Explaining Hormone-Gut Connection

Agenda

My story with endometriosis

Estrobolome

Estrogen related conditions

Adrenals and hormone issues

What to do

First two bouts – at 22 and 31

3 years after I graduated holistic nutrition school (2002) – I had my worst bout of endometriosis

I had a fibroid the size of canteloupe, a cyst in each ovary

Plus so much scar tissue my uterus was pasted to my colon

Yet, it went unnoticed by me until I got food poisoning

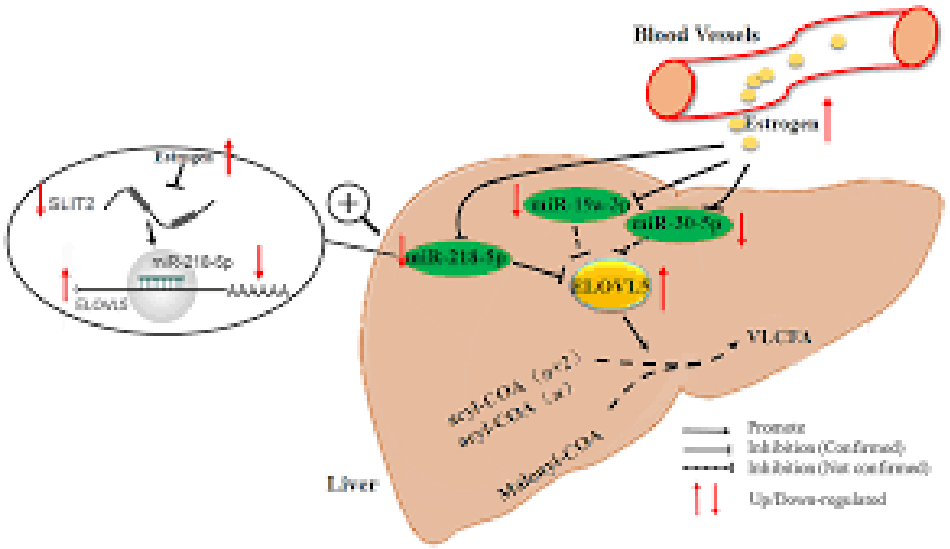
I did many things:

- Liver work – milk thistle, chanca piedra, formulas, cleanses
- A candidiasis protocol - repeated
- Vitex
- Black Current Seed oil capsules
- Adrenal support - licorice
- Rosemary, Hops, Schizandra and more

The turning point came when I went to a seminar with Dr Joel Evans, MD OBGyn

I learned that while the liver helps remove excess estrogen – it may not make it out of the body

This explained the relationship I had see between those with hormone conditions and candidiasis



So for years I focused on liver and candidiasis as the key areas of for estrogen-related hormones

