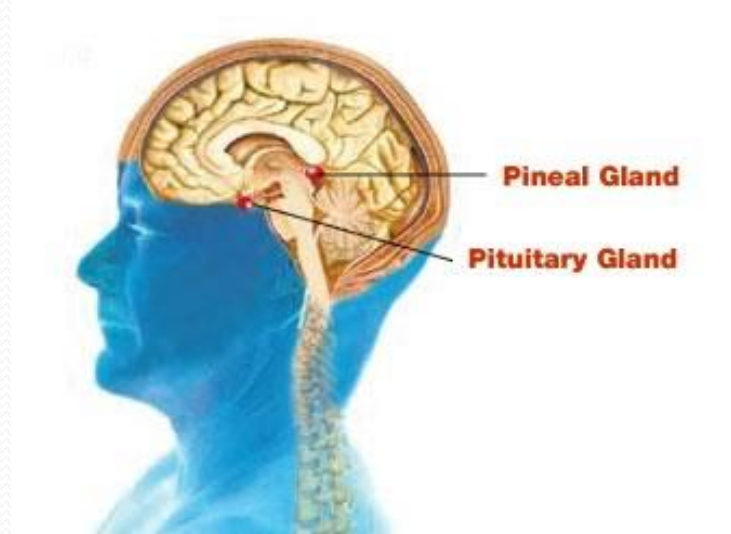


SISTEM HORMONAL



No. KD	KOMPETENSI DASAR
3.10	Menganalisis hubungan antara struktur jaringan penyusun organ pada sistem koordinasi (saraf, hormone dan alat indera) dalam kaitannya dengan mekanisme koordinasi dan regulasi serta gangguan fungsi yang dapat terjadi pada sistem koordinasi manusia
4.10	Menyajikan hasil analisis pengaruh pola hidup terhadap kelainan pada struktur dan fungsi organ sistem koordinasi yang menyebabkan gangguan sistem saraf dan hormon pada manusia berdasarkan studi literatur

IPK

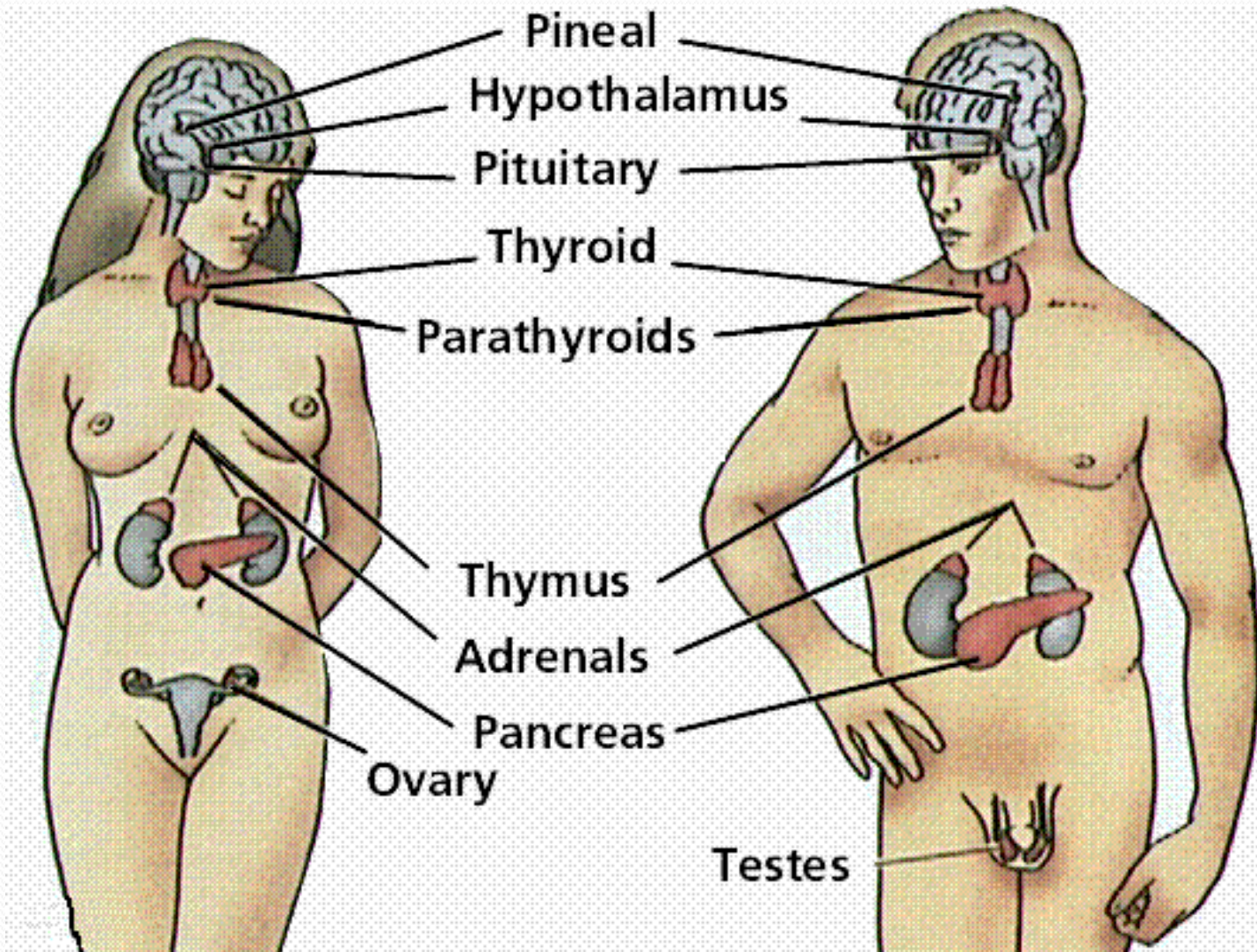
PENGETAHUAN	KETERAMPILAN
<ol style="list-style-type: none">1. Membandingkan fungsi otak besar dan otak kecil2. Memerinci fungsi batang otak3. Memerinci fungsi sumsum tulang belakang4. Memerinci fungsi saraf otonom5. Memerinci fungsi alat-alat indera6. Memerinci jenis dan fungsi hormon	<ol style="list-style-type: none">1. Melakukan pengamatan gerak refleks2. Membuat laporan pengamatan gerak refleks3. Studi literatur penyakit pikun, dan membuat laporan hasil studi literatur4. Membuat kliping gangguan pada sistem hormon

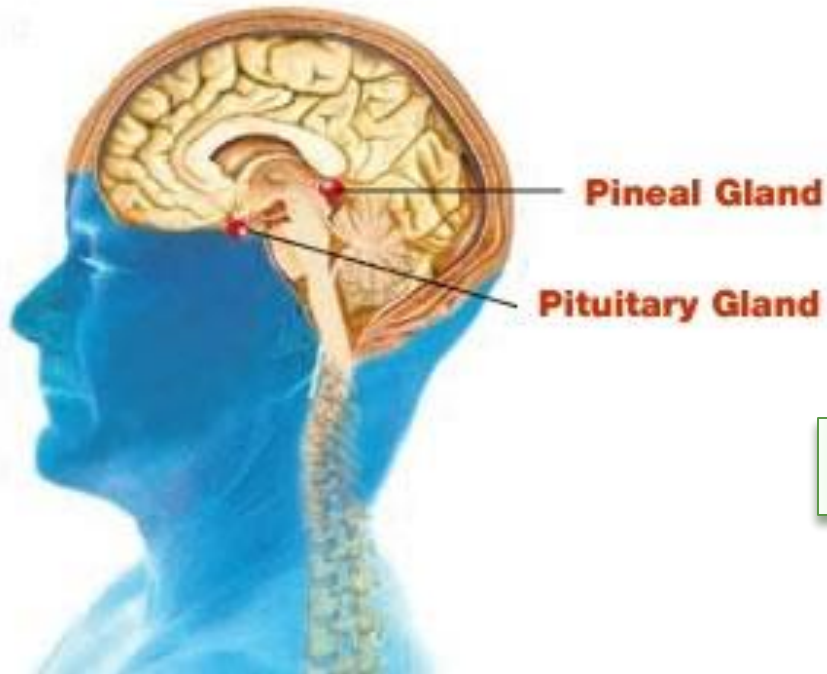
HORMON:

- Bahan organik ,dari kelenjar endokrin
- Bahan : protein, lemak, mineral
- Fungsi : perangsang aktivitas enzim
- Pengaruh : pada organ tertentu (organ target)

Anabolic Steroid → bahan kimia, menyerupai hormon alami untuk memacu metabolisme dan pertumbuhan otot.

