Foundational Principles of Natural Hormone Replacement Therapy

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AARM
Association for the Advancement of Restorative Medicine

Financial Disclosure: Nothing to Declare

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Overview:

- Physiology of sex hormone imbalances
- How is symptomatology helpful in diagnosis and treatment?
- What you need to know about the conventional medical approach…
- …and the best way to appproach sex hormone deficiencies
- Conventional HRT vs BHRT: What's the deal?
- Principles of Prescribing
- The How-Tos of Practical Prescribing: Estrogen, Progesterone, Estriol
- When is it too much hormone? Symptoms of Over-replacement
- Troubleshooting dosing of BHRT
- When to refer the complicated patient

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Physiology of Sex Hormones

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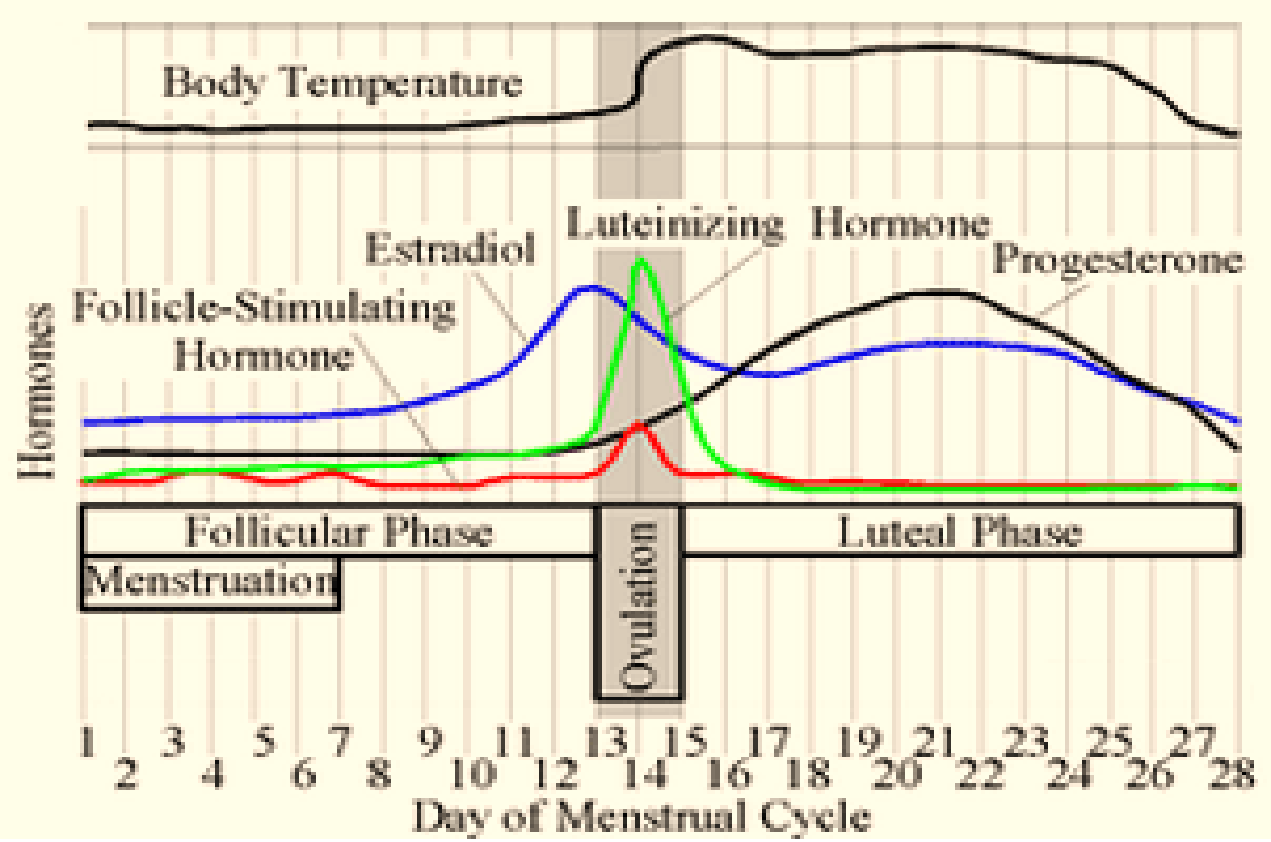
Physiology of the Menstrual Cycle



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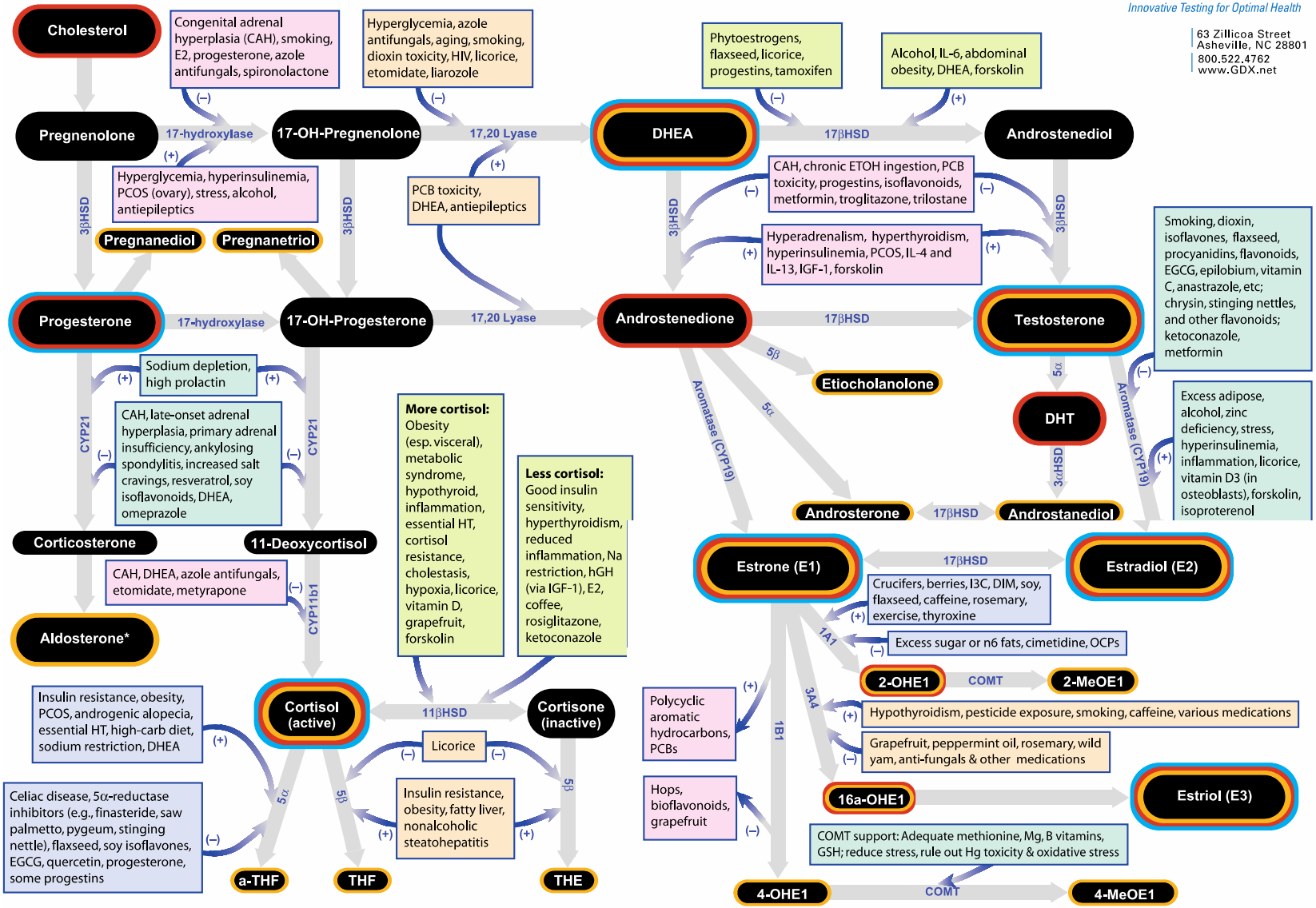
Steroidogenic Pathways

Genova Diagnostics
Innovative Testing for Optimal Health
63 Zillicoa Street
Asheville, NC 28801
800.522.4762
www.GDX.net