But there was still not proper explanation

And what I knew was quite simplistic

Focus was only on detoxification of estrogen

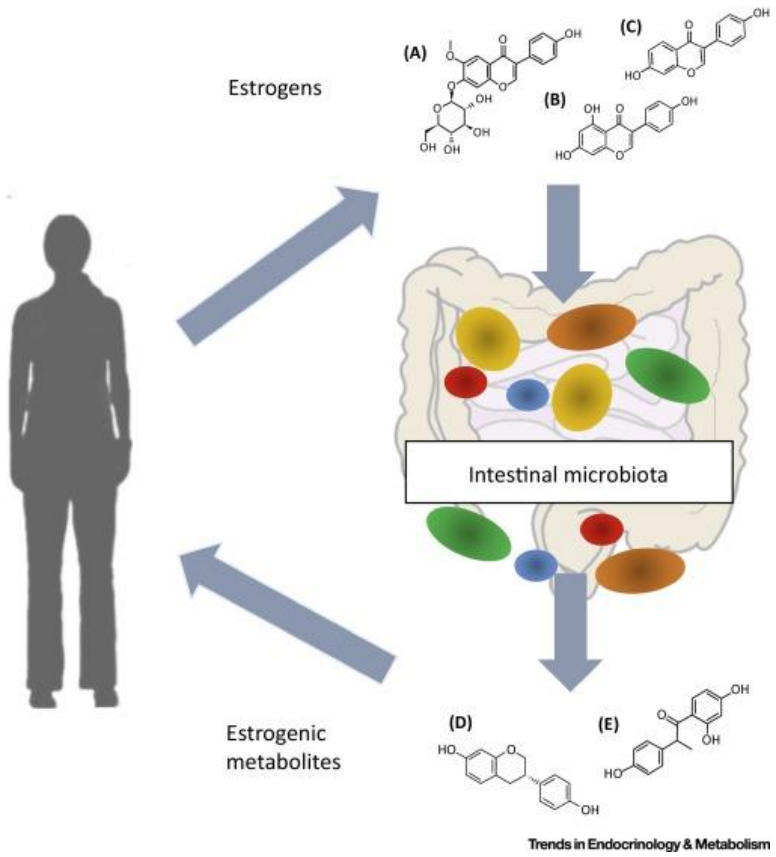
The Estrobolome

Refers to genes expressed by a group of bacteria that can metabolize estrogen

Produce beta-glucuronidase which de-conjugates estrogen

It is free to bind to estrogen receptors

May influence estrogen-dependent physiological processes



This can be helpful in low estrogen scenarios (menopause)

Or may be an issue in estrogen-related cancers or estrogen-dominant conditions

We have to consider both possibilities

Could they test for this? Possibly

Low Estrogen

Link to obesity and metabolic syndrome after menopause

Estrogen-receptors regulate both glucose metabolism and lipid metabolism

Gut bacteria has been linked to both as well

Plays a role in the development of cardiovascular disease and type of inflammation connected to it

Gut bacteria regulates inflammation

Study comparing obese and non-obese participants found the obese group has a lack of richness of bacteria

They also had higher levels of CRP – inflammatory mark linked to heart disease

Osteoporosis is also linked to low estrogen and gut- related inflammation

If gut bacteria dysbiosis decreases beta-glucuronidase, this will mean even less circulating estrogen

Big concerns for women in menopause

Also women who’ve had hysterectomies

HRT does not count

Consider gut work for women in these categories

Excess Estrogen

Endometriosis:

Women may have excess beta-glucuronidase producing bacteria

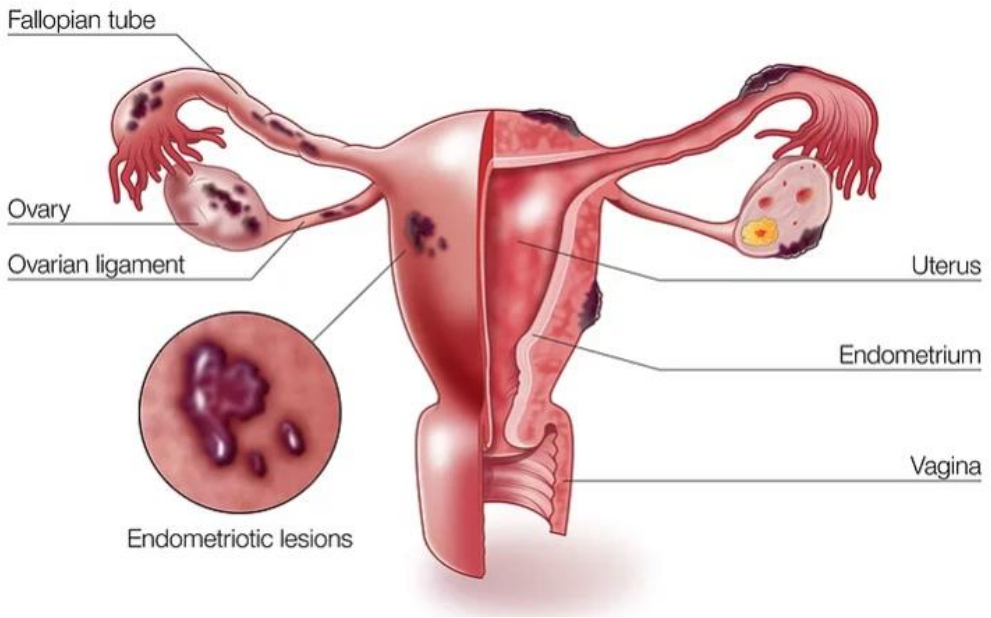
This allows more circulating estrogen which drives the condition

