DR. HYMAN+

# MENOPAUSE - Everything You Need To Know

Elizabeth Boham, MD, MS, RD
Functional Medicine Deep Dive on Dr Hyman +

# Welcome!

## Elizabeth Boham, MD, MS, RD

Physician and Medical Director -The UltraWellness Center

Dr Hyman +
Functional Medicine Deep Dive

# Menopause
# The Definitions

# Definitions

- Premenopausal - Before you have symptoms of perimenopause or menopause. Typically having cycles and could get pregnant.

- Perimenopause - Period of time before menopause when hormones are shifting and symptoms may be occuring because of this. May last 5-13 years. Less fertile, but still possible to get pregnant.

- Menopause or Postmenopausal - No period for 1 year. Typical age 45-55 years (average age = 51) old for natural menopause. Also can occur with surgery (removal of ovaries) or medication (ie chemo).

# Perimenopause - Symptoms

Wide range of symptoms

Irritability and changes in mood (anxiety / depression)

Changes in sleep

Fatigue

Hot Flashes / Night sweats -  vasomotor symptoms - caused by hormonal fluctuations

Shifts in cycle (more frequent, less frequent, skipping periods)

# Menopause - Symptoms

Hot Flashes / Night Sweats - vasomotor symptoms - caused by hormonal fluctuations

Vaginal Dryness / Pain with Intercourse

Decrease in Bone Density (osteopenia / osteoporosis)

Change in metabolism.  Shift in where weight is gained.  Shift in lipids.

Therefore increase risk of heart disease and stroke

# Perimenopause - Support

Support the adrenal gland

Self care

Acupuncture

Progesterone - Transdermal vs oral

Supplements

# Menopause - Support

Acupuncture

Vaginal Estrogen and Lubricants

Other hormones

Supplements

# How do we assess your hormones?

Your clinical picture

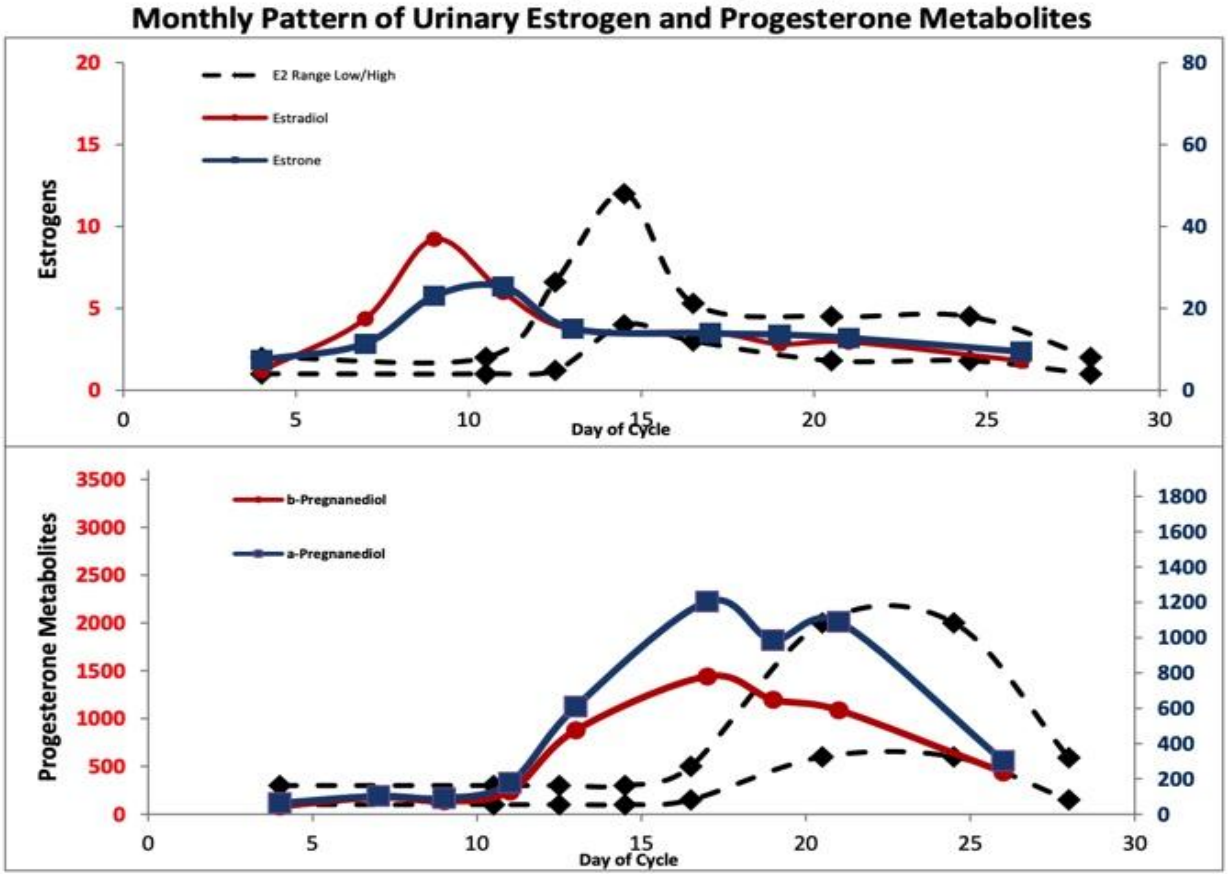
Blood - Day 20 for perimenopausal assessment

