Weill Cornell Medicine

Optimizing Your New Hormone Replacement Regimen

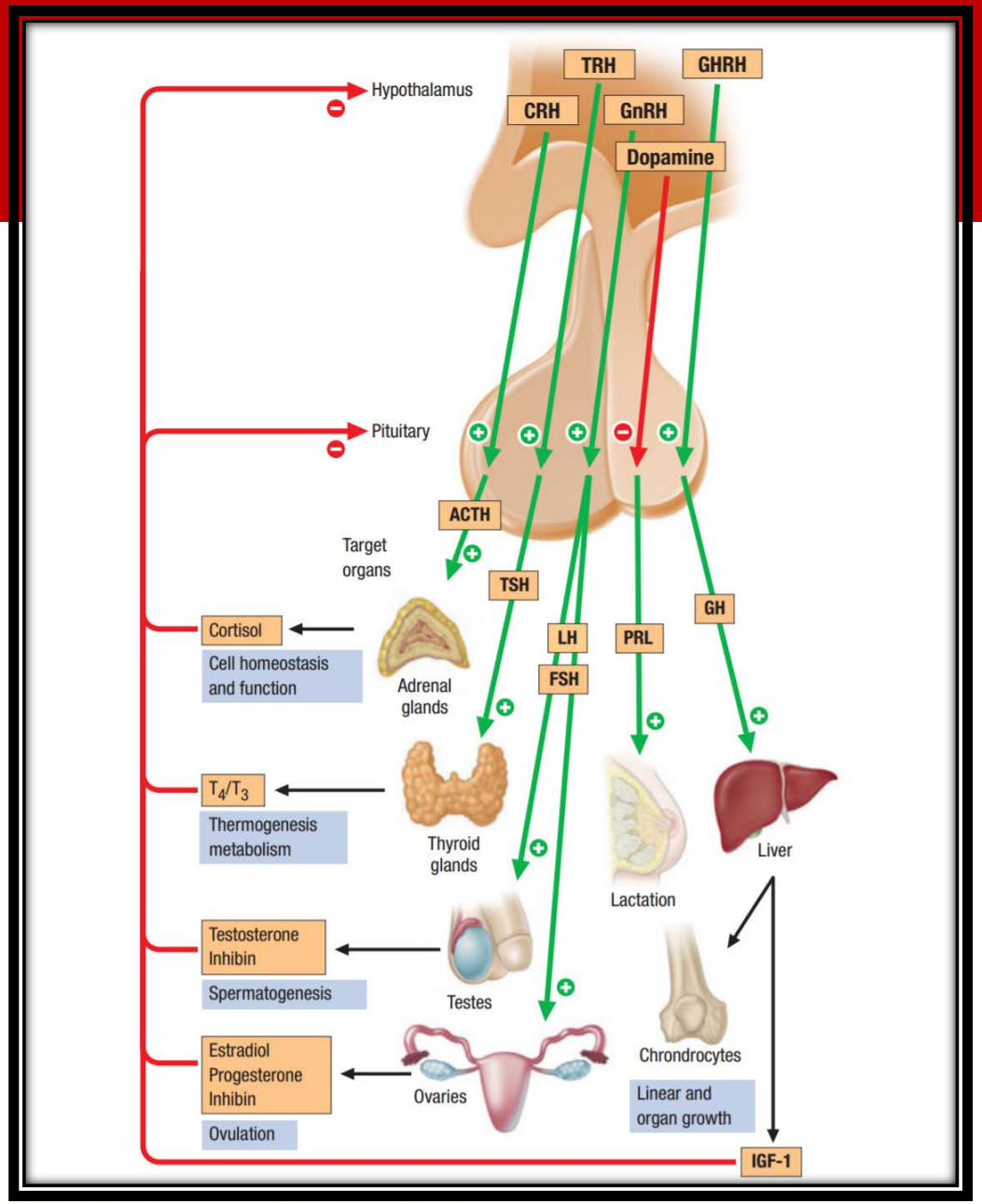
Dobri Georgiana Alina MD, ECNU

Assistant professor of Neuro-Endocrinology in Clinical Neurological Surgery

Assistant professor of Medicine in the Division of

Endocrinology, Diabetes and Metabolism

Weill Cornell Medicine

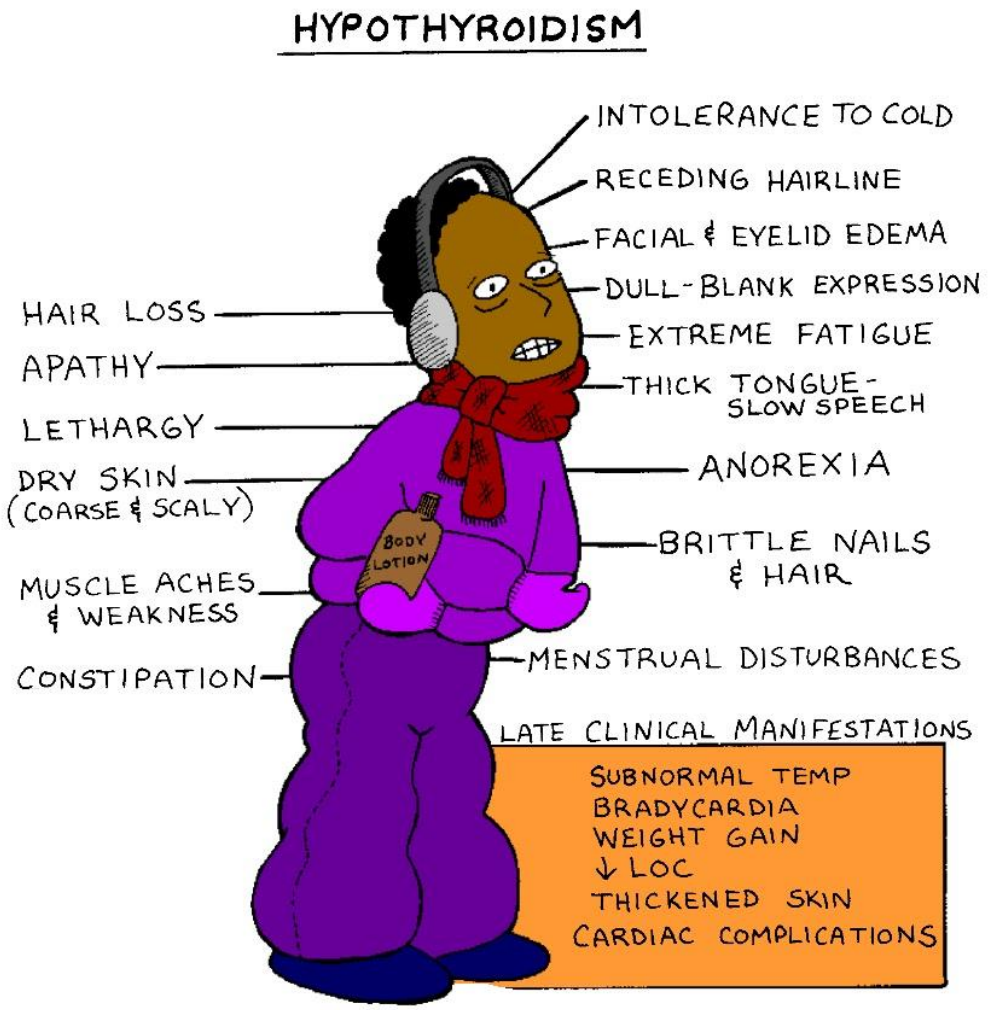


Kasper DL, Fauci AS, Harrison's Principles of Internal medicine, 17th Ed

Hypothyroidism

Central hypothyroidism

- low/normal TSH, low T4/T3



Central hypothyroidism

My first go to preparation is Levothyroxine

- start at 50-100 mcg and adjust (no need for total replacement dose, at least from the beginning)
- Aim for a free T4 towards the middle of the normal range, while monitoring for symptoms
- Cannot use TSH to adjust/monitor dose
- The generic 50 mcg pill is dye free
- Tirosint is gluten, lactose, dye free
- Best absorption on empty stomach, breakfast and other medications 30-60 minutes after
- Vitamins, minerals, herbal supplements, stomach pills 4h after
- Can take 2 the next day if a dose is missed

If patient with symptoms, can add T3 (Cytomel) daily or twice daily or

…..may switch to a natural preparation once or twice a day (Armour, Naturethroid, Westhroid, etc) although trickier to monitor the needed dose