Not necessarily estradiol – it's estriol

May not show up on hormone test

Dysbiosis (decrease in lactobacilli) is not just in the gut – it's in the vagina

Can affect the endometrium, less mucosal protection and localized inflammation



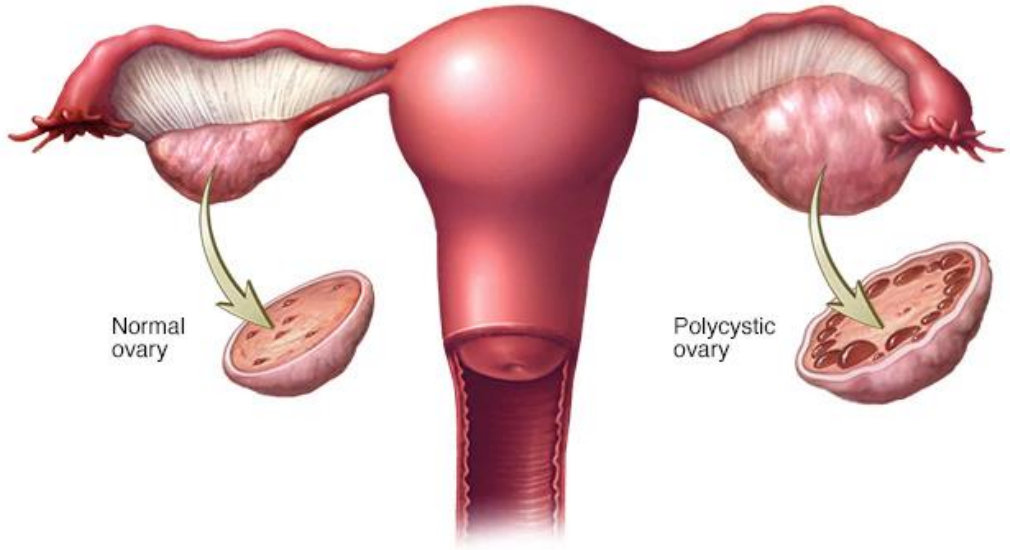
PCOS

Altered gut bacteria can result in excess androgen biosynthesis (more testosterone)

Decreased estrogen because of lower beta-glucuronidase

Fecal transplant (animal studies) have improved the estrous cycles and decrease androgen biosynthesis

Women with PCOS have lower gut diversity and altered bacteria profile



Female Reproductive Cancers

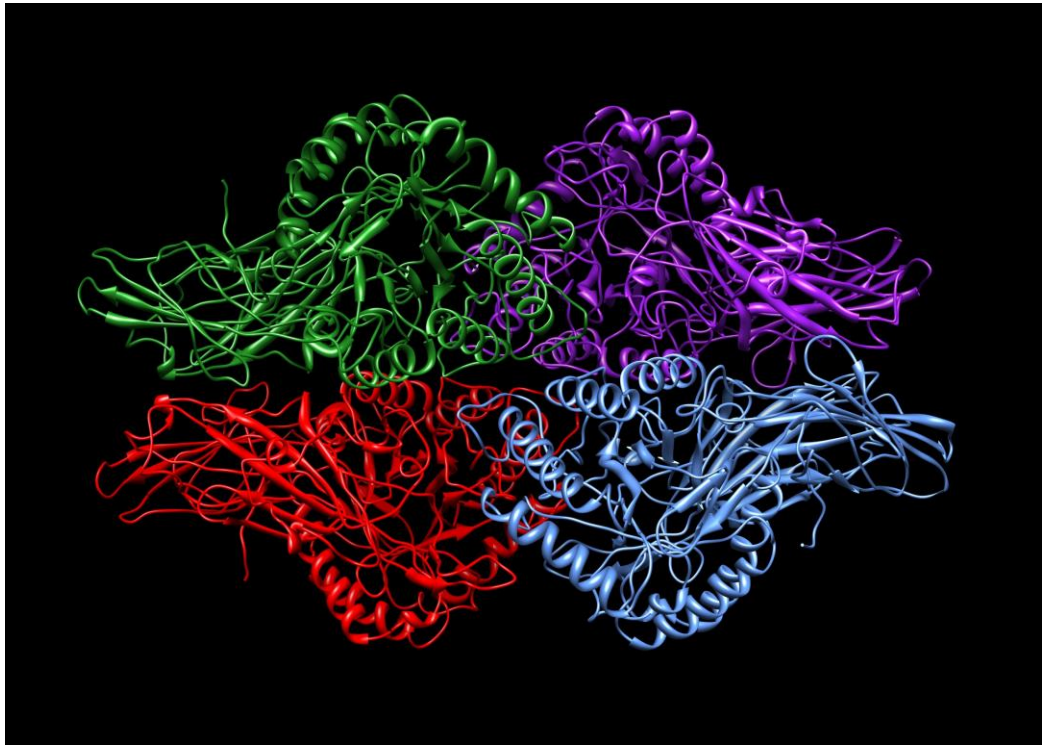
Breast, Ovarian, Cervical and Endometrial

