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ESTROGEN DOMINANCE AND THE GUT CONNECTION

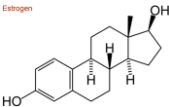


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What Is Estrogen Dominance?

- A catch-all phrase that refers to conditions that can be affected by estrogen
- It does not necessarily always mean excess estrogen
- It refers to conditions affected by an imbalance in the ratio of estrogen to progesterone
- Normal estrogen – low progesterone
- High estrogen – normal progesterone
- Lower estrogen and even lower progesterone
- Excess estrogen and low progesterone

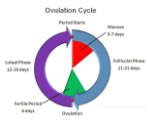
Estrogen



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The Cycle

- During a normal cycle – estrogen and progesterone are released
- Both help to mature an egg and prepare the uterus for the pregnancy
- Estrogen rises during the first half of the cycle, peaking at ovulation
- Estrogen should decrease somewhat during the second half of the cycle
- During ovulation, progesterone is released by rupturing the egg follicle
- Testosterone is also released



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The Cycle

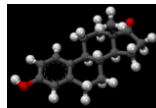
- No pregnancy, then the period occurs and cycle begins again
- The levels of estrogen, testosterone and progesterone are determined by a complicated feedback process involving the hypothalamus, pituitary (which releases luteinizing hormone (LH) and follicle stimulating hormone (FSH)), the ovaries and the adrenals
- Most people look for high levels of produced estrogen to indicate the cause of estrogen dominance or xenoestrogens contributing to the normal estrogen but this is often not the case



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Three Types of Estrogen

- Two are produced by androgens, which produce estrone and estradiol or testosterone (which can also convert to estradiol)
- Estradiol - strongest, main estrogen
- Estrone - weaker, primary during menopause "bad", produced in fat cells
- Estril - weakest, primarily produces during pregnancy and made by the placenta "good"



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Conditions

- Endometriosis
- Fibroids
- Ovarian Cysts
- Amenorrhea
- Polycystic Ovarian Syndrome (PCOS)
- PMS
- Fibrocystic Breast Disease
- Prostate problems and male andropause

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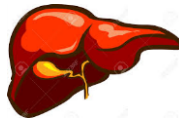
Symptoms

- Decreased sex drive
- Irregular or otherwise abnormal menstrual periods
- Bloating (water retention)
- Breast swelling and tenderness
- Headaches (especially premenstrual)
- Mood swings (most often irritability and depression)
- Anemia
- Cold hands and feet (a symptom of thyroid dysfunction)
- Hair loss
- Thyroid dysfunction
- Sluggish metabolism
- Foggy thinking, memory loss
- Fatigue Trouble sleeping/insomnia
- Weight and/or fat gain (particularly around the abdomen and hips)
- PMS

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Estrogen Dominance

- Estrogen dominance is not about getting too much estrogen
- It is about not getting rid of too much estrogen
- If too much estrogen exists, the liver must prepare it for removal
- It does this using phase I and phase II liver detoxification in a process called conjugation and creates estrogen conjugates
- During phase I estrogen is converted into an intermediate form (by cytochrome P450 enzymes), then it is metabolized in Phase II.



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Liver Detoxification

- Glucuronidation - A phase two process that can conjugate estrogen and it can be affected by intestinal health. Forms E-glucuronides which can be deactivated by an enzyme (beta-glucuronidase) produced by bad bacteria
- The estrogen is re-absorbed instead of being excreted and may be a key factor for estrogen dominance (and this will not show up in a normal estrogen test as this is not estradiol)
- Calcium d-glucuronate is a supplement that aids estrogen excretion through glucuronidation, so does indole-3-carbinol (found in cruciferous vegetables) D-glucuronate is found in apples, pears, grapefruit, citrus fruit, broccoli



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Liver Detoxification

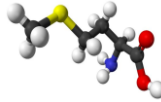
- Sulfation: Sulfur groups are added to the estrogen intermediate form by Phase II. Adequate amount of sulfur are needed in the diet. Foods include egg yolks, garlic, onions and Brussel sprouts. MSM is also sulfur
- Glutathione conjugation is another process, adding glutathione to estrogen for easy excretion. Avocados, walnuts and asparagus are all good food sources and vitamin C stimulates the body to produce glutathione
- Methylation can also help excrete estrogen by donating a methyl group in Phase II – B3, B6, B12 and Folic acid are needed



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Bile

- Once the conjugates are formed, it attaches to bile which carries it into the small intestines and then to the urinary system (bile detaches) or to the colon (bile stays attached)
- Women who are on birth control pills, may have issues eliminating estrogen due to inhibited bile flow.
- Methionine can improve bile flow
- SAMe, has been shown to improve bile flow



