

Disclaimers

- I speak for and am employed by:
 - Janssen Pharmaceuticals
 - Mallinckrodt Pharmaceuticals
 - Health Scripts
 - Lister Labs
 - American Society of Anti-Aging Medicine

Objectives:

- Describe the balance between estrogen and progesterone
- Identify the difference between a progestin and progesterone
- List symptoms and causes of progesterone deficiency
- Define what is natural progesterone
- Learn proper lab values for menopause, peri-menopause and polycystic ovary syndrome
- Know the reasons why to replace progesterone
- Learn about need and methods of testosterone replacement

My Story

- "The two most important days in your life are the day you are born and the day you find out why." ~ Mark Twain
- Why I started taking progesterone...
- 2003 my life changed...
- I believe I was born to help people get their life back.
- Hormones are an important part, but only a part.
- People come to me from all over the country because they are suffering and feeling hopeless.

A Brief Overview of Women in the U.S.

- 80% of women complain of PMS
- 20% - 50% of women have fibroids
- 80% - 90% complain of peri-menopausal and menopausal symptoms
- Osteoporosis effects more than 45% of women over the age of 50

Why Women Need Progesterone

- Perimenopause. Too little estrogen vs drop in progesterone
- Does too little progesterone cause PMS?
- Can even young girls have too little progesterone?

Symptoms of Progesterone Deficiency

- Excessive menstruation > 7 days.
- Anxiety
- Insomnia
- Migraine Headaches
- Low libido
- Hair Loss
- Osteoporosis
 - Bones have progesterone receptors

Kalkhoff, Ronald K. "Metabolic effects of progesterone." *American journal of obstetrics and gynecology* 142.6 (1982): 735-738.

Osteoporosis

- It is amazing to me how many people are still unaware of the fact that progesterone stimulates osteoblasts mediated new bone formation

Progesterone Deficiency Con't

- Irritability
- Depression
- Memory problems
- Hot Flashes
- Sudden Weight Gain



Never swallow your bubblegum

Causes of Progesterone Deficiency

- Impaired production
- Decreased thyroid hormone
- Deficiency Vitamins A, B6, C and Zinc
- High levels of saturated fat
- Increased Sugar
- Childbirth

Test Name	Result	Reference Range
Progesterone	0.8	0.1 - 1.0
Testosterone	1.2	0.5 - 1.5
SHBG	2.5	1.5 - 3.5
Free Testosterone	0.05	0.02 - 0.08
Free Progesterone	0.01	0.005 - 0.02
Androstenedione	1.5	0.5 - 2.5
DHEAS	15.0	5.0 - 25.0
17-OH Progesterone	0.5	0.1 - 1.0
17-Ketotestosterone	0.2	0.1 - 0.5
17-Epiandrosterone	0.5	0.1 - 1.0
17-Alpha-OH Androstenedione	0.5	0.1 - 1.0
17-Alpha-OH Testosterone	0.5	0.1 - 1.0
17-Alpha-OH Androstenedione	0.5	0.1 - 1.0
17-Alpha-OH Testosterone	0.5	0.1 - 1.0

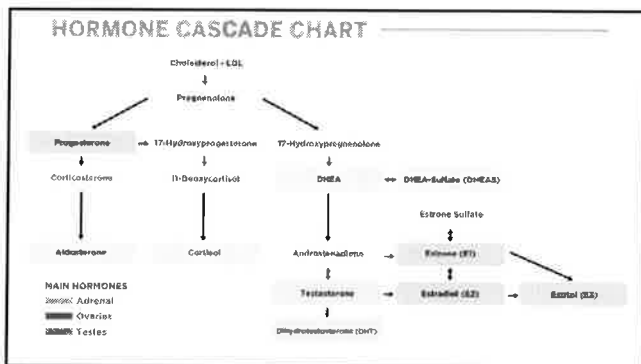
Could The Problem Be Stress?

