



WHOLE FOOD NUTRIENT SOLUTIONS

The Adrenal Conundrum

A Functional Medicine Perspective

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As a member of the Standard Process wellness team, Dr. Georgia Nab provides chiropractic care, nutrition counseling, and nutrition education training to more than 300 employees at the company's corporate headquarters in Palmyra, Wisconsin.

Dr. Nab owned a chiropractic clinic in Wichita, Kansas, before joining Standard Process and draws from experience gained during more than two decades in practice. She graduated from Cleveland Chiropractic College's Kansas City campus in 1994 and recently earned her master's degree in nutrition and functional medicine from the University of Western States. In addition, she is certified in applied kinesiology and nutrition.

Dr. Nab is a member of the American Chiropractic Association, Wisconsin Chiropractic Association, and Chiropractic Society of Wisconsin. She also works with Affiliated Monitors, an independent monitoring company for professionals. Good nutrition and healthy living are her passions, and she enjoys both with her family in Dousman, Wisconsin.



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The Adrenal Conundrum: A Functional Medicine Perspective

Discussion:

- Effect of stress on the adrenals, thyroid and mitochondria as seen through functional medicine model
- Psychoneuroimmunology—effect on HPA axis
- New Stress Assess questionnaire
- Nutritional support for each phase of adrenal support

The Adrenal Conundrum: A Functional Medicine Perspective

What is Functional Medicine?

- Biochemical individuality
- Dynamic balance
- Web-like interconnections
- Health = Vitality
- Promote organ reserve

Physiology and Function: Organizing the Patient's Clinical Imbalances

Retelling the Patient's Story

Antecedents
(Predisposing Factors-
Genetic/Environmental)

Triggering Events
(Activators)

Mediators/Perpetuators
(Contributors)

Structural Integrity
(e.g., form Subcellular Mem-
branes to Musculoskeletal
Structure)

Communication
(e.g., Endocrine, Neurotransmit-
ters, Immune Messengers)

Assimilation
(e.g., Digestion, Absorption,
Microbiota/GI, Respiration)

Mental
e.g., cognitive,
function, perceptual
patterns

Transport
(e.g., Cardiovascular, Lymphatic
System)

Spiritual
e.g., meaning &
purpose, relationship
with something
greater

Defense & Repair
(e.g., Immune, Inflammation,
Infection/GI, Microbiota)

Emotional
e.g., emotional
regulation, grief,
sadness, anger, etc.

Energy
(e.g., Energy, Regulation,
Mitochondrial Function)

**Biotransformation &
Elimination**
(e.g., Toxicity, Detoxification)

Sleep & Relaxation

Exercise & Movement

Nutrition & Hydration

Stress & Resilience

Relationships &
Networks

Name: _____ Date: _____ CC: _____

The Adrenal Conundrum: A Functional Medicine Perspective

How do we define “stress”?

“Any threat to an organism’s homeostasis”

“A state of mental or emotional strain or tension resulting from adverse or very demanding circumstances” (Webster)

“The non-specific response of the body to any demand for change”

(Hans Selye in 1936)

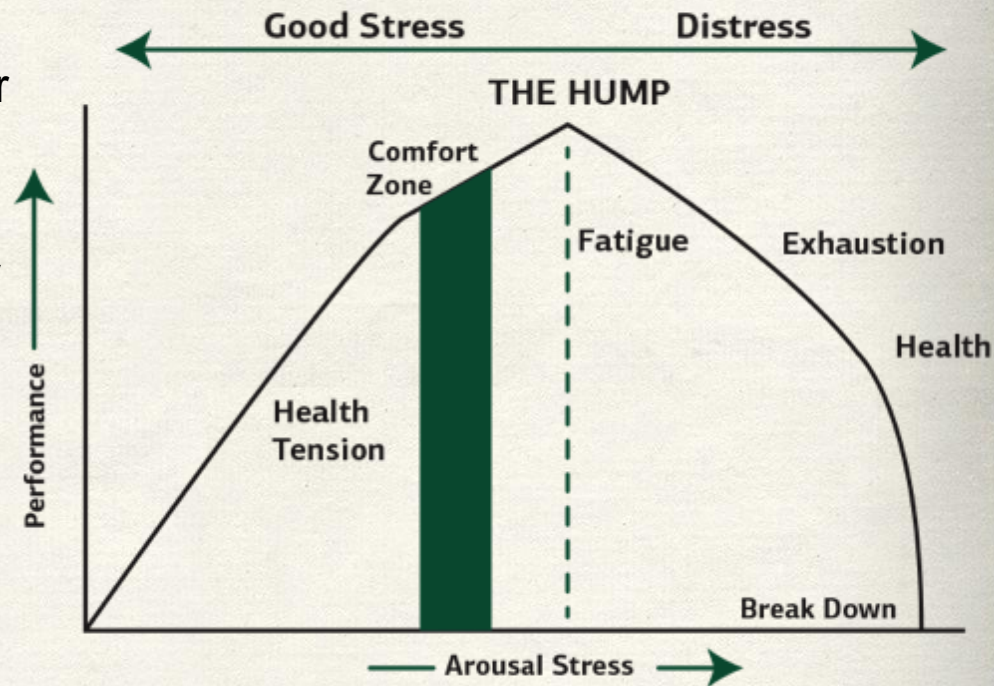
Good stress.