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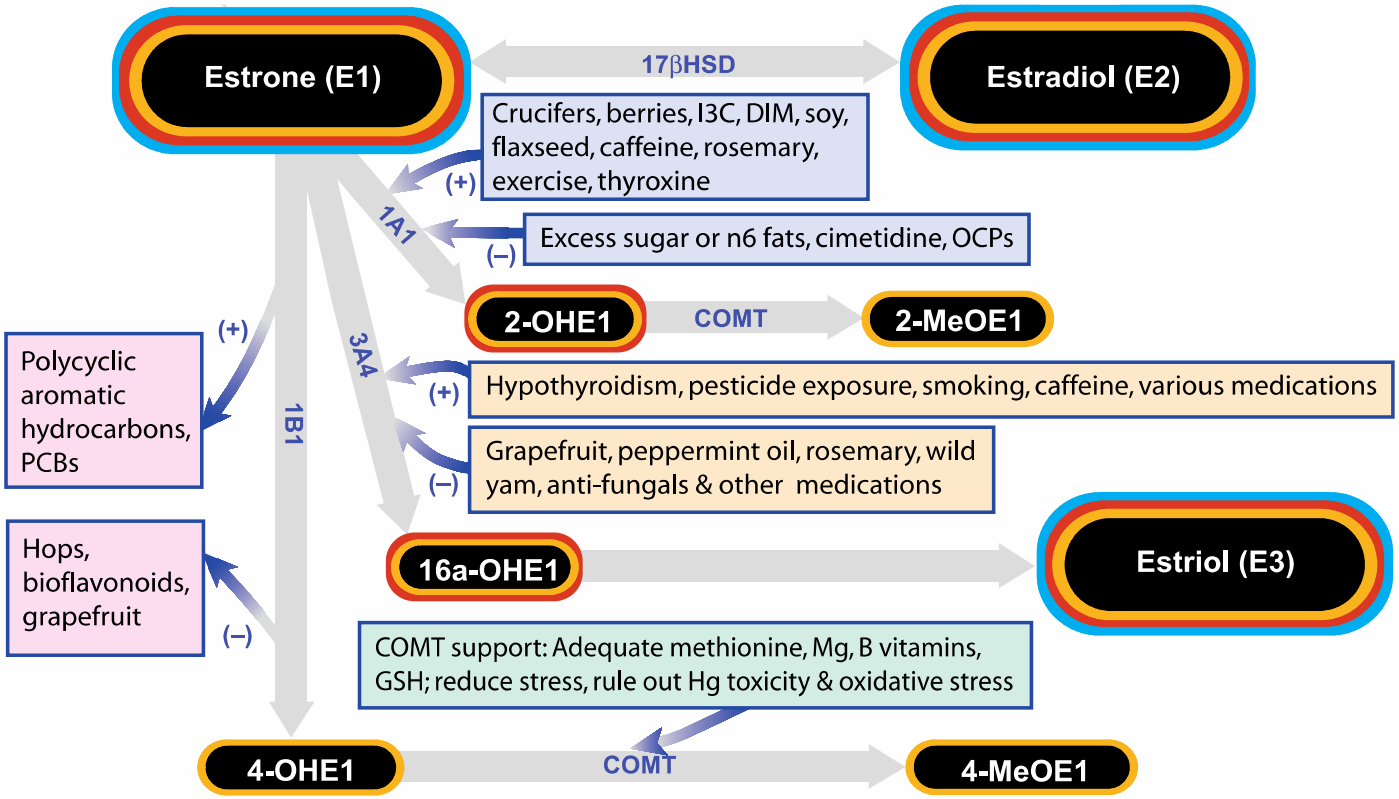
Estrogen Metabolism



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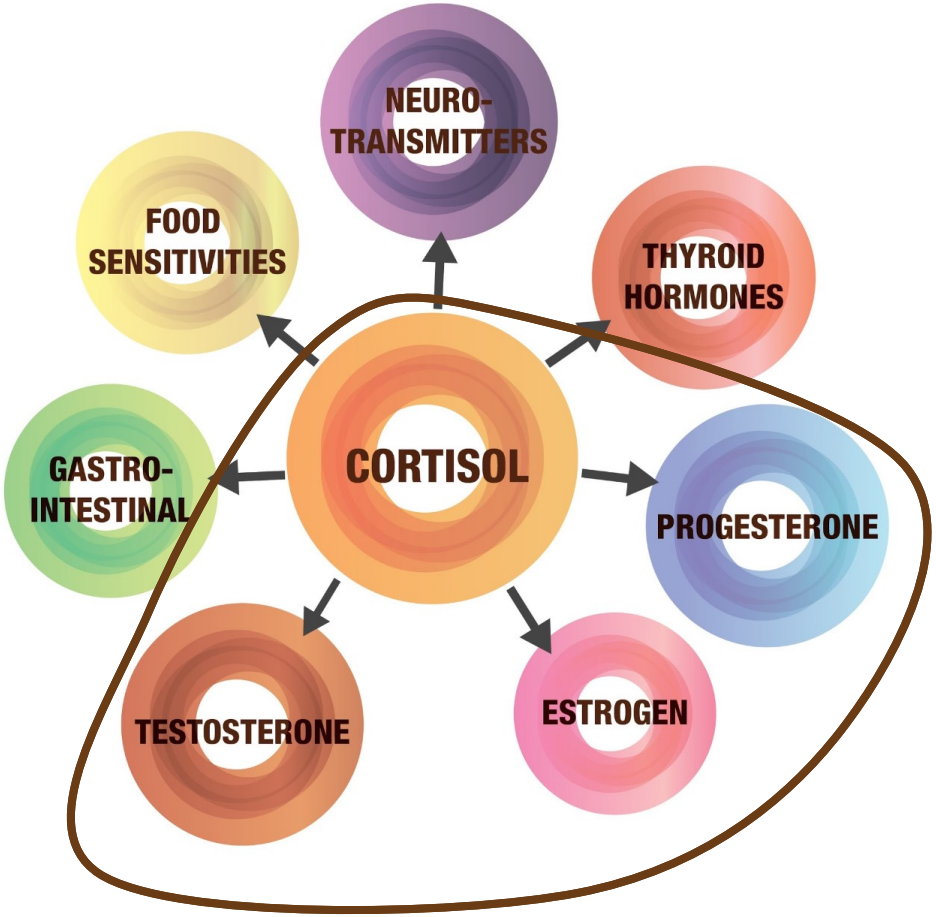
Cortisol-Sex Hormone Connection



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Classification and Symptomatology of Sex Hormone Imbalances

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Sex Hormone: Classification Imbalance & Deficiencies

IMBALANCES

- Estrogen Dominance
- Relative Estrogen Dominance
- Elevated Androgens

DEFICIENCIES

- Estrogen
- Progesterone
- Testosterone

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Sex Hormone Deficiencies: Symptomatology

LOW ESTROGEN/PROGESTERONE

- Hot flashes
- Memory decline
- Anxiety
- Insomnia
- Weight gain
- Vaginal dryness
- Painful intercourse
- Decreased libido
- Crawly skin
- Frequent bladder infections

LOW TESTOSTERONE (FEMALE)

- Decreased libido
- Decreased arousal/orgasm
- Decreased nipple sensation
- Loss of muscle mass
- Loss of vitality
- Decreased exercise tolerance

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Diagnosis

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Sex Hormones: Diagnosis

- Symptomatology: Imbalances/Deficiencies
- Physical Examination: breast and pelvic
- Saliva: historically gold standard for baseline
- Dried urine spot: baseline or for those on hormone replacement
- Bloodwork underestimates hormone levels

	Baseline Testing (no HRT)		With Hormone Replacement Therapy	
	Sex Hormones	Adrenal	Oral Progesterone	Transdermal Cream
Serum	😐	😐	☹	☹
Saliva	😐	🙂	☹	😐
24 Hour Urine	🙂	😐	☹	😐
Dried Urine	🙂	🙂	🙂	😐
Notes on Dried Urine Testing	Dried urine testing is comprehensive and convenient.		Dried urine testing can offer insight into dosing.	Proceed with caution. No testing is highly reliable for creams. Urine may be best for high doses (>1mg E2, 200mg Pg, 500mg T) or with alcoholic gels and saliva for low doses of creams

