

“We’re NOT Having Fun Yet” ©

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Not to be construed as medical advice

Stress and anxiety: A Prozac deficiency in the body? Xanax? (570,000% profit margin)
Or is there something else that is actually biochemically abnormal?

Stress and the adrenal gland

1. Adrenal cortex and medulla
2. HPA Axis (Hypothalamus-Pituitary-Adrenal)
3. 50 hormones and 12 are physiologically significant
4. Body does not distinguish between mental and physical stress.
5. Claude Bernard French physiologist *milieu interieur* balance of internal and external forces
6. Walter Cannon coined *homeostasis* as the dynamic equilibrium between exterior and interior forces with the addition that mental stressors change the equilibrium
7. Hans Selye and the stress response GAS (General Adaptation Syndrome) and the major headings:
 - Alarm - fight or flight
 - Adaptation - resistance
 - Exhaustion - aged “wear and tear” without the ability to respond normally
8. Stress and cortisol
 - Cortisol is one of the stress hormones and critical in the stress response
 - Cortisol released during stress, hypoglycemia, hemorrhage, & ACTH release
 - Elevated cortisol well replicated indication of depression
 - Elevated cortisol found in low serotonin levels
 - Liver inactivates cortisol through glucuronidation or sulfation
9. Cortisol actions and excess
 - Proteolytic
 - Glucogenic
 1. Antagonize insulin receptors on the muscles and adipose tissue
 2. Increases liver output of glucose from amino acids
 3. Excess cortisol increases total body fat stores
 - Cortisol increases appetite – a CNS effect
 - Cortisol increases blood glucose levels - increases insulin, a lipogenic hormone and cortisol is a weak lipolytic hormone
 - Central obesity
 - Osteoporosis from lower renal and GI absorption of calcium
 - Polycythemia
 - Thinning of the skin

- Immune deficiency – decreased T lymphocytes

10. Cortisol testing:

- Blood test is not accurate as it only tests one time during the day
- Saliva cortisol looks at four time periods: 8am, noon, 4 pm, bedtime this allows measurement of cortisol level trends throughout the day.
- DHEA is also pertinent. Sex hormone precursor. Cancer prevention
- Aldosterone deficiency is seen in a low blood pressure such as 90/70 or 90/60 and a pupillary reflex test insufficiency.

11. Cortisol treatment.

- Vit C – the only other place with a higher Vit C level is the pituitary gland
- Vit B5 – but why stop at one B vitamin? A high potency B vitamin supplement is greatly needed for general health. FDA = Fabulously Deficient Amount
- Hormone replacement: Cortisol, DHEA, Aldosterone (Fludrocortisone), Pregnenolone and possibly the sex hormones. All of a menopausal woman's and more of an older male's sex hormones are from the adrenal gland. Adrenal and thyroid are the hormonal foundation for the other hormones and adrenal is the linchpin without which the others will not work.
- Stress reduction – well duh!
- Stop sugar, caffeine intake. Take up the B vitamins and stress adrenals to handle sugar
- Sleep
 1. Seriphos or "Cortisol Manager".
 2. Magnesium at bedtime to bowel tolerance
 3. 5-HTP or tryptophan
- Protein – oak on fire vs the straw of carbs.
- HCl and the other digestive enzymes along with zinc
- Celtic sea salt
- Adrenal glandulars
- Herbals - adaptogens: Rhodiola, Eleutherococcus, Ashwaganda. Licorice
- Mercury detox – mercury blocks 11 alpha hydroxylase to stop aldosterone and cortisol production

10. Cortisol saliva retesting to see treatment efficacy.