KELENJAR HORMON



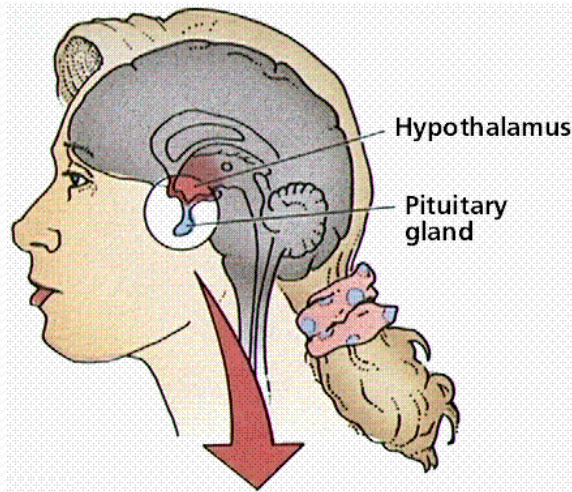


KELENJAR PINEAL

Merangsang:

- melatonin → sistem tidur/jam biologi
- perkembangan orientasi seks

HIPOTALAMUS → Kelj. PITUITARI



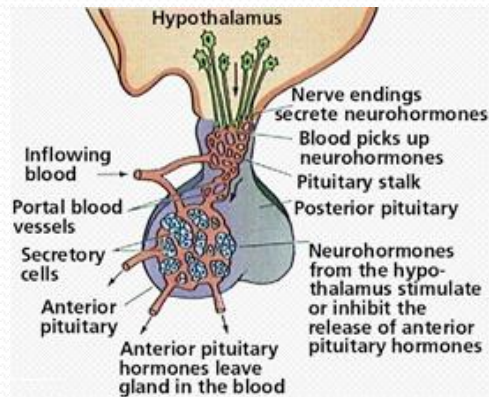
LOBUS ANTERIOR

- SGH /STH
- TSH
- FSH
- LH
- ACTH
- PROLAKTIN
- ENDORFIN

LOBUS POSTERIOR

- ADH
- OKSITOSIN

HORMON	FUNGSI
STH	Pertumbuhan tulang
TSH	Mamacu kelenjar tiroid
FSH	Memacu Ovarium → estrogen, ovum
LH	Memacu ovulasi → Korpus: progesteron



HORMON	FUNGSI MENGATUR
ADH	rebasorpsi ginjal
ACTH	kelenjar adrenal
PROLAKTIN	kelenjar susu
OKSITOSIN	kontraksi rahim
ENDORFIN	Membuat tubuh releks/penghilang rasa sakit

KELENJAR-KELENJAR HORMON

No.	Kelenjar	hormon
1	Tiroid	tiroksin
2	Paratiroid	parathormon
3	Timus	Thymosin → Imunitas (limfosit T)
4	Pankreas	insulin
5	Anak ginjal	adrenalin

KELENJAR-KELENJAR HORMON

No.	Kelenjar	hormon
1	Ovarium	Estrogen, progesteron
2	Testis	Testoteron
3*	Plasenta	Gonadotrof Korion

Hormon Androgen

- Dihasilkan oleh kelenjar adrenal (anak ginjal)
- Mengontrol perkembangan sifat “laki-laki”
- Pada perempuan androgen diubah menjadi estrogen

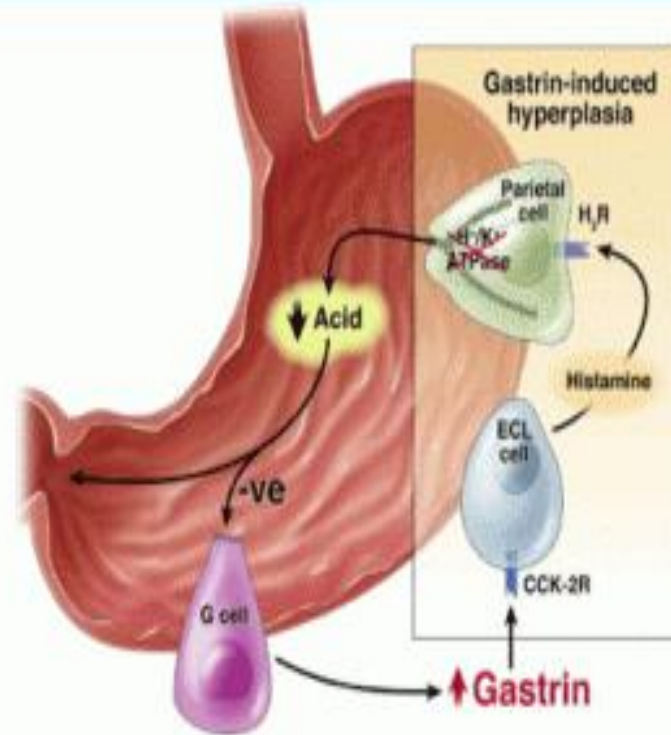
Pada laki-laki, androgen testosteron dihasilkan di dalam testis

LAMBUNG

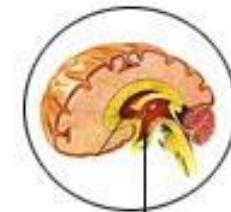
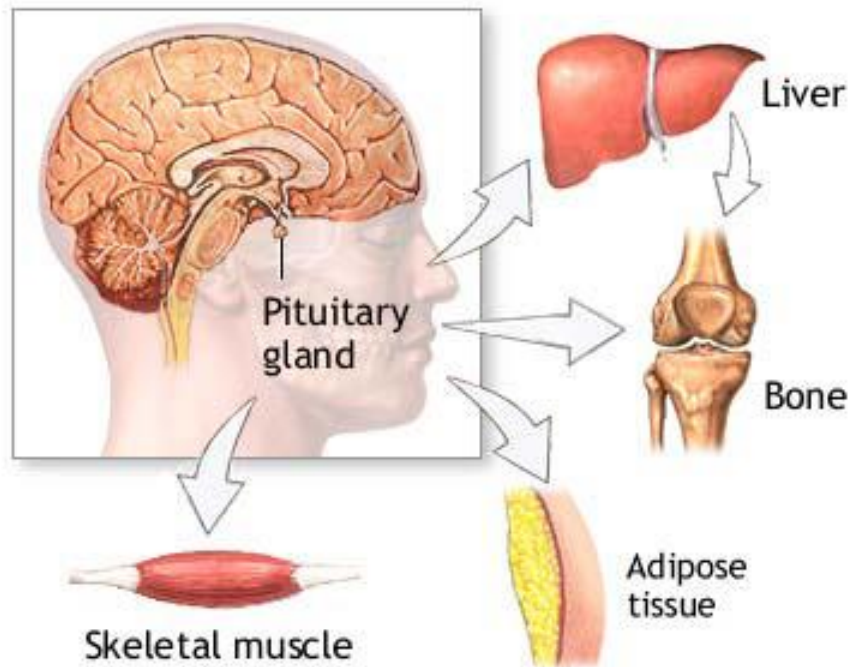