Urine

Saliva

Adrenal saliva testing

Limitations of testing




All values given in ng/mg creatinine

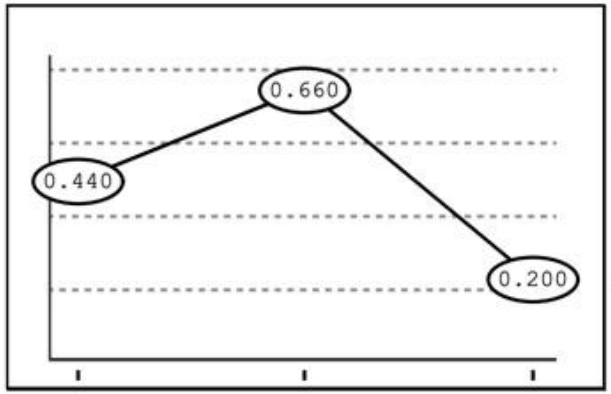
# Perimenopausal Assessment

4300 Adrenocortex Stress Profile - Saliva

*Methodology: EIA*

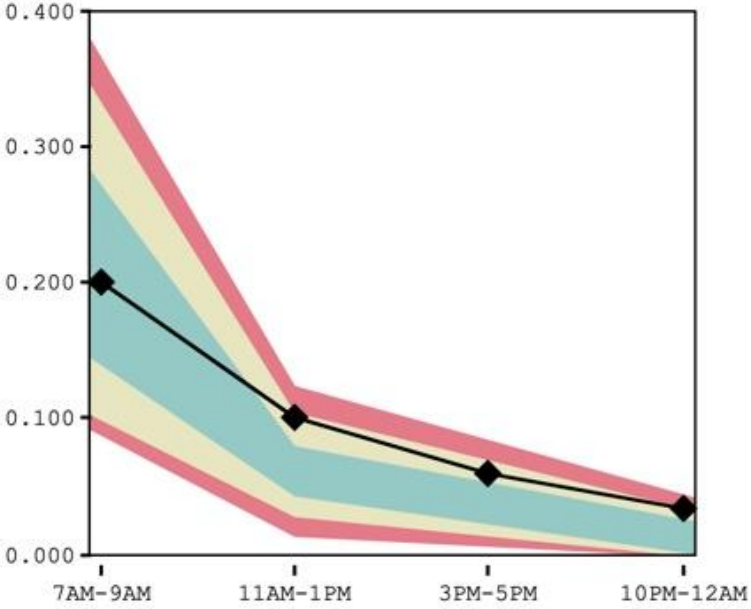
## Cortisol, Cortisol Awakening Response, and DHEA