Pregnancy

- 25-50% increase in dose during the pregnancy
- Levothyroxine alone is safer

Hypogonadism

Women

Hypogonadism (low ovarian function due to inadequate FSH, LH)

- Insufficient progesterone
  - Subfertility
  - Menstrual changes
- Decreased estrogen
  - Infertility
  - Menstrual changes (irregular to no periods)
  - Decreased bone mass
  - Hot flushes
  - Low libido
  - Vaginal dryness

Labs:

- Low/normal LH/FSH
- Low estrogen/progesterone

Hypogonadism in women - treatment

Estrogen +/- progesterone

- Progesterone is needed if the uterus is present
- Most convenient preparation is the oral contraceptive (E+P), Combipatch (E+P)
- Oral daily estrogen or patch twice weekly with progesterone pills (progesterone, norethindrone) days 1-10/12 of the calendar month
- ! Medroxyprogesterone is associated with higher risk of coronary heart disease, breast cancer – not a first choice
- Transdermal preparations bypass the liver and have lower risk of forming clots, gallstones
- If PMS/mood changes, continuous daily estrogen and progesterone (lower dose) might be better
- It takes about 3 months to get used with the new E/P regimen
- Monitor for increase in blood pressure, headaches, mood changes, bloating
- **In the pre-menopause age, unless contraindicated, the benefits are higher than any potential risks**

- Post-menopause age, preparations to be discontinued or for the estrogen dose to be reduced to lower risks (dose that controls hot flushes)
- If uterus is present progesterone is still needed but can be reduced to a lower daily dose (off label low progesterone IUD)

+ Fertility

- Clomiphene, HCG (Pregnyl), FSH (Follistim), GnRH +/- IUI, IVF, etc…

Men

Hypogonadism (low testes function due to inadequate FSH, LH)

- Low testosterone
  - low libido, erectile dysfunction
  - low muscle mass
  - low energy
  - decreased bone mass
  - decreased body hair
- Decreased sperm production → infertility

Labs:

- Low testosterone, low/normal LH/FSH

Treatment:

- Testosterone
- Clomiphene, HCG, FSH etc – sperm production

Hypogonadism in men - treatment

Testosterone

- Intramuscular injection: cypionate (weekly), undecanoate (every 2-3 months)
- Subcutaneous injection: enanthate (weekly)
- Subcutaneous implants (every 3-6 months)
- Transdermal: gel (packet, pump), patch, solution (underarm) (daily)
- Buccal striant (twice daily)
- Intranasal (three times daily)
- Oral: undecanoate (twice daily)

To monitor liver function, blood thickness (too many red blood cells), prostate enlargement, sleep apnea, risk for stroke/heart attack

Aim for a level in the middle of the normal range and monitor symptoms

Would suppress sperm production if partially preserved (most with injectable preparations)

