WEB-SOURCED INFORMATION REVIEW

WOMAN TO WOMAN WEBSITE

The conventional medical mindset is that menopause is an estrogen deficiency disease resulting from ovarian failure. Women have been led to believe that at the slightest symptoms, they should run out and get estrogen replacement. While estrogen levels will decrease during menopause, the truth is, estrogen levels do not fall appreciably until after a woman's last period. In fact, far more women suffer from the effects of "estrogen dominance" during the transition — that is, they have too much estrogen relative to progesterone. And some women can suffer from the symptoms of estrogen dominance for 10 to 15 years, beginning as early as age 35.
Oestrogen may overstimulate the brain and body, exacerbated by stress.

OESTROGEN DOMINANCE SYMPTOMS

- Decreased sex drive
- Irregular or otherwise abnormal menstrual periods
- Bloating (water retention)
- Breast swelling and tenderness
- Fibrocystic breasts Headaches (especially premenstrually)
- Mood swings (most often irritability and depression)
- Weight and/or fat gain (particularly around the abdomen and hips)
- Cold hands and feet (a symptom of thyroid dysfunction)
- Hair loss
- Thyroid dysfunction
- Sluggish metabolism
- Foggy thinking, memory loss
- Fatigue
- Trouble sleeping/insomnia
- PMS
- Causes of dominance
- Around perimenopause, oestrogen can go unopposed causing symptoms. These anovulatory cycles but there are other causes including-
- Excess body fat
- Stress causing increased cortisol, insulin, adrenaline
- Excess carbohydrates deficient in nutrients and other high-quality fats
- Impaired immune system, environmental agents
- Ways to decrease tolerance
- Add micronutrients
- Diet healthy
- Attention to fibre which improves bowel clearance of oestrogen

- Bioidentical progesterone
- Lose excess body fat plus exercise
- Improve liver function with detox diets and supplements
- Attention to stress

DR LAM WEBSITE

- Dramatic rise female related illnesses last 40 years.
- Puberty age dropping to as low as 10.
- Endometriosis 10%
- PMS up to 30%
- Uterine fibroids up to 25%
- Breast cancer up to 10% over a lifetime
- Perhaps endometriosis, PMS and fibrocystic breasts good progress on to uterine fibroids and hysterectomy, standard HRT and eventually breast cancer.
- Evidence is mounting that hormone disruption may well be the key of all of these related disorders.
- Typical symptoms of oestrogen dominance:
- Increased breast swelling and size and tenderness
- Cannot put rings on fingers
- Becoming more impatient
- People tell me I am getting bossy
- Sometimes getting. Cramps
- No longer get periods or irregular
- Sometimes see. Clotting
- I get PMS
- I have fibroids
- I have endometriosis
- Cannot fit into shoes
- Cyst on the breast
- Feel tired all the time

There have been changes over the last 100 years. Then average women started menstruating at around 16 now between 10 and 12. Women have less children, a far more periods over a lifetime and these factors contribute to the increased incidence of infertility, cancer, fibroids, anaemia, migraines, mood shifts, abdominal pain, fluid retention, endometriosis et cetera

Female hormones - oestrogen and progesterone - the properties of each offset the other and have individual effects on the body.

Oestrogen basically regulate that menstrual cycle, promotes cell division and largely responsible for Department of female characteristics. It affects all sexual organs, promoting growth, preparing for reproduction, but also affecting mood and well-being.

3 Main types of oestrogen-oestrone, oestradiol, oestriol. But there are 24 at least other forms of oestrogen produced.

So it is a pro-growth hormone. To balance this property is progesterone.

Progesterone

Progestational hormone. Protects against the growth effect of oestrogen. Prevents further ovulation.

Made from pregnenolone and cholesterol. Ovaries, adrenal glands and testes in males. 20-25 mg produce per day during a cycle and up to 300-400 during pregnancy.

