Stress

& Thyroid Dysfunction

The hypothalamic-pituitary-adrenal (HPA) axis and the hypothalamic-pituitary-thyroid (HPT) axis are closely connected. Imbalances in one system often cause imbalance in the other. Additionally, symptoms such as fatigue, chronic pain, weight gain, mood and memory problems, and menstrual irregularities can result secondary to HPA and thyroid dysfunction. Testing can help distinguish whether imbalances in the HPA axis, HPT axis, or both systems are present.

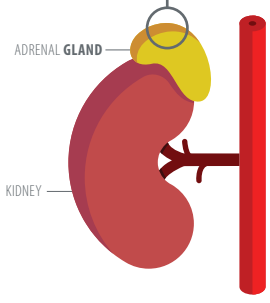
Chronic stress and inflammation increase the body's demand for cortisol. Elevated levels of cortisol are catabolic, meaning they break down the body and may cause extreme fatigue, joint and muscle pain and sleeplessness. High levels of cortisol also directly suppress thyroid function, by inhibiting release of TSH and decreasing T4 to T3 conversion. T3 is the metabolically active form of thyroid hormones and it is crucial that levels remain within normal range to promote optimal health.

HORMONE **RELEASE**

CRH+ACTH

EPI+NE

CORTISOL

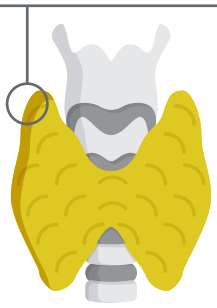


ADRENAL **GLANDS**

LOWERS **TSH**

LOWERS **T4** ▶ **T3** CONVERSION

RISE IN **RT3** (INACTIVE)



THYROID

PHYSICAL **SYMPTOMS**

FIGHT-OR-FLIGHT **RESPONSE**

Rise in blood pressure
Increased heart rate
Increased anxiety

HORMONE **RELEASE**

Decrease in thyroid hormone production
Decrease in sex hormone production

HYPOTHYROID **SYMPTOMS**

Unexplained weight gain
Cold hands and feet
Fatigue
Fine brittle hair or hair loss
Body temperature below 98.2°
High cholesterol
History of infertility or miscarriage

ACTH Adrenocorticotropic hormone
CRH Corticotropin-releasing hormone
EPI Epinephrine
NE Norepinephrine
RT3 Reverse T3
TSH Thyroid-stimulating hormone
T3 Triiodothyronine
T4 Thyroxine

Lifestyle Recommendations

MOVEMENT

Aim for 150 minutes of walking per week or 10,000 steps per day

STRESS MANAGEMENT

Identify your stressors

Prioritize what is most important in your life

Schedule time off

Spend time in nature

DIET

Avoid sugar

Avoid inflammatory foods like gluten, dairy and soy

Eat three to five well balanced meals per day with lean protein, colorful vegetables and healthy fats

Eat within a 12-hour window or less and at least two hours before bed

SLEEP

Aim for at least 30 minutes of outdoor (even overcast) light each day with sunglasses off for some of the time

Aim for seven to eight hours of quality sleep each night

Avoid blue light from cell phones and screens at least two hours before bedtime

Keep the bedroom cooler for more restful sleep

Nutrient Recommendations

Iodine
Tyrosine
Iron

Iodine, tyrosine and iron increase the production of thyroid hormones.

IODINE
300-1,000 mg/day

TYROSINE
300-1,000 mg/day

IRON
15 mg/day

Zinc
Selenium
Vitamin A
Vitamin C
Vitamin E

Antioxidants zinc and selenium, and vitamins A, C and E increase production of thyroid hormones, increase conversion of T4 to T3, and improve cellular sensitivity to thyroid hormones.

ZINC
20-50 mg/day

SELENIUM
100-600 mcg/day

VITAMIN A
3,000-7,000 IU/day

VITAMIN C
400-800 mg/day

VITAMIN E
200-400 IU/day

Vitamin B2
Vitamin B3
Vitamin B6

Vitamins B2, B3 and B6 increase the production of thyroid hormones.

VITAMIN B2
50 mg/day

VITAMIN B3
50 mg/day

VITAMIN B6
50 mg/day

Lifestyle Matrix RESOURCE CENTER

SOS STRESS RECOVERY PROGRAM

LT-SOS-011-B 10132020