Menopause
Menopause

- Feared event
- To many, it indicates “old age” - a sign of life coming to a close.
- Many expect a difficult psychological adjustment to menopause (bad press, bad jokes).
Age of Menopause

- In 1900, average age of menopause = 45 years
  - Average life span for women = 49 years
- Today, the average age of menopause is about 51 (typical range = 45 and 55).
  - Average life span for women in US = 81.6 years (data for 2015 from WHO – 33rd in world!)
  - Can expect to live more than 30 years post-menopause
Age of Menopause

Factors associated with early menopause:

- Early menarche (<11) is a risk factor for premature menopause (<40) and for early menopause (40-44)
- Nulliparity (no pregnancies) compounds that risk
- Women who smoke tend to experience menopause about 2 years earlier than non-smokers.
Menopause

- Cessation of monthly periods
- Result of a prolonged series of physiological and hormonal changes
  - a rapid decrease in the number of remaining ovarian follicles
  - remaining follicles less sensitive to FSH and LH
  - result is estrogen level too low to stimulate endometrial growth - therefore no menses
A woman is said to have gone through menopause when she has had no menses for 12 consecutive months.
Menopause

- Like menarche, menopause is the most noticeable part of an ongoing biological change.
- Physical and hormonal changes begin years before the cessation of menses and continue for years after menopause.
Menstrual changes can be rapid and abrupt or gradual.

Cycles may be irregular for a time. They may shorten or lengthen.

Some women experience periods with heavy bleeding prior to menopause.
Endocrinology of Menopause

- Relative cessation of estrogen and progesterone production by the ovaries.
  - Some small estrogen production may continue for as long as 10 years after menopause.
Endocrinology of Menopause

- Relationships between hormones stay the same, so:
  - Very low estrogen stimulates GnRH
  - GnRH stimulates FSH and LH
  - Not much estrogen produced in response to LH and inhibin very low.
  - GnRH increases causing FSH and LH to increase
  - GnRH, FSH and LH levels high post-menopause (opposite of pre-puberty).
Endocrinology of Menopause

- No decrease in sex steroids from the adrenal cortex.
  - Androstenedione from adrenal cortex becomes precursor of estrone.
  - Conversion of androstenedione to estrone occurs in fat.
  - Higher body fat = higher estrone. Obese women often show fewer symptoms of estrogen decline.
Estrogen (Replacement) Therapy - ERT

- ERT = daily treatment with estrogen either orally or by skin patch.
- Increased risk of endometrial cancer so it is rarely used for women with an intact uterus.
Hormone (Replacement) Therapy - HRT

- Sequential administration of estrogen and then progesterone (pills or skin patch).
- Results in cyclic (not necessarily monthly) bleeding (periods).
Hormone (Replacement) Therapy - HRT

- Study by Women’s Health Initiative showed increased risk of:
  - breast cancer
  - cardiovascular disease
  - stroke
  - thromboembolic events

- More recent work shows that while HRT does not increase the risk of developing lung cancer, it seems to be correlated with increased death rate if develop lung cancer.
Bioidentical Hormones

- Both FDA approved and non-approved versions available.
  - Difference in the strictness of manufacturing and availability on information on effectiveness.
  - FDA-approved versions have been found effective for treating many menopause symptoms.
- No large controlled studies so unclear whether risks are same as or different from traditional treatment.
Hormone Treatments

- Should only be used to treat symptoms that are interfering with the woman’s normal functioning
- Length of treatment should be as short as possible
- This holds no matter what hormones or how they are administered
Hot Flashes

- Most common symptom of menopause (In the US, 80% of all menopausal women experience them. Women in some cultures do not report hot flashes.)

- Frequency and severity vary

- Stop when body adapts to reduced estrogen.
Hot Flashes

- ERT/HRT (and bioidentical equivalents) will stop hot flashes but they will return when therapy stopped.

- Diets high in soy products or sesame can raise estrogens.

- Soy supplements available but unregulated. Safety and effectiveness of undetermined.

- Black Cohosh also has estrogenic action and recent studies suggest it is effective.
Genital Changes

- Genitourinary Syndrome of Menopause (GSM)
- Loss of fat in labia may leave the clitoris more exposed and more sensitive.
- Decreased vaginal lubrication - may make intercourse or vaginal exams painful.
- Decrease vaginal acidity may increase the risk of vaginal infections.
Genital Changes

- ERT/HRT and bioidentical treatment can reverse all genital changes.
- Localized treatment with an estrogen-containing cream can reverse vaginal symptoms.
Genital Changes

- Use of a **water soluble lubricant** like KY jelly® at the time of intercourse can provide the needed lubrication.
- Replens®, a non-hormonal vaginal cream, draws water into the vagina decreasing vaginal dryness. Can reduce pain of intercourse and vaginal exams.
- Drink lots of water. Water is needed to lubricate the vagina.
Sex Drive

- Effects vary and reasons not known.
- Some women report increased sex drive.
  - Reduced fear of pregnancy.
  - Children out of home.
**Sex Drive**

- Others report decreased sex drive.
  - Testosterone patch designed to increase sex drive recently sent back for further testing.
  - ERT/HRT can increase sex drive in some cases. No data on bioidenticals. Need to balance any benefits of hormone treatment with risks of the treatment.
Osteoporosis

- Loss of calcium from bones.
- Most common in light-skinned women of Northern European or Asian descent – rare (but still occurs) in Hispanic and African American women.
- More common in lean than in obese women.
Osteoporosis Risk Factors

- Being Caucasian or Asian
- Being tall and thin or small boned.
- Having a sedentary life style
- Taking thyroid hormones
- Smoking
- Early menopause or surgical menopause
Osteoporosis Treatments

- ERT/HRT will stop loss but won’t repair damage already done.
- Non-estrogen treatments (bisphosphonates), such as Fosomax®, Boniva®, Reclast®, increase bone density (but may not be good for long-term use – serious bone fractures reported with long-term use).
- Weight-bearing exercise and adequate calcium can decrease bone loss.
Psychological Symptoms

- Increase in depression for women between the ages of 45 and 55.
- Unrelated to menopause - may be related to loss of major female social role or societal attitude toward aging.
- No effect of ERT or HRT overall but can be helpful for some women.