Estrogen Effect	Progesterone Effect
Causes endometrium to proliferate	Maintains secretory endometrium
Causes breast stimulation that can lead to breast cancer	Protects against fibrocystic breast and prevents brea
Increases body fat	Helps use fat for energy
Increase endometrial cancer risk	Prevents endometrial cancer
Increase gallbladder disease risk	
Restrains osteoclast function slightly	Promote osteoblast function, leading to bone growth
Reduces vascular tone	Restores vascular tone
Increase blood clot risk	Normalize blood clot

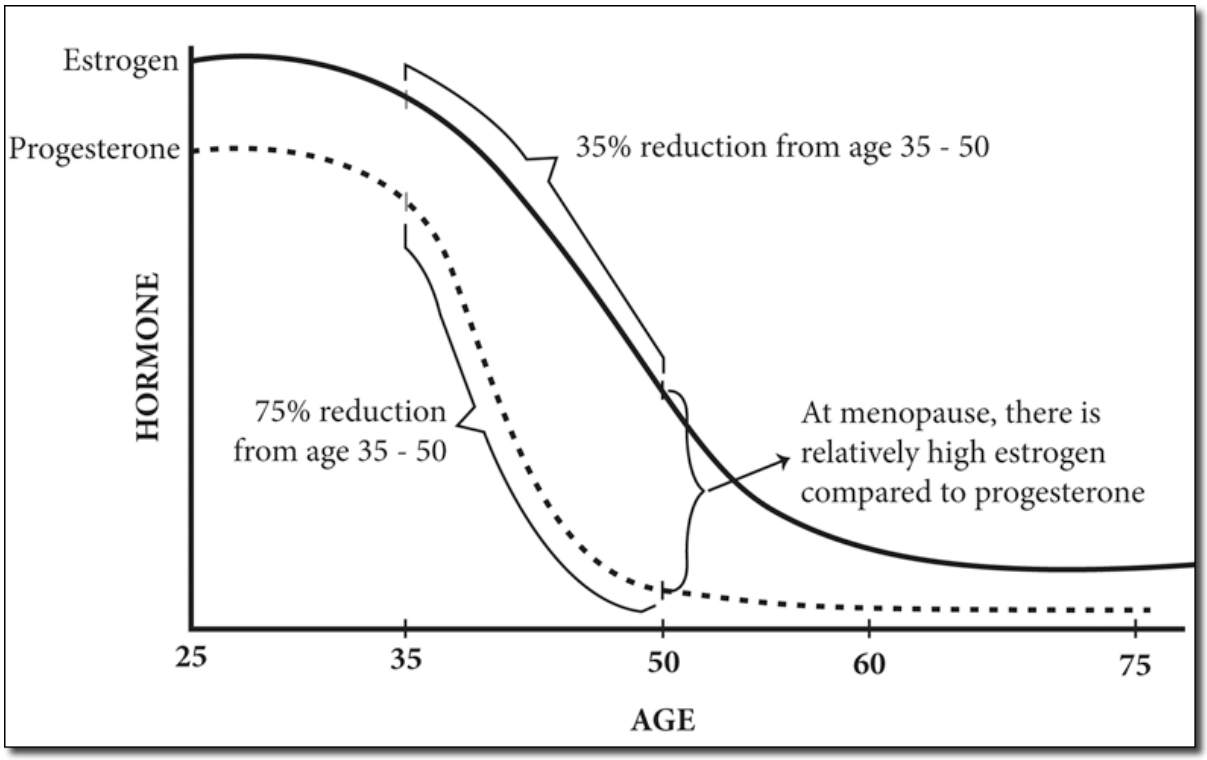
OESTROGEN DOMINANCE

E and P work in synchronisation, checks imbalances to achieve hormonal harmony.
It is not the absolute amount but the relative amount that determines the balance - so one could say that a low progesterone and normal oestrogen may signal oestrogen dominance symptoms.

From age 35-50 there may be 75% reduction in progesterone. Oestrogen by comparison may only declined by 35%. By menopause progesterone extremely low while oestrogen still present at about half the premenopausal level.

This status oestrogen dominance. Many women in mid thirties and pretty much all women during menopause at overloaded with oestrogen and at the same time suffering from progesterone deficiency. The end result-oestrogen dominance.

Some workers believe that the ideal ratio should be about 200-300/1.



2 MAJOR TIMES AND A WOMAN'S LIFE WHEN THE PROGESTERONE AS LOW –

puberty and perimenopause. However between these times production of progesterone can also change leading to oestrogen dominance. This may be also contributed by excessive external oestrogen intake from diet, environment, internal oestrogen production, obesity, birth control pills or tumours.