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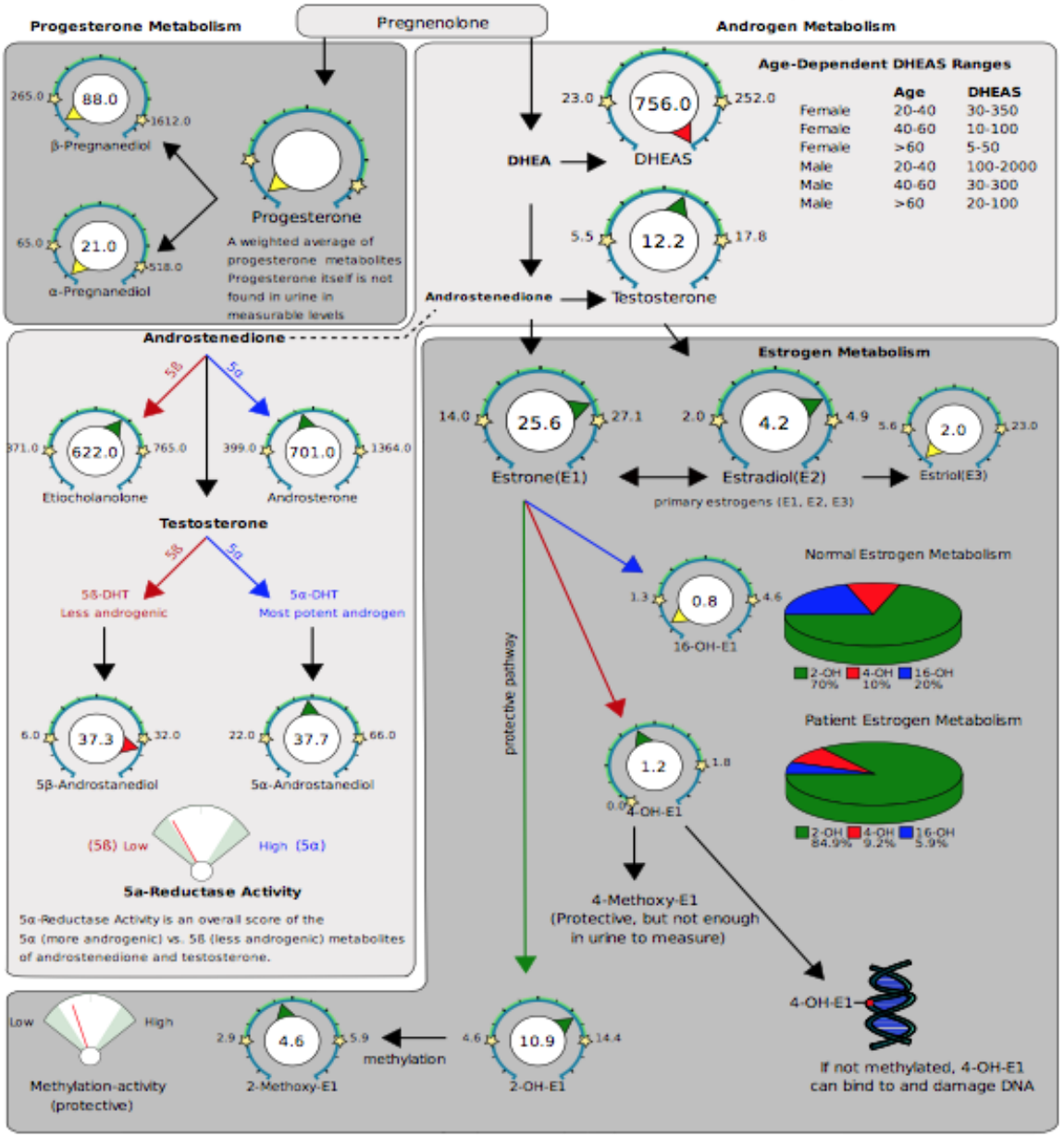

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Treatment Approach

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Sex Hormone Imbalance:Treatment Approach

- Eliminating the Cause
  - Dietary/Lifestyle modifications
- Help the body to heal itself
  - Dietary/Lifestyle modifications
- Sex Hormone Support
  - Herbal Remedies
- Bioidentical Hormone Replacement (BHRT) vs. conventional HRT

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Sex Hormone Imbalance: Treatment Approach
Herbal Remedies

ESTROGEN DOMINANCE
- Indole-3-Carbinol
- Calcium D-glucarate
- DIM

LOW ESTROGEN
- Black cohash
- Borage oil
- Evening primrose oil

LOW PROGESTERONE
- Chasteberry
- Wild yam

ELEVATED TESTOSTERONE
- Progesterone or Chasteberry
- Saw palmetto
- Pygeum Bark
- Fenugreek
- Nettle Root

LOW TESTOSTERONE
- Maca
- Tribulus Terrestris
- Zinc
- L-arginine

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Diagnosis and Treatment

CONVENTIONAL APPROACH

- No testing for hormone levels needed to prescribe
- ***IF*** tested (blood)-limitations
- No follow up testing with treatment
- No balancing of estrogen, progesterone, testosterone
- Progesterone not used if woman has hysterectomy
- Synthetic hormones commonplace

INTEGRATIVE MEDICINE APPROACH

- Always test hormone levels
- Dried urine hormone testing with 4 pt cortisol
- Follow up testing recommended (annually)
- Balancing of estrogen, progesterone, testosterone key
- Progesterone used if deficient even without a uterus
- Bio-identical hormones only

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BHRT vs CHRT

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Definitions

- Bio-identical Hormones: have a chemical structure identical to endogenous human hormones but are chemically synthesized such as progesterone, estriol, estradiol, and testosterone.
- Non-bio-identical hormones: are not structurally identical to human hormones and may either be chemically synthesized such as MPA or derived from a nonhuman source such as CEE.
- Progesterone: our own endogenous hormone.
- Progestins: synthetic chemicals that mimic the effects of progesterone by binding to progesterone receptors e.g., MPA
- Progestogens: an umbrella term for both progesterone and progestins.

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Sex Hormone Imbalances: Treatment Approach

Bio-Identical Hormone Replacement Therapy (BHRT)

- BiEst (Estradiol/Estriol) TD
- Estriol pv
- Progesterone po/TD
- Testosterone TD
- 7-keto DHEA SL/TD
- DHEA SL/TD

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Health Canada Approved Hormones

Type/Source	Brand Name	Bioidentical?
17 Beta-estradiol/plant	(Estrace) po/pv	Yes
17 Beta-estradiol/plant	(Esclim) TD patch	Yes
17 Beta-estradiol/plant	(Climara) TD patch	Yes
17 Beta-estradiol/plant	(Estraderm) TD patch	Yes
17 Beta-estradiol/plant	(Vivelle) TD patch	Yes
17 Beta-estradiol/plant	(Estrogel) TD gel	Yes
17 Beta-estradiol/plant	(Estrasorb) TD cream	Yes
17 Beta-estradiol/plant	(Estring) vaginal ring	Yes
Estradiol acetate	(Femring) vaginal ring	Yes
Estradiol hemihydrate	(Vagifem)vaginal tablet	Yes
Progesterone micronized	(Prometrium) po	Yes
Progesterone	(Procheive 4%) vaginal gel	Yes

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Health Canada Approved Hormones

Type/Source	Brand Name	Bioidentical?
Conjugated equine estrogens	(Premarin)po/pv	No
Ethinyl estradiol	(Estinyl)po	No
Medroxyprogesterone acetate (MPA)	(Provera)po	No
Norgestrel	(Ovrette) po	No
Norethindrone	(Micronor) po	No
CEE and MPA	(Prempro) po	No
Ethinyl acetate and norethindrone acetate	(FemHRT) po	No
17 beta estradiol and norgestimate	(Combipatch) TD	No
17 beta estradiol and levonorgestrel	(Climara Pro) TD	No

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Comparison of Bio-identical Hormones vs. Conventional Hormone Replacement

	Bio-identical Progesterone	Synthetic Progestins
Clinical Efficacy	best	good
Physiologic actions on breast tissue	protective	negative
Risk of breast cancer	protective	increased
Risk of CVD	protective	increased
Risk of DVT	none	none

	Bio-identical E2/E3-TD	Synthetic Estrogens
Breast cancer risk	protective	increased
DVT risk	none	increased

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Prescribing Bio-identical Hormones

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Principals of Prescribing BHRT

- Start low and go slow
- Balance
- Physiologic ranges
- Understand downstream hormones
- Avoid down regulation of receptors
- Conversion dosing TD->po (x4-5)
- Perform baseline investigations

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Baseline Investigations

- ✓Trans-vaginal pelvic ultrasound (TVUS)
- ✓PAP smear
- ✓Mammogram or thermography (>50yo)
- ✓Bone Mineral Density (BMD)(>50yo)

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Progesterone

- Used to balance estrogen and to support cortisol production
- TD or po applications most common
- Prescribed orally for sleep/anxiety
- Given cyclically to menstruating woman
- Given daily (with a day of rest) to post-menopausal woman
- Initiate dose according to test results and titrate to symptoms