HORMON
GASTRIN

SEKRESI ASAM
LAMBUNG



SGH

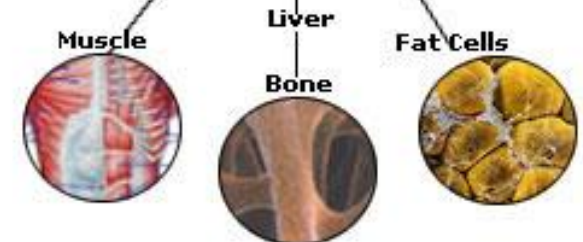


Hypothalamus



Pituitary

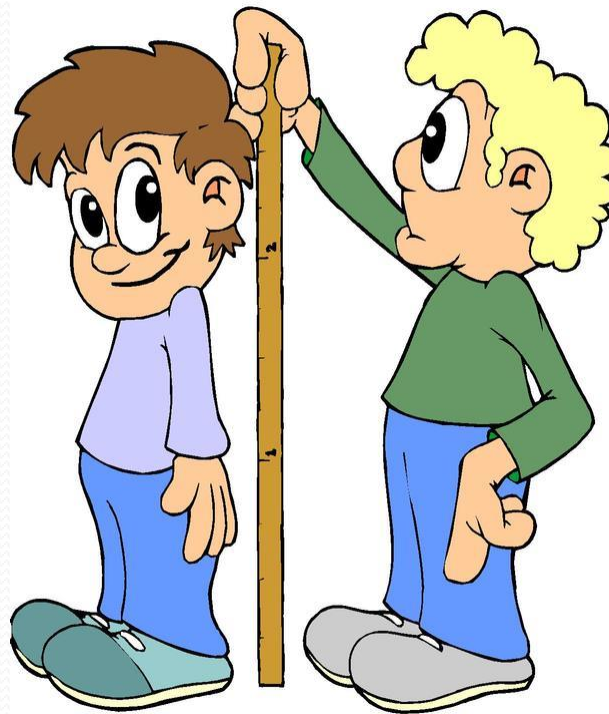
Growth Hormone



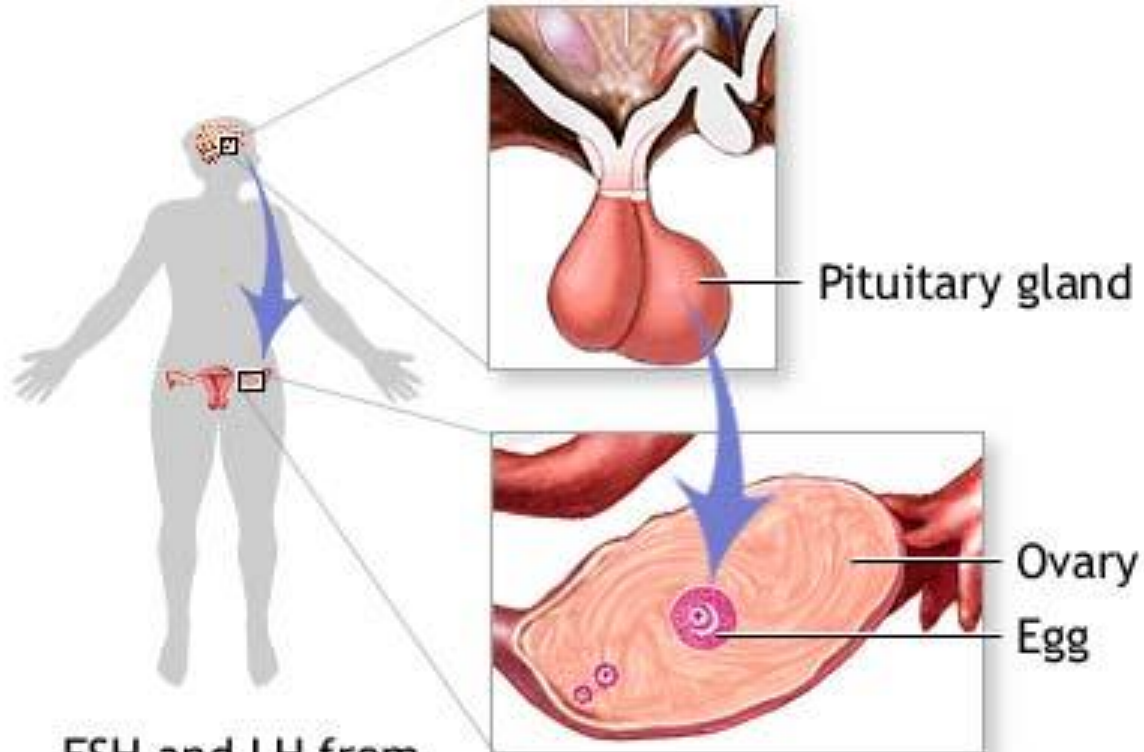
<http://www.royaltherapy.com/index-4.html>