2 MAJOR CAUSES

Anovulation. This may result in a delayed or absent period but may be normal. However the niece this would be likely relative or absolute progesterone deficiency. The oestrogen dominance may lead to PMS, mood swing, cramps, tender breasts et cetera. Anovulation itself may have many causes including environmental xenoestrogens, poor diet and stress.

Luteal insufficiency. More frequent then anovulation. Corpus luteum malfunctions. Lab work shows high oestrogen but low progesterone. This situation may result in pregnancy failure.

OESTROGEN DOMINANCE IN MENOPAUSAL WOMEN.

One reason used to be the widespread prescribing of hormone replacement therapy (HRT).
Obesity factor. Whilst oestrogen decreases around menopause, androstenedione increases and is converted by fat cells into oestrogen.

ENVIRONMENTAL SOURCES OF OESTROGENS

- Environmental oestrogen like hormones - termed a xenoestrogen . Agricultural sources from pesticides, herbicides and hormone growth factors. Poultry are fed antibiotics as growth factors. Many pesticides are known hormone disruptors. Roundup is currently under close scrutiny in Europe. Pesticides band in the West such as DVT may be used freely in other countries from which we buy foods. Cleaning products, personal care products, plastics in food and drink containers. PCB, dioxin, V OC - most are fat-soluble compounds in the developing ova are particularly vulnerable. Industrial solvents found in cosmetics, fingernail polish, glues, pains, varnishes, carpets, fibre board glue, and so on.
- HRT without opposing progesterone is should not be used. Certainly not the equine Premarin type which has about 48% oestrone.
- Stress major factor affecting the hypothalamus and the HPA. It may reduce progesterone output. Excessive oestrogen may also lead to insomnia, anxiety and further pressure on the adrenal glands. A vicious cycle.
- Obesity. That convert adrenal steroid to oestrogens. Plant-based diet far better than high fat high-carbohydrate. Many plant sterols have progesterone genic fracture.
- Liver disease can affect the breakdown of oestrogens.
- Deficiency of B6 and magnesium are required for the metabolism of oestrogen in the liver. 2 much oestrogen cratered efficiencies of zinc, magnesium and be vitamin C.
- Coffee and caffeines are linked with higher oestrogens.

THERE ARE A NUMBER OF OTHER MEDICAL COMORBIDITIES WHICH MAY BE ASSOCIATED WITH OESTROGEN DOMINANCE-PREVIOUSLY CONSIDERED UNRELATED.

- Allergies, including asthma, hives, rash, sinus congestion
- Autoimmune disorders such as systemic lupus erythematosus (SLE) and Hashimoto’s thryoiditis
- Breast cancer
- Copper excess and zinc deficiency
- Endometriosis
- Endometrial cancer
- Gallbladder disease
- Syndrome X (Insulin resistance)
- Infertility
- Polycystic Ovaries
- Menopausal symptoms
- Magnesium deficiency
- Osteoporosis
- Pre-menstrual syndrome (PMS)
- Pre-menopausal syndrome
- Hypothyroid-like conditions
- Prostate cancer

- Uterine fibroids
- The most common conditions associated with oestrogen dominance-
- Endometriosis
- Cause not fully understood but E dominance may play a part
- Premenstrual Syndrome (PMS)
- Irritability, nervousness, craving for chocolate/magnesium, tender breasts and fluid retention. 95% of symptoms improved when hormones balanced. 1953 Dr Kate Dalton described rectal progesterone were leaving PMS. Note are other causes of PMS including thyroid, adrenal, low fibre diet causing recycling of oestrogen, perhaps even exposure to maternal a xenoestrogen's.
- Diet, reduced calcium increased magnesium intake. Plant diet, isoflavone extract or D I M. Increase fatty acids and progesterone cream.
- Fibrocystic Breast
- Early warning sign of progesterone deficiency and oestrogen dominance. Also vitamin D, borage or primrose oil can help. Progesterone cream. Also note iodine deficiency.
- Pre-menopausal Syndrome

Mid thirties-forties. Gradual luteal failure to produce sufficient progesterone. Adrenal gland distress. Symptoms may include PMS, fibrocystic, fibroids, irregular periods and endometriosis. All features of oestrogen dominance

POLYCYSTIC OVARY SYNDROME (PCOS)

Disruption of normal ovulatory cycle. Many many causes. Follicle migrates to the outside of the ovary but does not ovulate. It becomes cystic with no progesterone production. Results in oestrogen dominance and androgen production without progesterone. Associated with insulin resistance, type 2 diabetes, abnormal lipids and low bone density. Higher circulating androgens. Even though may be menstruating could well have oestrogen dominance because of progesterone deficiency.