Bad stress.

Perceived stress.

“Adopting the right attitude can convert a negative stress into a positive one.” - Hans Selye

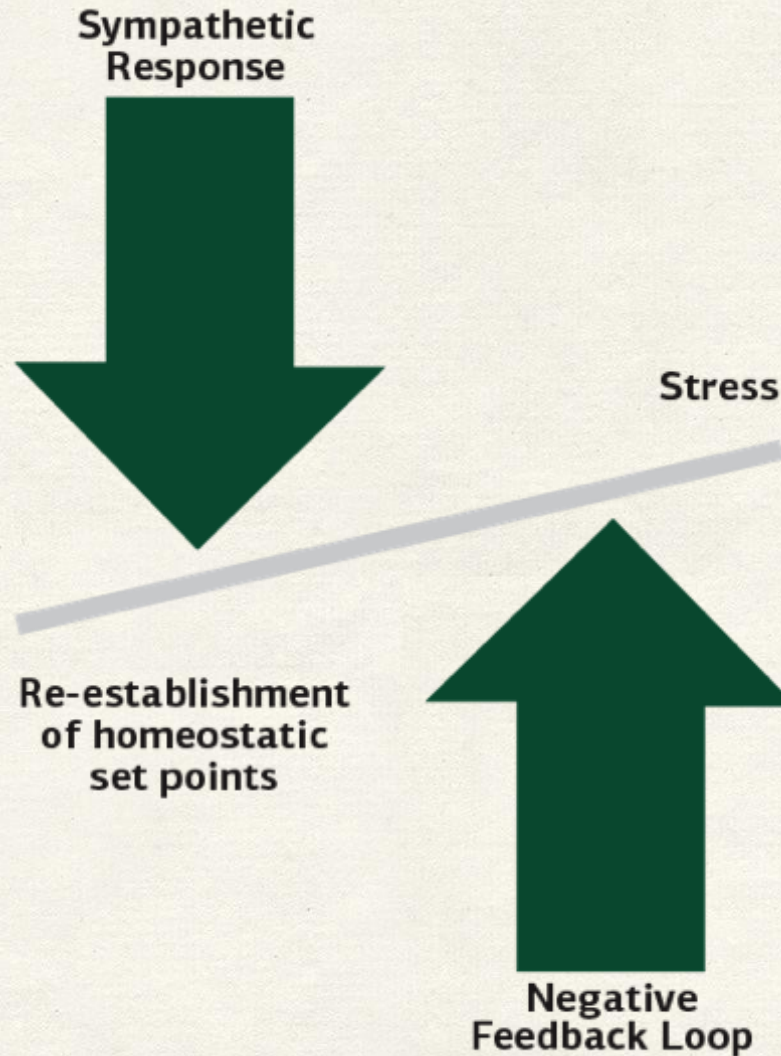
The Human Function Curve



Adapted from: Nixon, P: Practioner, 1979.

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The function of the stress response is to maintain homeostasis via neural and endocrine adaptations.

