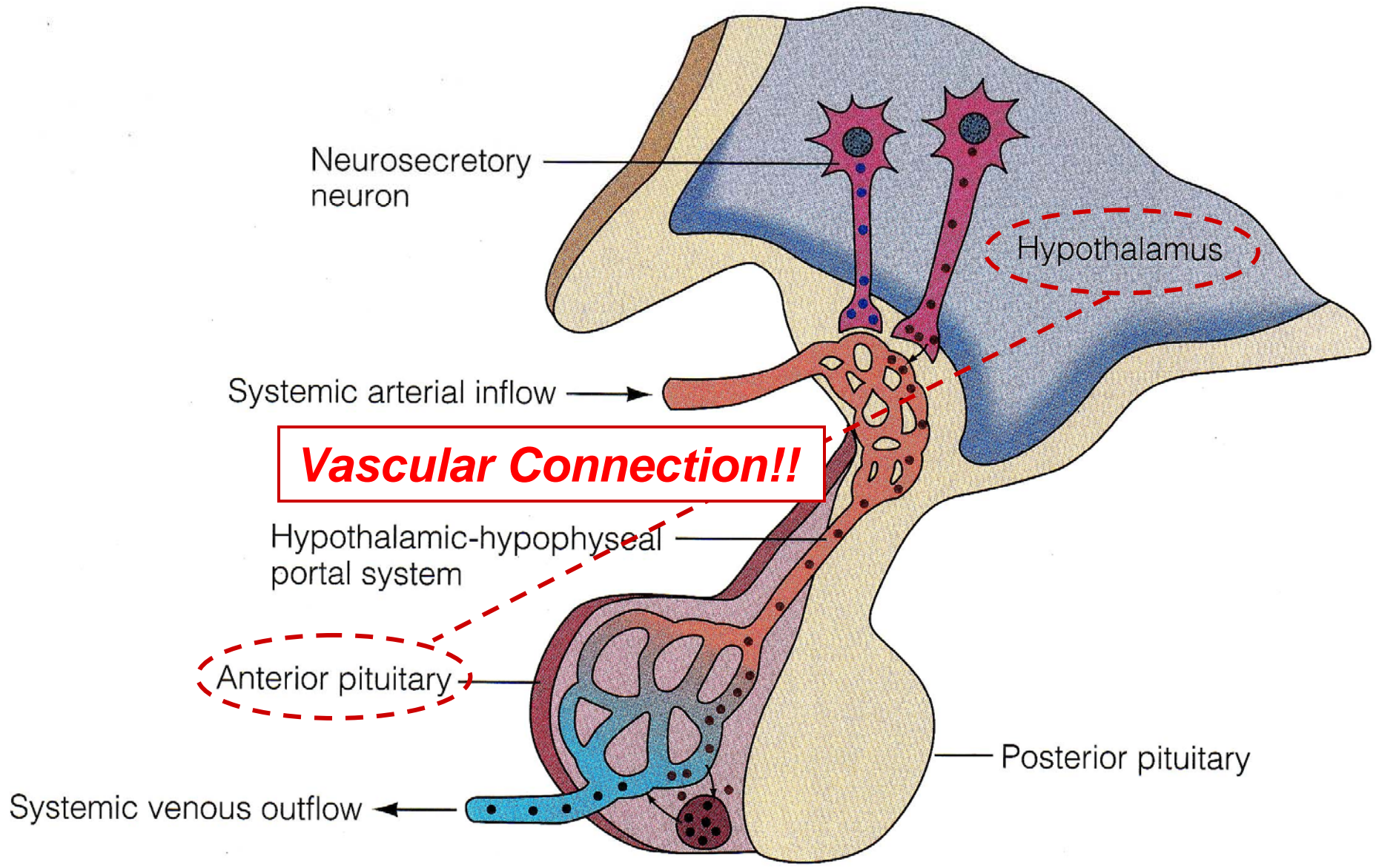
Blood Chem Lab Q?



Hypothalamus-Posterior Pituitary Nervous Connection!



Hypothalamus-Anterior Pituitary Vascular Connection!

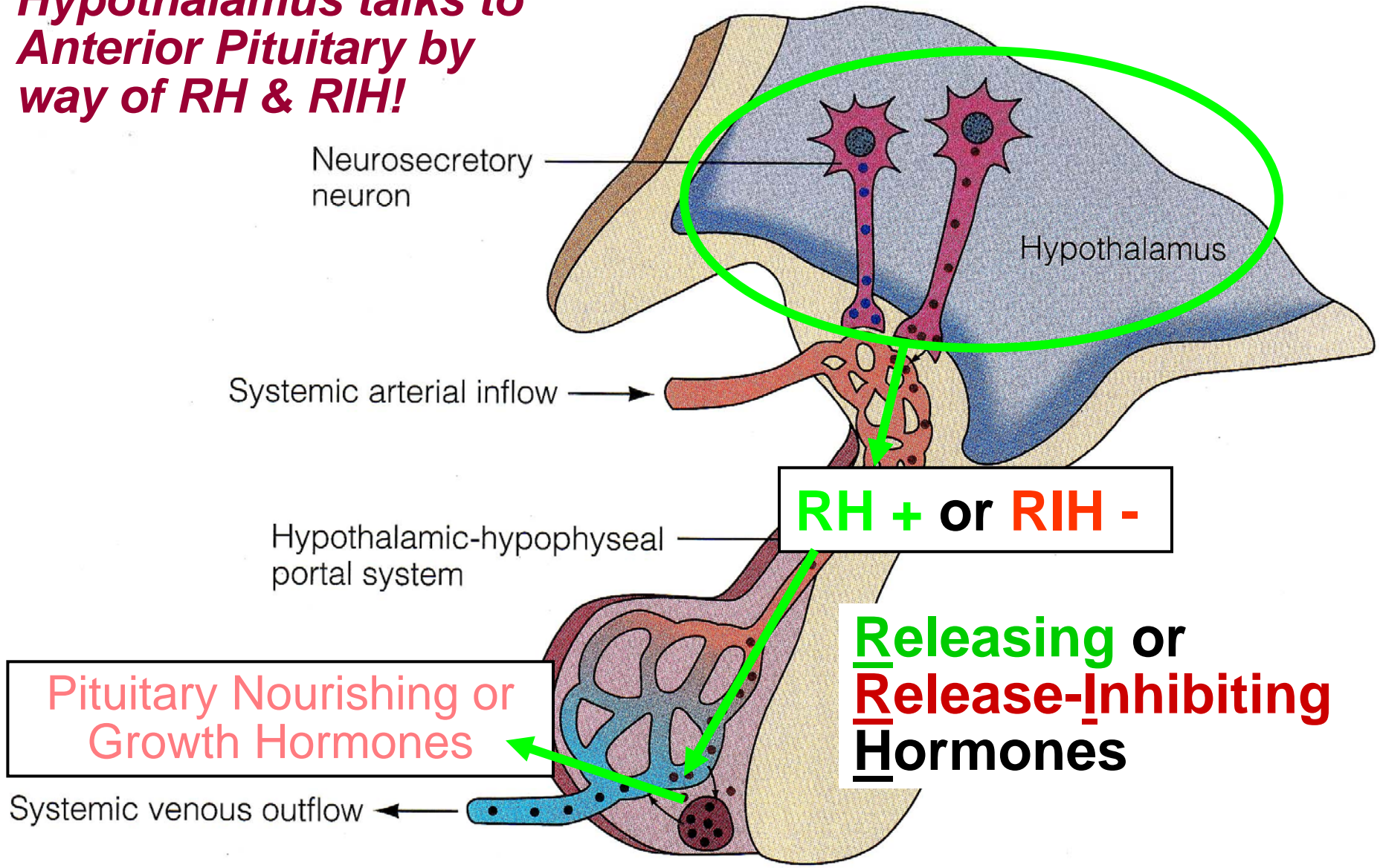


Vascular Connection!!