### Cortisol Awakening Response




| Percent Increase | 50 | Expected: >= 50 % |
|---|---|---|

### Salivary Cortisol




### DHEA

| | | Reference Range |
|---|---|---|
| DHEA 7AM - 9AM◆ | 71 | 71-640 pg/mL |

| | | Reference Range |
|---|---|---|
| DHEA: Cortisol Ratio/10,000◆ | 355 | 358-2,538 |

# Symptoms of Adrenal Gland and HPA Axis Dysfunction

Brain Fog

Concentration Issues

Fatigue and Chronic fatigue

Mood - irritable, low mood, anxiety

Overwhelmed

Tired in the am

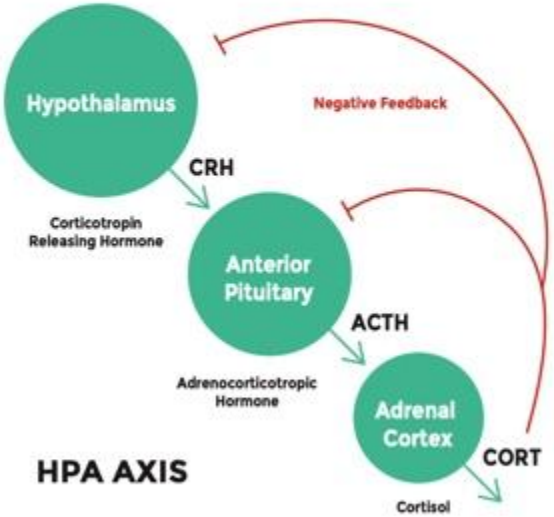
Food Cravings

Weight gain around abdomen

Frequent infections

# THE HPA AXIS

## WHAT IS HPA AXIS




HPA Axis stands for the **hypothalamic - pituitary - adrenal** axis. This is a complex neuroendocrine system that controls the body's response to stress, regulates digestion, the immune system, metabolism, libido, mood/emotions and more.

When we perceive that we are – or actually are – in danger, this response prepares us to either run away or stay and fight. It makes your heart beat faster, increases blood sugar to fuel your muscles, increases rate of breathing, activates your immune system and retains salt to keep our blood pressure high. This happens all so that in case you are injured, you won't go into shock. It's an amazing system!

| STAGE | PROCESS OF ACTIVATION | TRIGGERS AND PRIMARY SYMPTOMS | SECONDARY SYMPTOMS |
|---|---|---|---|
| STAGE I: HPA ACTIVATION | • Immediate activation of the nervous system and adrenal gland<br>• Release of cortisol results in "fight or flight" response<br>• Stressor is neutralized through the inflammatory response | • High stress<br>• Person appears highly anxious, irritated or agitated<br>• Poor sleep yet without feelings of fatigue ('wired and tired')<br>• Elevated heart rate | • Acute GI symptoms such as gas, bloating, constipation, nausea, reflux and indigestion<br>• More likely to be immune compromised |

| STAGE | PROCESS OF ACTIVATION | TRIGGERS AND PRIMARY SYMPTOMS | SECONDARY SYMPTOMS |
|---|---|---|---|
| STAGE II: HPA ADAPTATION | • The hypothalamus releases corticotrophin-releasing hormone (CRF)<br>• CRF stimulates the pituitary to release adrenocorticotropic hormone (ACTH)<br>• ACTH stimulates cortisol release from the adrenal cortex which quiets the inflammatory response<br>• Cortisol inhibits CRF and ACTH and balance returns | • Moderate stress<br>• Fatigue | • Driven and/or over reactive<br>• May increase alcohol and tobacco use<br>• More likely to have weakened |
| STAGE III: HPA DEPRESSION | • After repeated stress, the system never has a chance to shut off. This results in exhaustion of the HPA axis and cortisol levels start to decline. Cortisol may be low on salivary testing<br>• If this continues, it can have long-reaching and irreversible consequences on the body | • Fatigued and possible exhaustion<br>• Low libido<br>• Very tired in the evening<br>• Poor quality sleep—can have difficulties getting to sleep or falling asleep<br>• Low pulse | • More likely to experience pain<br>• Prone to allergies<br>• Reduced ability to handle stress (even small issues cause significant response)<br>• Emotional issues (anxiety, depression, etc.)<br>• Slow wound healing |