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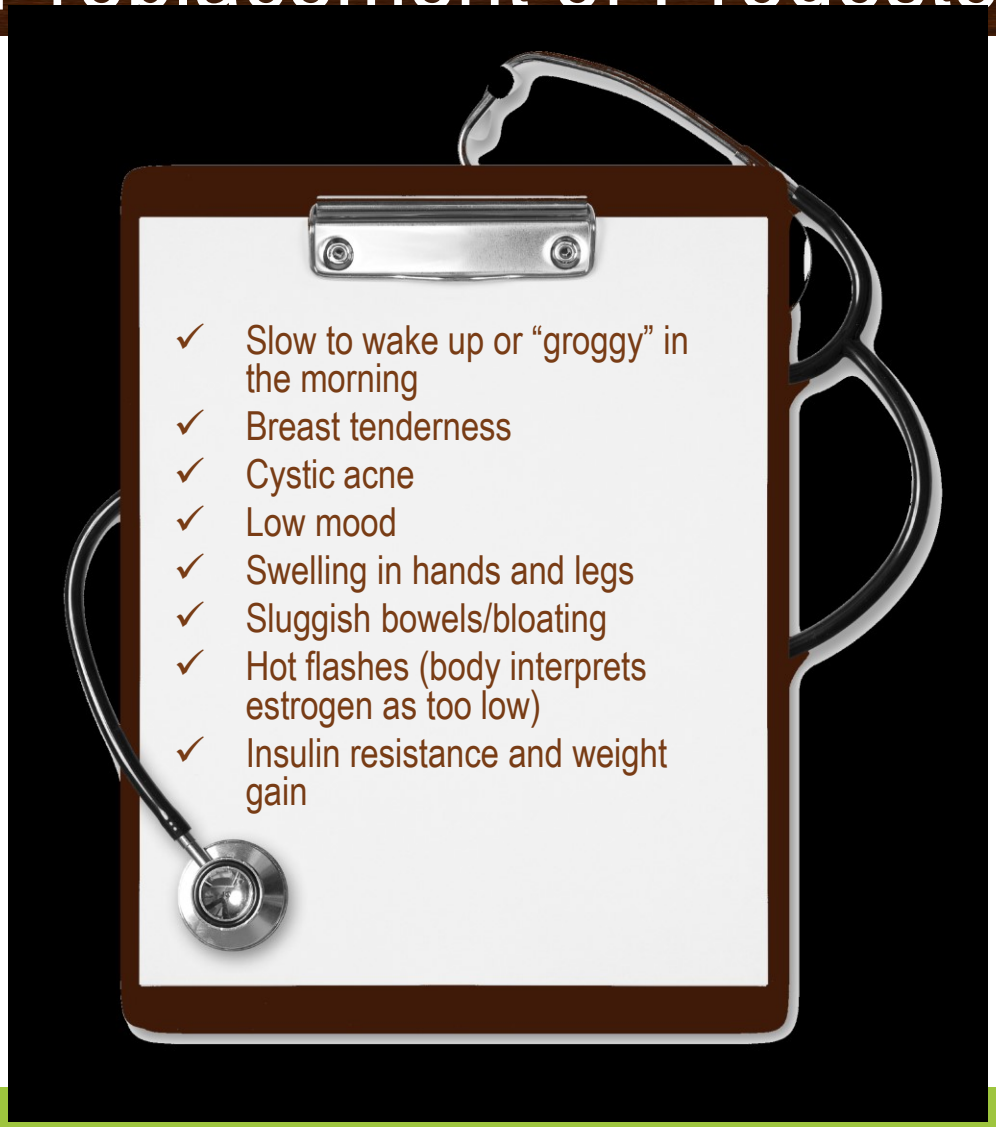
Over-replacement of Progesterone



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Typical Progesterone Dosing

Post-Menopausal

- Compounded progesterone 75-175mg SR po qhs Monday to Saturday

**increments of 25mg

- Compounded progesterone cream 10-30 mg TD qhs Monday to Saturday

**increments of 5mg

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BiEst

- Used to replace estrogen when objectively deficient
- Combination of estradiol and estriol (20:80) or (50:50)
- Transdermal application only
- Given daily (with a day of rest) to post-menopausal woman
- Initiate dose according to test results and titrate to symptoms
- Must be balanced with progesterone

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Over-replacement of Estrogen

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Typical BiEST Dosing

Post-menopausal

- Compounded BiEST cream 80:20 (E3/E2) 0.5-1.75mg TD BID Monday to Saturday

**Increments of 0.5mg

- Surgical menopause may require higher doses to manage symptoms

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Troubleshooting Estrogen

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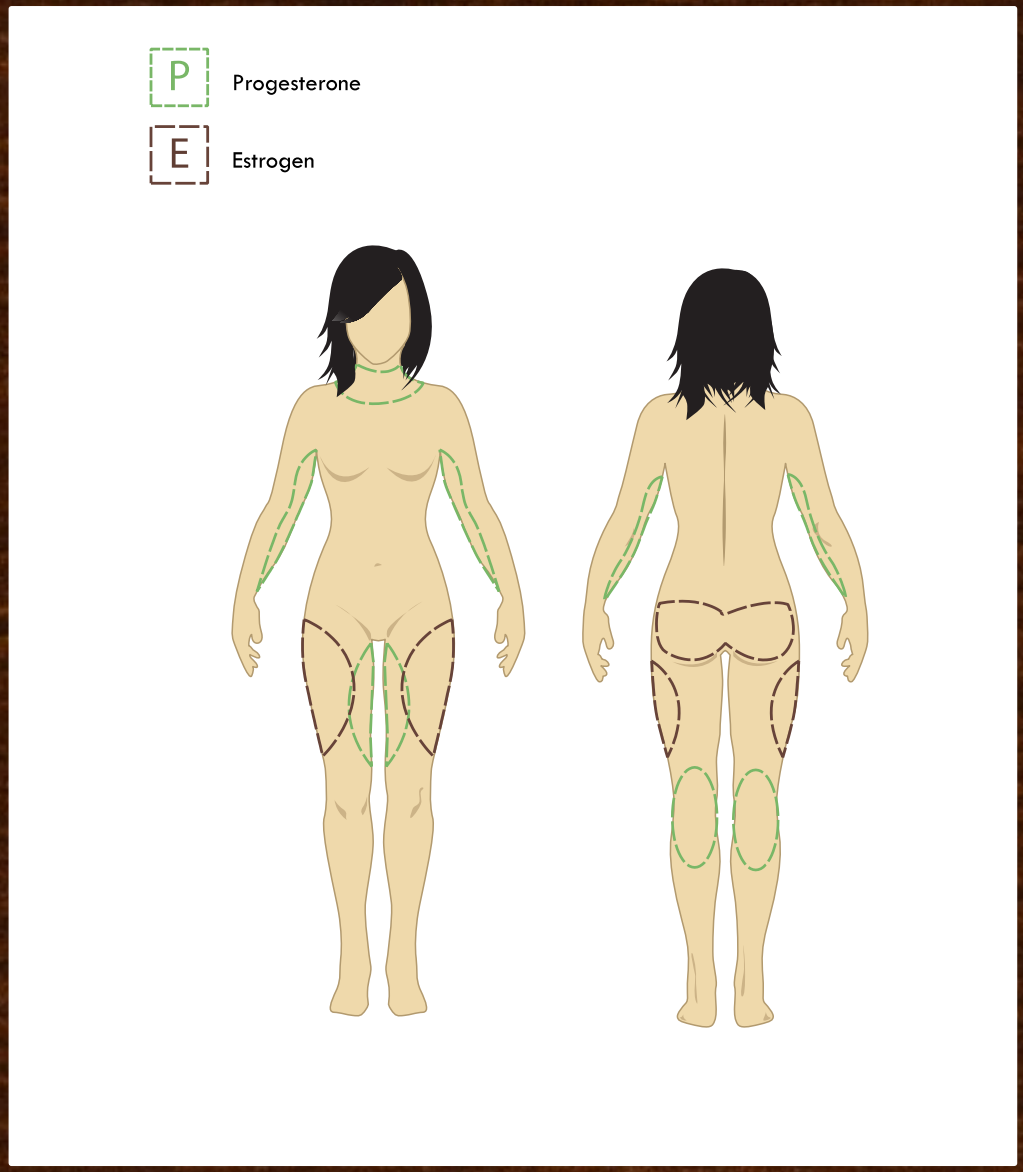
Estrogen/Progesterone Application Sites



Estriol for Vaginal Atrophy

- Used for vaginal atrophy resulting in bothersome vaginal dryness, painful intercourse or recurrent urinary tract infections
- Transvaginal application
- Administered in tapering doses at bedtime
- May be transferred to sexual partner
- May initiate without testing based on symptoms and physical examination

- Be aware of the modern strategies for urogenital atrophy treatment including laser therapy and photobiomodulation

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Typical Vaginal Estriol Dosing

- Compounded Estriol vaginal cream 0.25-0.5 mg qhs x 2 weeks, then twice weekly x 2 weeks, then once per week x 2 months and then as needed