FIBROIDS

Leiomyomata arise and a highly sensitive to oestrogen. Enlarged during pregnancy and decrease after menopause. Extremely common. Often asymptomatic but can lead to pain, bleeding and so on. The more oestrogen the faster they grow.

BREAST CANCER

Breast cancer is surging. The top cause of death between age 45 and 50. 90% occur in the ducts. 15% or breast cancer is in situ carcinoma or DCIS. Precursor to invasive cancer. Incidents increased dramatically since mammography. Lobular carcinoma in situ or LCIS occurs mostly premenopausal women, not palpable, detection difficult, 25% on to invasive breast cancer even up to 40 years later. Believed by many to be atypical hyperplasia. Finally invasive ductal and lobular breast cancer is worst prognosis can spread quickly.

HRT previously when comprised of oestrogen and progestin caused significant increase risk of breast cancer. Risk was worse when combined with synthetic progestin by 40%, and 20% when oestrogen used alone. Short-term oestrogen found not to cause increased risk, but 10 years or there is an elevated risk of breast, ovarian and ovarian cancer. The latter was significant as oestrogen increased the risk of ovarian cancer by 40% within 8 years and 70% within 11 years. Peak risk for breast cancer thirties-forties. About 5 years before menopause. During this time is to levels are high but progesterone starting to drop.

Xenoestrogens have a powerful and persistent stimulation of breath duct cells and accompanied by progesterone.

Xenoestrogens may also damage ovarian function resulting in decreased progesterone

Xenoestrogens also may affect the immune system

Oestrogen can increased risk cell proliferation by over 200%, progesterone decrease by 400%. Unopposed oestrogen likely a causative factor for breast cancer.

Oestradiol up regulates oncogene Bcl-2 leading to cell operation. Progesterone up regulates the p53 gene that increases apoptosis (cell death) and opposes the carcinogenic effect.

Therefore breast cancer may be linked to oestrogen dominance by even up to 80%. Reducing oestrogen and balancing effect with progesterone is clear.

LAB INVESTIGATIONS AND PITFALLS

- Routine tests do not detect organ dysfunction or patterns of relative hormone relationships.
- Laboratory reference ranges do not necessarily equate to normal range for that person.
- Normal laboratory values are used to justify sending patient back home to self navigate and that "nothing is wrong" when the body continues to suffer.
- Adrenal fatigue-normal white cell count often all low in spite of frequent infections. Contributing factors low zinc, low magnesium, low be vitamin C, low EF a.
- Normal platelets does not rule out stealth virus, residual bacterial infection e.g. EB virus low platelets can be a sign of toxic stress from viral or motion.
- Borderline or high MCV suggest B12 deficiency, folic acid, hypothyroidism. But still may be normal in subclinical B12.
- Clinical hypoglycaemia may have a normal fasting blood sugar.
- Normal electrolytes do not always rule out subclinical dilutional hyponatraemia in advanced adrenal fatigue.
- Same with thyroid function tests.
- Normal aldosterone can be with salt craving and low blood pressure in adrenal fatigue
- Normal potassium may not rule out the need to reduce potassium load such as an adrenal fatigue with sodium depletion and relative potassium overload.
- Liver function high normal may indicate liver dysfunction from chemicals poor nutrition. Normal enzymes can mean poor clearance of metabolites in adrenal fatigue.
- Upper-level cholesterol levels can indicate low vitamin D, hypothyroidism plus adrenal fatigue.

FUNCTIONAL LABORATORY TESTING

THYROID AND ESTROGEN DOMINANCE

FROM LATE DR JOHN LEE:
WHEN DO YOU NEED THYROID SUPPLEMENTS?