<http://liquidhgh.com/how-hgh-works.jpg>

HORMON PERTUMBUHAN

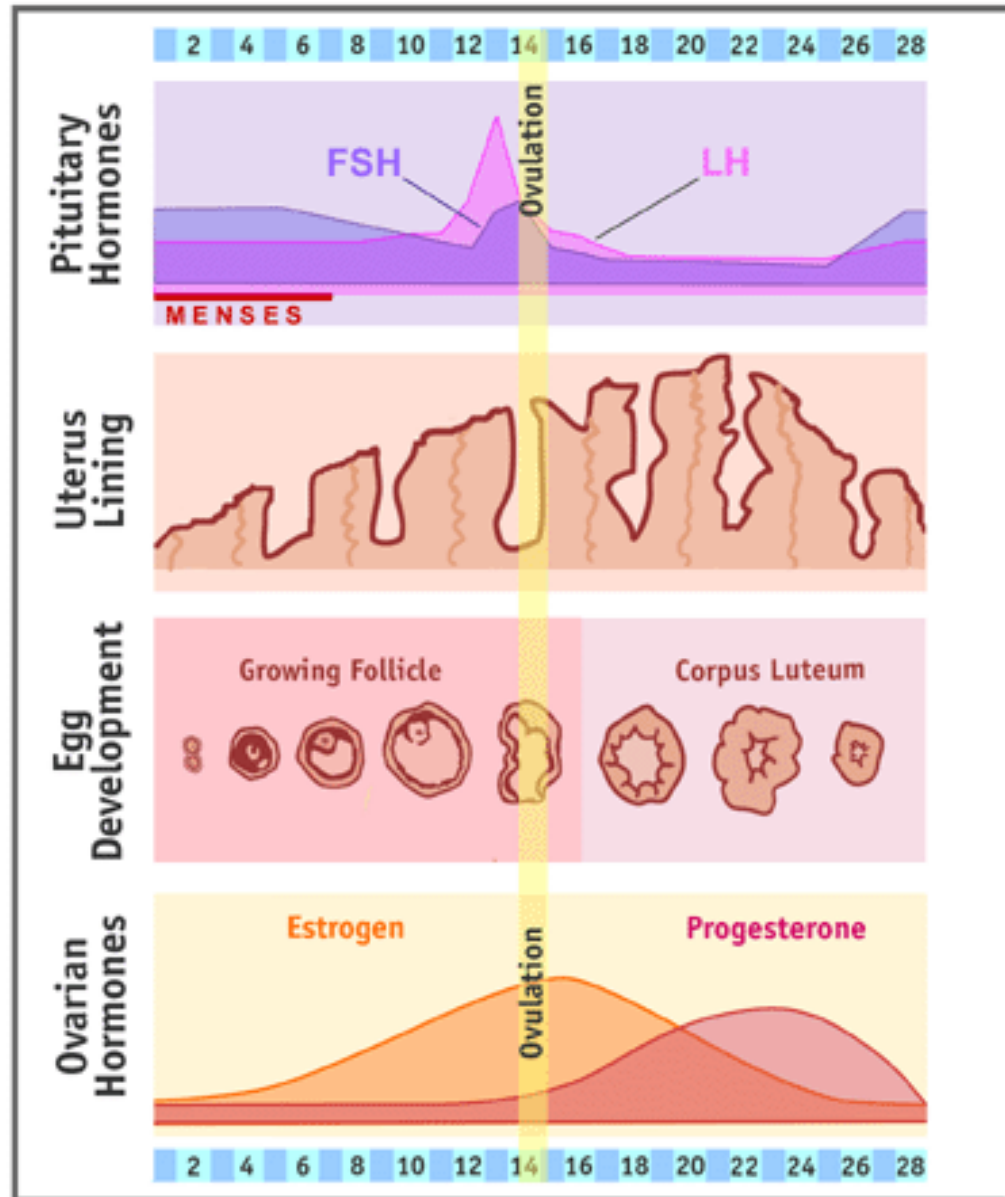


FSH

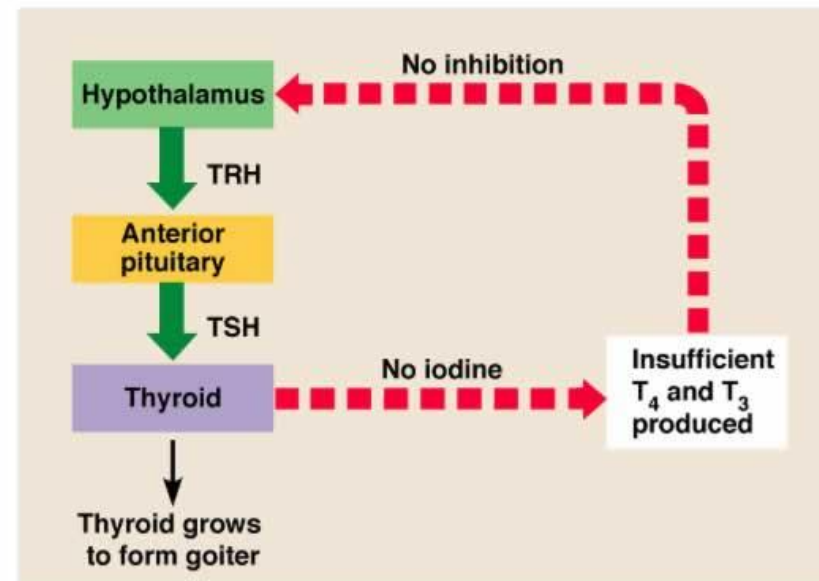
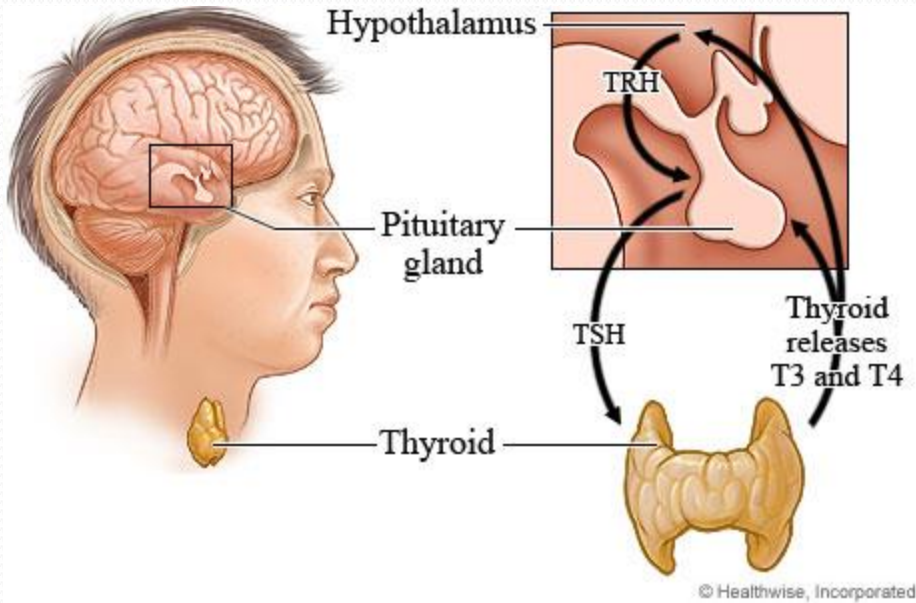