All linked to gut dysbiosis

Women with cancer have significantly altered gut microbiota and breast and endometrial tissue dysbiosis

May lead to increased beta-glucuronidase activity

One study found that lactobacilus probiotics reached breast tissue and had anti-cancer effect



Prostate Cancer

Altered aromatase activity

Prostate cancer is now considered to be more of an estrogen-driven condition than androgen

Dysbiosis of the prostate gland is associated with prostate cancer

Also connected to GI Tract dysbiosis

What Influences Estrobolome

Good gut bacteria is needed to get the right effect from chemicals in foods

Diet can have a positive effects

This includes increase or decreasing beta-glucuronidase activity as needed

Phytoestrogens are positive when working with gut bacteria

Probiotics

Not only have anti-cancer benefits

Formula of Lactobacilli strains can regulate estrous cycle and lower androgen biosynthesis

L. Gasseri can suppress ectopic-tissue growth in endometriosis

L. Reuteri can prevent bone loss

More will be discovered in future research

Endocrine-Disrupters Examples

Pesticides

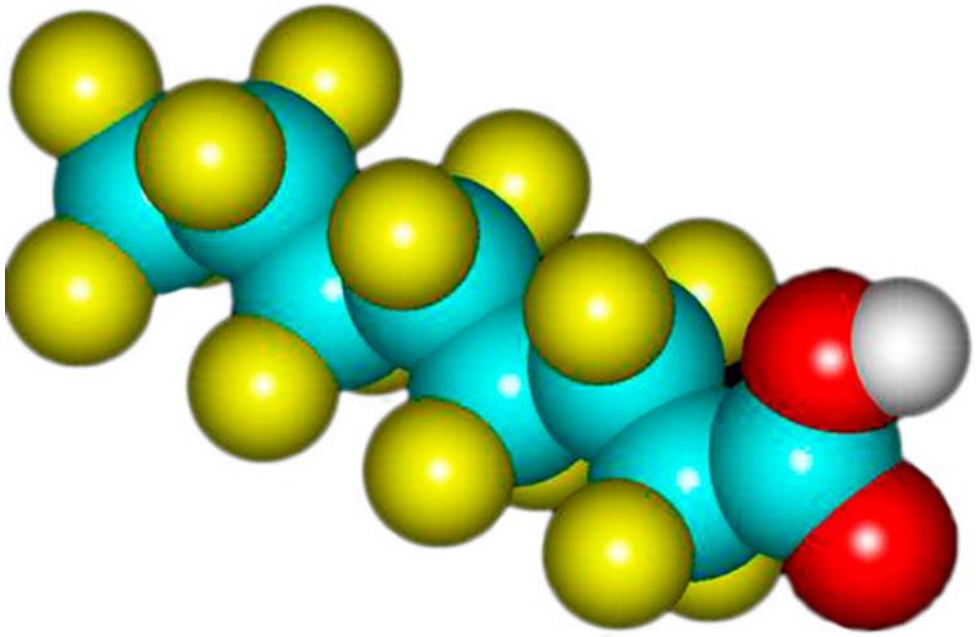
HRT and birth control pills

Phthalates and BPA (help make plastics soft, cash register receipts)

Poly-and perfluoroalkyl substances (PFAS) – non-stick pans

Cosmetics – parabens, triclosan, resorcinol

Many chemicals and some heavy metals



Endocrine Disrupters

BPA alters gut diversity

Increases Proteobacteria (estrogen generally inhibits growth)

Decrease Clostridium and Helicobacteraceae

Similar to the effect of a high-fat diet and high-sugar diet

Endocrine-Disrupters

They can lock onto estrogen receptors

Therefore, can contribute to the increase effects of the estrogen both in the gut, vagina and how those signals effect function in the body

L. Reuteri had been shown to degrade BPA

May be others that do the same

Why is this significant?