Deciding whether or not you need thyroid supplementation involves clinical judgement on the part of your doctor.

HERE'S A TYPICAL EXAMPLE.

A premenopausal woman we'll call Ann sees her doctor for complaints of fatigue, weight gain, and thinning hair. Her T3 and T4 tests are normal but her TSH (thyroid stimulating hormone) is a bit high, indicating low overall thyroid function. He has her take her basal body temperature (under the armpit in the morning) and it is low. Ann's doctor prescribes thyroid hormone supplements for her.

Some time later, Ann's periods become more scant and a bit irregular, and her doctor prescribes estrogen supplements. Six weeks later, her fatigue becomes extreme, and the doctor finds her TSH high again. Her thyroid dose is increased. Her symptoms only partially resolve so her thyroid dose is increased even more. She finds she is gaining weight and her breasts are so swollen and tender that she can not lie in bed without discomfort. She quits the estrogen supplement and, within two weeks, she is feeling fine again, but a few weeks later begins to exhibit symptoms of high thyroid levels such as a rapid heartbeat, due to the high dose of thyroid she is taking. Again, the estrogen supplement was excessive and interfered with the functioning of thyroid hormone.

HERE'S YET ANOTHER COMMON SCENARIO.

A premenopausal woman reports poor sleep, weight gain, swollen breasts, water retention, and lack of energy. She is also taking thyroid supplements for presumed hypothyroidism. To restore her hormone balance, Dr. Lee recommends progesterone cream and a check of her TSH level in six weeks or so. In six weeks, TSH is found to be low, indicating that her thyroid medication should be reduced. Three months later, her TSH is again low, and her thyroid dose is again reduced. Eventually her thyroid hormones test normal and she no longer has any need for thyroid supplements.

THE SYMPTOMS OF PROGESTERONE DEFICIENCY AND HYPOTHYROIDISM CAN BE VERY SIMILAR.

Being premenopausal, we know that her estrogen production was sufficient (if you are menstruating you have adequate estrogen). Because she still had regular periods, her doctor, like so many others, did not feel the need to test her progesterone level. He assumed that, despite her normal T3 and T4 levels, her fatigue and low basal temperature indicated hypothyroidism. He did not know that progesterone is anabolic (burns fat) and thermogenic (increases temperature) so that a deficiency causes weight gain and low temperature. He simply did not consider the possibility of progesterone deficiency.

This is not to say that all cases of hypothyroidism in women are misdiagnosed. I estimate, however, that 90 percent of them are secondary to estrogen dominance and progesterone deficiency. Some women do, in fact, need a little thyroid supplementation but the incidence is much lower than is generally appreciated.

It is certainly no secret that progesterone raises one's body temperature a bit. One of the tests for successful ovulation is a rise in basal temperature secondary to the production of progesterone at ovulation. The Catholic Church knows this and uses this test in fertility planning. If the Pope knows this, why doesn't your doctor know this? Why is this not taught in medical school? Why is progesterone deficiency not included in the differential diagnosis of fatigue and low basal temperature? I believe it stems from a mindset problem in conventional medicine that has ignored the study of progesterone for the past four to five decades in favor of the synthetic progestins.

Synthetic progestins do not enhance thyroid hormone function; in fact, they make the problem worse. They occupy progesterone receptors and prevent real progesterone from its normal function. The PDR lists fatigue and loss of energy as common side effects of synthetic progestins.

OTHER THYROID BLOCKERS

A new clinical symptom that doctors are seeing increasingly frequently is a cluster of symptoms caused by eating too much soy. Some women are eating soy products such as tofu and tempeh, taking soy protein powders, drinking soy milk, eating soy "energy" bars, and taking soy supplements for they phytoestrogenic effect – every day! This is overdoing it and leads to blocked uptake of glucose in the brain, blocked absorption of minerals, blocked absorption of protein, and blocked thyroid function. Like everything else, soy should be eaten in moderation and I don't recommend the use of soy protein powders or drinking soy milk on a regular basis. Eating soy a few times a week should be plenty.

If you eat excessive amounts of the cruciferous vegetables such as broccoli, cauliflower, cabbage and Brussels sprouts, you can block thyroid function. Again, a few times a week is plenty.