FSH and LH from
pituitary gland
cause egg to mature

PENGARUH HORMON FSH - LH

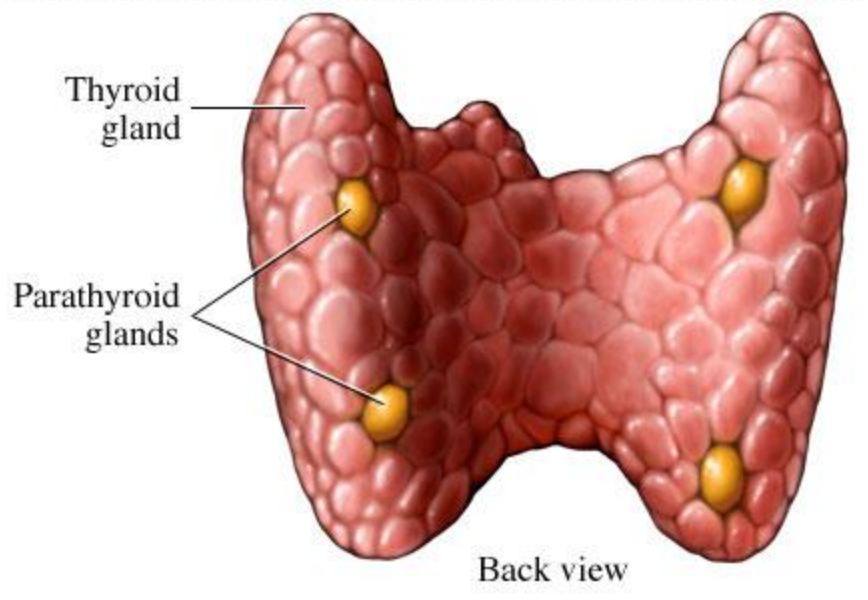


TSH



http://www.health.com/health/static/hw/media/medical/hw/h9991509_001.jpg

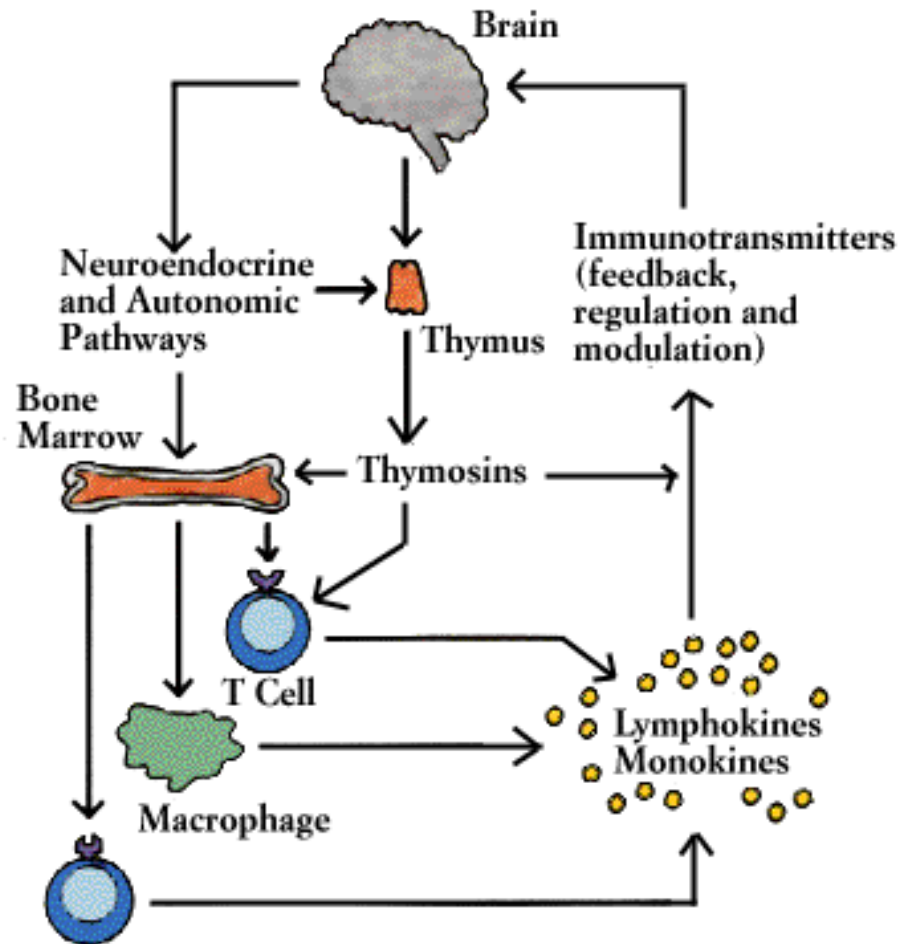
Thyroid & Parathyroid



THYROID → Hormon
Tiroksin → METABOLISME
KARBOHIDRAT

PARATHYROID → Parathiroid
Hormon → PENGATURAN
KADAR KALSIMUM

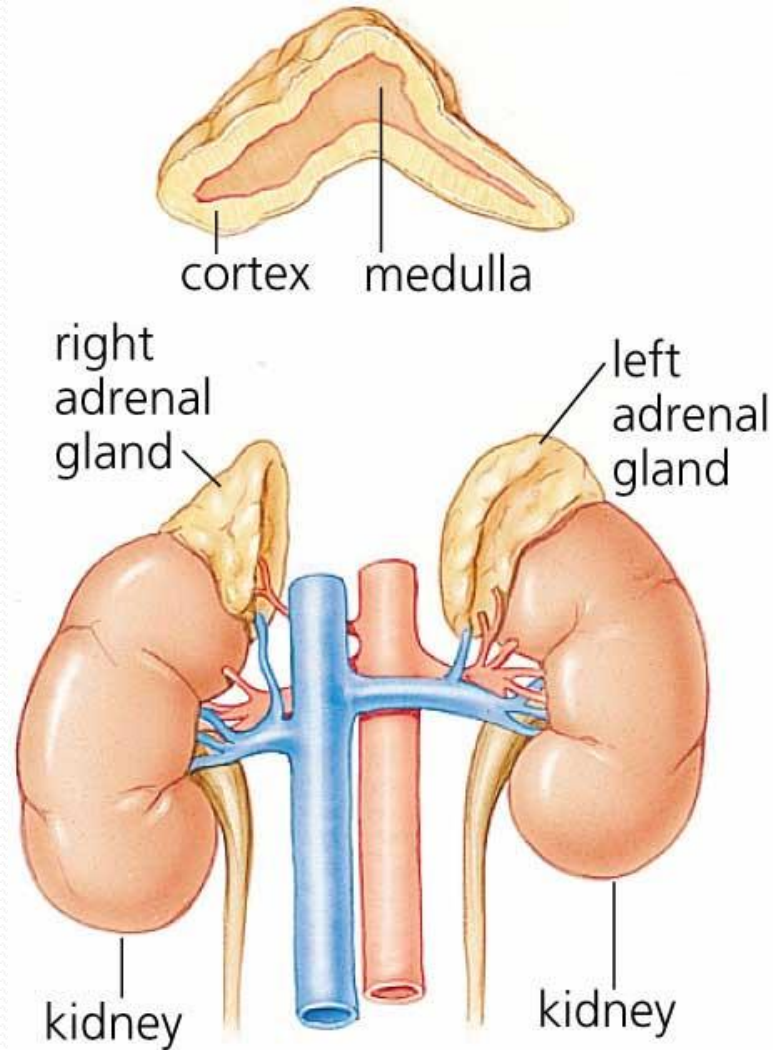
Thymus → IMUNITAS



KELENJAR ADRENAL



ADRENALIN



KELENJAR ANAK GINJAL

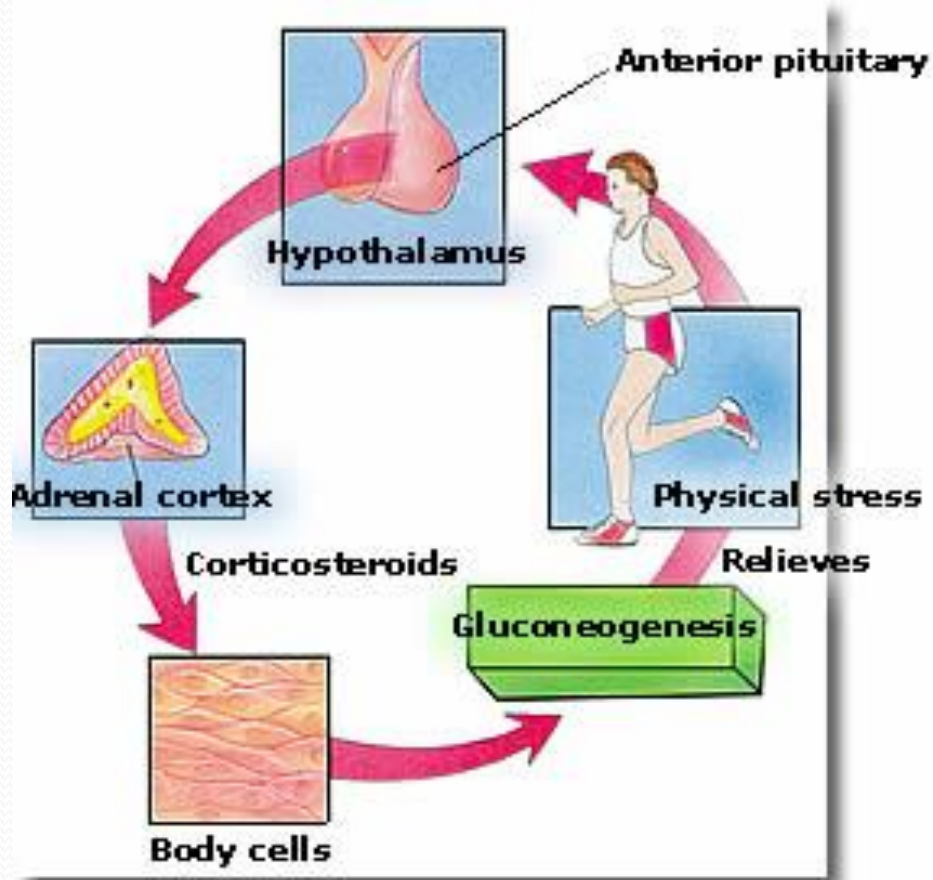
KORTEKS:

- Adrenalin → meningkatkan kadar gula, kerja jantung, otot
- Noradrenalin → antagonis adrenalin

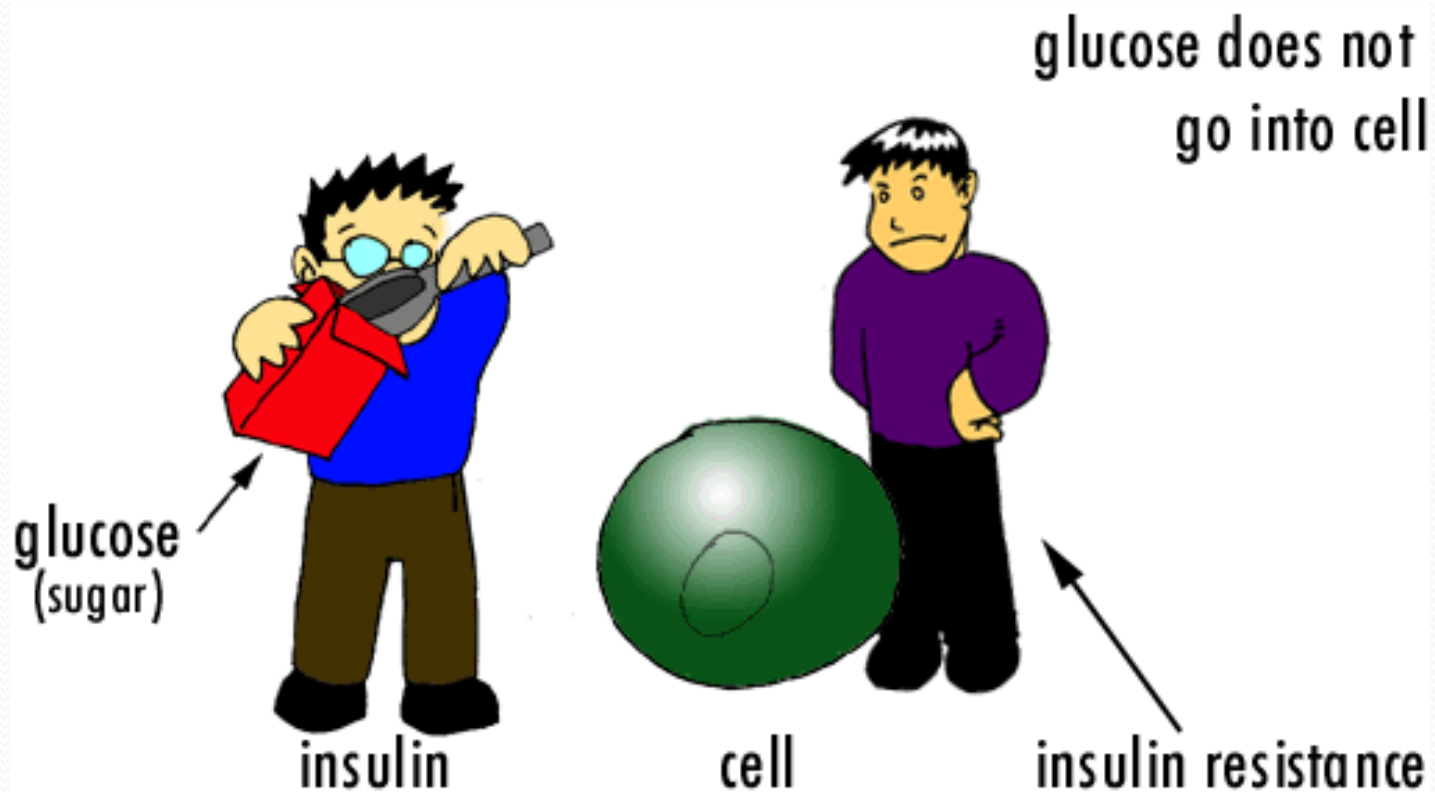
MEDULA:

- Kortikoid → Metabolisme gula
- Androgen → Sifat “laki-laki”
“(eksplosif)”

ADRENALIN

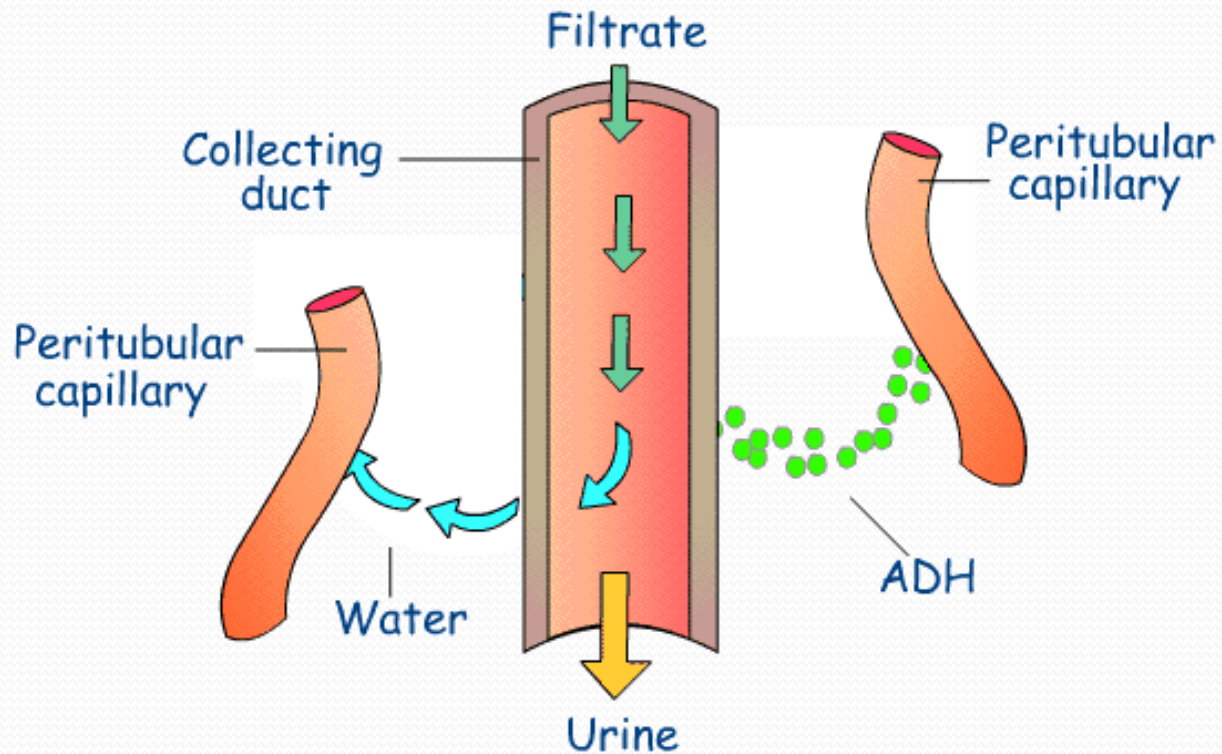


INSULIN



http://diabetesmellituscenter.files.wordpress.com/2010/01/insulin_resistance1.gif