• • = Hypophysiotropic hormones

• = Anterior pituitary hormone

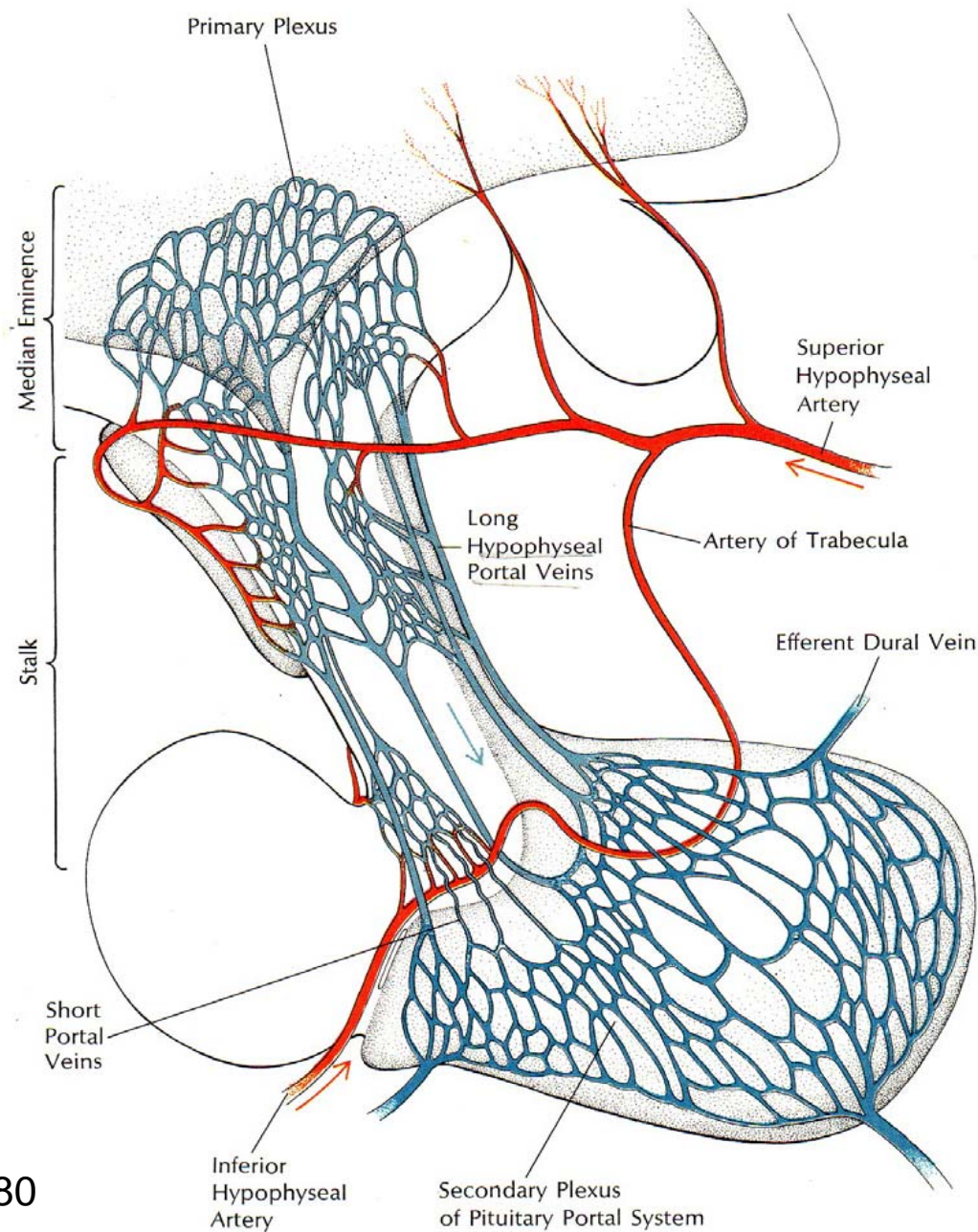
Hypothalamus talks to Anterior Pituitary by way of RH & RIH!



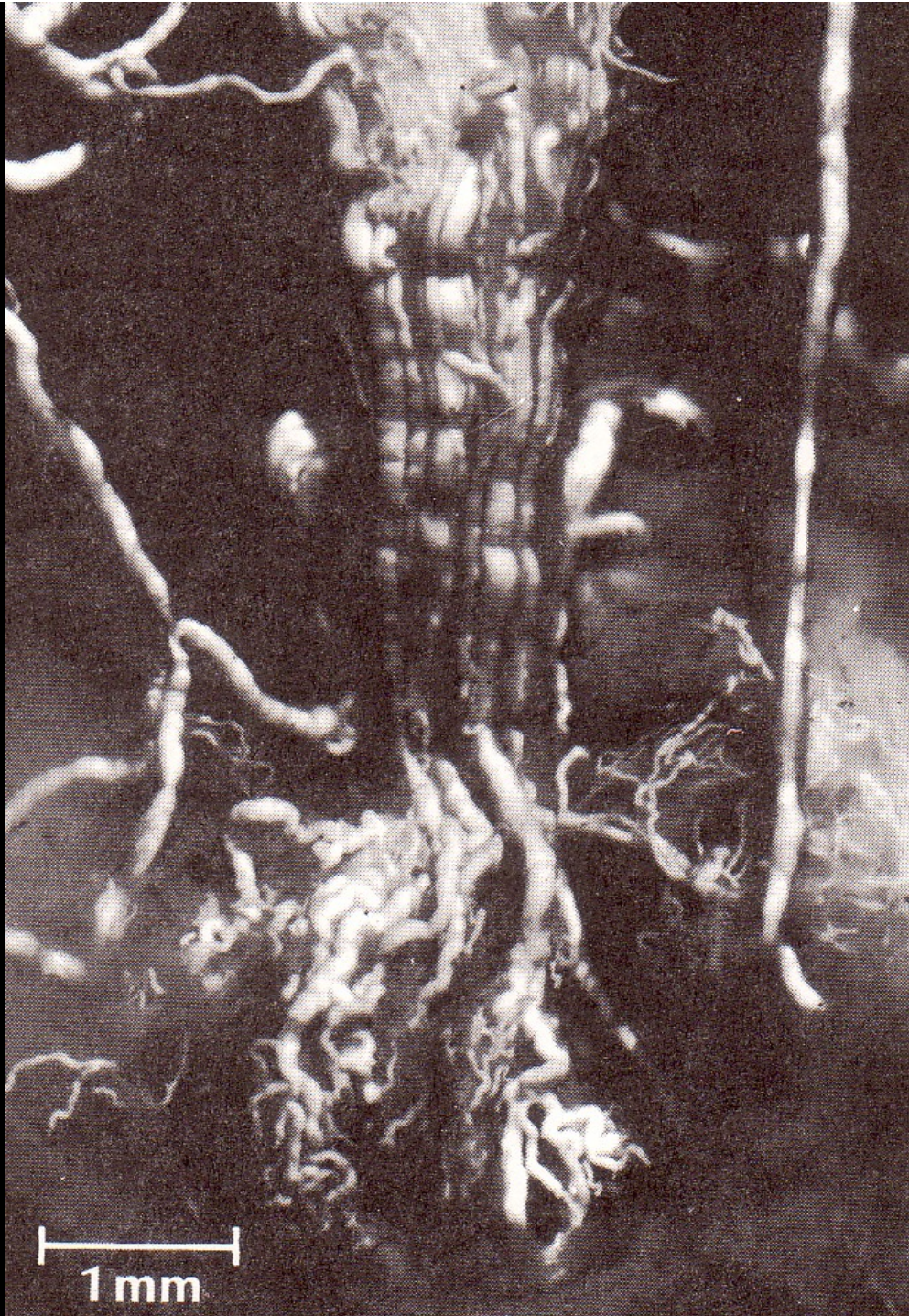
- = Hypophysiotropic hormones
- = Anterior pituitary hormone