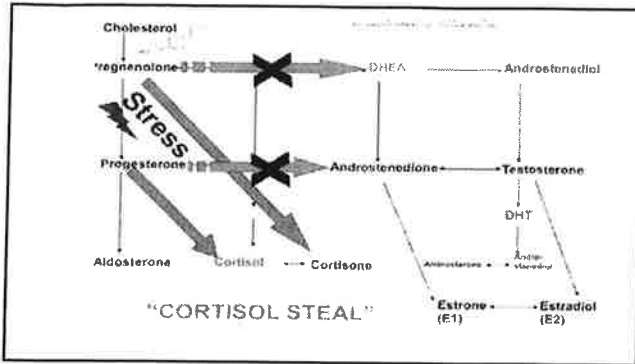
- 45% of all adults suffer stress related adverse health effects
- 75% - 95% of all visits to PCP are for stress-related illness.
- Stress has been linked to all causes of death. CVD, Cancer, accidents, & respiratory illness
- An estimated 1 million workers are absent each day with stress related complaints.

Causes of Progesterone Deficiency

- Birth control pills
- Antidepressants
- Stress!! Constant Stress causes adrenals to pump out cortisol.
- This is called "Progesterone Steal"

Prior, Jerilynn C. "Perimenopause: the complex endocrinology of the menopausal transition." *Endocrine reviews* 19,4 (1998): 397-428.





Perimenopause

- Perimenopausal women often have anovulatory cycles
- Anovulation, no corpus luteum results and no progesterone is made
- Main problem is the month long presence of unopposed estrogen with its abundant side effects, leading to PMS

Lee, John R., and Jesse Hanley. *What Your Doctor May Not Tell You About (TM): Premenopause: Balance Your Hormones and Your Life from Thirty to Fifty*. Grand Central Publishing, 2001.

If a woman is upset,
hold her and tell her
how beautiful she is.

If she starts to growl,
retreat to a safe distance
and throw chocolate at her.

Do You Know
There Is NOTHING in the Body
Called Estrogen??

Estrogens....

- E₁ - Estrone - made in fat tissue
- E₂ - Estradiol - made by the ovary
- E₃ - Estriol - highest amount in pregnancy
- Phytoestrogens - Plant estrogen
- Xenoestrogens - Man made estrogen-like compounds that disrupt natural estrogens in the body

Functions of Estrogen

- Over 400 functions in your body
- Regulates body temperature
- Prevents Alzheimer's disease
- Regulates Blood Pressure
- Enhances Your Energy
- **Improves Mood**

Functions of Estrogen (cont.)

- Decreases LDL and Increases HDL
- Maintains Bone Density
- Decreases Wrinkles
- Decreases Accumulation of Plaque in Arteries
- Improves Insulin Sensitivity
- Aids in formation of Neurotransmitters

Who is John Lee and what is "Estrogen Dominance"?

- Metabolism Change – Decreased Metabolism
- Impossible to lose weight
- Irritability, mood swings, anxiety
- Sleep disturbances
- Interference with thyroid hormone function
- Memory Loss

Lee, John A. Natural progesterone: the multiple roles of a remarkable hormone. NY: Park, 1995.
 Rosenfeld, David. Endometrial Thinning: A Holistic Approach to Treating Thyroid Disorders Including Hypothyroidism, Clinical Disease and Postmenopausal Syndrome. See how a Natural Treatment Program Can Reverse Many Chronic Diseases Including Fibromyalgia, Chronic Pain and More. Chicago: Natural Horizons Press, 2006.

SOME DAYS I
 ♪ quare myself ♪
 ...OTHER DAYS
 I LOOK FOR
 MY PHONE WHILE
 TALKING ON IT

Estrogen Dominance

- Unopposed Estrogen:
 - PMS
 - Uterine Fibroids
 - Endometrial Cancer
 - Fibrocystic Breasts
 - Prolonged Periods
 - Marked thickening of the uterine lining.
 - Breast Cancer

Bland, J. "Introduction to Neuroendocrine Disorders: Functional Medicine Approaches to Endocrine Disturbances of Aging." *Gig Harbor, Washington: The Functional Medicine Institute* 121 (2001).
Dai, Binghui, et al. "Progesterone inhibits human endometrial cancer cell growth and invasiveness: down-regulation of cellular adhesion molecules through progesterone B receptors." *Cancer research* 62.3 (2002): 881-886.