Have a healthy gut and prevent absorption

Adrenals and Estrogen

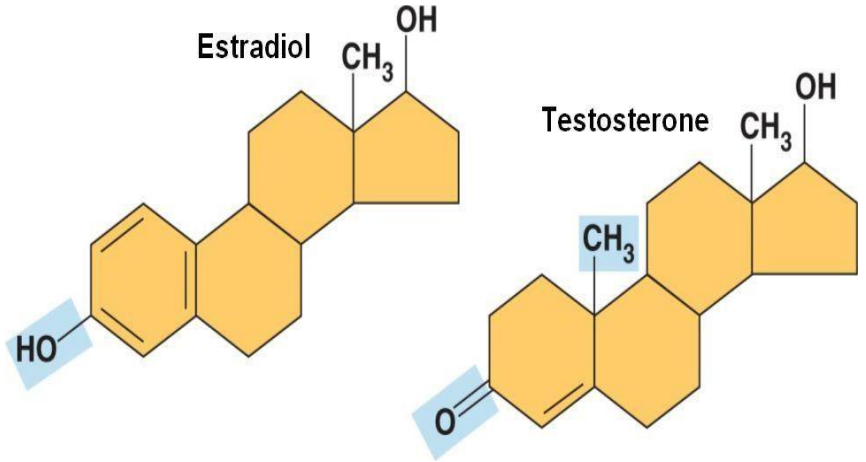
Aromatase is an enzyme that converts testosterone to estrogen

Highest concentration of aromatase enzymes in the body is in the adrenals

Inflammation and gut also play a role with excess estrogen

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

This is a major connection between stress and estrogen dominance



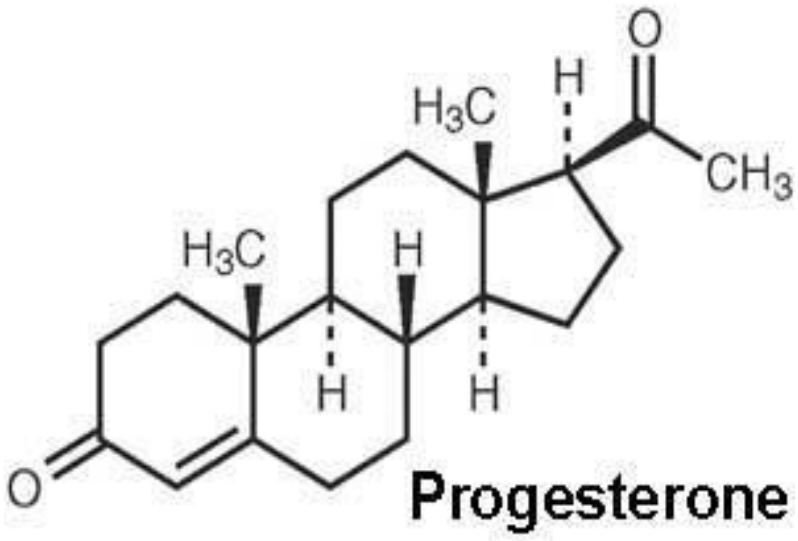
Hormones and the Gut

Healthy hormone function is needed for healthy intestinal linings and function

Progesterone receptors in the gut – it's suggested that some progesterone in produce in the gut

Progesterone helps protect the lining – increases occludin which keeps junctions tight

LPS (lippopolysaccarides) produced by bad bacteria has an inverse relationship with progesterone in the blood



