



Converting Patients from Conventional
to Bioidentical
Hormone Therapy

with

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- Clinical Consultant and the Director of Education at Power2Practice.
- 30 years of experience creating and using bio-identical hormone therapies in both retail pharmacy and clinical practice.
- Nationally recognized expert in pharmacy, BHRT and custom compounding.
- Previously served as Director of Provider Education for ZRT Laboratory and Education Director for the Professional Compounding Centers of America.



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EMR - PRACTICE MANAGEMENT PLATFORM - LIFESTYLE BASED PATIENT PORTAL



Integrating all components of Integrative Care.

Conventional HRT

- Inappropriate dosage route for estrogen
- Invalid assessment of effects
- Too much estrogen
- Inaccurate evaluation of the need for progesterone/progestins
- Inaccurate, invalid, and inappropriate dosage and monitoring of testosterone replacement in males





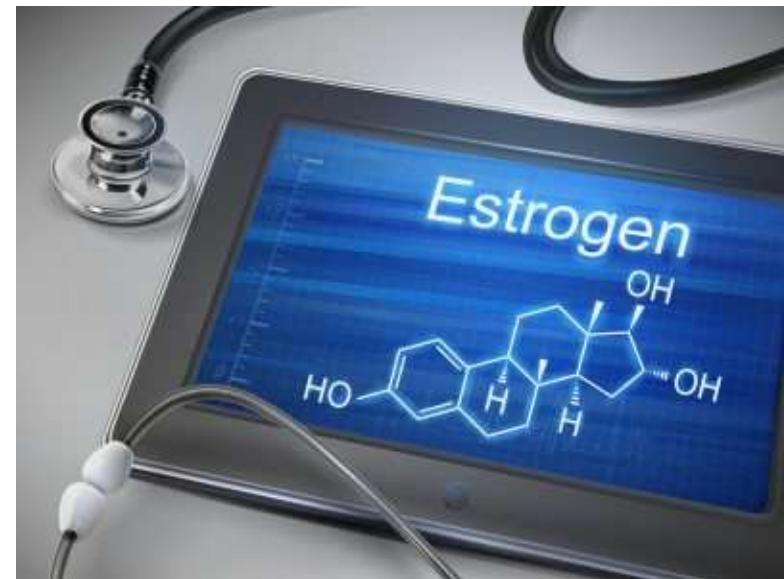
CONVENTIONAL FEMALE HRT



Conventional HRT

Metabolism of orally administered estradiol

- Estradiol administered orally is significantly converted to Estrone.
- Estradiol levels may be normal, but estrone levels are almost always higher than normal pre-menopausal ranges.
 - Increase in 4-catechol-quinoone estrone metabolites that may damage DNA and therefore increase risk of breast cancer.
- Conjugated Estrogens contain 50% estrone and only 5-19% Estradiol
 - Measuring Estradiol levels does not at all give total picture of estrogen burden.
- Conjugated Estrogens and Estradiol oral manufactured products provide too much estrogen for all women.



Estradiol (E2), Estrone (E1) and Oral Estrogen Supplementation

	<u>Serum E₂</u> (pg/ml)	<u>Serum E₁</u> (pg/ml)	<u>E₂/E₁</u>
Premenopause	60	60	1
Postmenopause	20	60	0.33
Oral Estradiol	60	300	0.2

Conventional HRT

Oral dosage route for estradiol

- Significantly increased risk of stroke and VTEs compared to sublingual or topical administration.
- Increased binding proteins SHBG, TBG, CBG.
- Improper ratio of E1 to E2 created by oral route:
 - When oral estrogen creates a normal level of estradiol, estrone is significantly higher than it should be.



Conventional HRT

Inaccurate assessment of effects

- Misleading levels for oral estradiol
- Serum testing is not accurate for topical administration
- Conjugated Estrogens approved for treating hot flashes based only on short term effects
- No long term studies looking at:
 - Overall effects compared to endogenous functions of estrogen
 - Risk increases associated with oral administration of approved dosages