ADH

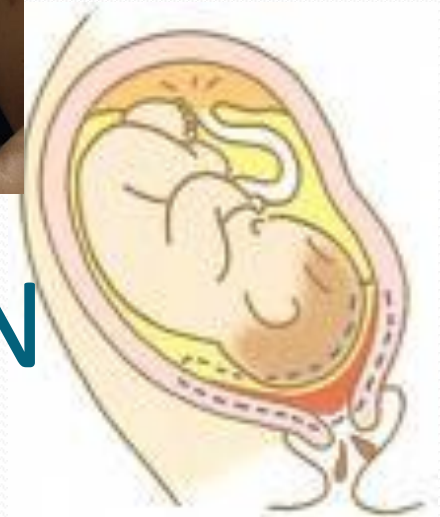


<http://www.health.bcu.ac.uk/physiology/re-nalsystem.htm>

PROLAKTIN

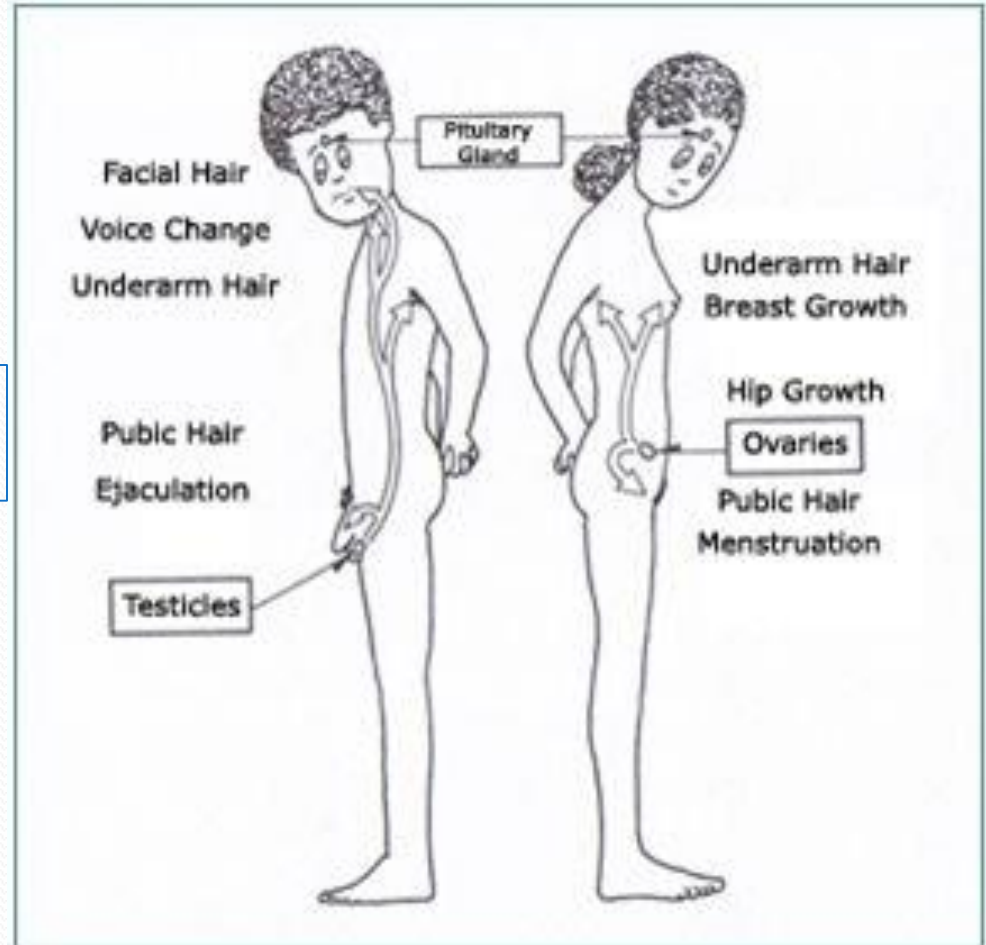


OKSITOSIN



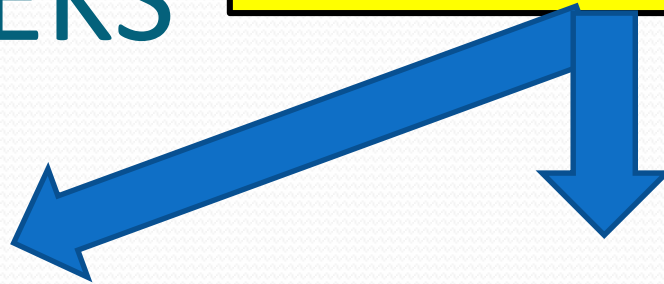
HORMON SEKS

- ESTROGEN
- TESTOSTERON



KELENJAR SEKS

FSH & LH



- OVARIUM

- Estrogen
- Progesteron



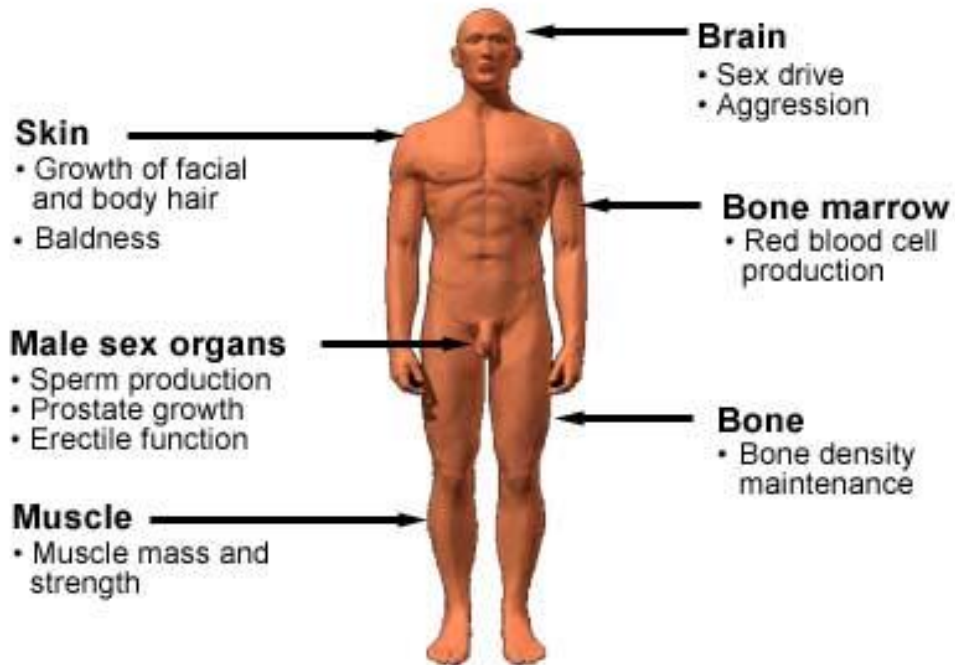
- TESTIS

- Sel Leydig : Testosteron
- Sel Sertoli : Estrogen

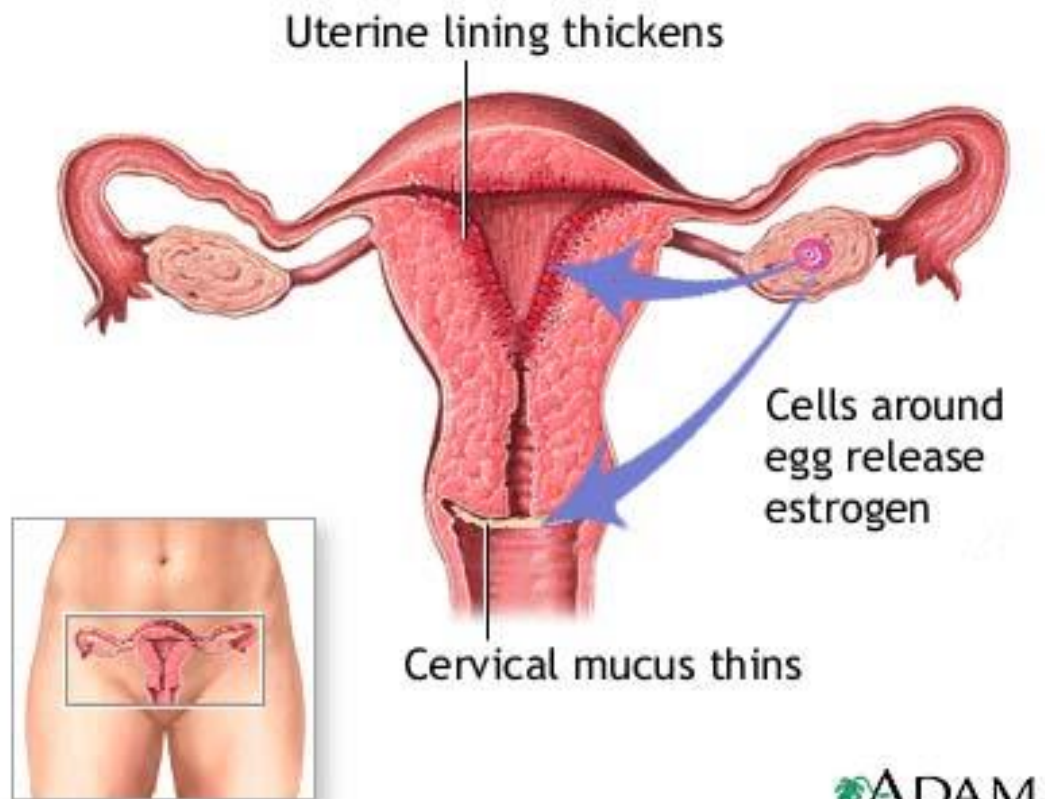


KELENJAR GINJAL : HORMON ANDROGEN

TESTOSTERON



ESTROGEN



Positive Effects of Estrogen

Brain

- Estrogen helps to maintain body temperature.
- Estrogen may delay memory loss.
- Estrogen helps to regulate parts of the brain that prepare the body for sexual and reproductive development.

Bone

- Estrogen helps to preserve bone density.

Breast

- Estrogen stimulates the development of the breasts at puberty and prepares the glands for future milk production.

Heart & Liver

- Estrogen helps to regulate the liver's production of cholesterol, thus decreasing the build-up of plaque in the coronary arteries and lowering the risk of a heart attack.

Ovary

- Estrogen stimulates the maturation of the ovaries. Estrogen stimulates the start of a woman's menstrual cycles -- an indication that a girl's reproductive system has matured.

Uterus

- Estrogen stimulates the maturation of the uterus.
- Estrogen helps to prepare the uterus to nourish a developing fetus.

Vagina

- Estrogen stimulates the maturation of the vagina.
- Estrogen helps maintain a lubricated and thick vaginal lining.