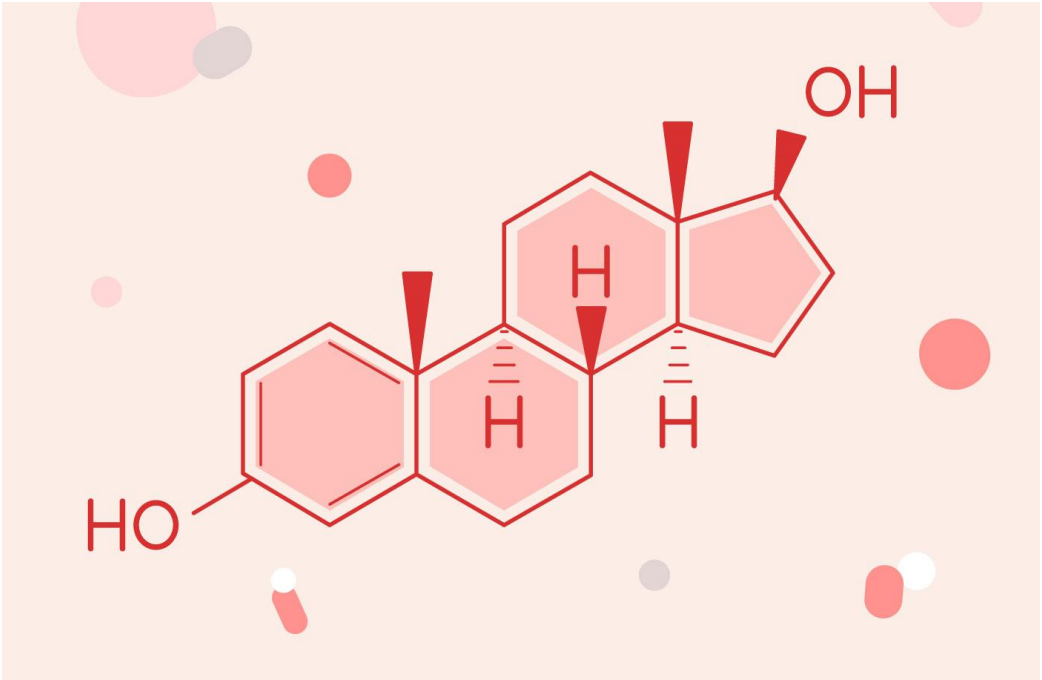
Progesterone

Estrogen

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

Estrogen modulates permeability and the tight junctions



Testosterone

Lack of testosterone delays intestinal healing

Androgens receptors in the gut

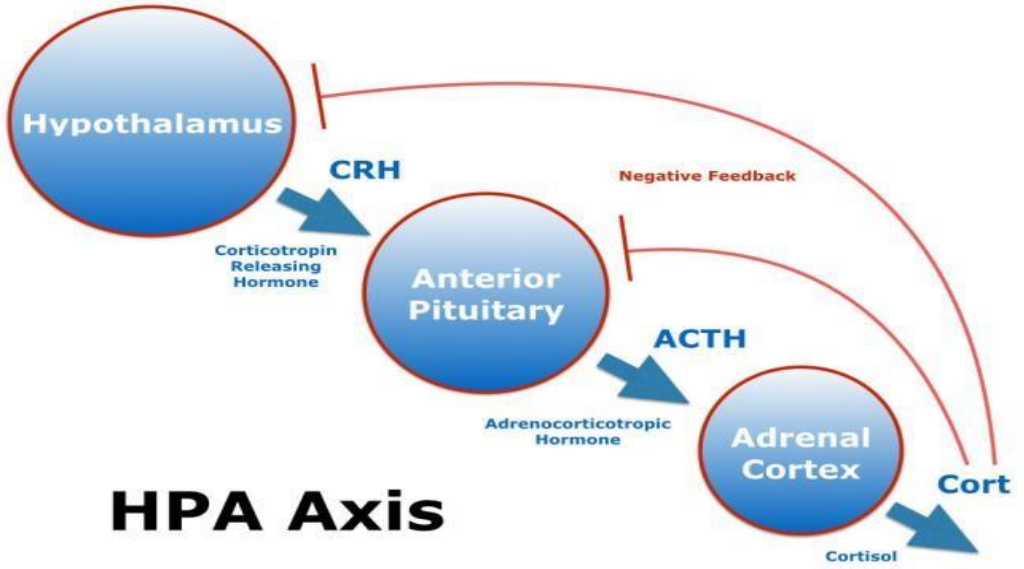
Gut bacteria can convert androgens to testosterone

Activating androgen receptors has been shown to slow colon cancer cell migration in mouse study