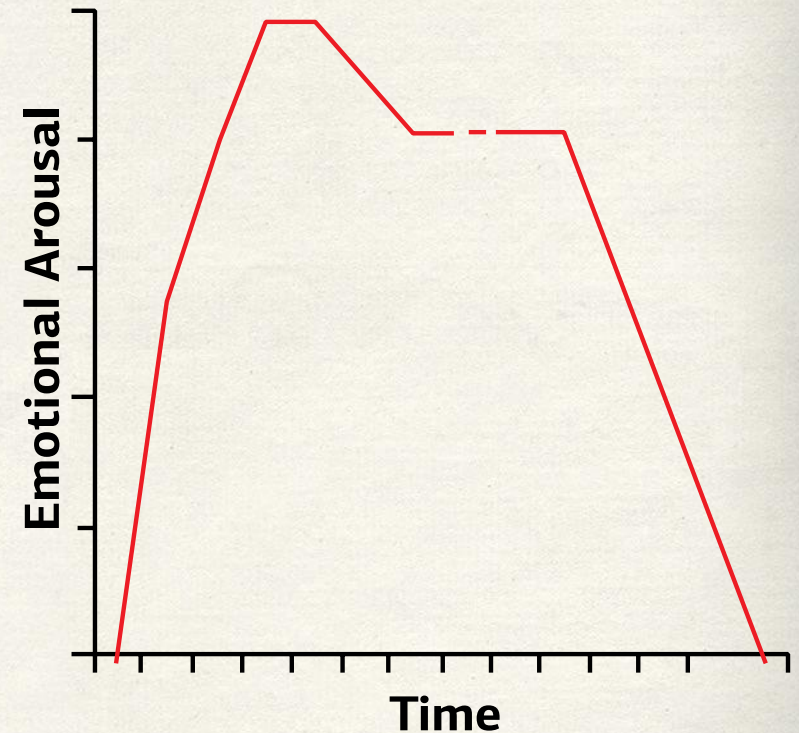


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The General Adaptation Syndrome

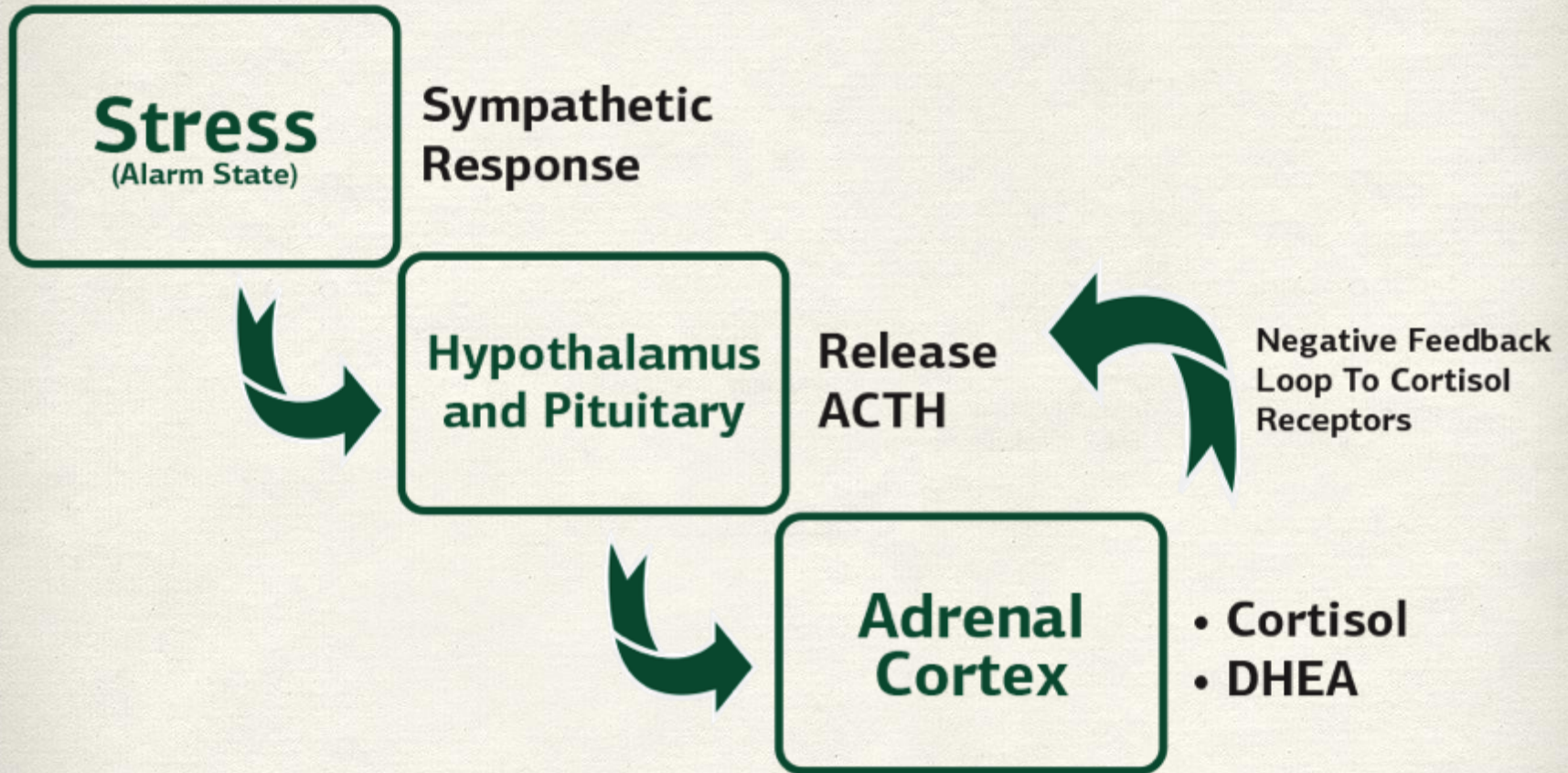
Selye (1956)