Estrogen Dominance Symptoms

Symptoms include

- Mood swings
- Irritability
- Anxiety
- Salt and fluid retention
- Blood clotting
- Increased production of body fat
- Food cravings
- Hot flashes

Symptoms continued

- Irregular periods
- Depression
- Water retention & bloating
- Sleep Disturbances
- Headaches
- Fatigue
- Memory Loss
- Weight gain
- Craving for sweets
- Uterine fibroids
- Breast pain

Smith, Pamela Wartlan. *What You Must Know about Women's Hormones: Your Guide to Natural Hormone Treatment for PMS, Menopause, Osteoporosis, PCOS, and More.* Square One Publishers, 2009.

Signs of Estrogen Deficiency

- Bladder problems, Chronic infections, Urinary Leakage
- Brittle Hair and Nails
- Depression
- Difficulty losing weight
- Dry Eyes
- Osteoporosis/Osteopenia
- Vaginal Dryness – Vulvodynia
- Decreased sexual interest and function
- Chronic Fatigue Syndrome –Low energy at the end of the day.

Depression Definition

- 7 symptoms that present during the same two week period & represents a change from previous functioning:
- Depressed Mood
- Diminished interest or Pleasure in Activity
- Significant Appetite/Weight Loss or Gain
- Insomnia or Hypersomnia
- Feelings of worthlessness or Excessive Guilt
- Diminished ability to think or concentrate
- Recurrent Thoughts of Death or Suicide

Estrogen Dominance & Thyroid Issues

- Thyroid function is diminished because estrogen increases thyroid-binding globulin which binds free thyroid hormones.
 - This creates fatigue, weight gain, bile thickens, promotes gall bladder disease, causes copper retention and zinc loss.
 - Unopposed estrogen causes intra-cellular hypoxia, promotes blood clotting this increases the risk of stroke and embolism.
 - ALL these undesirable estrogen side effects are countered by progesterone.
- Stefanick, M. L. "Estrogen, progestogens and cardiovascular risk." *The Journal of reproductive medicine* 44.2 Suppl (1999): 221-226.
- Lee, John R. *Natural progesterone: the multiple roles of a remarkable hormone*. BLL Pub., 1995.

When to do lab testing

- In menstruating females check labs on days
- 19, 20 or 21 of their cycle.
- Women with ablation check anytime unless they are still having cycles.
- Postmenopausal check anytime.

ESTRADIOL (R228392, Final, 02/25/2014 @ 15:46)

Ordering Provider	DR SHEA DAVIS, ERNP	Performing Lab	LABCORP BIRMINGHAM LTD LABCORP BIRMINGHAM 2000 ELGIN 500 FIRST AVENUE, SOUTH BIRMINGHAM, AL 35233-1118 Account ID: 01452800
Specimen Accession ID	0800102870	Specimen Source	
Specimen Coll. Date	02/25/2014 08:15	Result Status	Final
Specimen Recv. Date	02/25/2014 09:23	Receipt Status	
Specimen Reported Date	03/03/2014 08:11		

Report	Result	Ref Range	Units	Status	Lab
ESTRADIOL	429.8		pg/mL	Final	01

ADULT FEMALE:
 FOLLICULAR PHASE 15.0 - 166.0
 OVULATION PHASE 85.8 - 498.0
 LUTEAL PHASE 43.8 - 211.0
 POSTMENOPAUSAL 46.0 - 54.7
 FREQUENCY
 1ST TRIMESTER 215.0 - 14300.0
 GIRLS (1-10 YEARS) 6.0 - 27.0
 Roche ECLIA methodology

Abn	Unit	Ref Range	Units	Apn Val	Status	Lab
progesterone	<0.1		Ng/mL		Final	01
			Follicular phase	0.1 - 0.9		
			Luteal phase	1.8 - 23.9		
			Ovulation phase	0.1 - 12.0		
			Pregnant			
			First trimester	11.0 - 44.3		
			Second trimester	25.4 - 83.3		
			Third trimester	58.7 - 214.0		
			Postmenopausal	0.0 - 0.1		