## LIFESTYLE SUPPORT FOR EACH STAGE

### Stages I and II:

- Avoid simple sugars and limit your consumption of alcohol.
- Identify and remove food intolerances.
- Regular exercise is one of the most powerful ways to reduce stress, eliminate stress hormones and reduce secondary complications such as insulin resistance. **However, over-exercise can also cause stress.** It is important to find a balance.
- Having regular bed times and getting restorative sleep is key. Review the suggestions on the following page to support optimal sleep.
- Engage in daily relaxation practices. See our suggestions on the next page.
- Stop smoking and consider getting help through a cessation program if you are unable to do so on your own.

**Stage III:**

- All of the above strategies remain important. Additionally, focus on balancing your blood sugar. Key strategies include eating small frequent meals and incorporating appropriate amounts of healthy protein, fat and fiber with each meal.

- Caffeine mimics the stress response. By drinking coffee or consuming other sources of caffeine, you add fuel to the fire and slow the healing process. At this stage, it is best to gradually wean off coffee entirely. A few hidden sources of caffeine include chocolate, some tea, some protein bars, and even certain pain killers.

  In addition to the above interventions, you may be prescribed one or more supplements to support this complex system. These will be selected specifically for you based on your individual needs. Often supplements need to be taken for at least 3 months, but sometimes for as long as 1 year.

## ADDITIONAL SUPPORT

Find ways to calm your body on a daily basis. Adopting a relaxation/mindfulness practice will help to support and restore the HPA Axis. Make a goal of practicing for at least 20 minutes every day. Here are some suggestions:

1. Deep breathing exercises (see below for instructions)
2. Biofeedback is helpful for many people.
3. Join a meditation/relaxation class to help you stay focused and committed to the practice.
4. Plan activities that nourish you: acupuncture, Reiki and massage are wonderful examples.
5. Do something for yourself every day. Maybe that is walking outside in nature or taking a hot bath.
   - For a relaxing bath, mix 1-2 cups Epsom salts with ½ - 1 cup baking powder and 10 drops lavender oil to the bath water. Soak for 20-30 minutes.

## DEEP BREATHING EXERCISE

Breathing with your diaphragm tends to reduce stress and improve energy. *Abdominal breathing*, also known as *diaphragmatic breathing*, is a powerful way to decrease stress by activating relaxation centers in the brain. The abdominal expansion causes negative pressure to pull blood into the chest, improving the venous flow of blood back to the heart.

- Find a comfortable place to sit or lie down, with your feet slightly apart, one hand on your abdomen near the navel, and the other hand on your chest.
- Gently exhale all the air in your lungs through your mouth, then inhale slowly through your nose to the count of 4, pushing out your abdomen slightly and concentrating on your breath. As you breathe in, imagine warm air flowing all over your body. Hold the breath for a count of at least 4 but not more than 7.
- Slowly exhale through your mouth while counting to 8. Gently contract your abdominal muscles to completely release the remaining air in the lungs.
- Repeat for a total of 4 cycles. You may only be able to do 1 or 2 cycles at first, which is fine. You will get used to this and can increase the number of cycles as you are able to tolerate.
- Once you feel comfortable with your ability to breathe into the abdomen, it is not necessary to use your hands on your abdomen and chest.

# The Adrenal Gland / HPA Axis

3 stages of adrenal dysfunction

How best to support

Rest

B vitamins

Adaptogens

Glandular or medication support?