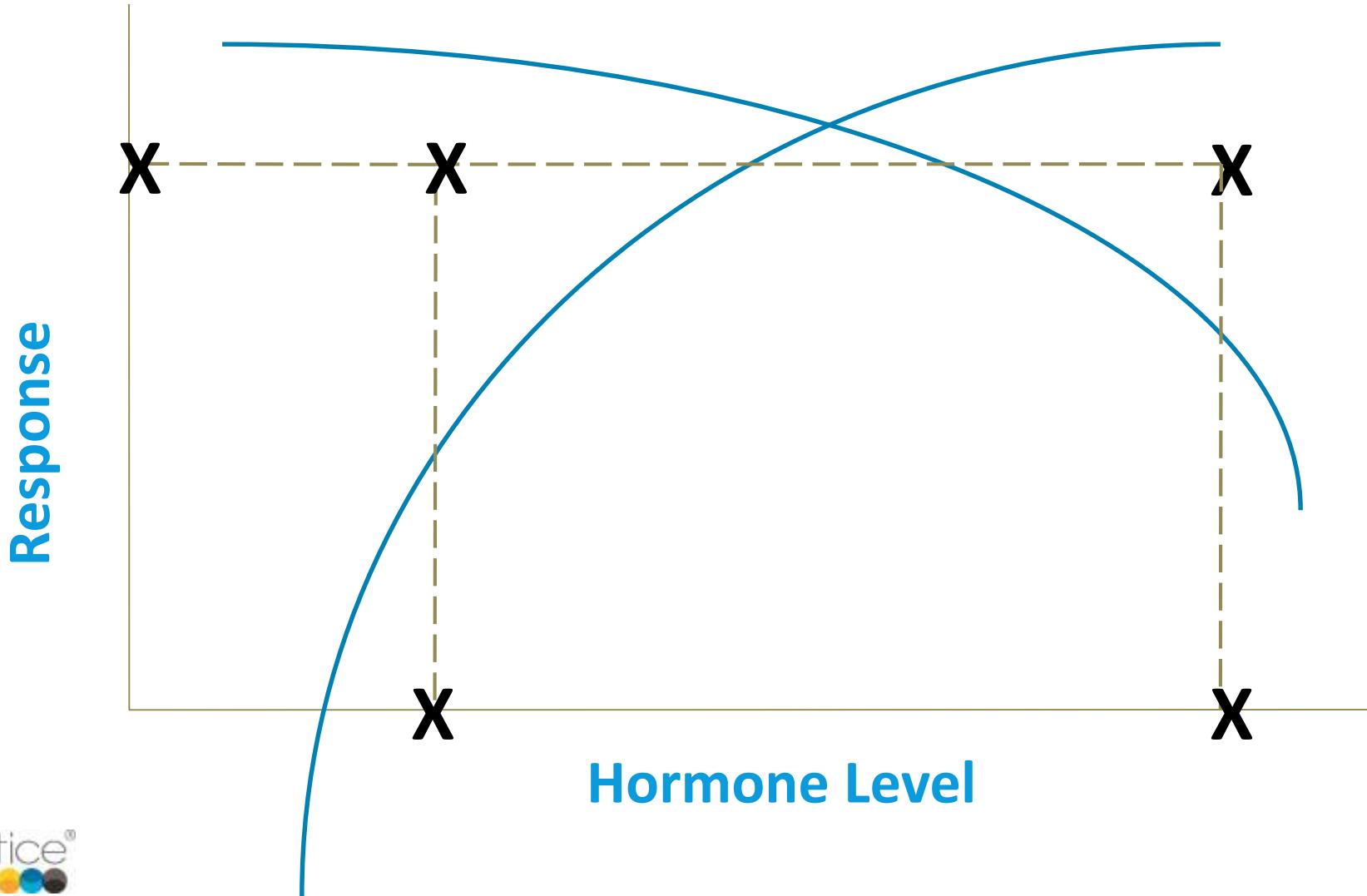
Too Much Hormone

Symptoms of excess hormone may mirror symptoms of deficiency.