- **Gross Emotional Reaction**
 - Sympathetic Activation
- **Decreased Emotion**
 - Parasympathetic Activation
- **Exhaustion, Death**
 - Depletion of Resources



Hans Selye, General Adaptation Syndrome, 1936

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Selye: General Adaptation Syndrome

Stage 1: Arousal

- Both cortisol and DHEA increase with episodic stress, but recovery occurs to baseline. Usually asymptomatic.

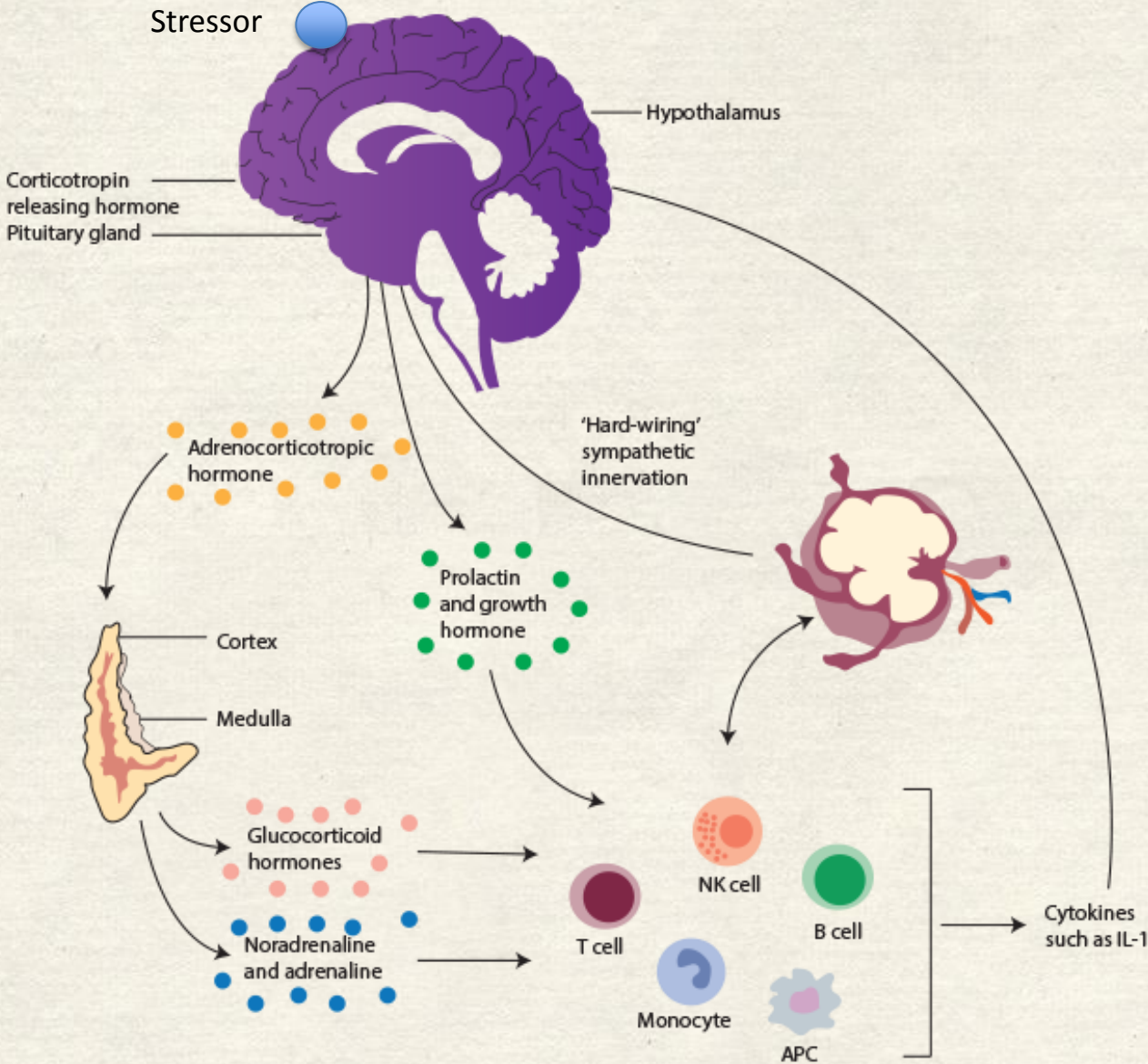
Stage 2: Adaptation

- Cortisol chronically elevated, but DHEA declines. “Stressed”, anxiety attacks, mood swings, low moods.

Stage 3: Exhaustion

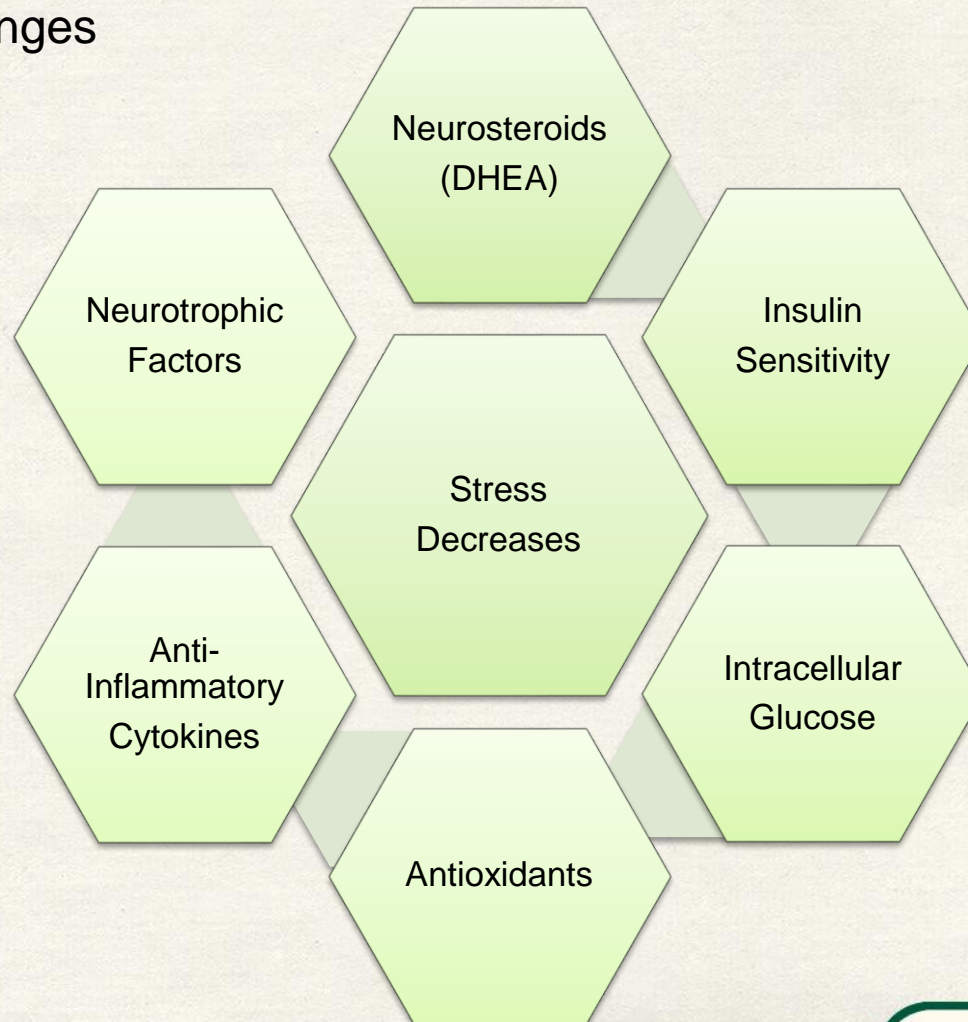
- Adrenal insufficiency/low cortisol and DHEA. Low mood and low energy.