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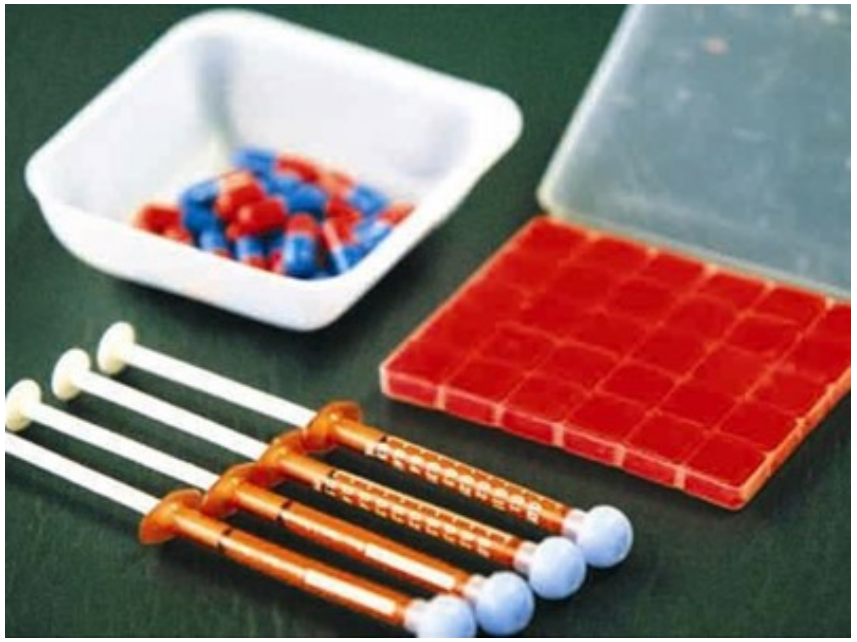
Delivery Methods

- Carrier bases
- Application site
- Suppositories (E_3)



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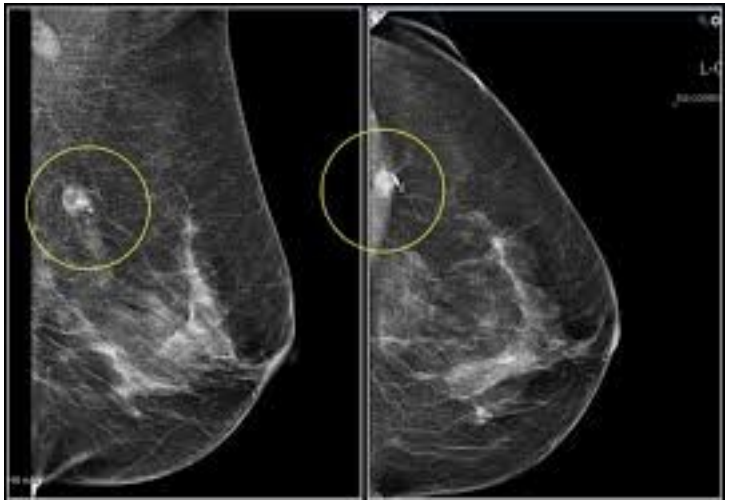
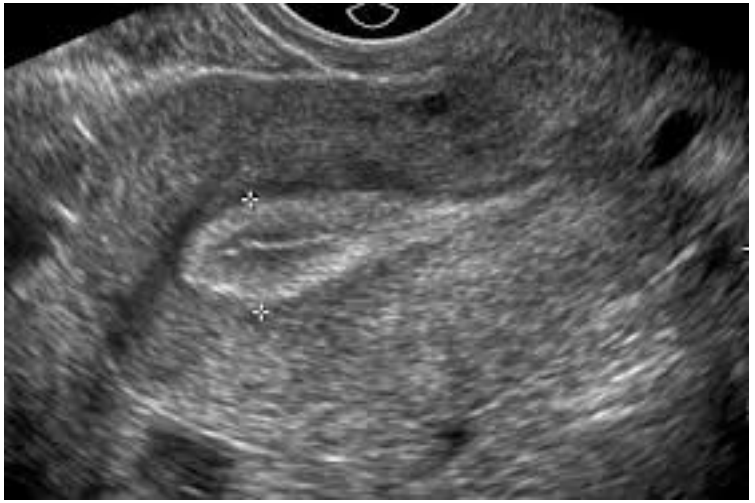
The Complicated Patient: Know when to refer





- ✓ Post menopausal bleeding
- ✓ Thickened endometrium on trans-vaginal pelvic ultrasound
- ✓ Breast cancer history
- ✓ Urogenital atrophy unresolved with systemic and local estrogen

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Sex Hormone Case Studies

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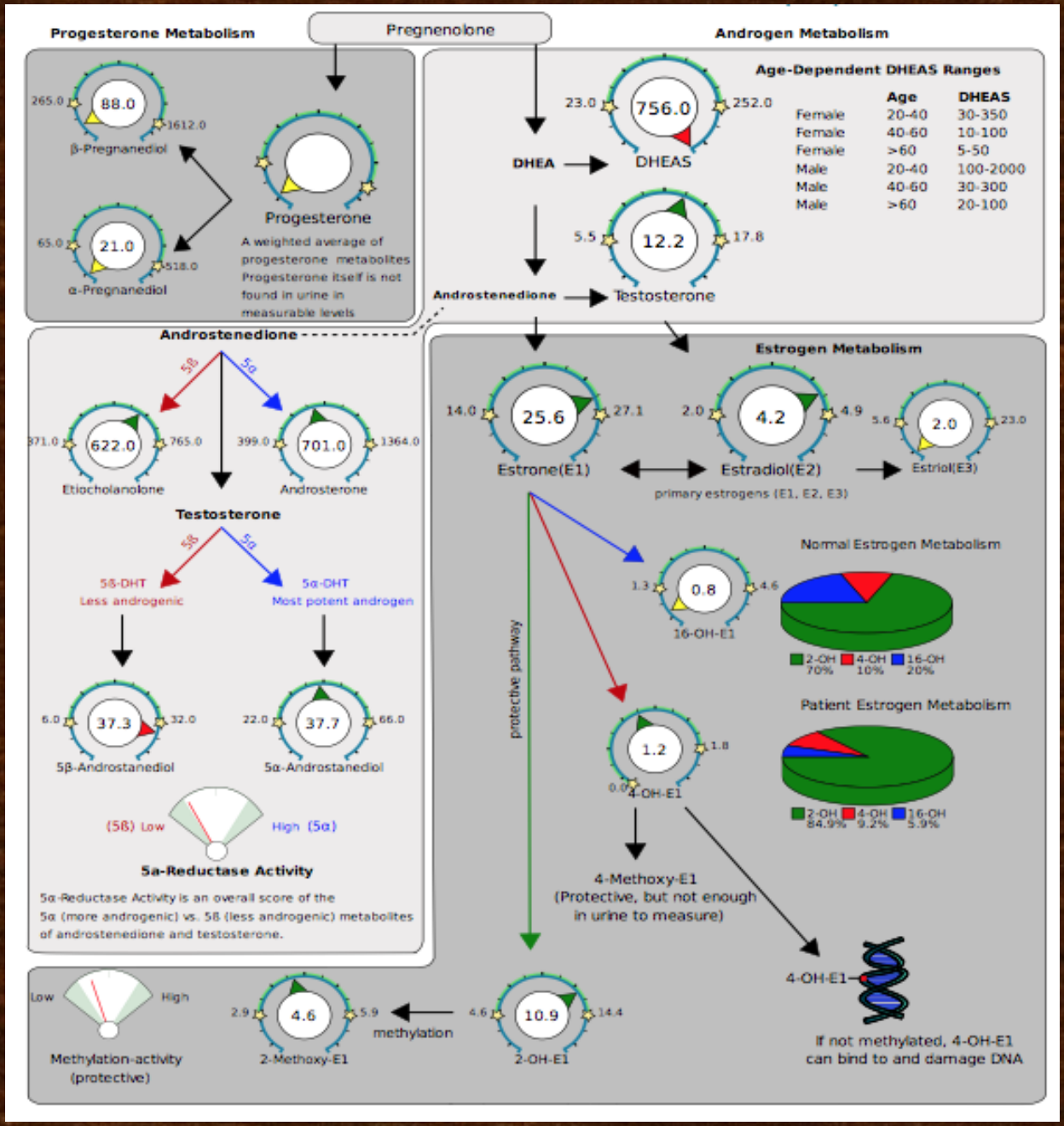
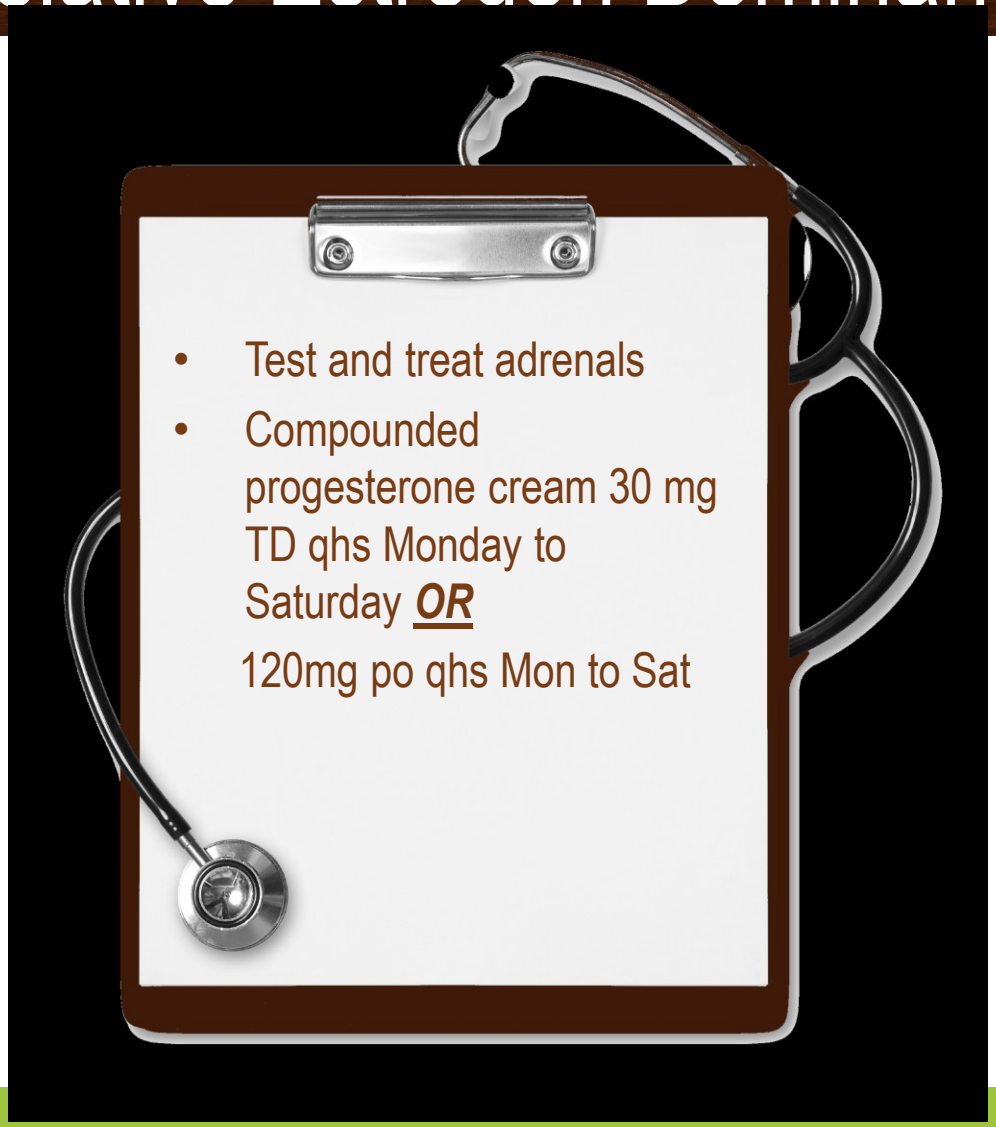
CASE STUDY #1