Hypophysis ≡ Pituitary

Capillary-Venule-Capillary Intimate Circulation



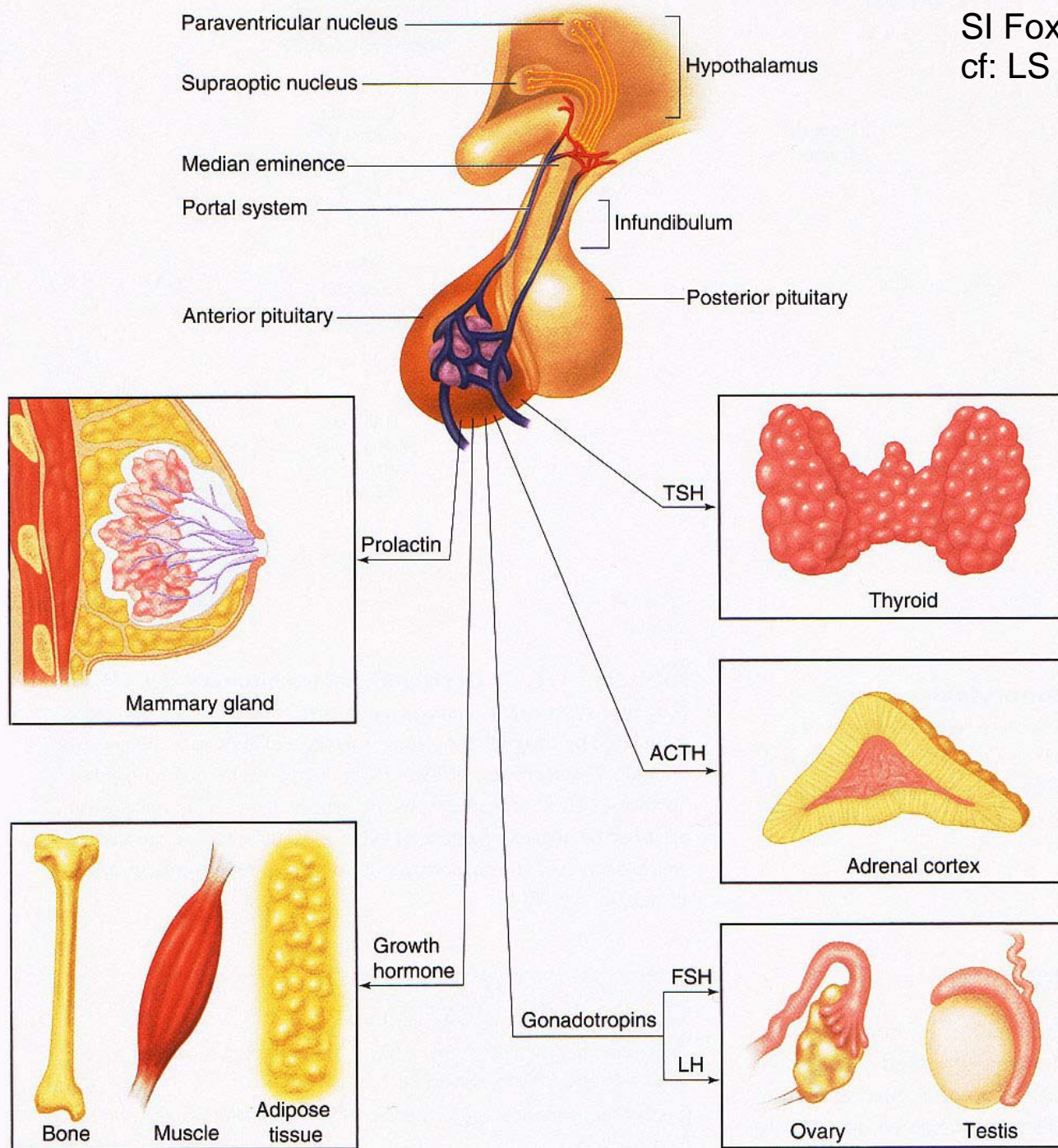
Krieger & Hughes 1980

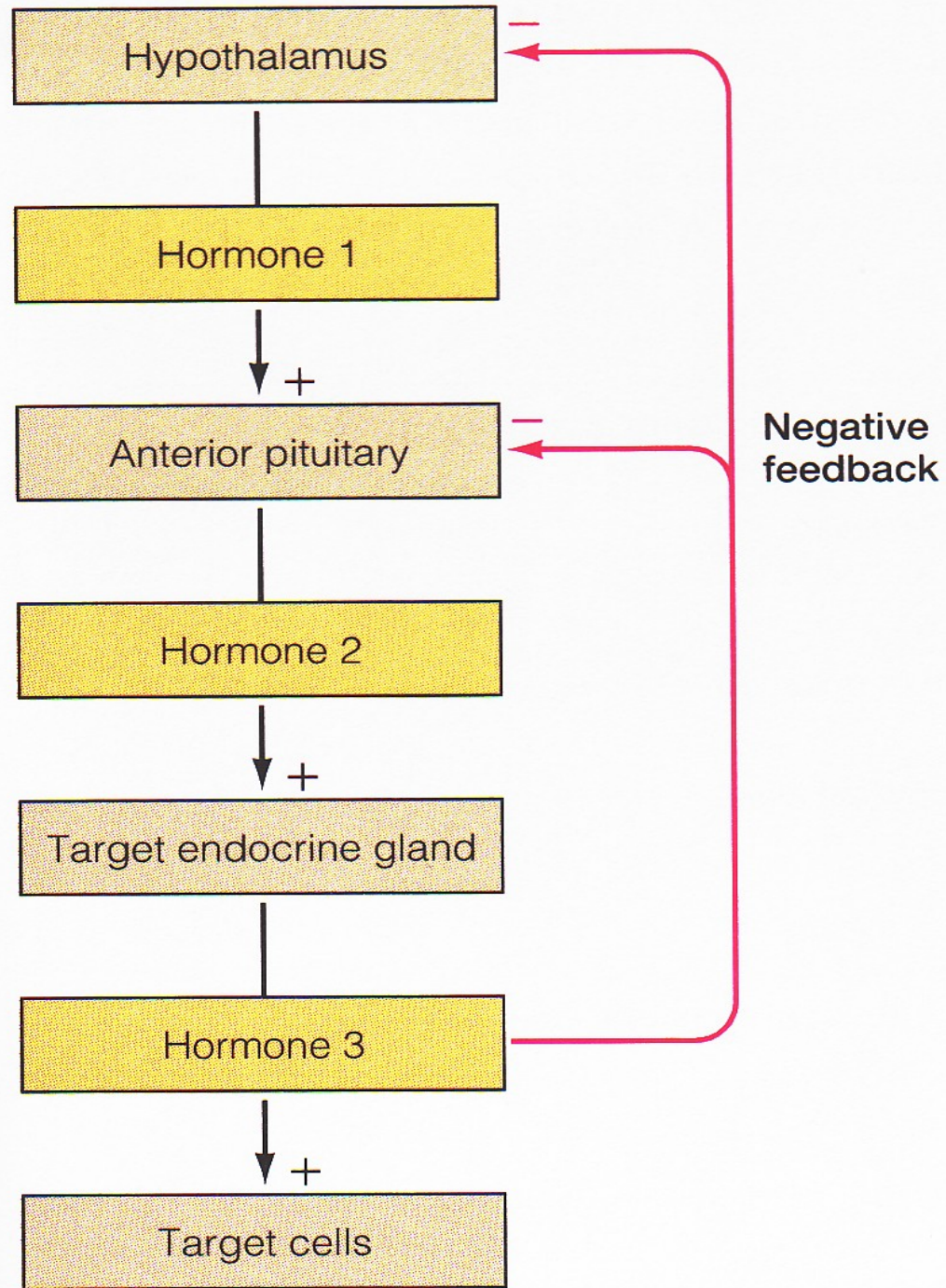


Krieger & Hughes 1980

1 mm

SI Fox 2008
cf: LS 2012 fig 17-5



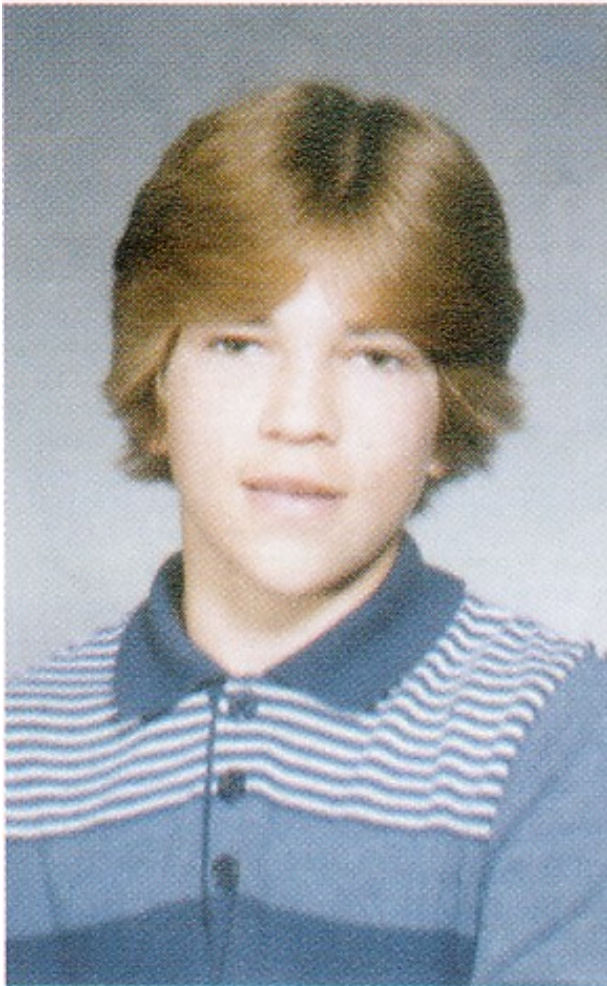