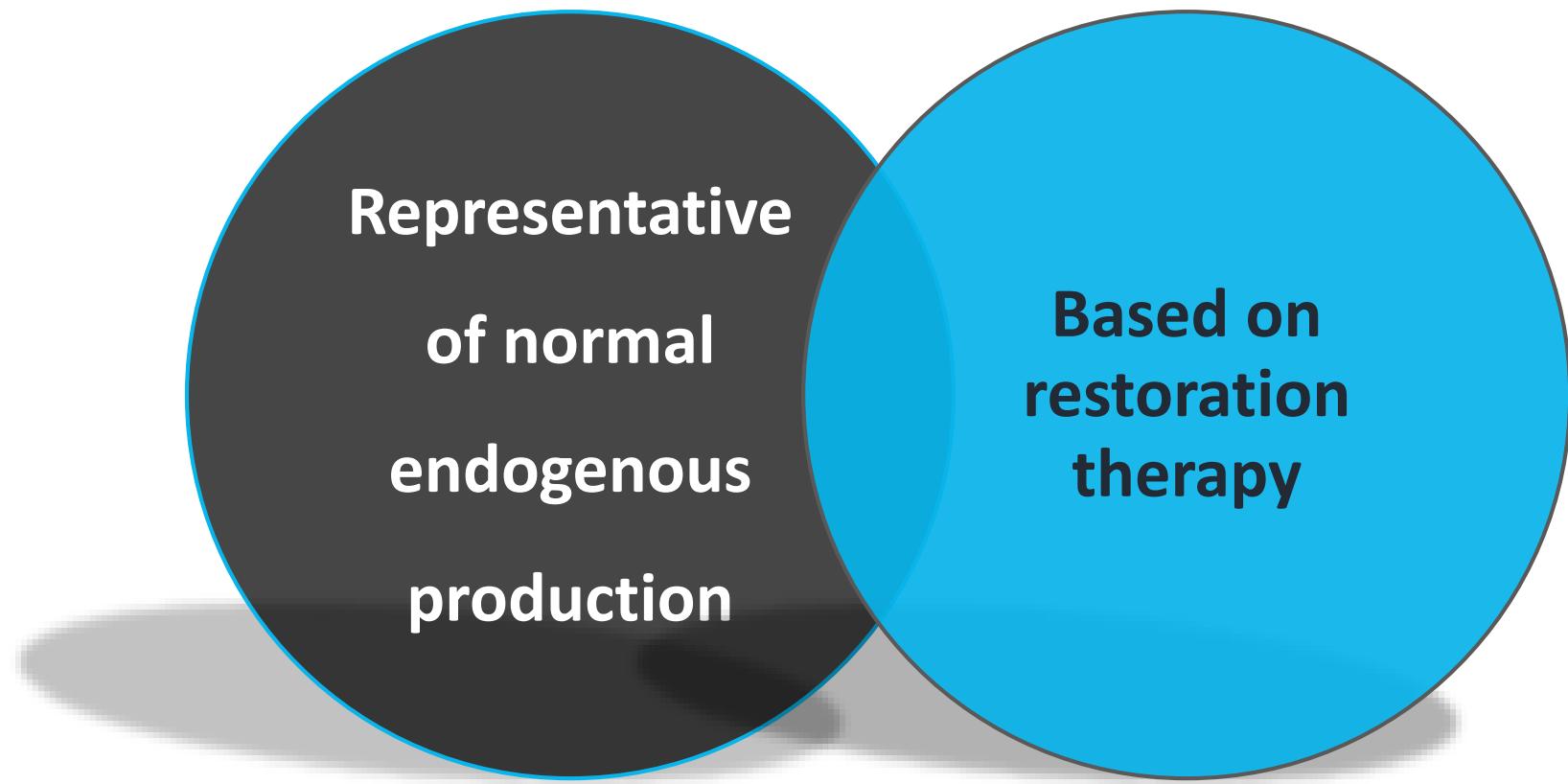
- The symptoms of too much of a hormone can closely mimic the symptoms of too little.
- May indicate the receptor response to hormone level.
- Delayed response to excessive hormone.



OPTIMAL RECEPTOR RESPONSE



Physiologic Dosing



Daily Endogenous Production in Women

Sex Hormone	Follicular	Luteal
Estradiol	0.036 mg	0.25 mg
Progesterone	1 mg	25 mg
Testosterone	0.14 -0.35 mg	0.13-0.35 mg
DHEA	7-8 mg	7-8 mg

Daily Endogenous Production in Men

Sex Hormone	Amount
Testosterone	5-6 mg
Estradiol	0.045-0.050 mg
DHEA	10-18 mg
Progesterone	2-3 mg

Progesterone and Progestins

Invalid assumption was/is taught that a woman does not need Progesterone if she no longer has a uterus

- Progestins only mimic the action natural progesterone in the uterus.
- Outside of the uterus progestins produce the opposite effect of natural progesterone.