47 yo peri-menopausal female not on any hormone replacement therapy complaining of heavy periods with breast tenderness in the week before her period. She is complaining of new onset anxiety and sleeplessness.



Relative Estrogen Dominance



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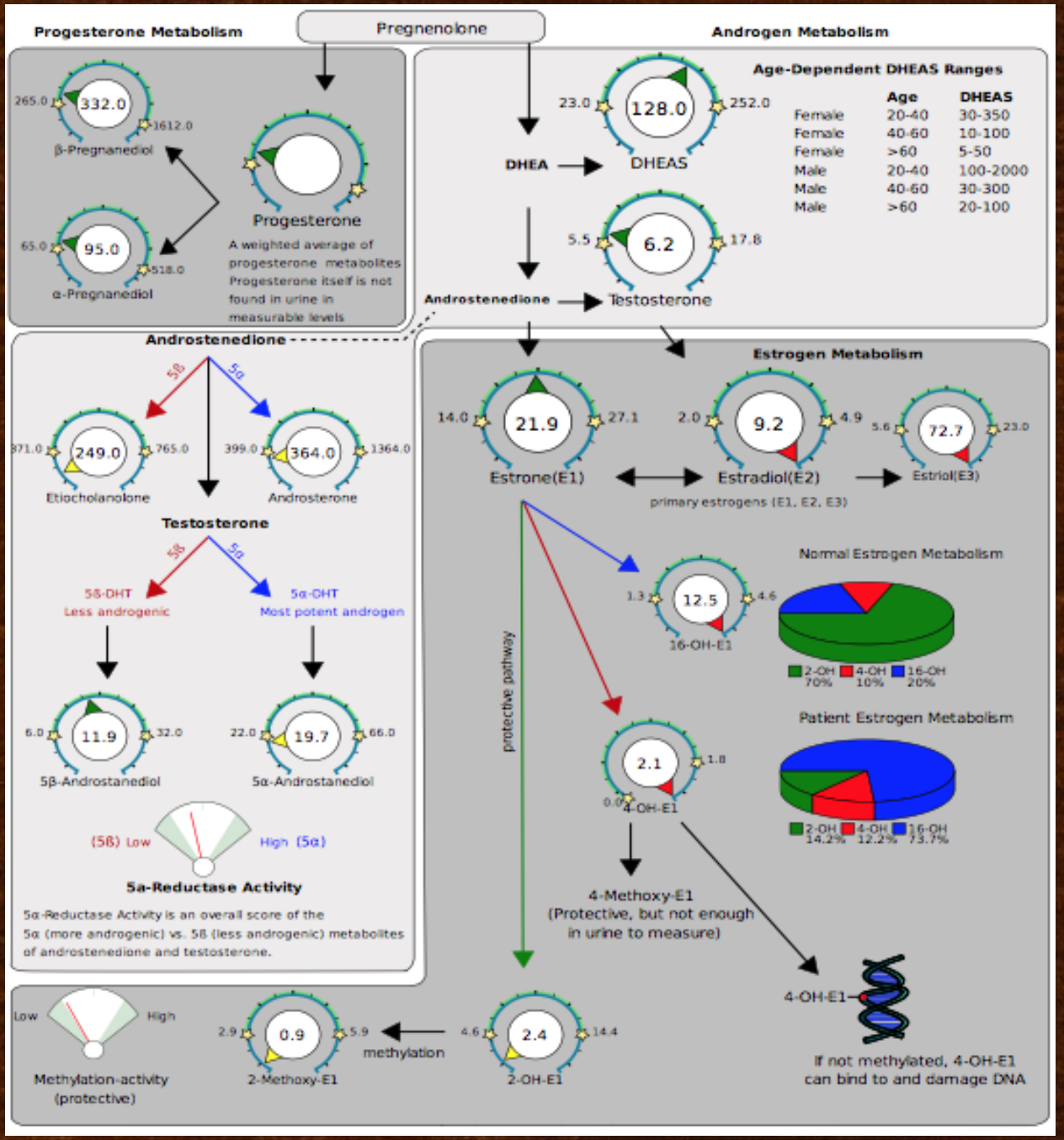
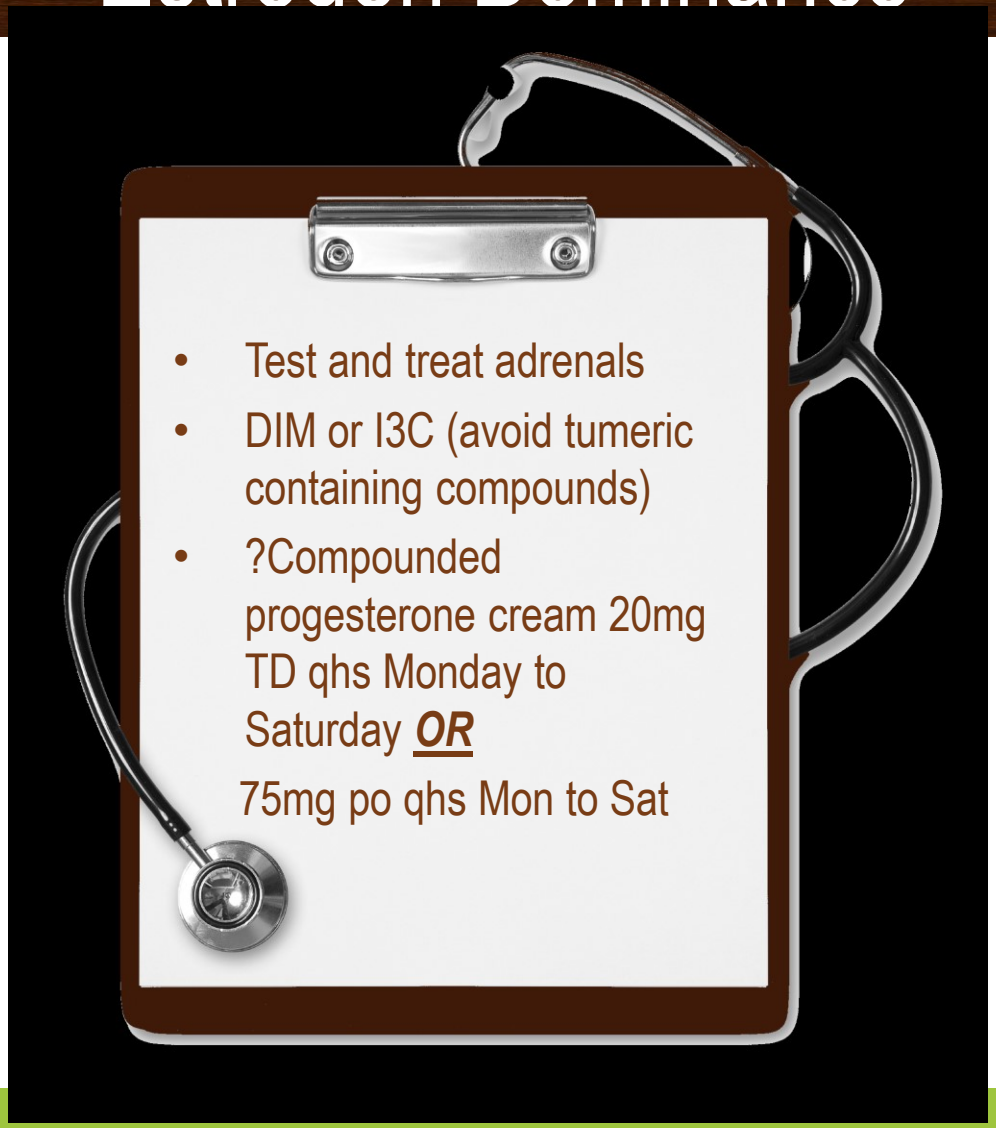
CASE STUDY #2