Many prescription drugs can block or decrease levels of one or both thyroid hormones. The most common include prednisone, barbituates, oral contraceptives, cholesterol-lowering drugs, heparin, phenytoin (Dilantin), propranolol, and aspirin.

DR MARCELLE PICK -WOMEN TO WOMEN

Gynaecologist who presents an argument that progesterone deficiency, or the widespread use of this by Dr Lee is an oversimplification. The concept involved to promote a compelling argument of Xenoestrogens. This has proven to be without doubt. This sources are many including steroid levels increasing from birth control pills in the water ways et cetera.

She argues the importance of the ratio of progesterone to oestrogen is to simplistic as is the concept of progesterone supplementation. Many women actually have normal levels of progesterone but what throws the balance is in excess of oestrogens particularly environmental, dietary and lifestyle factors. So oestrogen dominance is very real with the significance lies in the ratio of oestrogen to progesterone (is not this what Dr Lee said). It is true that oestrogen is often too high relative to progesterone resulting in for example PMS. During menopause it is common for oestrogens to decrease slowly and progesterone levels plummet. There is no simple test for oestrogen dominance other than a clinical assessment.

Oestrogen has many wonderful qualities-fertility, protecting health on a myriad ways and a powerful anti-inflammatory. The concern about environmental oestrogens or Xenoestrogens is an entirely different story.

Xenoestrogens may be carcinogenic, immune disruptive as well as hormonally disruptive. Cells may not distinguish between self oestrogen and Xenoestrogens. They are powerful even in microfollicular amounts. Pesticides largest source they by accumulate.

Second major source of Xenoestrogens may be in the growth hormone is given to livestock and poultry most of which are fat-soluble oestrogen-like compounds. Termed endocrine disruptors.

The role of progesterone and oestrogen in women.

Showed chart. Progesterone can readily be converted into many other hormones if required. Under stress progesterone may be diverted into cortisol depriving other hormones.

Its complex so that adding progesterone may not always be the solution fortnightly straight into oestrogen worsening the situation. Important factors are lifestyle, diet, stress, weight and body shape. Stress can also be unhappiness.

Can we limit exposure to Xenoestrogens. Washing. Produce to remove some of the pesticides. Prefer lean organic meet (remove fat). Avoid plastics. Diet rich in fighter nutrients with some soy but not too much, yams, alfalfa et cetera.

If truly progesterone deficient and adding progesterone okay.

Phyto therapy may work well.

Conclusion - progesterone alone cannot restore normal hormonal balance. Combination better.

DUTCH TESTING

Main advantages:

Comprehensive

Ease

Better than saliva but saliva for diurnal cortisol good too. But can add because of free cortisol and 40% have elevated metabs so is really high not low cort. So metb C is better to get total adrenal output. Eg obese can have low free C but high metabs which are cleared.

Estrogen. Metabs important.

BHRT and DUTCH

With general testing of HRT. Problems of false highs and lows depends on type and test.

Urine vs Serum

Saliva is better than blood for cortisol. Better measure of free cortisol. Urine adds more data ie metabs. Very important. So can get low free cort yet metabs high so get complete picture of high adrenal output.

For C not just total 24 hr but the diurnal pattern.

DUTCH report overview

Progesterone cannot be measured in urine but the 2 metabolites, alpha and beta added together do represent the total and equivalent to see progesterone. These can be high but serum may be low. So if you want to get premen level of Pg then if the lab uses Mass Spec may be low reorting so careful. So if test 8 hours will be low.

Serum testing for oral progesterone does not work because 8 hours later the levels will be very low, there is a sharp peak a few hours later but that is metabolite generally alpha pregnenolone that rapidly dropped down by the morning.

Measuring progesterone is a problem with serum on oral PG.
Whereas with good labs saliva progesterone correlates well with serum

And oestriol can cross-react an increase oestradiol by small percentage.

Urinary oestrogens may under estimate tissue levels in the Dutch tests

Don’t push too much allo as some early data suggesting may stimulate cancer cells.

Most tests are not perfect.

TOPICAL HORMONES DUTCH

Controversial. Issue is conflicting messages dep on which lab. Saliva go way up. Serum and using increases a lot less.

Highly variable saliva tests day to day.

