Estrogen Therapy in the Twenty-First Century—Beyond the Myths

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My objective is go beyond cultural myths (such as "*Estrogen is what makes a girl a girl*" or "*Estrogen is women's elixir of youth")* to provide accurate information about what is normal in women's reproductive lives. In the past many believed that all menopausal women needed "hormone replacement therapy". The results of major randomized controlled trials such as the Women's Health Initiative hormone studies show us that the pill estrogen (conjugated equine estrogen) alone or with progestin (a synthetic knock-off of natural progesterone) caused more harm than benefit. We also now know that estrogen with *progestin* increases breast cancer. Note: progesterone and progestin are totally different. Progestins only need to be proven to change the lining of the uterus and usually have many different cellular effects.

The new concepts are: 1) menopause and its low hormone levels are normal; 2) progesterone is likely as effective, and safer than, estrogen for treating hot flushes/flashes and night sweats; 3) Ovarian Hormone Therapy (OHT) of estradiol and progesterone, or progesterone alone, in life phase-appropriate therapy can safely be used to restore a normal hormonal balance for symptomatic women.

Estrogen is really three hormones:
1. ***Estradiol***: the ovarian hormone of the menstruating woman,
2***. Estrone***: the hormone of menopausal women, and
3. ***Estriol***: the hormone of the pregnant woman.
Estradiol is the commonly available bio-identical hormone used for treatment.

Estradiol is only one part of women's balanced hormonal system—we should always think of estradiol *and* progesterone (women's other important reproductive hormone) *together*. Estradiol is an important hormone for young women's health—it is a powerful growth stimulator causing cell proliferation in every tissue and also preventing bone loss. However, estradiol must be balanced by progesterone to be effective as well as safe.

Progesterone is the hormone of the second half of a menstrual cycle in which ovulation (egg release) has occurred. Progesterone is initially a growth-stimulator but then acts to slow growth while encouraging cells to mature and do their special jobs. Progesterone halts estrogen-related overgrowth. In bone—estrogen slows bone loss while progesterone promotes building of new bone and bone strength.

In **perimenopause**, the transition from regular menstrual cycles to menopause, estradiol levels are unpredictable and usually higher than in younger women; progesterone levels are lower and often absent. In **menopause** it is normal to have low estradiol and progesterone levels. Menopause is the life phase that begins one year after the last flow, or whenever both ovaries are surgically removed.

Some general cautions about hormone therapy:

1. Never take *oral* or pill-type estrogens. This form of estrogen causes risks for serious blood clots. Pills have no advantages over taking bio-identical estradiol absorbed through the skin (as a patch or gel).
2. Never take estradiol alone, meaning without progesterone. A woman who has had a hysterectomy still has breasts, brain and bones that also need progesterone. Estradiol plus progesterone (in contrast to estrogen combined with *progestins*) is ***not*** associated with increased breast cancer risk in two large observational studies from France.

Effective & Safe Reasons for Ovarian Hormone Therapy

1. **Cyclic oral micronized progesterone** (Prometrium® or compounded) therapy http://www.cemcor.ubc.ca/resources/cyclic-progesterone-therapy for *irregular* or *skipped cycles*, *heavy flow*, *acne* or risks for *osteoporosis* in teens, young adult and perimenopausal women. Effective non-hormonal (barrier + spermicide or copper IUD) contraception is needed.
2. **Cyclic progesterone therapy** (link in #1) for *night sweats/hot flushes*, *premenstrual breast tenderness, fluid retention* and *mood swings* in very early perimenopausal women with regular menstruation. (Non-hormonal birth control is needed).
3. **Estradiol** (as a patch or gel) in normal menstrual cycle doses days 1-25 of the month with **oral micronized progesterone** 300 mg at bedtime days 14-27 of the month for *early menopause—1 year without flow and high FSH levels at age 40 or younger*. Continue both until aged 52. Follow these instructions for stopping http://www.cemcor.ubc.ca/resources/stopping-estrogen-treatment-sometimes-called-%E2%80%9Chrt%E2%80%9D.
4. **Estradiol** (as a patch or gel) in normal menstrual cycle doses days 1-25 of the month with **oral micronized progesterone** 300 mg at bedtime days 14-27 of the month for menopause (1 year without flow) *in a woman younger than 45 who has both a low bone density/or past fragility fracture plus hot flushes/flashes and night sweats* disturbing sleep. Continue both for five years and follow link in #3 for instructions about stopping.
5. **Oral micronized progesterone** 300 mg at bedtime daily for sleep-disturbing moderate-severe *hot flushes/flashes and night sweats* in a perimenopausal or menopausal women. Stop treatment once a year to see if the night sweats have gone away. If they have not ended, restart therapy.
6. **Oral micronized progesterone** 300 mg at bedtime *daily* for three months in a young adult or perimenopausal woman with *persistent heavy flow* and *low blood count/anemia*. Transition to **cyclic progesterone** (see link in #1.)
7. **Oral micronized progesterone** 300 mg at bedtime *daily* for a highly symptomatic perimenopausal woman who has *classic migraine headaches* and would otherwise take *cyclic* progesterone. Going on and off progesterone may trigger migraines.
8. **Vaginal estriol cream** 0.5 mg once a week applied by finger to the outer 1/3 of the vagina helps if *vaginal discomfort with intercourse* persists despite gentle and frequent sex while using non-hormonal lubricants.