Medroxyprogesterone Acetate (MPA) Vs. Progesterone

Progesterone has favorable effects on cardiovascular health, lipid profile, liver function, sleep, mood, CNS, insulin & glucose regulation

Medroxyprogesterone Acetate has unfavorable effects on all the above, creating side effects and increased risks

Medroxyprogesterone Acetate (MPA) Vs. Progesterone

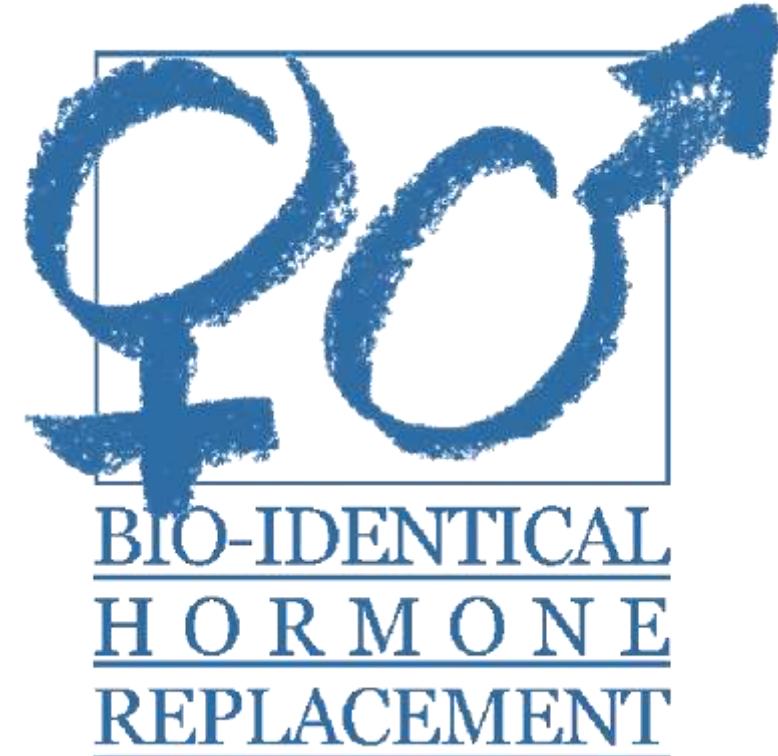
- Progesterone protects against breast cancer while MPA and all progestins significantly increase the risk no matter how long used and what dosage is used.
- When compared to a MPA-containing regimen, women using progesterone-containing HRT experienced significant improvement in symptoms and 80% reported overall satisfaction.
- Progesterone is required to maintain pregnancy while MPA is contraindicated in pregnancy.



Conversion to BHRT

Considerations in conversion from synthetics to bio-identical hormones:

- Length of time on synthetics
 - Estrogen receptors can lose sensitivity due to exposure to high amounts and/or long exposure of estrogen replacement (any type of estrogen).
- Liver detox



Conversion Considerations - *Progesterone*

**Start Progesterone
Immediately**



**Discontinue
Any Progestin**



Conversion Considerations - *Progesterone*

Progesterone affects estrogen effects:

- Regulates estrogen receptors.
- Has effects on SHBG, thyroid and cortisol actions – all effect “estrogen deficiency” symptoms.

Start progesterone prior to switching from conventional estrogen therapy to bio-identical estrogen.

Conversion to BHRT

Address other hormone imbalances that may be adding to symptoms:

All endocrine hormones effect estrogen function

- Insulin resistance, adrenals, thyroid and androgens.



Conversion Considerations - *Estrogen*

Taper off of conventional estrogen:

Higher than physiological levels reset the threshold for estrogen need within the brain.

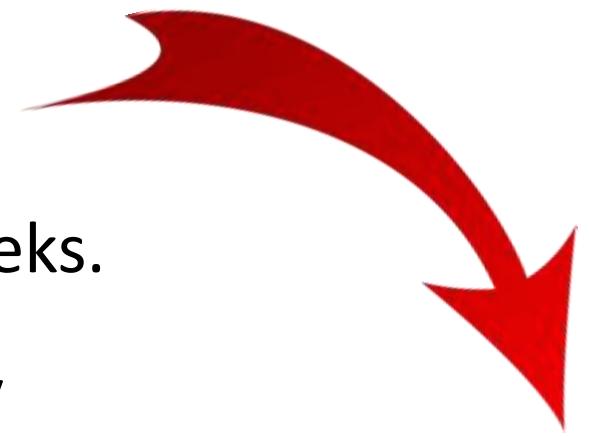
- Quick reduction in dosage will cause withdrawal symptoms (severe hot flashes).