# Adrenal Herbal Support

Maca

- Supports hormone levels by nourishing the HPA axis

Ashwagandha

Rhodiola

Mushrooms - Reishi

# Hot Flashes

## What causes hot flashes? Will they ever end?

Acupuncture

Breath work

Lower the sympathetic nervous system and support the parasympathetic nervous system

Cut back on caffeine

Cut back on alcohol

Medications - (paroxetine, venlafaxine) and hormone therapy

Black cohosh

Soy

# Vaginal Dryness

Vaginal moisturizers and lubricants

Hyaluronic Acid

DHEA vaginally

Estrogen vaginally

- Cream, tablets, rings

# Bone Density

Exercise

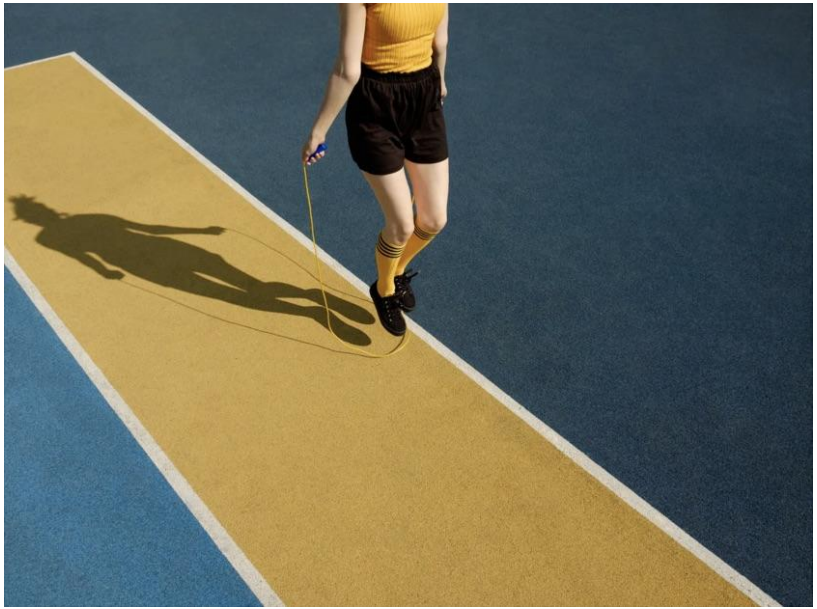
Exercise

Exercise

Vitamin D3

Vitamin K2

Calcium



# Sleep

Good sleep hygiene

Cool room

Magnesium

Valerian

Passion flower

Phosphatidyl serine

## GETTING A RESTFUL SLEEP

| | |
|---|---|
| **MINIMIZE OR AVOID STIMULANTS** | • Discontinue any caffeinated beverages or foods after 2pm.<br>• Avoid decongestant cold medications at night.<br>• Complete aerobic exercise 3 hours before bed. |
| **NIGHTTIME TENSION AND ANXIETY** | • Avoid watching the news or reading stimulating material before bed.<br>• Use positive self-talk phrases regarding your ability to sleep: "I can relax," "I can fall asleep," etc.<br>• Write any disturbing or racing thoughts in a journal to leave space for you to rest. |
| **PLANNING** | • Schedule your day so that you have 8-9 hours to sleep.<br>• Avoid naps longer than 45 minutes unless you are sick or sleep deprived.<br>• Try to go to sleep at about the same time every night. |
| **ENVIRONMENTAL CONSIDERATIONS** | • Turn down the light 15 minutes before bed.<br>• Decrease irritating noises in your space. Try using a white noise generator or HEPA air filter.<br>• Try to have your head at least 5 feet away from electric fields (e.g. electrical outlets, stereo, cell phone, computers, etc.) |
| **STAYING ASLEEP** | • Read a neutral book under low light.<br>• Put a dark covering over your eyes.<br>• If you wake up and are unable to get back to sleep after 30 minutes, do not stay in bed. Get up and engage in a relaxation practice. |

# How can you give hormones?

Progesterone

- Transdermal vs oral

Estrogen

- Typically transdermally
- Vaginally

Testosterone

DHEA

# Why Use Hormones?

Progesterone

- Sleep, adrenal support, anxiety

Estrogen

- Hot flashes, bone density, vaginal dryness, mood
- When do you need to also use progesterone?