Psychoneuroimmunology



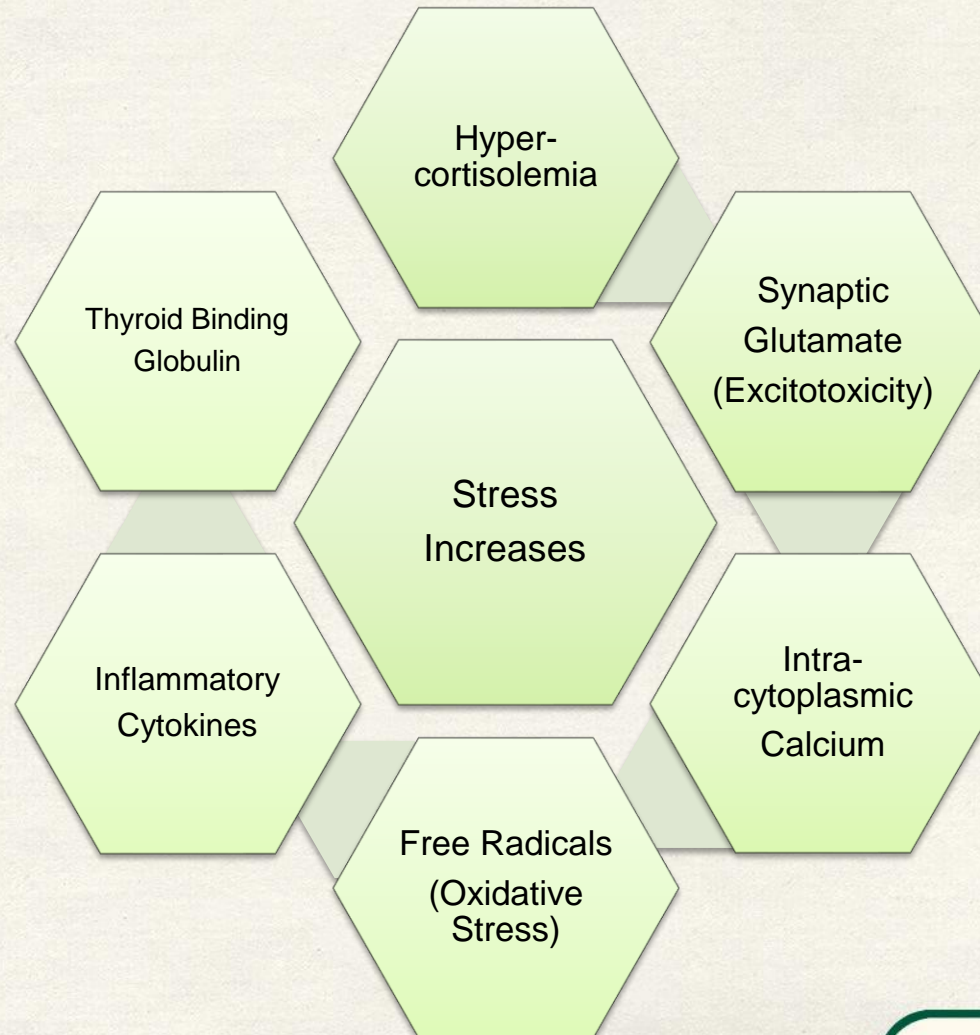
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Stress induced
physiological changes
include:



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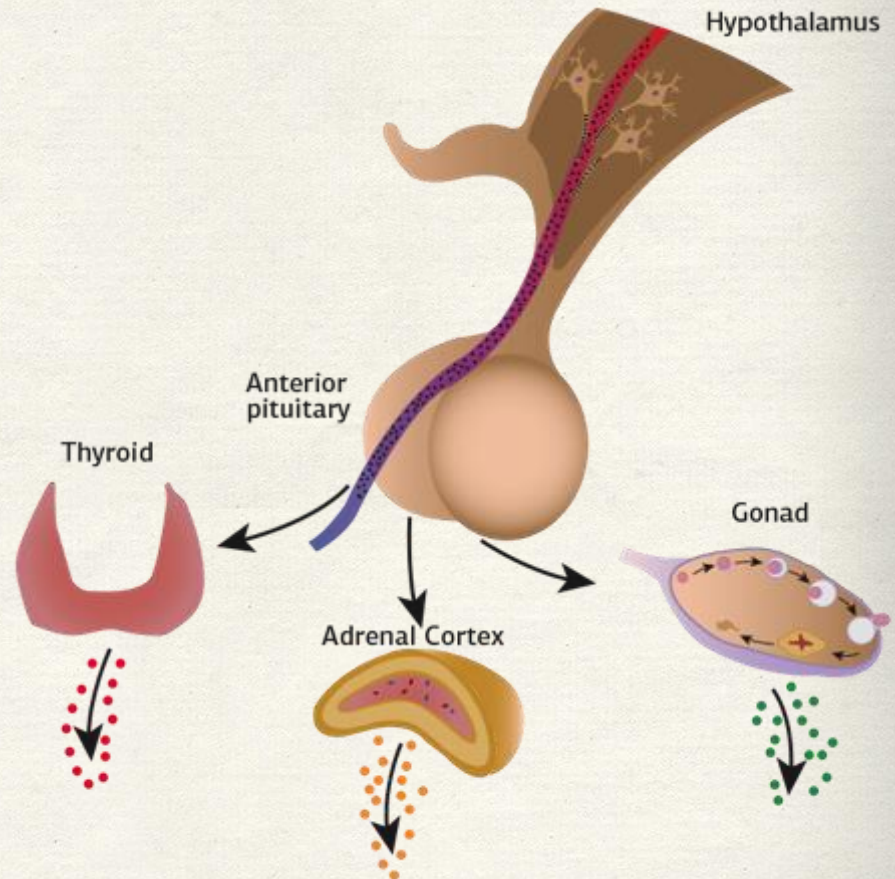
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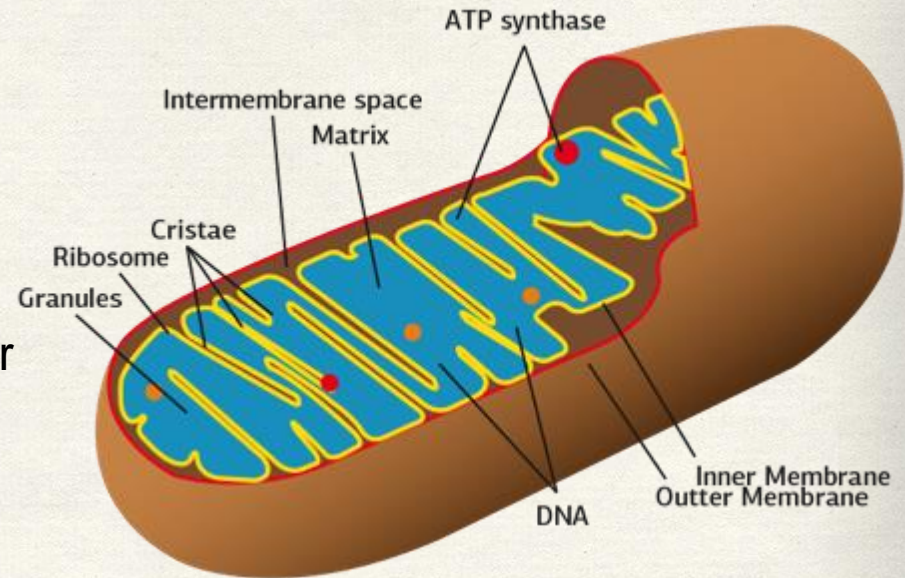
What about the interaction of stress, adrenals, and the thyroid gland?

1. Suppression in hypothalamus = decrease in TRH, TSH, thyroid hormones
2. Inflammatory cytokines block conversion T4 to T3
3. Overactive immune system increases chances of antithyroidal antibody production
4. Increase thyroid binding globulin
5. Cortisol depleted
6. Magnesium depleted



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- And those amazing mitochondria?
- City = electric company
- HVAC = thermal regulation
- Waste management = ROS containment
- Grim reaper = apoptotic regulation
- Moving company = intra-/extra-cellular trafficking/cell movement
- Dept. of defense = immune system response/inflammatory response/stress response/cell danger
- Historical society = evolutionary tacking via mtDNA



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Key is to look at the patient as a whole, evaluating clinical imbalances beyond one organ.

- What lifestyle factors need to be addressed?
- Diet, movement, sleep, relationships
- What is the patient's outlook (positive or negative) and therefore their outlook on stress?
- How can you best support the patient nutritionally?

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STANDARD PROCESS **STRESS ASSESS**™

How well do you think you are handling stress? This assessment will help you and your health care professional design a personalized program to support your stress response and well-being.