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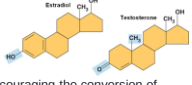
Sex Hormone-Binding Globulin



- SHBG is also made by the liver
- It follows the estrogen around the body – if hormone production is too high, it can de-activate the body's hormone production ability
- The production of SHBG is stimulated by estrogen in the blood
- It likes testosterone more
- In circumstances where there is an excess of estrogen (birth control pills and HRT) SHBG can actually shut down testosterone causing low sex drive, mental foginess and an inability to maintain muscle

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Adrenals and Estrogen



Cortisol has an effect on several of our sex hormones

Excess cortisol elevates estrogen levels encouraging the conversion of testosterone to estrogen

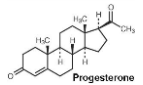
Aromatase is an enzyme that does the converting and the highest concentration of aromatase enzymes in the body is in the adrenals

The adrenals also convert progesterone to cortisol when the adrenals need more of it

This is a major connection between stress and estrogen dominance.

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Hormones and The Gut



- Healthy hormone function is needed for healthy intestinal linings and function
- Estrogen modulates permeability and the tight junctions
- Lack of testosterone delays intestinal healing
- Progesterone helps protect the lining
- One study also found that women with more diverse microbes had a better ratio of estrogen and estrogen metabolites - with gut bacteria deciding if the estrogen metabolites are left behind or excreted in the urine or colon

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Hormones and the Gut



- There is new research that suggests that sex hormones do have an effect on the gut
- It is not known whether this is due to a direct relationship with the gut or an indirect relationship because sex hormones influence the brain-gut connection and play a role with the HPA axis
- Studies have noted a difference in men and women with symptoms of IBS, even IBS symptom differences during a women's cycle or when pregnant or menopausal
- May be due to estrogen's relationship with serotonin and the stress response which both play a role in IBS

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Working with Estrogen Dominance

- Intestinal health, healthy adrenals and good liver function are the key
- Liver Health:
 - Milk thistle (Estrosense is also a good product)
 - D-glucurate foods
 - Sulfur-rich foods (also beneficial for the gut)
 - Lemons and limes (limonene)
 - Indole-3-Carbinole foods
 - Bitter food such as dandelion greens, kale, rapini, collard greens
 - Antioxidants (phytonutrients)



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Working with Estrogen Dominance

- Liver work should always be accompanied by gut health support (at least probiotics and or fermented foods, prebiotic foods)
- If gut health is really poor – work on it first with some gentle liver support
- Adrenal support and stress reduction is critical to the success of any estrogen dominant protocol



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Phytoestrogens

- Plant compounds: Extremely beneficial men and women with estrogen dominance
- Phytoestrogens:
 - Isoflavones – found in soy and other legumes
 - Coumestans – found in legumes, alfalfa and clover
 - Lignans – found in flax
 - Stilbenoids – such as resveratrol found in grapes and wine
 - Flavanoids – rutin, quercetin
 - Ellagitannins – raspberries, pomegranate and almonds



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Phytoestrogens

- Called this because of their ability to lock onto estrogen receptor sites and trigger a beneficial response
- But they are not estrogen (1/100,000th as potent)
- By locking onto the receptors, they force the detoxification of real estrogen (estradiol)
- Phytoestrogens (isoflavones and lignans) are acted upon by gut bacteria to create beneficial metabolites (anti-cancer)
- Negative studies were in vitro, isolated compounds, not in food and not with good bacteria present



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The Truth About Soy

- A study of 9514 women who had had breast cancer followed them for eight years and compared women who consumed at least 10 mg of soy a day in comparison to those who consumed less than 4 mg per day
- The 10 mg group had a 25 % less risk of recurrence
- 10 mg = 1/4 cup tofu, 2 tbsp soybeans, 1/2 cup soy milk
- Researchers also found that those who were on tamoxifen had no issues with soy interfering with the drug
- This is not surprising since soy contains aromatase-inhibitors



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Working On Estrogen Dominance

- Probiotics and fermented foods
- Look for and consider a Candidiasis protocol (not always present) – may just be dysbiosis
- All estrogen dominant conditions involve inflammation which must also be controlled (Omega 3)
- Rosemary helps shrink fibroids



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In Conclusion...

An estrogen dominant protocol will take time - usually 2 years minimum
So the goal is a protocol that the client can live with
Even after conditions resolve – continued focus on stress levels, gut health and liver support will always be a part of the client's life
Best to do this with food and to help the client find tasty ways to keep the key foods in the diet
Supplements can be helpful for fixing the issues and occasional use to maintain well-being after