LS 2006, cf: LS 2012
fig 17-10

Progression & Development of Acromegaly

Age 13

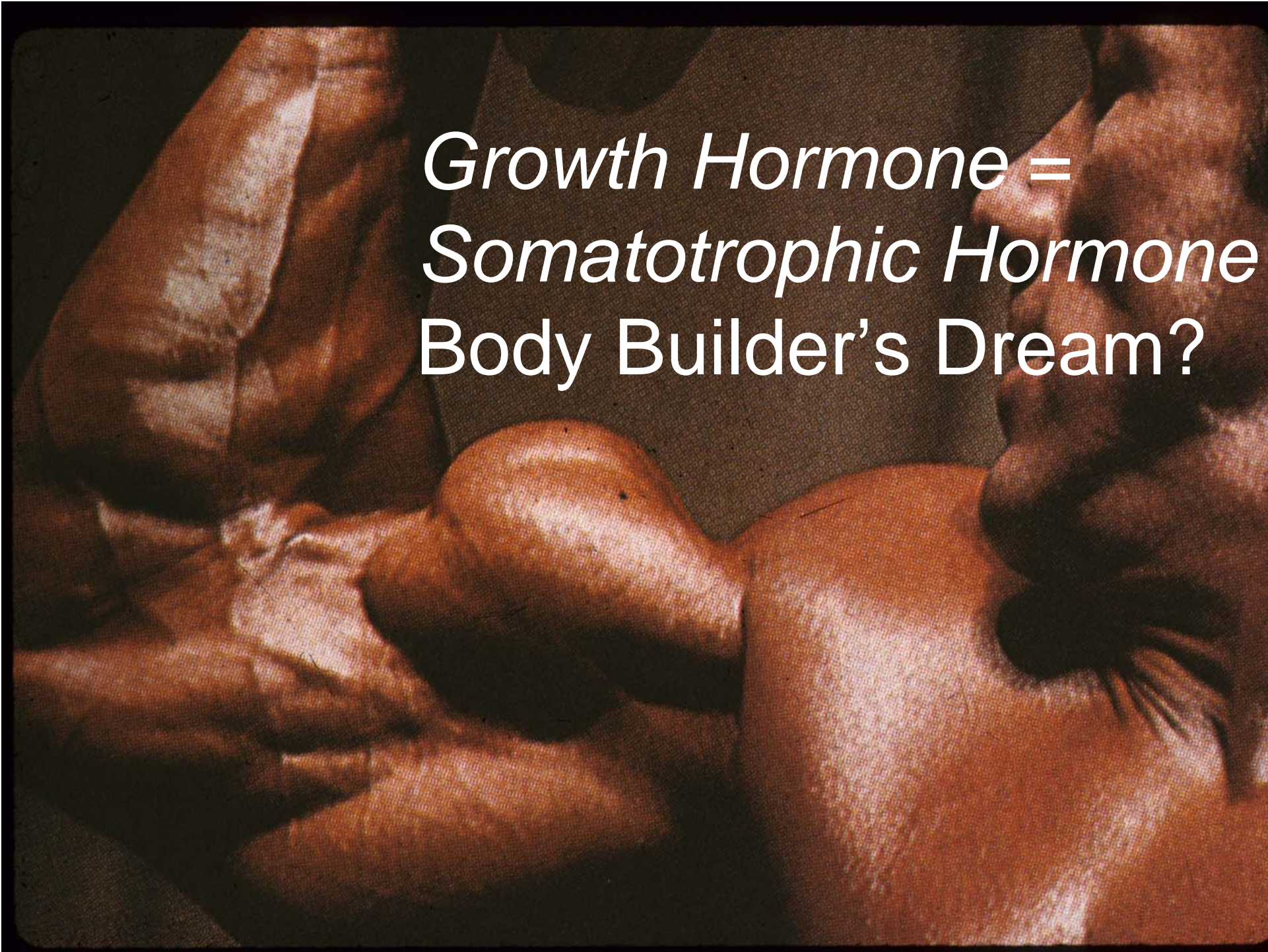


Age 21



Age 35



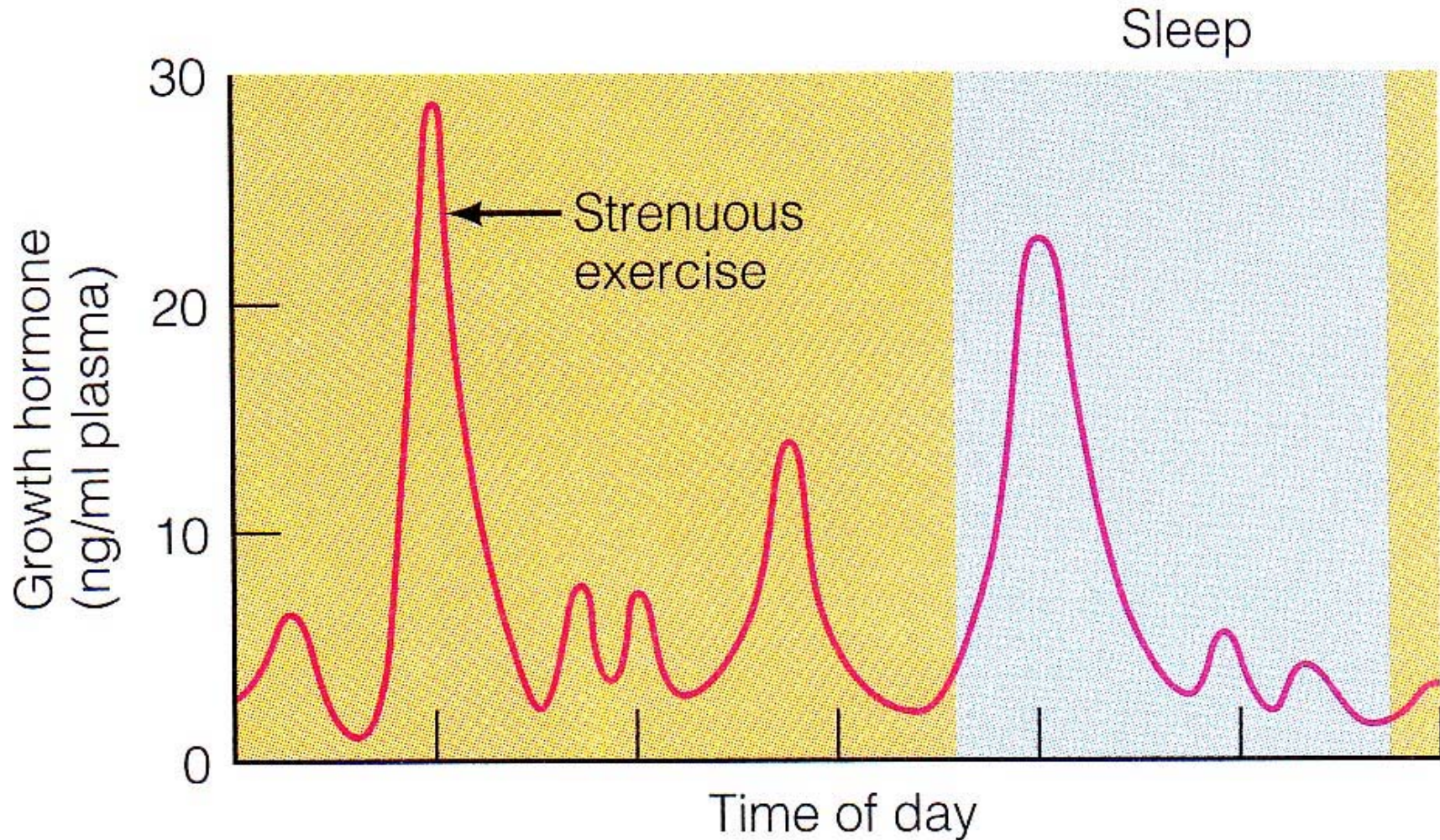


*Growth Hormone =
Somatotrophic Hormone
Body Builder's Dream?*

GH/STH Effects: Insulin Resistance/Type II Diabetes?