Abn	Value	Ref Range	Units	Apn Val	Status	Lab
estradiol	5.7		pg/mL		Final	01
			Adult Female:			
			Follicular phase	12.5 - 166.0		
			Ovulation phase	85.8 - 498.0		
			Luteal phase	43.8 - 211.0		
			Postmenopausal	46.0 - 54.7		
			Pregnancy			
			1st trimester	215.0 - 14300.0		
			Girls (1-10 years)	6.0 - 27.0		

Roche ECLIA methodology

Units	Units	Reference	Units	Units	Units
ng/mL	43		ng/mL	Final	<C
Adult:					
			Follicular phase	29 - 132	
			Periovulatory	58 - 256	
			Luteal phase	54 - 179	
Pregnancy:					
			1st trimester	247 - 2774	
			2nd trimester	569 - 5761	
Postmenopausal:					
			with ERT	51 - 426	
			without ERT	21 - 109	

Units	Units	Reference	Units	Units	Units
ng/mL	401		ng/mL	Final	01
Follicular phase					
				0.1 - 0.9	
Luteal phase					
				1.8 - 23.9	
Ovulation phase					
				0.1 - 12.0	
Pregnant:					
			First trimester	11.0 - 44.3	
			Second trimester	25.4 - 83.3	
			Third trimester	58.7 - 214.0	
Postmenopausal					
				0.0 - 0.1	

Lab Testing

- Many physicians, if they do check hormones, will only check for a group of estrogen and not test for Estrone and Estradiol
- They never check for Progesterone!

WHI Results Using Provera

- 8000 more breast cancers; 26% increase
- 7000 more cardiac events; 29% increase
- 8000 more strokes; 41% increase
- 8000 more pulmonary emboli; 213% increase
- 5 years of therapy, risk is 1 in 100
- Alzheimer's Dementia 200% increase

Premarin & Estrogen Dominance

- Premarin causes estrogen dominance!
 - It is a very strong estrogen derived from urine of pregnant horses
 - It is not a human hormone and cannot be metabolized properly by the human body
 - Substantial evidence has accumulated to prove the harm caused by Premarin and it is still used by millions of women all over the world today

Campagnoli, Carlo, et al. "Progestins and progesterone in hormone replacement therapy and the risk of breast cancer." *The Journal of steroid biochemistry and molecular biology* 96.2 (2005): 95-108.

Gynecology Made Simple

- Key Question.... How old are you?
- < 45.... Birth Control Pills
- > 45.... Premarin or Prempro
- < or > 45.... Antidepressant
- No response to therapy.... Surgery

Differences between Progesterone and Progestins

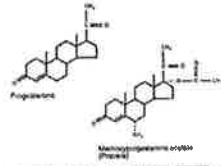


Figure 1.—Differences in the chemical structures of natural progesterone and synthetic progestins.

Tietz, N., ed. Textbook of Clinical Chemistry, Philadelphia, W.B. Saunders Co., 1085-1171, 1986.

What a Difference 1 Atom Makes!



“The problem with popular thinking is that it doesn’t require you to think at all”

Kevin Meyers

It is easier to do what other people do and hope that they thought it out.

John Maxwell "Thinking for a Change"

Progesterone vs Progestin

The safety and efficacy of a daily combination of micronized estradiol (E2) (0.1-0.5 mg) and progesterone (100-300 mg) were evaluated in ten menopausal women with moderate to severe vasomotor symptoms and/or vaginal atrophy over a 12-month study interval. For comparison, the similar women were placed on conjugated estrogens, 0.625 mg daily, and medroxyprogesterone acetate, 10 mg daily, for the first 10 days of each calendar month for 12 months. Patients were evaluated at 0, 3, 6, and 12 months. Estrogens rose significantly from baseline in both groups (P less than .01). Progesterone increased significantly above baseline in the E2 and progesterone group (P less than .01), but did not change in the conjugated estrogens and medroxyprogesterone acetate users. All women on E2 and progesterone had a decrease in total cholesterol and an increase in high-density lipoprotein cholesterol from baseline (P less than .01). Those on conjugated estrogens and medroxyprogesterone acetate had no significant change from baseline on total cholesterol; however, they did have an increase in high-density lipoprotein cholesterol values (P less than .01). In the E2 and progesterone group, the endometrial histology became completely quiescent and there was no uterine bleeding after 6 months of observation. Four of five women on conjugated estrogens and medroxyprogesterone acetate continued regular withdrawal bleeding throughout the study period, but no endometrial hyperplasia was encountered.