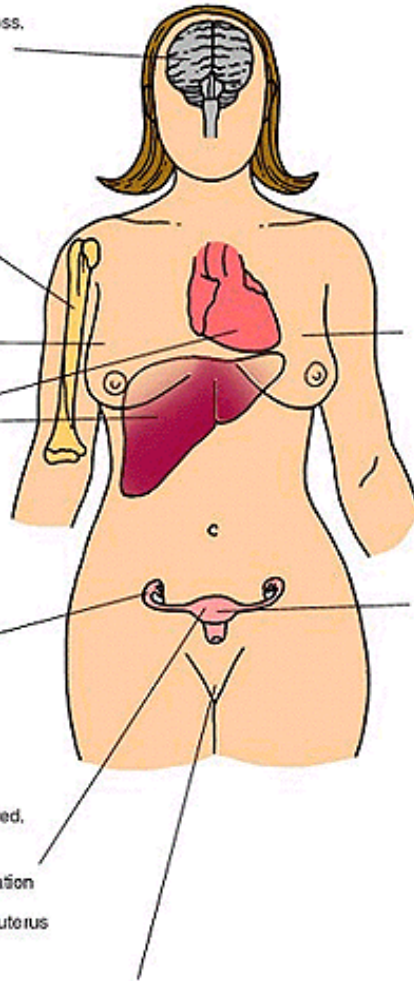
Negative Effects of Estrogen

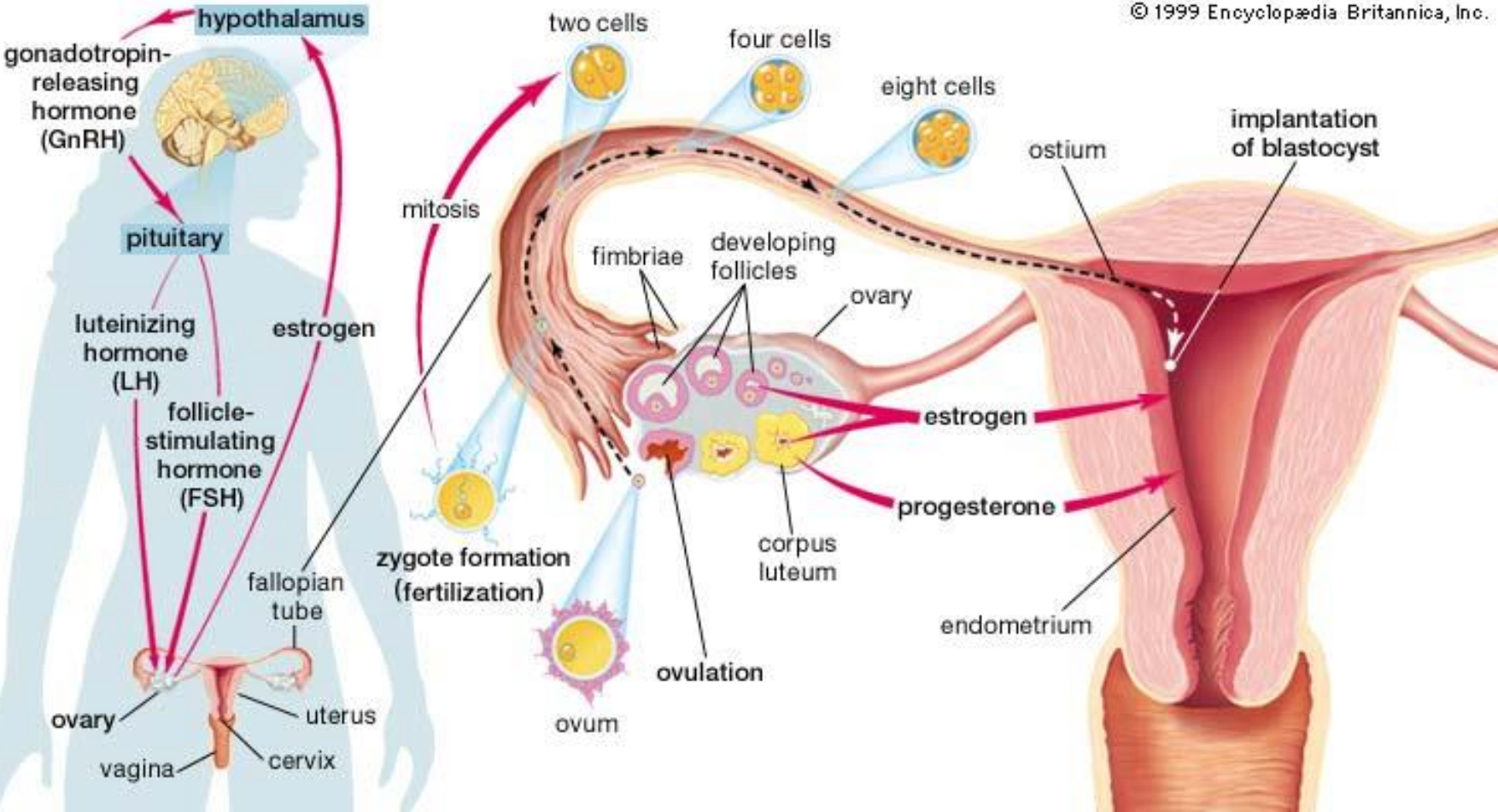
Breast

- Some research has indicated that prolonged exposure to estrogen may increase a woman's risk of breast cancer.

Uterus

- Some research has indicated that prolonged exposure to estrogen may increase a woman's risk of uterine cancer.





Berbagai Gangguan Hormonal



● Kretinisme



■ Gigantisme



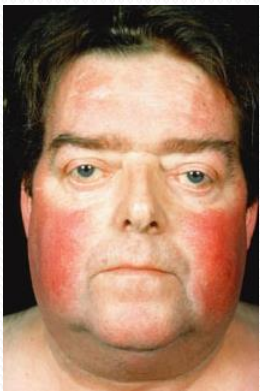
■ Gondok



■ Beser



■ SEX



■ addison



■ Morbus basedow



Virilisme

KRETINISME

- Gejala : tumbuh kerdil, otak kurang berkembang
- Sebab :
 - kurang STH
 - Kurang Tiroksin
 - kurang gizi (Garam Yodium)

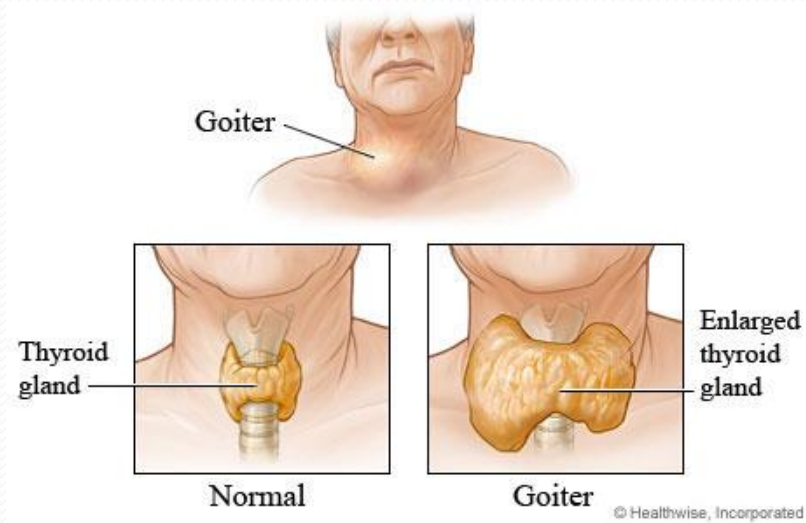


AKROMEGLALI



- Kelenjar masih aktif setelah usia pertumbuhan (laki2 : 22 tahun, perempuan : 17 tahun)
- Gejala : Tulang terus tumbuh, otot tidak → tubuh tidak seimbang
- Sebab : biasanya tumor di kelenjar pituitari

GOITER (GONDOK)



- Pembesaran kelenjar gondok
- 2 jenis
- HIPOTHIROID : Kurang Yodium
- HIPERTHIROID : Kelebihan Yodium
 - Menderita Morbus Basedow (Mata “melotot”)
 - Jantung berdebar-debar

□ VIRILISME



- Perempuan memiliki perkembangan sekunder laki-laki → rambut : jambang, janggut.
- Sebab : kelebihan ANDROGEN



Thank You...