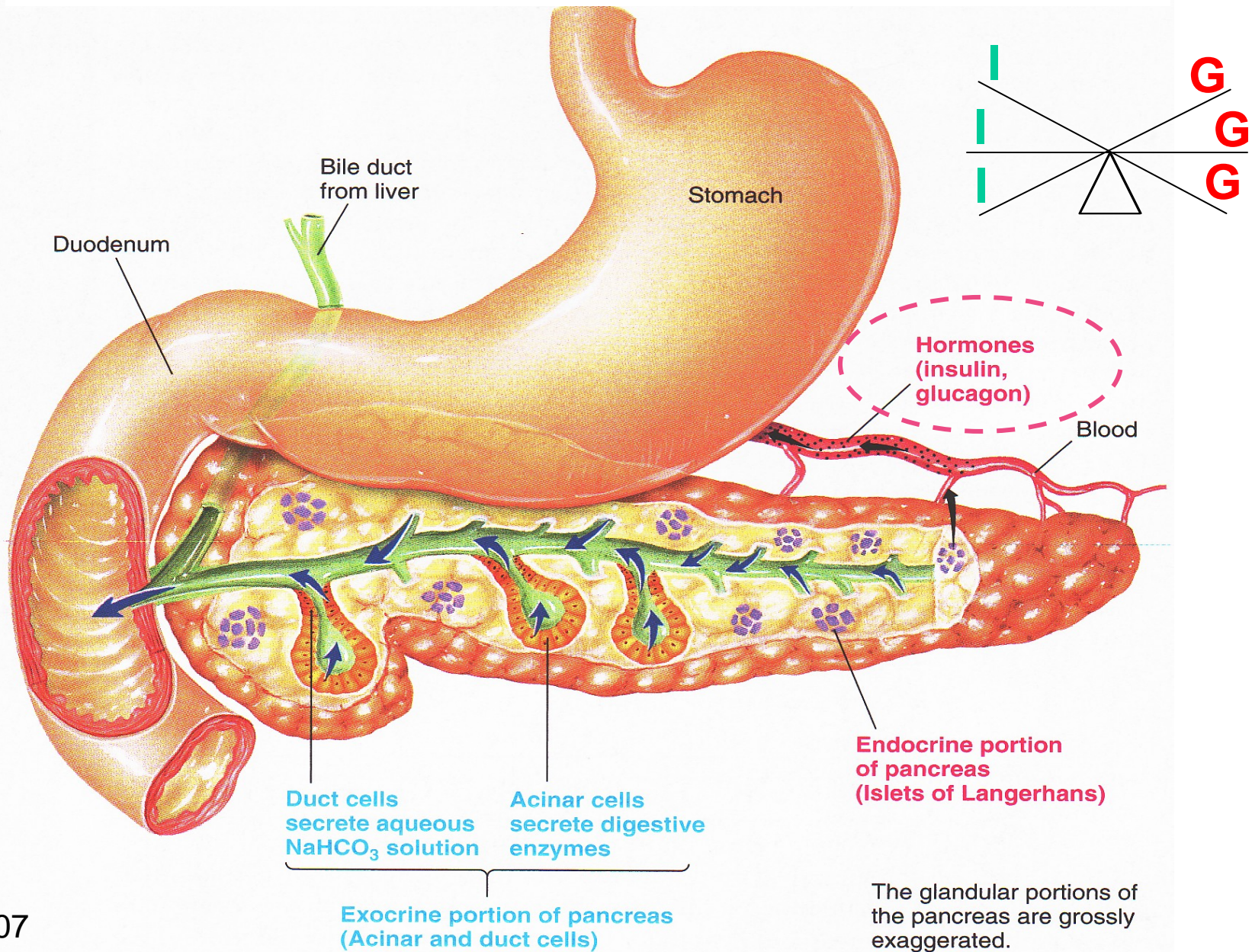
- ↑ Amino Acid uptake & Protein synthesis
- ↑ Lipolysis & Fatty Acid mobilization
- ↓ Glucose uptake
(skeletal muscle & adipocytes)
- ↑ Glucose production
(liver glycogenolysis)
- ↑ Insulin secretion

Increase GH naturally with exercise & sleep!!

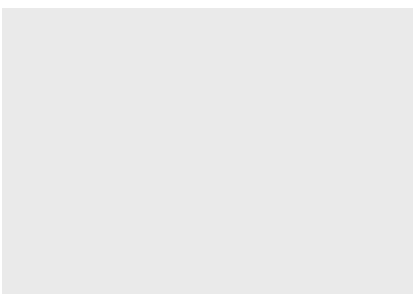
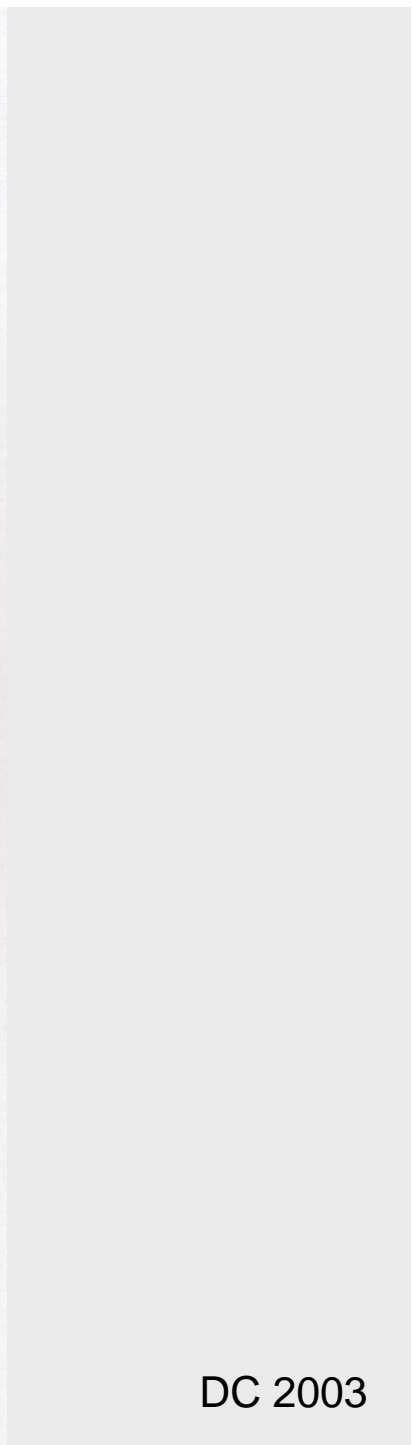
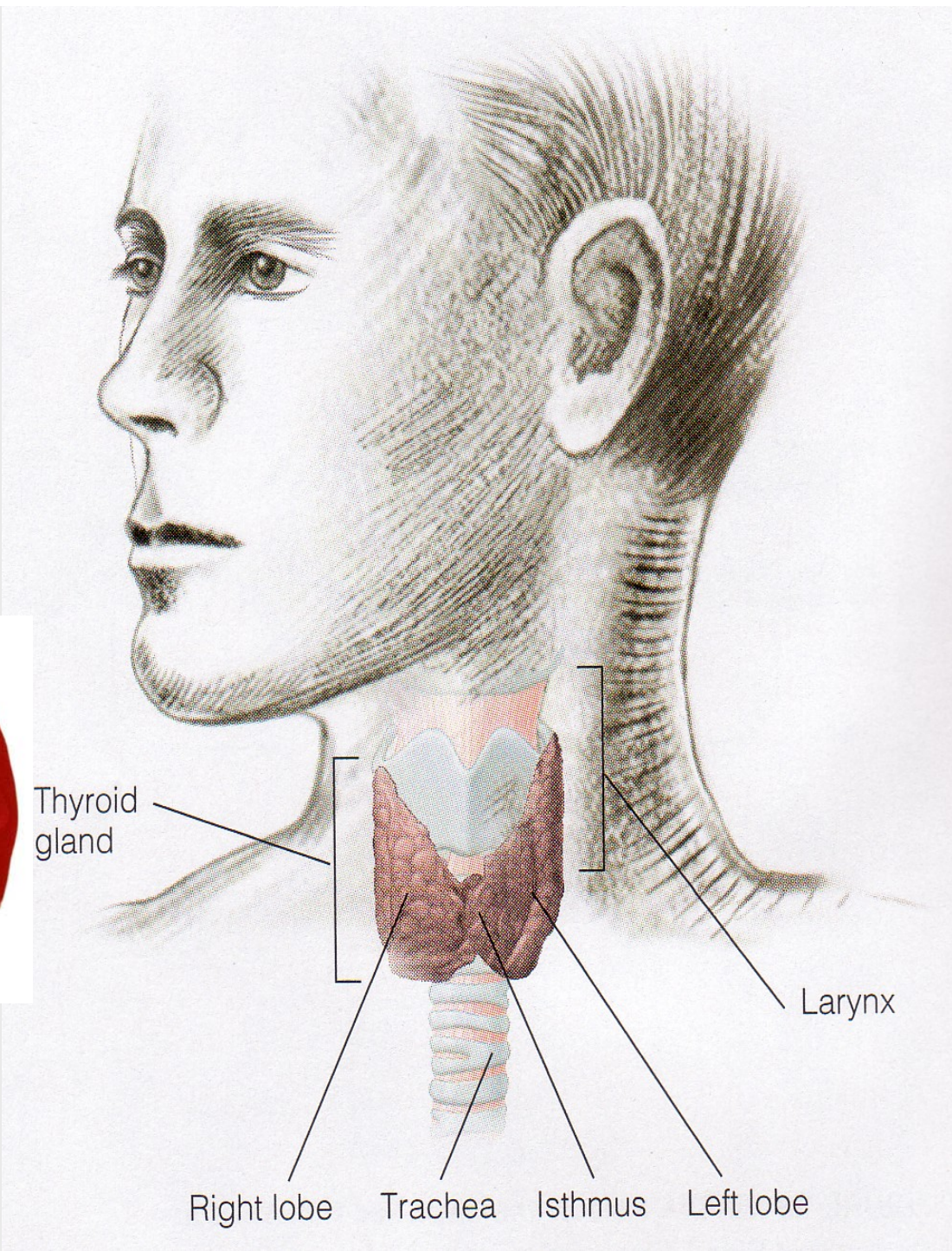
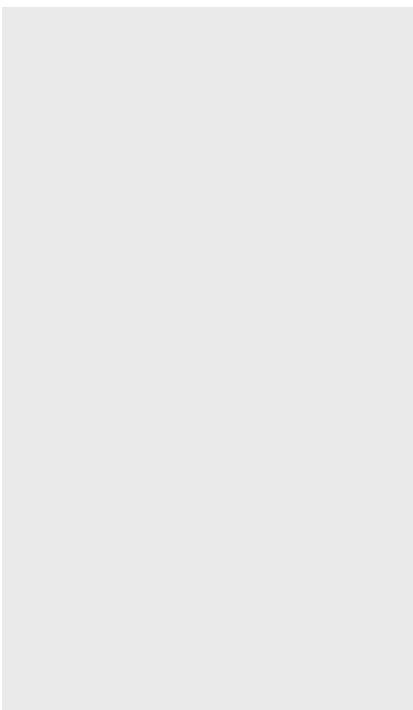


