



ESTRADIOL LEVELS AND SERUM LIPIDS

Frank Z. Stanczyk et al. American Journal of OB/GYN, Volume 159, No. 6 A Randomized Comparison of Non Oral Estradiol Delivery in Post-Menopausal Women.

- **Pellets produce more reproducible estrogen levels faster and remain steady longer than patches.** Estradiol levels with patches were less than half of pellet patient levels and fluctuated widely.

SIGNIFICANT INCREASE IN HDL

Maturitas 1984: 5: 177-84, Linda Cardozo

- **HDL increased at 12 weeks with pellets** (sub-cutaneous hormone implants: bio-identical estradiol and testosterone).
- **24 weeks with patches**
- **Hot flashes were resolved in 100%** of patients.
- **Depression resolved in 99%**
- **Loss of libido resolved in 92%**

76% REDUCTION IN HOT FLASHES

Lobo RA. Fertil Steril 2009; 92:1025 and Lindsey R. Fertil Steril 2009; 92:1045

- Using CEE and Bazedoxifene demonstrated 76% success in hot flash reduction
*This is but one example of the **inferiority of synthetic HRT** vs Bio-identical hormone pellets.*

DECREASED TOTAL CHOLESTEROL, SERUM TRIGLYCERIDES, AND INCREASED HDL.

Susan Davis, et al Menopause Volume 7, No. 6, pp.395-401

- Using subcutaneous bio-identical hormone pellets

*This again is **superior to oral HRT** where triglycerides are increased and there is a null effect on HDL.*

BONE DENSITY

Studd, J WW, et al (1990) Am Journal OB/GYN 163, 1474-1479

- Testosterone and estradiol pellets increased BMD 8.3% per year vs 1-2% for oral HRT.

BONE DENSITY

Morris Notelovitz et al Obstetrics & Gynecology, Volume 70, No. 5, Nov 1987 Metabolic & Hormonal Effects of 17-B-Estadiol Implants

- Two year study: **marked increase in bone density with no adverse** effects were noted in the coagulation inhibition and fibrinolysis assays **in the pellet patients**
- Multiple others showing similar results
Testosterone that stimulates the osteoblast working with the estradiol inhibiting the osteoclast.

THE BRAIN

Intl. Journal. Alzheimer's Disease; 2012: 1-18

- HRT and particularly ERT plays an efficacious role in **preventing neurodegenerative conditions.**
- 17B Estradiol reduced risk for Alzheimer's disease.
- Minimizes cognitive decline in otherwise healthy women
- Estradiol (E2) protects against B-amyloid induced degeneration.
Progestins may actually dampen this affect.
- Compared to E2 users vs Non-users E2:

For avg. 15 years had increased cerebral blood flow

CEREBRAL METABOLIC ACTIVITY

Psychoneuroendocrinology 2010; 36:502-513, Silverman et al looked at

- 17B Estradiol vs CEE vs CEE plus progestin on 17-B Estradiol performed the best on verbal memory (an early warning of Alzheimer's disease) by more than 3 standard deviations.

CEREBRAL METABOLIC ACTIVITY

Pike,CJ: *Frontiers in Neuroendocrine* 30(2009):239

- *Both* Estrogen and Testosterone have neuro-protective roles. Women with lower E2 levels have an even greater risk of AD.
- There is overwhelming evidence that E and T help decrease apoptosis. Protective effect of both hormones *decreases* beta amyloid deposition.

THE HEART

Zmuda J., Amer. J. Card. 1996; 77:1244-1247

- Multiple benefits including men given aromatize-able testosterone
- Increase blood flow to the coronary arteries (even in patients with C.A.D.)
- Decrease plaque in the coronary arteries
- Decrease inflammation in the coronary arteries

Coupled with the lipid data above is impressive and safe way to reduce the number one killer of men and women in America.

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Zmuda J., Atherosclerosis. 1997; 130:199-202, and Collins P.

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THE BREAST

Dimitrakakis and Bondy. Breast Cancer Research 2009; 11:212

- Protected by the use of estradiol and testosterone
- Clinical and non-human primate studies suggest androgens inhibit mammary epithelial proliferation and breast growth. Estrogen, particularly in oral form, ***stimulates SHBG and reduces free testosterone.***

Testosterone is being used worldwide as a treatment for breast cancer.

THE BREAST

Glaser R. Menopause: The Journal of the North American Menopause Society Vol. 21, No. 6

Rebecca Glaser M.D., a renowned breast cancer surgeon: Testosterone pellets reduce significantly tumor volume in an active breast cancer patient. Patient achieved physiologic testosterone blood levels.