47 yo peri-menopausal female not on any hormone replacement therapy complaining of heavy and painful periods with PMS symptoms in the week before her period (28d cycle).



Estrogen Dominance



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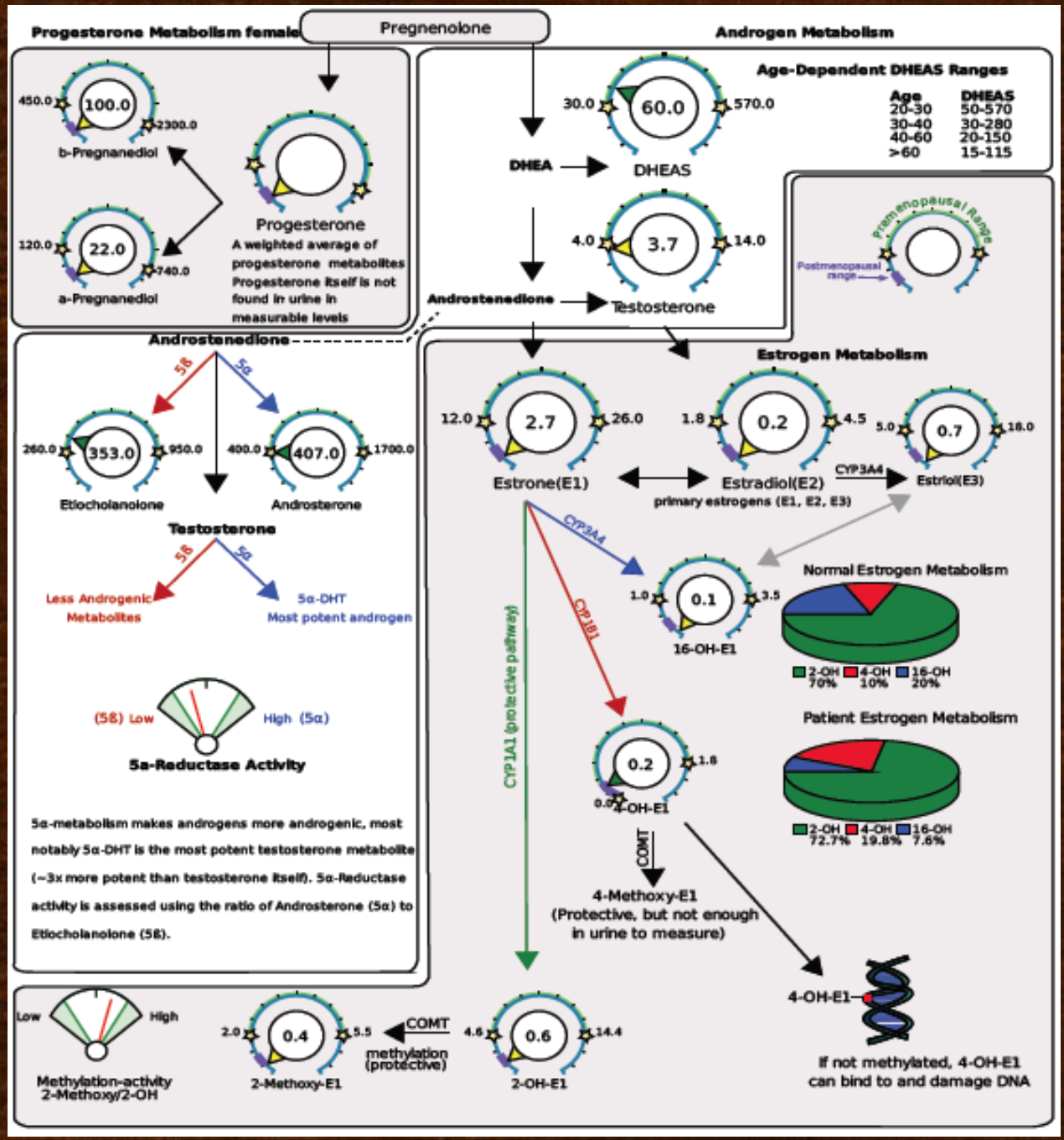
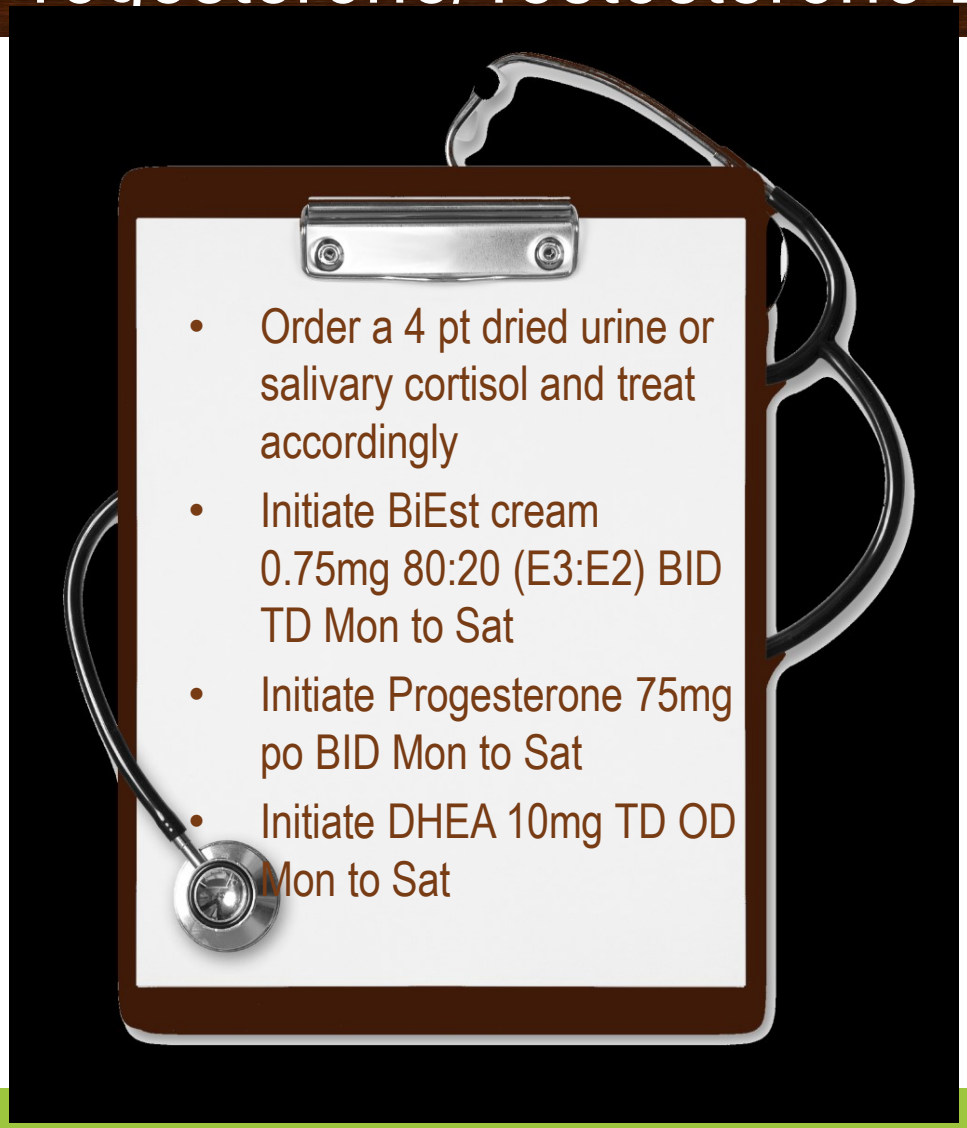
CASE STUDY #3

55 yo post-menopausal female not on any hormone replacement therapy complaining of hot flashes, irritability, awakening between 2-4am, low libido, vaginal dryness and painful intercourse.



