

# Those Goofy Adrenals (and that Silly Thyroid)

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## **Anatomy and Function:**

One on each side on top of the kidneys, hence “suprarenal” term. 7-10 gms total.  
Two layers: cortex and medulla.

Cortex: Hormones made from cholesterol

1. Aldosterone: regulates water and electrolytes therefore BP regulation.
2. Cortisol: 20-40 gms cortisol ACTH from pituitary regulates, HPA axis.
3. Androgens: mainly DHEA and DHEA-S

Medulla: Chromaffin cells produce epinephrine and norepinephrine. Acts as a sympathetic ganglion for a “flight or fight” response. Cortisol from medulla will also upregulate epinephrine release through PNMT.

## **Dysregulation:**

1. Stress which is both chronic and long term
  - Hans Selye: Alarm, Resistance, Exhaustion
2. Illness, hunger, lack of sleep, dieting, estrogen HRT, etc
3. PTSD
4. Mental illnesses
5. Infections (also includes ones that are subclinical)
6. Pregnancy - Sheehan’s syndrome - postpartum hypopituitarism

## **Symptoms:**

- 1) Have a hard time falling asleep at night
- 2) Wake up frequently during the night. Insomnia from low cortisol causing low blood sugar and resulting epinephrine release to raise blood sugar.
- 3) Do you have problems putting on weight?
- 3) Do you have a hard time waking up in the morning early, or feeling refreshed?
- 4) Are you dry (dry skin)?
- 5) Do bright lights bother you more than they should?
- 6) Do you startle easily due to noise?
- 7) When standing from sitting or from lying down, do you feel lightheaded or dizzy?
- 8) Do you take things too seriously, and are easily defensive? Anxious?
- 9) Do you feel you don’t cope well with certain people or events in your life?

## **Testing:**

1. Saliva – most conclusive
2. Positional hypotension BP Test 20/10 BP drop laying → standing

- Take 2x/day to test adrenals at different times of the day!
  - May be other causes than adrenals (cardiogenic, low blood volume, neurogenic and “unknown”)
3. Pupil test for aldosterone (low Na<sup>+</sup> and too much K<sup>+</sup>)
  4. Bright light hurts your eyes beyond other people’s sensory ability
  5. Graph basal temps 3x/day (should have no more than 0.2 to 0.3 degree change)
  6. Blood tests:
    - TSH, fT4, fT3, Thyroid antibodies- anti-TPO and TgAb, ferritin, B12, folate, RBC potassium and magnesium, Vit D, possibly rT3 (Well, carrying over into thyroid...)

### **Support for adrenal fatigue syndrome:**

1. Vitamin - B5 and Vit C
2. Herbals – Ashwaganda, Rhodiola rosea, Eleutherococcus, Glycerrhiza (150 mg = 5 mg cortisol), Panax ginseng, Cordyceps sinensis (well, it’s almost herbal)
3. Glandulars
4. Pregnenolone
5. Progesterone
6. DHEA or DHEA-S
4. Iodine (Also calcium, magnesium, potassium, manganese and zinc).
5. Celtic sea salt
6. Protein with each meal. Vegans may have a hard time with protein.
7. HCl as a digestive aid especially if cortisol is upsetting to stomach
8. Magnesium 600-1,000 mg of top quality form until deficiency resolves. Can resolve irregular heart rate and other muscle cramping.
9. Isocort (OTC)
10. Cortef (hydrocortisone) (cortisol) natural corticosteroid produced by the adrenal gland. Given too much or too little affects BP & HR.
11. Prednisolone & Medrol (methylprednisolone) 4 mg Medrol = 20 mg cortisol  
Once a day dosing often.
12. Fludrocortisone (Florinef) mineralcorticoid in doses of 0.1 mg. once or twice a day. Replaces aldosterone from adrenals. Better when laying down is indicative
13. Thyroid (too much increases HR but not BP).
14. Clear cavitations or root canals if iodine does not help adrenals to stop stress.
15. Clear heavy metal toxicities (when hormone treatment does not work and difficult to balance!) Challenge testing. Many different chelators and protocols.
16. Chronic pain patients who are resistant – see above for heavy metals
17. Clear mold toxicities when intolerant to dessicated hormones. NEAT BY Healing Pathways does wonders!
18. Phosphatidyl serine most abundant phospholipids in brain. Blunts cortisol
19. Omega three fish oils as precursor to steroid hormones. EPO, flax, borage also
20. Relaxation
21. Wholesome diet
22. Reduce chemical additives such as aspartame (Equal)