Hormones and the Gut

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



Skin Issues

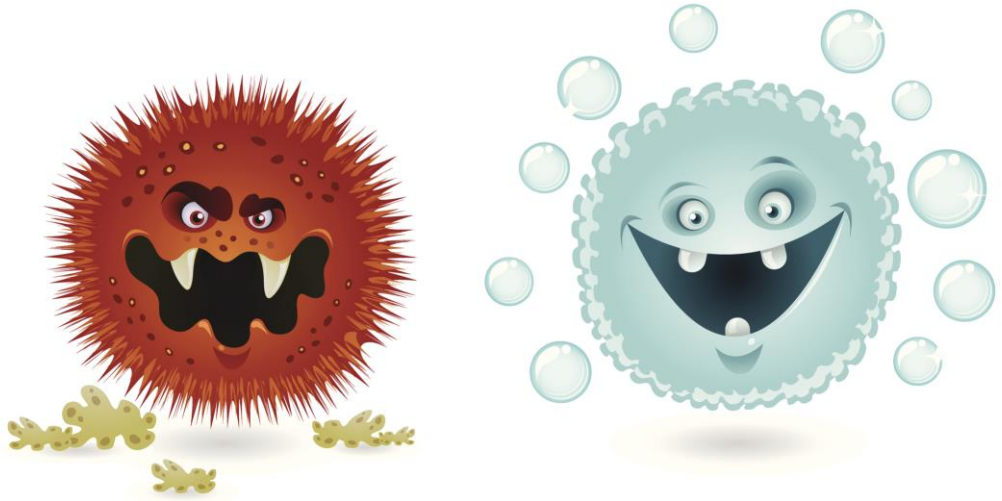
Acne, eczema, rosacea all inflammatory

Linked to inflammatory process

Too much estrogen can open gap junctions – too little also an issue

Both progesterone and testosterone involved in health of the intestinal lining

More of an indirect relationship



Pre-Period Headaches

One of the many symptoms of progesterone issues

Other include mood swings, irregular periods and other estrogen dominance symptoms

Headaches – consider a low-grade migraines related to estrogen imbalance

Comes just before periods

Last three days

Painkillers don’t

Why?

Stress – adrenals take the progesterone to convert to cortisol to cope with stress right before the period

(not the exact explanation)

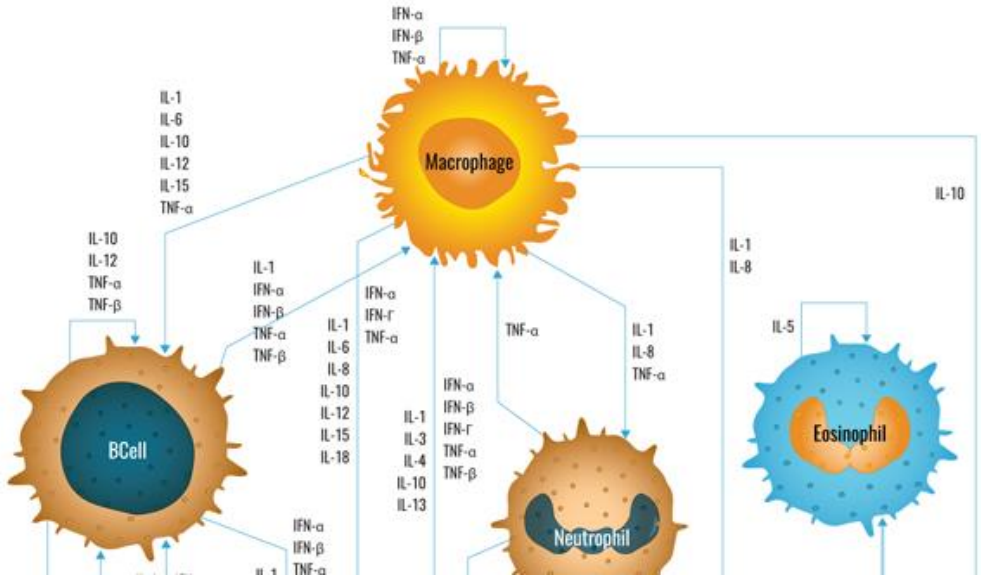
Licorice helps keep progesterone as progesterone and cortisol and cortisol

Any hormone-related – think is inflammation

Is it because of hormone imbalance in the gut?

Is it due to stress? Affecting dysbiosis – affects lining

Cortisol also affect hormone levels and throws of the ratio



Working with Hormones

Intestinal health, healthy adrenals and good liver function are the key

Liver Health:

Milk thistle, reishi, black cumin seed

D-glucurate foods

Working with Homones

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)

Working With Hormones

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 are critical to the success of any hormone or gut protocol

Adrenal Support

Stabilize blood sugar

Adrenal adaptogens

Stress reduction techniques

Exercise – low intensity

Get proper sleep

Phytoestrogens

Plant compounds: Extremely beneficial for 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

Flavonoids – rutin, quercetin

Ellagitannins – raspberries, pomegranate and almonds

Phytoestrogens

Called this because of their ability to lock onto estrogen receptor sites and trigger a beneficial response