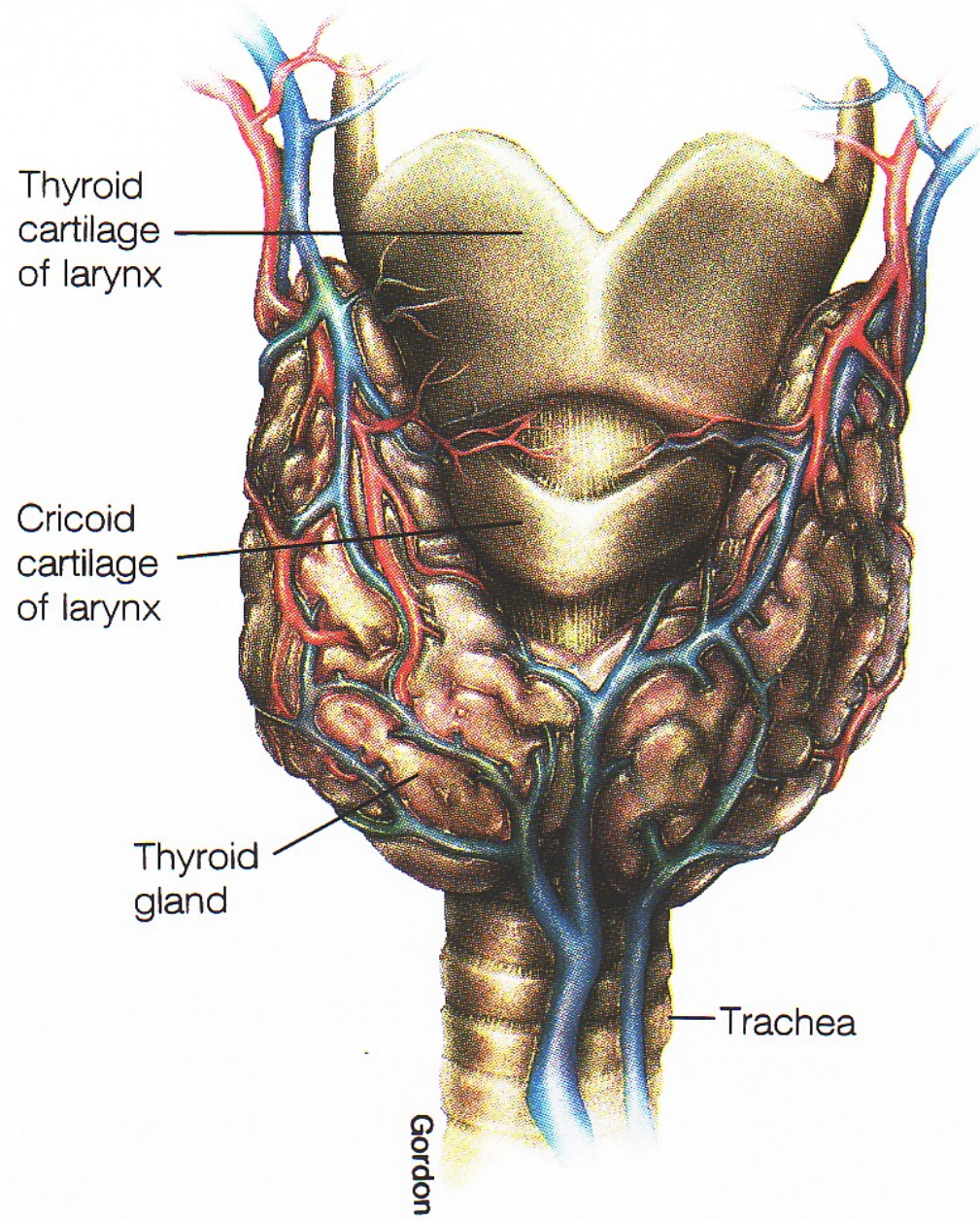
ng/ml = nanograms per milliliter

Endocrine Pancreas: Insulin (I) & Glucagon (G) See-Saw Hormones in Regulating Blood Glucose

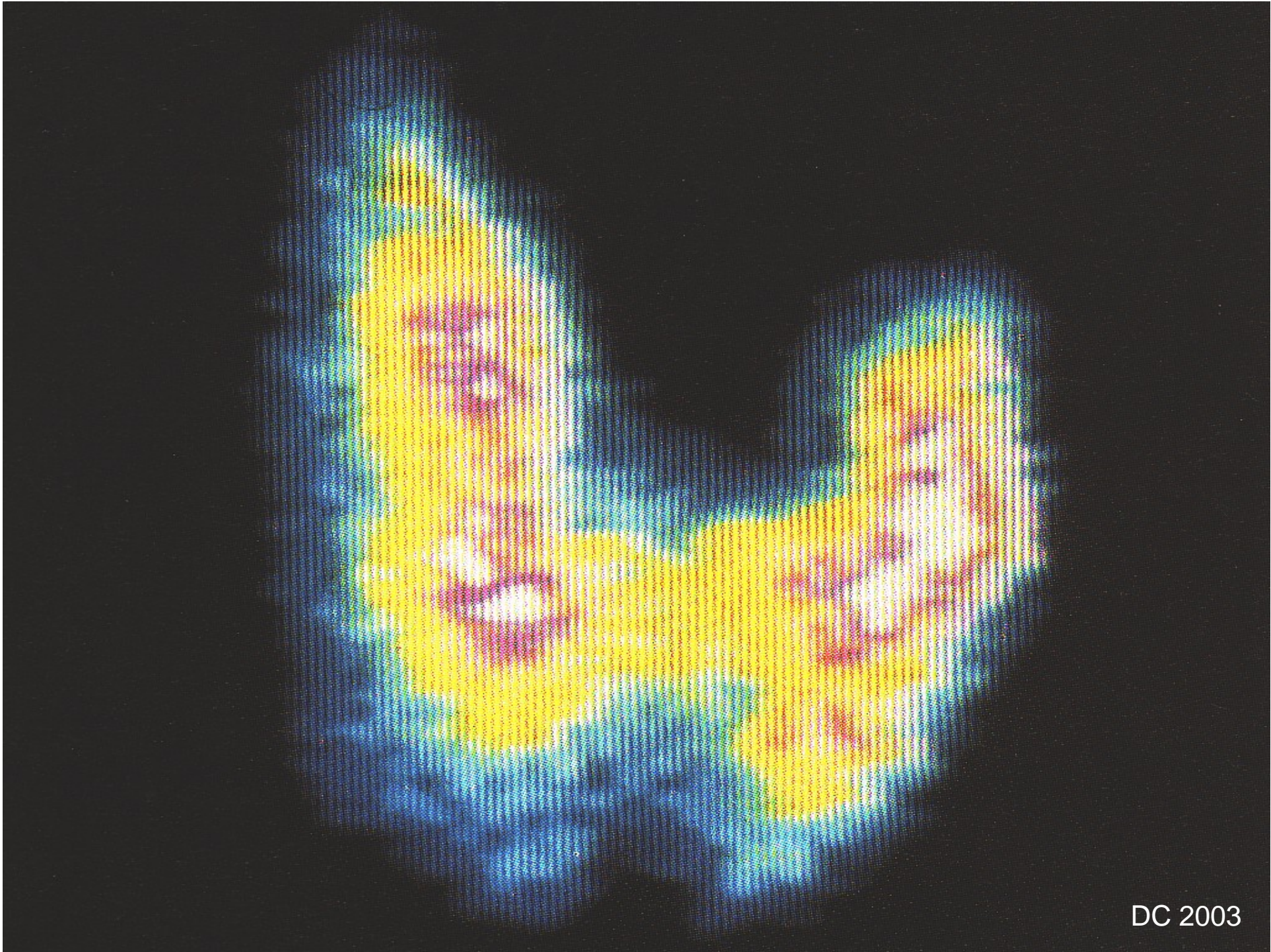


The glandular portions of the pancreas are grossly exaggerated.