+ Fertility

- Clomiphene, Anastrazole, HCG (Pregnyl), FSH (Follistim) etc – sperm production

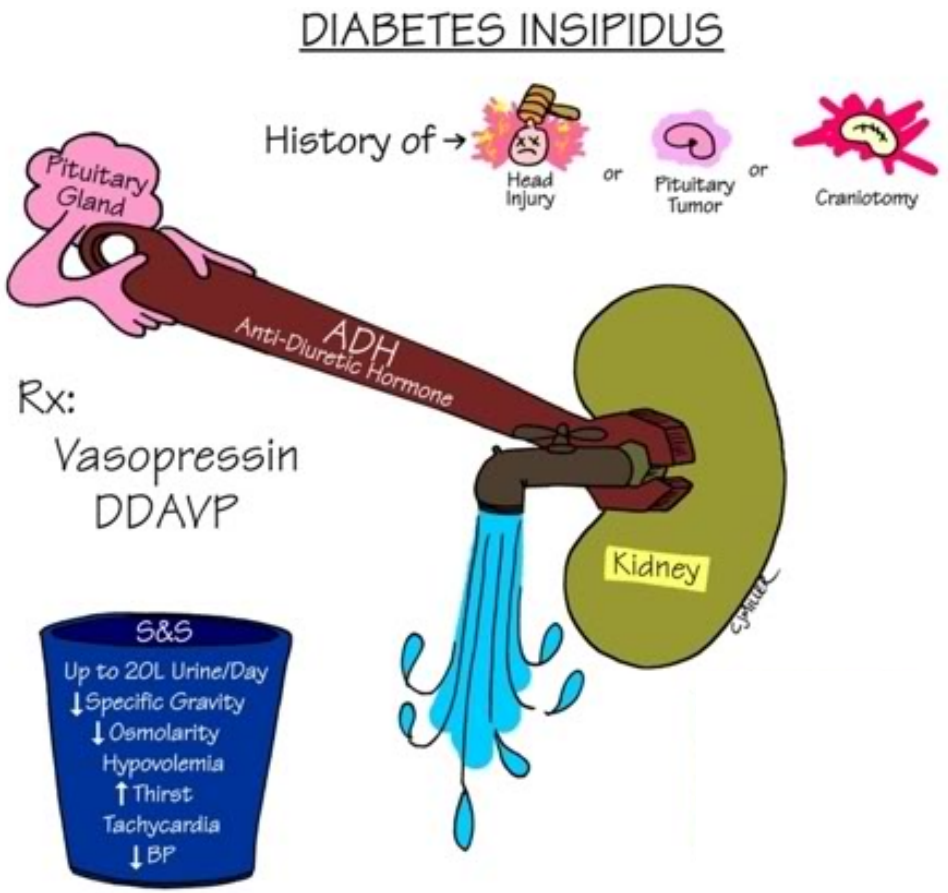
Diabetes insipidus

Diabetes insipidus

- low antidiuretic hormone

- high serum Na, low urine osmolality

– after no liquids for at least 4h



Weill Cornell Medicine

Treating Central DI

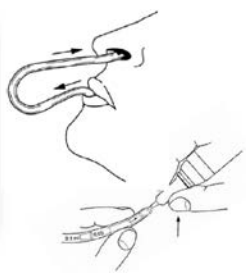
- DDAVP -desmopressin
  - Intranasal (needs refrigeration)
    - Spray
    - Rhinal tube - children
    - Usual dose 1-4 sprays/dose per day up to three times daily
  - Oral
    - 0.1 (100) or 0.2 (200) mg(mcg) tabs, start at 0.05-0.1 mg at bedtime and titrate to maximum 1.2 mg per day in up to three divided doses
    - ! absorption
  - Subcutaneous or IV needs refrigeration)
    - 0.5-2 mcg/dose 1-3 times daily

Injectables (4 mg and 10 mg/ml)

IntraNasal Spray (10 mcg dose)

Tablets (0.10 and 0.20 mg sizes)

Melt/Sublingual Europe only



Rhinal Soln/Tube (small volumes than 10 mcg intranasal dose)

Treating Central DI

- Usually maximize twice a day administration before going to three times a day
- Bedtime dose targeted to control thirst, urination during the night and morning/day doses to control thirst and urination during the day
- cannot have perfect control of urination 24/7
- 1h of increased urination prior to the DDAVP dose or lower dose once a week to allow for polyuria are recommended to prevent water retention

- Slight recovery can be seen over time and dose may need to be decreased
- Aim for Na in low 140's of course paired with symptom control

Weill Cornell Integrated Pituitary/Neuroendocrine Program

Weill Cornell Medicine




Dr. Georgiana Alina Dobri
Dr. Theodore H. Schwartz
Dr. Rohan Ramakrishna
Dr. Babacar Cisse

In addition to neurological surgery and neuroendocrinology, our team members include:
Interventional Neuroradiology: Athos Patsalides, M.D.
Neuro-opthamology: Mark Dinkin, M.D., Cristiano Oliveira, M.D.
Neuropathology: David Pisapia, M.D.
Neuroradiology: Douglas Phillips, M.D.
Oncology: Rajiv Magge, M.D.
Otolaryngology: Ashutosh Kacker, M.D., Abtin Tabaee, M.D., Vijay Anand, M.D.
Pediatric endocrinology Zoltan Antal M.D.
Pediatric neurosurgery Jeffrey Greenfield M.D.
Radiosurgery/Radiation Oncology: Susan Pannullo, M.D., Jonathan Knisely, M.D.

Thank you

Weill Cornell Medicine