Have you experienced any significant life events or changes in the last three months (illness, injury, job change, new baby, marriage, divorce, extreme training for a sporting event, major project at work, etc.)? If so, please list: _____

Hours of sleep each night:

3-4 5-6 7-8 9+

Hours exercised per week:

0 1-2 3-5 6+

Alcoholic drinks per week:

(1 drink = 12 oz. beer, 5 oz. wine, 1.5 oz. liquor)

0 1-2 3-7 8+

Meals eaten out per week:

0 1-2 3-5 6+

Do you have any downtime or participate in quiet mindfulness activities? (Pilates, yoga, meditation, quiet walks, personal hobbies)

Yes

No

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Please answer the following questions based on your experience within the last month .	Not at All	Little Bit	Somewhat	Quite a Bit	Very Much
1. How stressful would you say your life is?	1	2	3	4	5
2. Dealing with daily stresses is negatively affecting my daily tasks.	1	2	3	4	5
3. I have a high intake of sugar and/or processed foods.	1	2	3	4	5
4. I feel worn down and/or burnt out.	1	2	3	4	5
5. I need caffeine or other energy drinks in the morning or afternoon to give me energy.	1	2	3	4	5
6. I seem to have lower than usual energy during the day.	1	2	3	4	5
7. I experience body aches and pains.	1	2	3	4	5
8. I have periods of low moods.	1	2	3	4	5
9. I feel more irritable.	1	2	3	4	5
10. My weight and metabolism have changed.	1	2	3	4	5
11. I can't seem to focus or concentrate.	1	2	3	4	5
12. I have feelings of anxiousness.	1	2	3	4	5
13. I feel totally exhausted most of the day and only have a few productive hours.	1	2	3	4	5
14. I find myself pushing through fatigue to get things done.	1	2	3	4	5
15. I seem to be sleeping a lot but never feel quite rested. I wake up feeling tired.	1	2	3	4	5
16. I have difficulty getting to sleep and/or wake up in the middle of the night.	1	2	3	4	5
17. I experience strong cravings for sweet or salty foods.	1	2	3	4	5
18. I feel overwhelmed with daily tasks and all that is on my plate.	1	2	3	4	5
19. I have a low sex drive.	1	2	3	4	5
20. I am unable to enjoy socializing with family and/or friends.	1	2	3	4	5

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Add up your total score and mark where you fall on the stress scale below.

Total: _____

Low Stress

High Stress

20

40

60

80

100

Stress is fairly well managed in your life. It may be important to support your body to continue its healthy response.

Your body's response to stress may be getting in the way of normal activities quite frequently, leaving you feeling depleted. Consult your health care professional for an individualized program to achieve your health goals.

You may have experienced prolonged stress, and your body's stress response can no longer adapt or successfully cope. Consult your health care professional for targeted support and strategies for improvement.

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Phase I: Alarm

Adrenal
Health Daily
Fundamentals

- Drenamin[®], Cataplex[®] A-C-P, Paraplex[®]
- Support adrenal function and emotional balance
- Support cellular health, cardiovascular, and immune*

Cellular
Vitality

- Provides CoQ₁₀, multi-B's, antioxidants
- Support cellular functions
- American ginseng as a body tonic for everyday stress*

Rhodiola &
Schisandra

- Support when experiencing temporary stress
- Support against emotional and environmental stressors
- Support healthy liver and nervous system function*

*These statements have not been evaluated by the Food and Drug Administration. These products are not intended to diagnose, treat, cure, or prevent any disease.


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Phase II: Resistance



Drenatrophin
PMG®

- Protomorphogen™ extract support
- Unique profile of minerals, nucleotides and peptides
- Supports adrenal gland health*



Adrenal
Complex

- Restore adrenal function to reduce the effects of stress
- Support adrenal gland function and health
- Support healthy immune system during occasional stress*



Withania
Complex

- Whole body tonic
- Promote healthy adrenal gland function
- Promote vitality and stamina*

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Phase III: Fatigue/Exhaustion

Adrenal
Desiccated

- Powerful adrenal support for immediate energy needs
- Short term: 1 to 2 months only
- Supports immune system during times of increased demand*

Nevaton®


- Support healthy nervous system response
- Ease effects of occasional stress
- Encourage balance between body and mind*


Kava Forte


- Calm the nerves
- Ease the effects of everyday tension and stress
- Promote relaxation and sleep*


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