This study demonstrates that the daily administration of a combination of micronized E2 and progesterone results in symptomatic improvement, minimal side effects, an improved lipid profile, and amenorrhea without endometrial proliferation or hyperplasia in menopausal women.

How to Increase Progesterone Levels

- Capsules
- Troches
- Creams
- Vaginal Suppositories
- Buccal
- Bio-Identical
- Not Pellets

Natural Progesterone

- Same chemical structure your body naturally produces.
- Balances estrogen levels
- Decreases rate of cancer
- Enhances the action of thyroid hormone
- Has a natural calming effect
- Balances fluid in the cells
- Helps restore proper cell oxygen levels
- Helps you sleep
- Helps your body use and eliminate fats
- Increases beneficial effects estrogen has on blood vessel dilation
- Increases metabolic rate
- Increases scalp hair
- Induces conversion of E1 to the inactive E15 form (E15 does not increase the rise of breast cancer)
- Natural Anti Depressant

Dr. Jeff P. Smith, M.D., Director of the Center for Integrative Medicine, University of Maryland School of Medicine, Baltimore, MD. Dr. Smith is a board certified and board eligible in Internal Medicine, Endocrinology, and Geriatrics. He is also a board certified and board eligible in Obstetrics and Gynecology. He is a past president of the American Society of Endocrinology and the American Society of Geriatrics. He is also a past president of the American Society of Integrative Medicine. He is a past president of the American Society of Menopausal Medicine. He is a past president of the American Society of Reproductive Medicine. He is a past president of the American Society of Human Reproduction. He is a past president of the American Society of Human Genetics. He is a past president of the American Society of Human Immunology. He is a past president of the American Society of Human Nutrition. He is a past president of the American Society of Human Physiology. He is a past president of the American Society of Human Psychology. He is a past president of the American Society of Human Sociology. He is a past president of the American Society of Human Anthropology. He is a past president of the American Society of Human Linguistics. He is a past president of the American Society of Human Musicology. He is a past president of the American Society of Human Art History. He is a past president of the American Society of Human Archaeology. He is a past president of the American Society of Human Paleontology. He is a past president of the American Society of Human Cosmology. He is a past president of the American Society of Human Astrology. He is a past president of the American Society of Human Astrology. He is a past president of the American Society of Human Astrology.

Natural Progesterone Continued

- Is a natural diuretic
- Anti Inflammatory
- IV progesterone after traumatic brain injury
- Leaves the body quickly
- Lowers cholesterol
- Lowers high blood pressure
- May protect against breast tissue over growth
- Normalizes and improves libido
- Prevents migraines that are menstrual cycle related
- Promotes healthy immune system
- Promotion myelination which helps prevent nerve injury
- Relaxes smooth muscle
- Stimulates the production of new bone by stimulating osteoblasts
- Helps use fat for energy
- Precursor of cortisone synthesis by adrenal cortex
- Necessary for survival of embryo and fetus throughout gestation

Lee, J.H. R. "Effect of progesterone on the multiple sites of a steroid hormone." *Endocrinology* 1955.
 Dugan, S. A., and R. A. Smith. "The simultaneous restoration of neuroendocrine and metabolic integrity as a very promising method of migraine management." *Bull Clin Exp Neurol* 4 (1995): 422-9.
 West, Elizabeth Lee, M.D., M.P.H., and M.D. "The Role of Progesterone in the Menopausal Transition." *Menopause* 18 (2011): 101-10.

Why Replace Progesterone?