Testosterone

- Adrenal support, allows us to use less estrogen, sexual health

# Why not to use hormone replacement

Unnecessary?

Cancer - breast / uterine

DVT

Gallstones

Heart disease - small increase risk of heart disease if started > 10 years after menopause or > 60 years old

Contraindicated in people with a history of breast cancer, venous thromboembolism, liver disease

# Can we make sure they are safe?

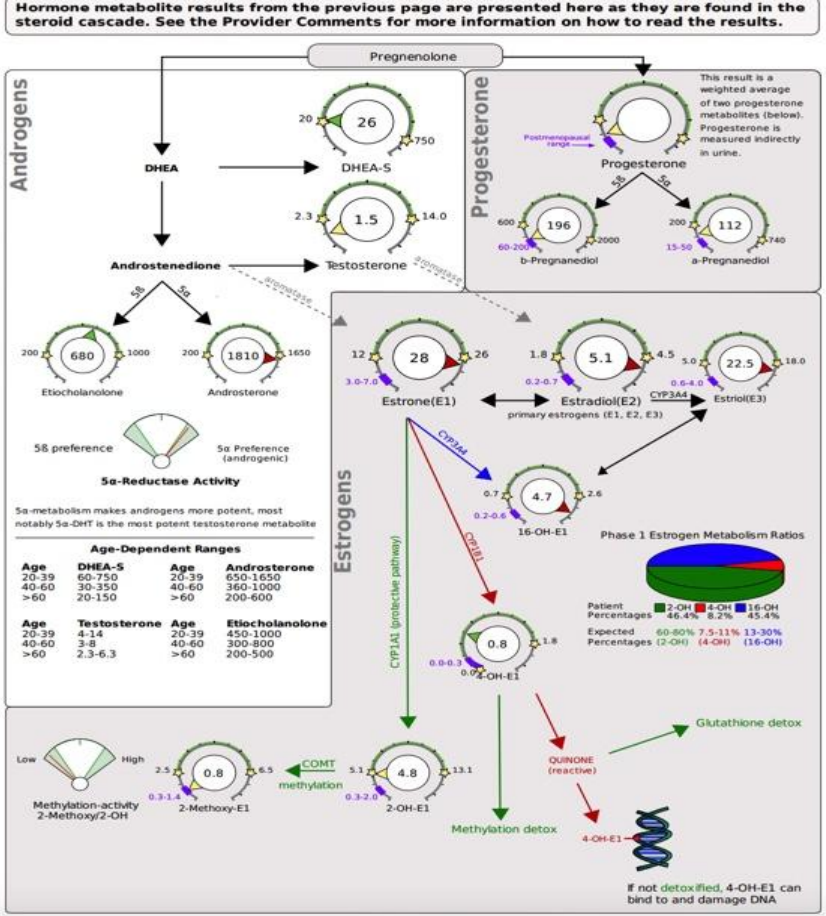
Hormone metabolism

Genomics - snps

Levels

Regular screening

- yearly physical exam, mammogram, DEXA, colonoscopy




# Hormone Levels and Metabolites

# SNPS

COMT

MTHFR

CYP1B1

CYP1A1

GSTM1

BRCA

# High Impact vs. Low Impact Genes

- Current research is focused on identifying genetic changes that have a small effect on disease risk but are common in the general population. Although each of these variations only slightly increases a person's risk, having changes in several different genes may combine to increase disease risk significantly. Changes in many genes, each with a small effect, may underlie susceptibility to many common diseases, including cancer, obesity, diabetes, heart disease, and mental illness.
- Multifactorial diseases that can be impacted with lifestyle and environmental factors