(a)

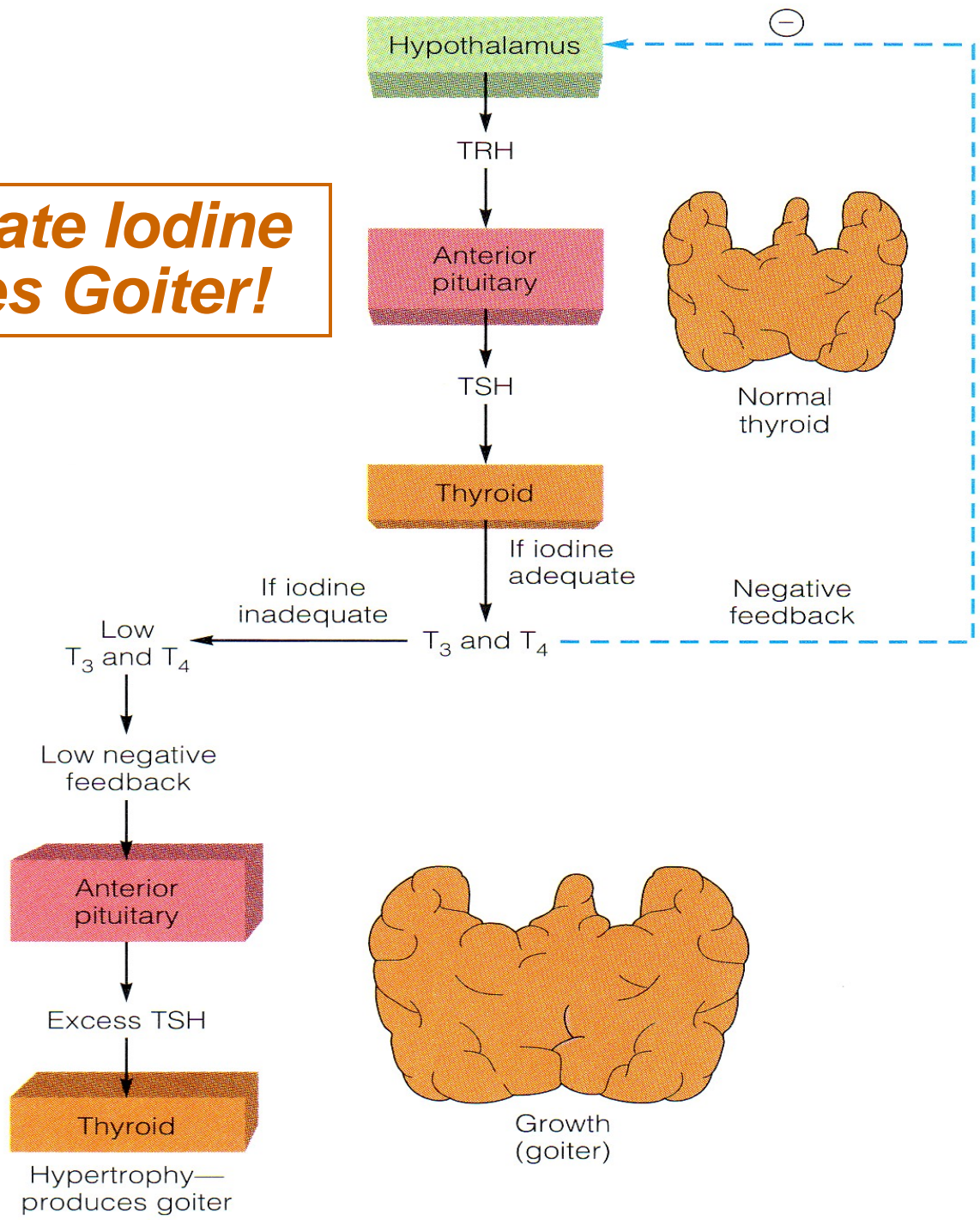




LS 2012 fig 17-16



Inadequate Iodine Promotes Goiter!





Guyton & Hall 2000

Adrenal gland

Adrenal cortex

Adrenal medulla

Kidney

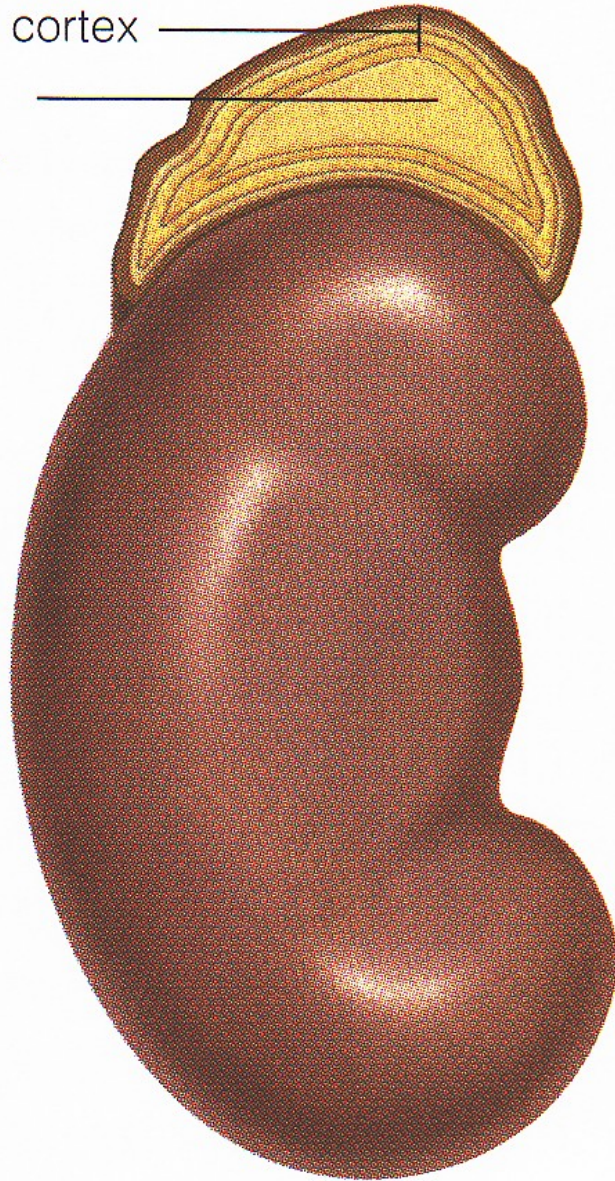
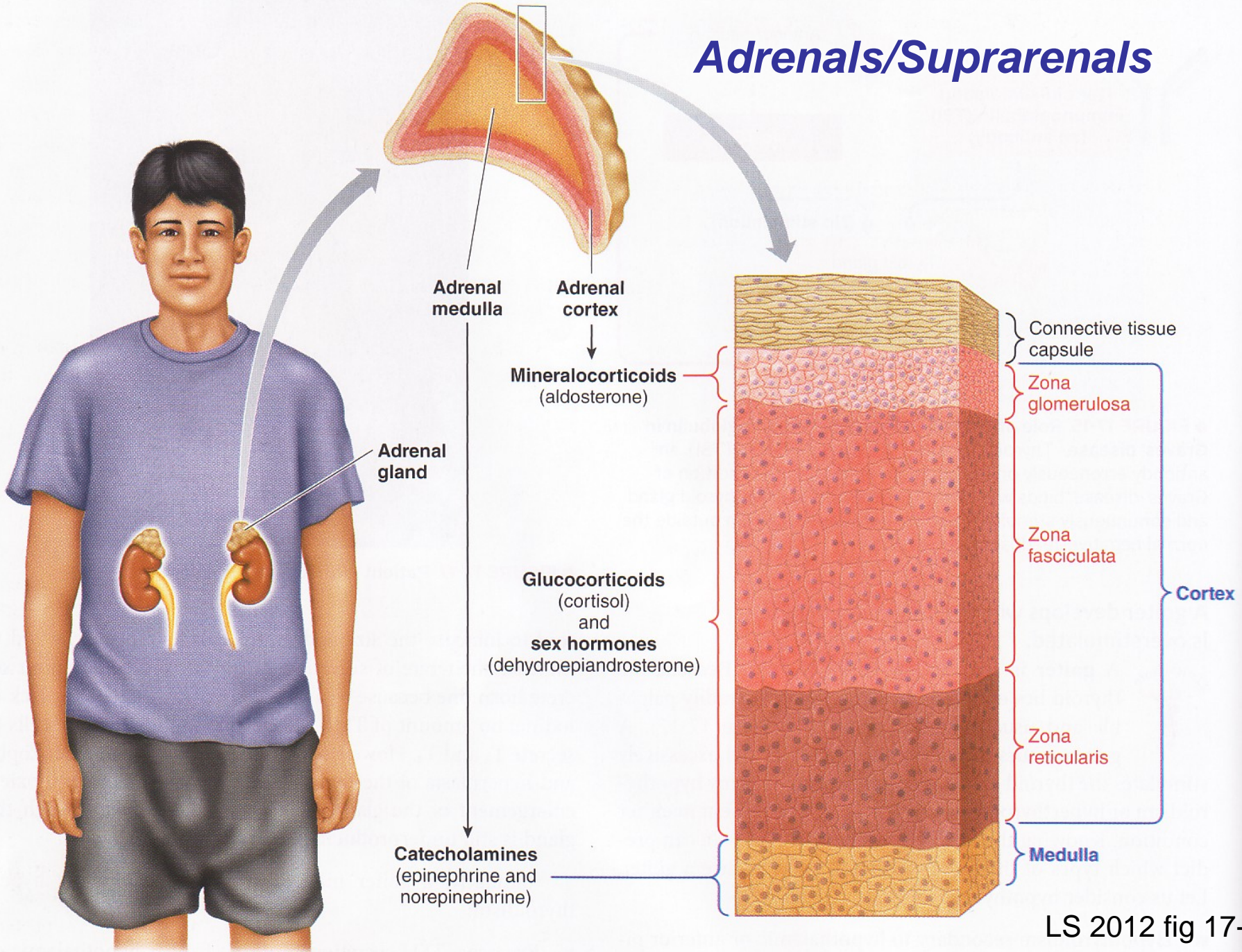