But they are not estrogen (1/100,00th as potent)

By locking onto the receptors, they force the detoxification of real estrogen (estradiol)

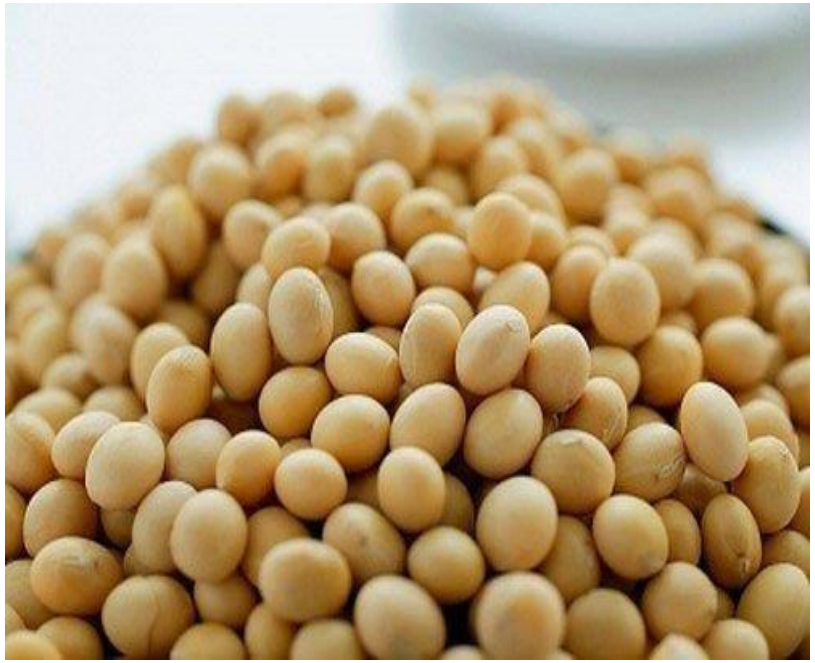
Phytoestrogens (isoflavones and lignans) are acted upon by gut bacteria to created beneficial metabolites (anticancer)

Negative studies were in vitro, isolated compounds, not in food and not with good bacteria present

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

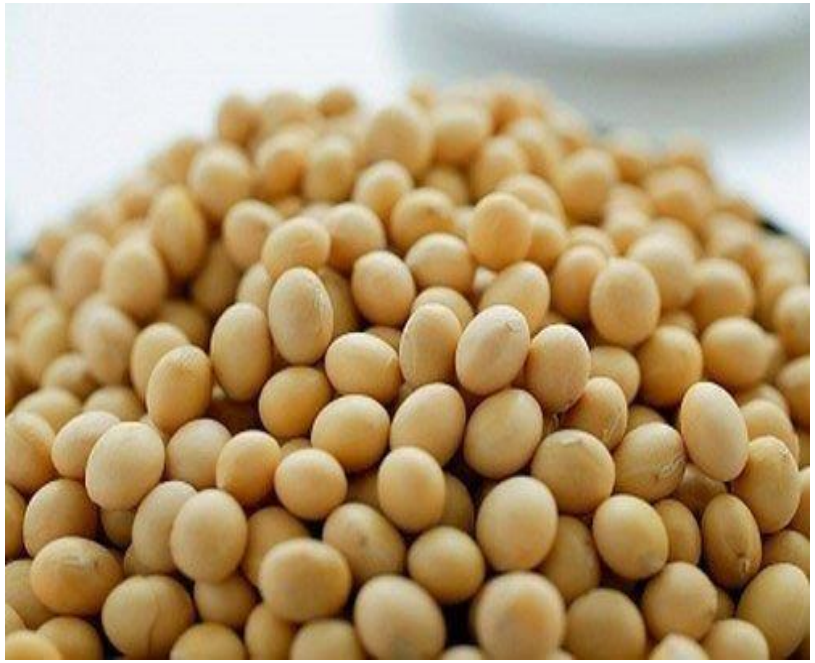


The Truth About Soy

10 mg =1/4 cup tofu, 2 tbsp soybeans, 1/2 cup soymilk

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



Working on Hormones

Probiotics and fermented foods

Diversity of the diet – can't be pulling out a lot of foods

Anti-microbials

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

In Conclusion…

An hormone protocol will take time - usually 2 years minimum – same for gut protocol

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