- Increases GABA in the brain, the calming neurotransmitter
- Decreases insulin levels / regulates blood sugar
- Treats traumatic brain injury
- Treats acne
- Treats alopecia

Majewska, Maria D., et al. "Steroid hormone metabolites are barbiturate-like modulators of the GABA receptor." *Science* 232:4753 (1986): 1004-1007.
 McAuley, James W., Frank J. Kruboth, and Patricia D. Kruboth. "Oral administration of micronized progesterone: a review and more experience." *Pharmacotherapy: The Journal of Human Pharmacology and Drug Therapy* 16 3 (1996): 453-457.
 Vliet, Elizabeth Lee. "New Insights on Hormones and Mood." *Menopause Management* (1993): 14-16.

A word about Men and Progesterone

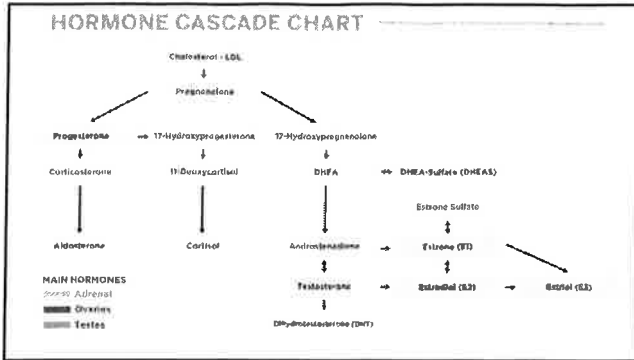
- Made in the adrenal glands and the testes
- Need optimal levels to produce Testosterone
- Men with low levels are at risk of
 - Osteoporosis
 - Arthritis
 - Prostate Cancer

Symptoms of Low Progesterone In Men

- Low Libido
- Hair Loss
- Weight Gain
- Fatigue
- Depression
- Gynecomastia "moobs"
- Erectile dysfunction
- Bone Loss
- Muscle Loss

Progesterone In Men

- Potent inhibitor of 5-a-reductase (enzyme that converts testosterone to DHT).
- DHT stimulates prostate cell growth
- As Testosterone levels decline Progesterone levels decline = more DHT
- Testosterone is a direct antagonist of estradiol.
- DHT is not = estrogen dominance.



Prostate Cancer

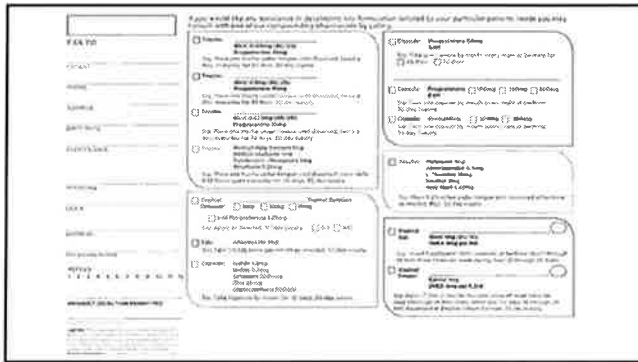
- Prostate is male equivalent of female uterus.
- Both are very sensitive to harmful effects of unopposed estrogen
- Both cancers are due to continued presence of metabolic imbalance.
- BOTH can be protected by Progesterone!

How To Replace Progesterone

- Young women start with 50 mg capsule at night 1st week after cycle, then increase to 100 mg capsule for next two weeks. Stop for cycle. If PMS is still a problem add 30 mg of progesterone cream once a day the week before cycle.
- Peri-menopause and Menopause 100 mg at Night every night.

Replace Progesterone

- These are starting doses and can always be adjusted.
- Remember Progesterone Steal
- For Men the dose is 10 mg (or less) in a cream a day. Can be applied to light skin or to testes.



It is not legal for a compounding pharmacy to put Testosterone on a prescription pad so that first line will always be blank and you have to write in

“Testosterone 1 mg.”

Hormonal Balance

Restoring proper progesterone levels *IS*
Restoring Hormone Balance
Some people are afraid to use hormones...
The reality is just the opposite! People
should be most concerned about the
Deficiency of Hormones.

“A life is not important except for
the impact it has on other lives”

-Jackie Robinson

Get out there and impact other lives!
Treat hormone imbalances properly.