FIGURE 13-12

Adrenal Gland

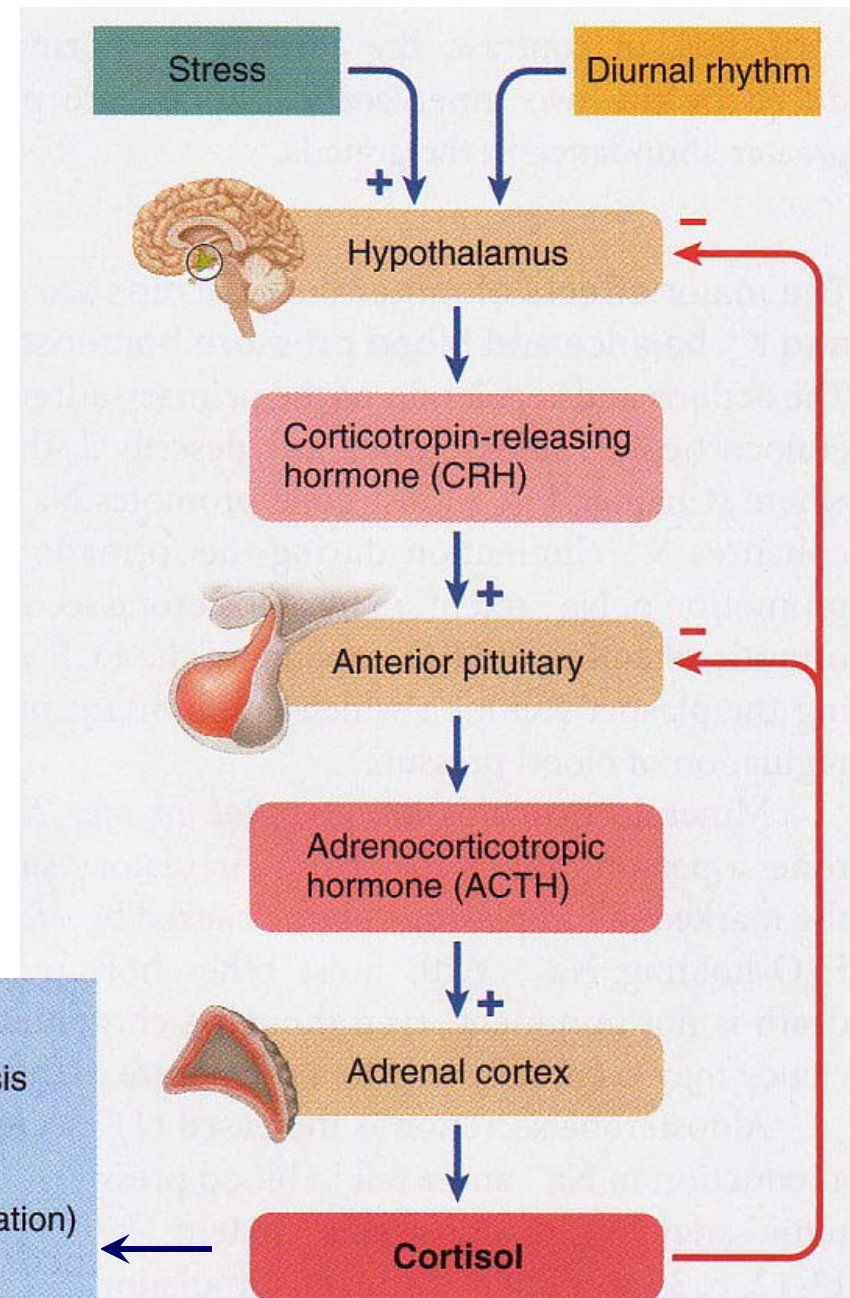
The adrenal glands sit atop the kidney and consist of an outer zone of cells, the adrenal cortex, which produces a variety of steroid hormones, and an inner zone, the adrenal medulla. The adrenal medulla produces adrenalin and noradrenalin.

Adrenals/Suprarenals



LS 2012 fig 17-18

Stress Promotes Cortisol Secretion



Metabolic fuels
and building blocks
available to help
resist stress

- ↑ Blood glucose
(by stimulating gluconeogenesis
and inhibiting glucose uptake)
- ↑ Blood amino acids
(by stimulating protein degradation)
- ↑ Blood fatty acids
(by stimulating lipolysis)

BI 121!!



**Epinephrine
80%
Norepinephrine
20%**



Guyton & Hall 2000

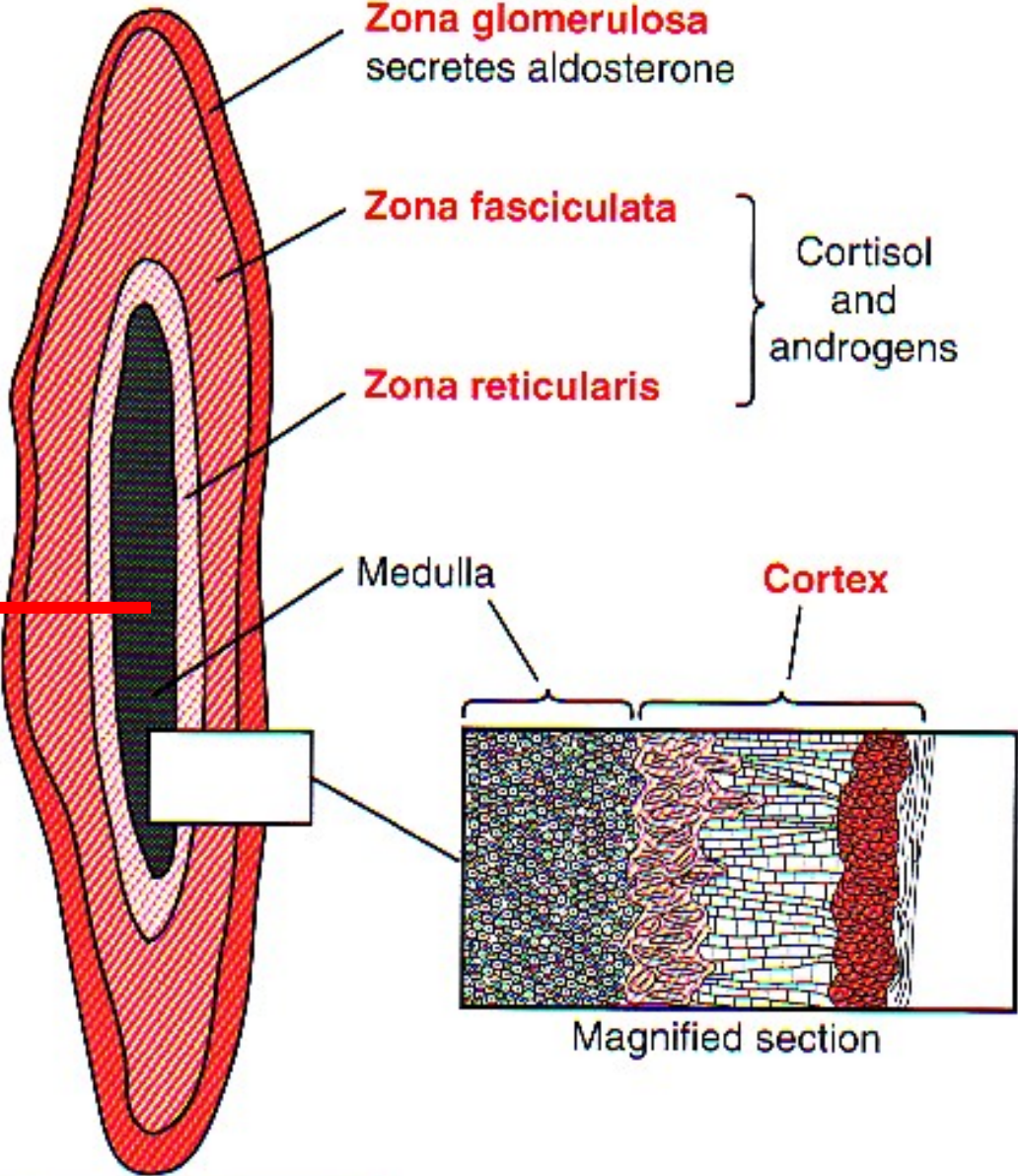


FIGURE 77 - 1

Secretion of adrenocortical hormones by the different zones of the adrenal cortex.