Menopause

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Definition

* Climacteric
  * The phase in the aging process of women marking the transition from the reproductive stage of life to the non-reproductive stage

* Menopause
  * Menopause is defined by complete, or near complete, ovarian follicular depletion and absence of ovarian estrogen secretion.
Menopause

- 12 months of amenorrhea after the final menstrual period.
- FSH and LH increases
- Women sex hormones decreased.
Age at menopause

- Although the average age at menopause is approximately 51 years
- **Late menopause**: 5 percent of women, it occurs after age 55 years
- **Early menopause**: 5 percent of women, it occurs between ages 40 to 45 years
Changing hormone levels with menopause
## Normal ovarin cycle

<table>
<thead>
<tr>
<th>Gonadotrophic hormone levels</th>
<th>FSH</th>
<th>LH</th>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Ovarian cycle</th>
<th>Follicular phase</th>
<th>Ovulation</th>
<th>Luteal phase</th>
<th>Progesterone</th>
</tr>
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<table>
<thead>
<tr>
<th>Ovarian hormone levels</th>
<th>Estrogen</th>
<th>Inhibin</th>
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</table>

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Menopausal and postmenopausal hormonal levels

![Graph showing hormonal levels during menopause and postmenopause.](image)

**Fig. 2.9.** Decline in estrogen, progesterone, FSH and LH levels with age and menopausal status.
Target organs of Estrogen

- Bone
- Urogenital
- Vasomotor
- Heart
- Breast
- Eyes
- Teeth
- Colon
Universal signs of menopause

- Cessation of menses
- Vaginal dryness
- Skin changes
- Bone loss
Non-universal changes
Consequences of Estrogen Loss

- Hot flashes
- Sleep disturbance
- Urogenital Atrophy
- Osteoporosis
- Skin Dryness
- Aging

Cultural differences
Bone loss with aging

Illustrations by: Simeon Liebman
Osteoporosis

* A bone thinning disease that sets the stage for serious fractures
Osteoporosis

Osteoporosis is associated with fracture:

- Vertebral
- Distal radius
- Femoral neck
Prevention of osteoporosis

- Change lifestyle risk factors
- Exercise
- Adequate calcium / vitamin D intake
- Hormone Replacement Therapy
- Alendronate
- Raloxifene
Cardiovascular disease

- Rapid increase in mortality and morbidity from cardiovascular disease after menopause
  - Coronary heart disease (CHD)
  - MI
  - Stroke
  - Pulmonary Embolism
Prevention of cardiovascular disease

- Healthy lifestyle
- Diet
- Avoid smoking
- Control of:
  - Hypertension
  - Diabetic
  - Hyperlipidaemia
- H RT?
  - HDL ↑, LDL ↓, Lipoprotein ↓
  - Insulin sensitivity ↑
  - Vascular dilatation
Hot flashes
Hot flashes

- Hot flashes typically begin as a sudden sensation of heat centered on the face and upper chest that rapidly becomes generalized.
- Peripheral vasodilatation, profuse perspiration followed by chills.
- Sudden onset, seconds to minutes (2 - 4 minutes).
Hot flashes

- Unknown etiology.
- Thermoregulatory dysfunction
- 75% of menopausal women complain of hot flashes
- 20% seek therapy.
- Self limited to 1-5 years.
Avoid hot flash

- Alcohol
- Caffeine
- Spicy foods
- Hot foods and drinks
- Warm environment
- Stress
- Smoking
Tip for Patients

- Wear cotton
- Wear open neck shirts
- Keep ice water on hand
- Sleep with fewer blankets
- Take cool shower before bed
- Eat smaller, more frequent meals
- Limit caffeine and alcohol
- Stop smoking
Night Sweats

- Hot flashes can arouse from sleep and primary sleep disorders more common
  - Irritability
  - Anxiety
  - Fatigue
  - Forgetfulness
  - Inability to concentrate
Therapies

- **Estrogen** is most effective
  - If women has uterus give with progesterone
  - Short term therapy
  - Taper to end

- **SSRIs** are One of first choices if not taking HRT.

- **Gabapentin** is suggested for nocturnal hot flashes
Therapies cont...

- Progestins
- Clonidine (alpha adrenergic agonist)
- Phytoestrogens
- Herbal (Black Cohosh)
- Vitamins
Urogenital Atrophy

- **Estrogen deficiency:**
  - pH >4.5
  - Leads to thinning of epithelium
    - Vaginal atrophy:
      - Lack of the normal rugae
      - Pale
  - Vaginal dryness
  - Frequent UTI
Vaginal dryness

- Sexual dysfunction
- Dyspareunia
- Postcoital bleeding
- Itching
- Urethritis
- Urinary incontinence
**Therapies**

- **Topical estrogen:**
  - **Vaginal Cream**
  - **Vaginal tablet**
  - **Vaginal ring**
Central Nervous System

- Psychological
- Anxiety
- Depression
- Cognition
- Memory
Skin Dryness

* Estrogen deficiency:
  * Can lead to reduced collagen content of the skin and bones.
  ✫ Thinning of epidermis
  ✫ Atrophy of sebaceous glands
  ✫ Increased aging and wrinkling of the skin.

* Increased sensitivity to temperature, humidity, and trauma