- https://ghr.nlm.nih.gov/primer/mutationsanddisorders/predisposition

# BRCA 1 and 2

- High impact / Low Prevalence
- 1 in 500 women - 50% risk of breast cancer by 70 years old
- 1 in 400 of the US population has a BRCA 1 or 2 variation or 0.25%
- 1 in 40 for Ashkenazi Jewish men and women have a BRCA 1 or 2 variation or 2.5%
- BRCA mutation results in 45-65% risk of getting breast cancer by age 70 vs 7% without the BRCA mutation
- 8-10% of Ashkenazi Jewish women in the US diagnosed with breast cancer have a BRCA 1/2 mutation
- Susan G Komen https://ww5.komen.org/BreastCancer/AshkenaziJewishHeritage.html#:~:text=About%208%2D10%20percent%20of,%2F2%20mutation%20%5B28%5D.

# Combined Effect of GSTM1, GSTT1, and COMT Genotypes in Individual Breast Cancer Risk

The breast cancer risk increased in parallel with the number of COMT , GSTM1 , and GSTT1 at-risk genotypes.

-This association was particularly clear in pre-menopausal women.

-The trend was more pronounced in women with BMI greater than 22 kg/m2 and high-risk status of parity factor (nulliparous or women with the first full term pregnancy at age of over 25-year-old).

-These results suggest the combined effect between reproductive factors and GSTM1, GSTT1 and COMT genotypes in human breast carcinogenesis.

•Park SK, Yim DS, Yoon KS, et al. Combined effect of GSTM1, GSTT1, and COMT genotypes in individual breast cancer risk. *Breast Cancer Res Treat*. 2004;88(1):55-62. doi:10.1007/s10549-004-0745-x

# COMT

- Low Impact / High Prevalence
- 20-30% of the Caucasian population are homozygous variant of the COMT gene – Met / Met
- Resulting in a 25 % reduction in the Catechol O-Methyltransferase enzyme
- Increased dopamine and estrogen
- Increased risk of anxiety, worry, better focus, fibromyalgia, estrogen dominance – breast cancer
- Support methylated B complex, Magnesium, SAMe
- Cruciferous vegetables, DIM, flax
- Stress reduction and self care
- Avoid caffeine / stimulants

# GSTM1 null

- Low Impact / High Prevalence
- Glutathione S-transferases are enzymes involved in Phase 2 detoxification and elimination of carcinogenic metabolites
- 23-35% Africans, 38-67% Caucasians and 33-63% East Asian populations
- Associated with increased risk of cancers (lung, bladder, gastric, cutaneious, colon, breast)
- EGCG upregulates GSTM1
- Sulforaphane – sulfur containing compound in cruciferous vegies – upregulates Nrf2, to help lower oxidative stress and increase glutathione production
- https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4374322/

# Glucosinolates and Sulforaphane 1-2 cups per week

•Cruciferous vegetables (broccoli, cauliflower, kale, Brussel sprouts) - Give bitter taste

•Pro apoptotic activity

•Decreases DNA damage and increases glutathione, decreases oxidative stress

•Microbes in our gut with myrosinase activate glucosinolate into isothiocyanate sulforaphane

•Feeds healthy gut bacteria

•Epigenetically increases tumor suppressor genes

# Green Tea

- EGCG – epigallocatechin 3 gallate
-2-4 C per day or 225mg
-antiangiogenic, antioxidant, anti-inflammatory
-supports apoptosis
-epigenetically increases tumor suppressor genes and increases glutathione s transferase enzyme
-increases glutathione

# Bringing It All Together

Natural stage of life

Support your adrenals

Self Care!

# Thank you!

Elizabeth Boham MD, MS, RD

Learn More!

www.ultrawellnesscenter.com

www.DrBoham.com

FB – Elizabeth Boham, MD

Twitter - @DrBoham

Instagram - elizabethbohammd