Estrogen/Progesterone/Testosterone Deficiency



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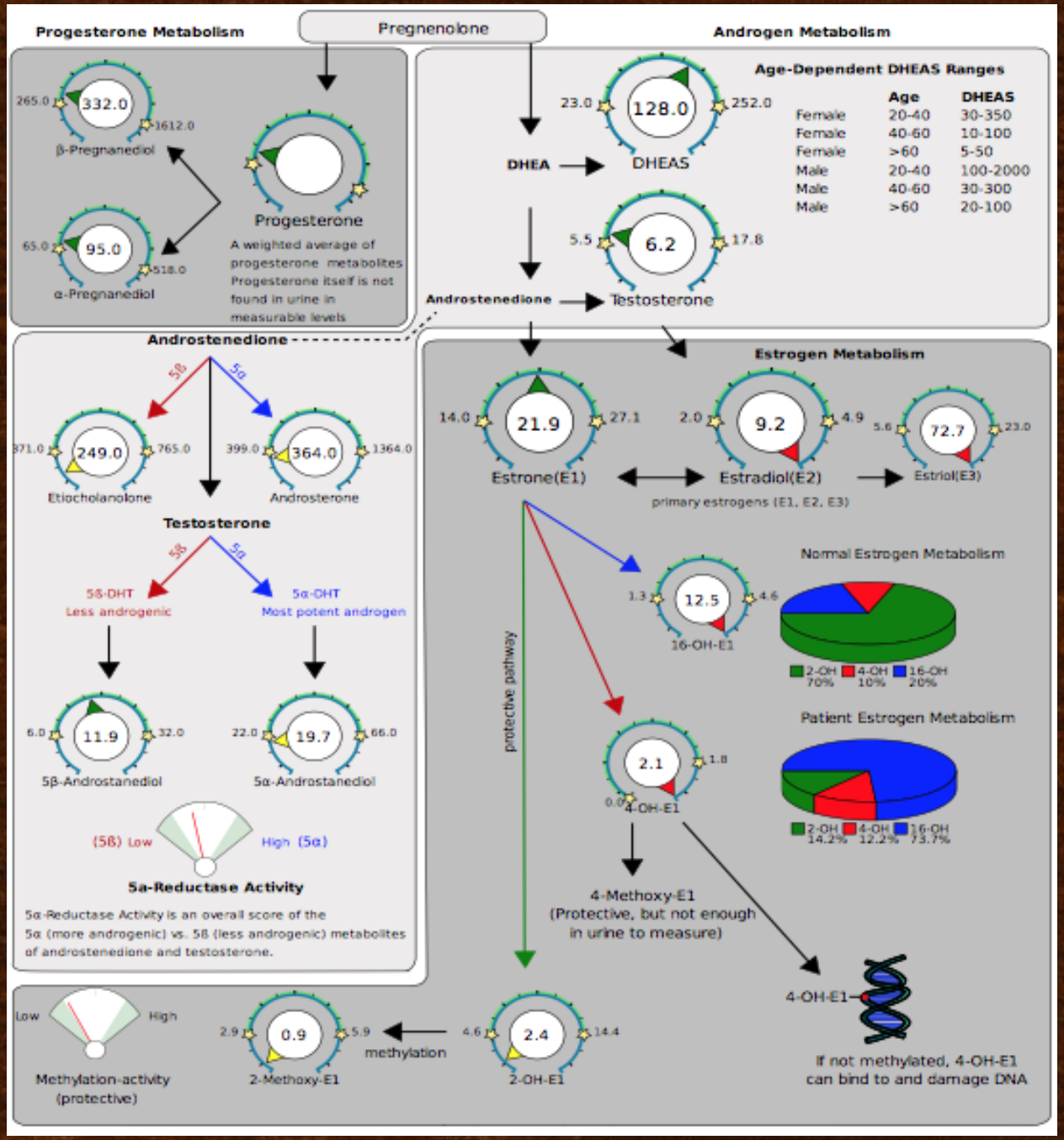
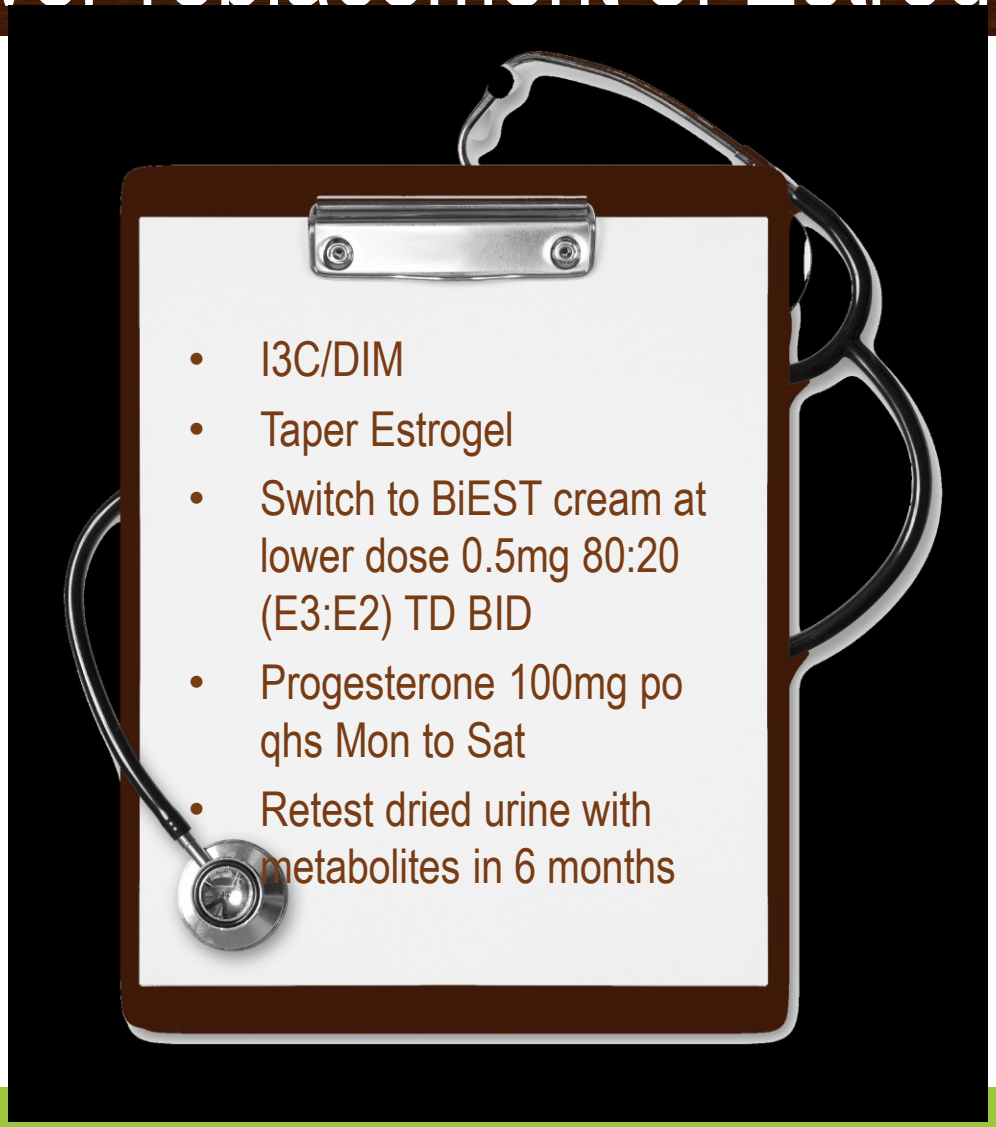
CASE STUDY #3

47 yo post-menopausal female started on Estrogel 1 pump and Prometrium 100mg po by her family doctor without testing. She is largely asymptomatic however with questioning she does note occasional breast tenderness. She has not had any PV bleeding and endometrial thickness is 4mm.



Over-replacement of Estrogen



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Conclusion: Foundational Principles of Natural Hormone Replacement Therapy