Tissue affects going on – not all tissues may uptake the same so saliva gland may be quite different from other target tissues such as brain, breast etc etc etc.

Saliva is of no value with topical hms. Urine and serum better but have their own problems.

How much P to balance E and protect uterus ? If do saliva, e levels are way higher than P so not a good guide.

PATCHES AND INJECTIONS

Easier to monitor. Better linear response. In between twice weekly doses get good plateau. So U, S and Serum should test well.

4 testosterone probably best to test to get the average. If you do the next day you get the peak effect if you do at the day before the next injection due get the lowest effect.

SUBLINGUAL

Highly variable and difficult to interpret

VAGINAL HORMONES

Useful for local effect and as the dose increases get systemic effects. There is an issue by using serum testing, far too variable. Urine reasonable.

IMPORTANCE OF BIO-INDIVIDUALITY

Mainstream Western medicine is basically medicine for the masses approach and applying same therapeutics to every person with a complaint.

Be aware of the steroid pathways when prescribing BHRT. Showed diagram of pathways and the effect of stress diverging precursors down into the corticosteroids and depriving the sex steroid hormones. Show also in diagram a methylation and COMT. Hormones affect cells into the ways-1) a direct receptor side effect and 2) a nuclear gene expression effect.

SIDE EFFECTS AND WHAT CAN GO WRONG

Certain forms of synthetic progestins have a high risk of VT E.
2013 JAMA reported lower risk of venous blood clots with bio identical oestrogen compared with conjugated equine oestrogens. (Equine oestrogens have at least 10 active oestrogen compounds and probably more-primary oestrogen is oestrone).

2013 American Journal of public health Yale. Calculated 50,000 unnecessary deaths women between 50 and 69 who had hysterectomy but no ERT. Due to fear of adverse risk. This was from the WHI study 2002. One study arm with oestrogen alone there was a decrease in risk of breast cancer and heart disease and a low rate of overall mortality. The backlash from the major arm of the study which was equine oestrogens and synthetic

progestin dominated the scene. As a result all forms of approved menopause hormone therapy declined precipitously.

SAFETY BHRT HORMONES.

Dr Holtorf published article citing 196 research studies comparing bioidentical hormones to synthetic patented hormones. Concluding that current evidence demonstrates that bioidentical hormones are associated with lower risk than the non-bioidentical counterparts conclusion BHRT preferred method of HRT.

The French cohort study showed no increase cancer in bioidentical group. Women's health initiative study 2002 the bioidentical oestrogen arm showed no increase in cancer or heart. 2007 JAMA showed less heart disease in women taking unopposed oestrogen.

E DOMINANCE AND PROGESTERONE ROLE.

Oestrogens is processed by the cytochrome P4 50 pathway. Defects he may increase dominance. Because of this the may be an increase in sensitivity when progesterone prescribed. If bloating breast tenderness irritability increases reduce progesterone dosing and also resolve constipation to improve oestrogen clearance. Progesterone has a role of activating oestrogen receptors.

A 4 AM Dr Rothenberg

French Fournier 2007 cohort study.

80,000 women. No increase or decrease in breast cancer in women on oestradiol and progesterone.

When oestrogen combined with MPA was 69% increase breast cancer. Prove bioidentical hormones are safe.

Oral progesterone i.e. a allo pregnenolone better for sedation and cross of the blood brain barrier better.

She women just do not tolerate progesterone that well orally so go to transdermal, and even a few there just do not seem tolerate. This may be a group where progesterone increases oestrogen dominance sensitivity.

Static versus cyclic debate. No real data.

Youre in charge, Ill help you do it safely…

WEIGHT GAIN AT MENOPAUSE

Abdominal fat is considered to be an endocrine organ as it can secrete adipokines and other substances linked to metabolic diseases such as insulin resistance, type 2 diabetes and metabolic syndrome. As well changes and inflammatory markers correlate strongly with increased visceral adiposity. SHBG is a strong independent marker of insulin resistance and type 2 diabetes and probably cardiovascular disease. The relationship between SHBG and insulin resistance in postmenopausal women is independent of oestrogens and androgens. Primary ovarian failure or bilateral removal of ovaries in early life is not associated with increased visceral adiposity.