Conversion Considerations - *Estrogen*

Taper off of **synthetic** estrogen:

Various protocols have been used:

- Reduce estrogen dosage 25% to 50% every two weeks.
- Reduce estrogen dosage to one-half the dose every other day for 2-3 weeks, then to one-half dose every day for 2-3 weeks, then one-half dose every other day for 2-3 weeks.



Conversion Considerations - *Estrogen*

Taper off of synthetic estrogen:

Protocol that I use

- Use 1/2 dose every 3rd day for 9-12 days, then 1/2 dose 2 of 3 days for 9-12 days, then 1/2 dose daily for 9 days, then 1/2 dose 2 out of 3 days for 9 days, then 1/2 dose every other day for 8 days

My goal to get to Conjugated Estrogen 0.3mg every other day or Estradiol 0.25 mg every other day before changing to Biest 50:50

Decreasing Estrogen Protocol Example

MONTH-AT-A-GLANCE BLANK CALENDAR						
MONTH _____						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1 1/2 DOSE	2 FULL DOSE	3 FULL	4 1/2	5 FULL	6 FULL	7 1/2
8 FULL	9 FULL	10 1/2	11 FULL	12 FULL	13 1/2	14 1/2
15 FULL	16 1/2	17 1/2	18 FULL	19 1/2	20 1/2	21 FULL
22 1/2	23 1/2	24 FULL	25 1/2	26 1/2	27 1/2	28 1/2
29 1/2	30 1/2	31 1/2	32 1/2	33 1/2	34 SKIP	35 1/2

Decreasing Estrogen Protocol Example (continued)

MONTH-AT-A-GLANCE BLANK CALENDAR						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
36	37	38	39	40	41	42
1/2	SKIP	1/2	1/2	SKIP	1/2	1/2
43	44	45	46	47	48	49
SKIP	1/2	SKIP	1/2	SKIP	1/2	SKIP
50	51	52	53	54	55	56
1/2	BEGIN BIEST					
57	58	59	60			

Conversion Considerations - *Estrogen*

High variance of degree of symptoms of withdrawal among individuals

- Patients should be allowed to decrease dose at a rate that doesn't make them miserable.
 - Some patients have stopped Conjugated Estrogens completely in 1-2 weeks.
 - Some patients have taken up to a year to obtain a low dose.
- Patients on supraphysiologic doses of estrogen for a long duration may take longer to lower dosages.



CONVENTIONAL MALE HRT

Male HRT

Manufactured products provide supraphysiologic doses of testosterone

- Medical profession told that venous serum levels were appropriate to monitor testosterone levels for topical/transdermal therapies.
 - Manufacturers invented the word “delivered” and redefined the words “absorption” & “bioavailable” in explaining monitoring of their products.
 - Young adult males produce 5-10 mg of testosterone daily.



Male HRT

- **Topical application of 25 mg of testosterone is a supraphysiologic dose.**
- **Weekly injections may be close to physiologic on the average, but provide supraphysiologic amounts immediately and shortly following the dose.**
 - Increase in conversion to Estradiol
 - Increase in potentially dangerous estrogen metabolites



Male BHRT

Decreasing supraphysiologic dosage of testosterone in males can lead to withdrawal symptoms.

- Lethargy, depression, fatigue, erectile dysfunction, even suicidal thoughts.
- Need to taper down testosterone dose over time.



Male BHRT

Tapering Testosterone

- No established protocols.
- For patches, I change to topical administration to make tapering easier.
- I ask patient to stop testosterone until they start feeling worse.
- Patient then goes back on a reduced dose for no longer than the number of days they went without it.
 - Example: if patient tolerated 6 days off of testosterone, then they take the reduced dose for no more than 6 days, then go off of hormone again.
- With each stoppage, go back at lower dose, and keep patient on for original number of days.
- Decrease dose by 20-25% with each reduction until physiologic dose/levels are obtained.

Last Thought

For topical administration of hormones, I suggest not to dose every day.

- To prevent accumulation of hormone.
- Dose 6 out of 7 days each week, skipping the same day each week.
- If patient feels worse on day they skip their hormone (rare), then they can try skipping one day every other week, or once a month.



Thank You!



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