MENOPAUSE: THE CHANGING LANDSCAPE OF HRT

IPAS CONFERENCE
OCTOBER 8, 2014

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Outline

- Terminology & Statistics
- Treatment
  - Focus: Hormone Therapy
    - Estradiol
    - Progesterone
    - Testosterone
- Patient-based Discussion

Objectives

1. To understand menopause terminology
2. To understand common menopausal symptoms and cause of symptoms
3. To understand the basic differences between Hormone Replacement Therapy (HRT) and Bio-identical Hormone Therapy (BHIT)
4. To understand how to initiate estradiol and progesterone therapy

Integrative Medicine
What is Integrative Medicine?

- Healing-oriented medicine
- Takes account of the whole person
- Emphasizes the therapeutic relationship between patient and provider
- Makes use of all appropriate therapies, conventional, complementary and alternative
- Good medicine is based in good science
- IM providers lead change by example

North America Menopause Society (NAMS) Terminology

Menopause

- Traditional definition
  - That point in time when permanent cessation of menstruation occurs following the loss of ovarian activity (Speroff, et al., 1994)
Peri-menopause

- Peri-menopause
  - The period immediately before and after the menopause
- Climacteric
  - The period of time when a woman passes through a transition from the reproductive stage of life to the postmenopausal years, a period marked by waning ovarian function

Terminology

<table>
<thead>
<tr>
<th>Menarche</th>
<th>Menstrual Change</th>
<th>Date of FMP* = Menopause</th>
</tr>
</thead>
<tbody>
<tr>
<td>Premenarche</td>
<td>Pre-Menopause</td>
<td>Peri-Menopause</td>
</tr>
<tr>
<td>8-16 years</td>
<td>5 – 45 years</td>
<td>45 - 55 years</td>
</tr>
</tbody>
</table>

*(Speroff, 1994)*

Menopause Statistics

- 90% of women suffer menopausal symptoms due to loss of ovarian function (estrogen, progesterone, testosterone)
- 50% of US women will seek help from medical professionals to address menopausal symptoms
- 25 million US women will become menopausal within the next 10 years (6000 women every day)
- 1.1 billion women worldwide will become menopausal by the year 2025

Symptoms associated with menopause

- Hot flashes/night sweats
- Vaginal dryness/dyspareunia
- Mood changes
- Insomnia
- Sleep disturbances
- Weight gain
- Urinary symptoms
- Cardiovascular changes
- Skin & hair changes

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Menopause Rating Scale (MRS)

Developed by the Berlin Center for Epidemiology and Health Research

Goal: to measure the severity of aging-symptoms and their impact on the health-related Quality of Life

Somatic: 1-3, 11
Psychological: 4-7
Urogenital: 8-10

Hormones of interest

Normal Menstrual Cycle

Life Cycle Estrogen & Progesterone

Estrogen

Progesterone
Estrogen + Progesterone

Perimenopause and Hormones

Perimenopause

Bith - Teenage - Adulthood - Older ages

- Estrogen
- Progesterone

Treatment Pathways

- Wise Woman Tradition
- Medicinal Symptom Control
- Long-term Chronic Disease Reduction

Lifestyle Modification

- Nutrition
  - Portion control
  - Complex carbohydrates, lean protein, oils
  - Eat organic, when possible
  - Alcohol consumption: 0-1 drinks per day (red wine)
- Supplements
  - Vitamins: M, K, D3, B Complex
- Exercise
  - Aerobic 30 minutes 6/7 days per week
  - Muscle strengthening, balance, stretch 30 minutes 2 x per week
  - Sleep: 6-7 hours per night
- Stress management
- Smoking cessation
- Socialize
- Spiritual practices

Physical Activity and Structural Balance

Environmental Balance

Stress Reduction

Relationship & Social Balance

Spiritual Balance

Macro and Micro Nutrition and Water

Sleep and Restoration

Lifestyle Modification
Wise Woman Tradition

- **Do nothing:** sleep, meditate, unplug, back to nature
- **Collect information:** learn, support each other
- **Engage the energy:** prayer, aromatherapy, color therapy, laughter, ritual, visualization
- **Nourish & Tonify:** Herbal infusions, lifestyle modification
- **Stimulate/sedate:** water therapy, acupuncture, botanical therapy, massage
- **Supplements**

### Hormone Replacement Therapy (HRT)

### Synthetic Hormones - Estradiol

- **Natural Estradiol**
- **Synthetic Estradiol**

### Synthetic Hormones - Progesterone

- **Progesterone**
- **Medroxyprogesterone Acetate**
Synthetic Estrogens

- Estradiol (E2) is eliminated within hours
- Conjugated Equine Estrogen (CEE) remains in bloodstream for up to 13 weeks
  - Estrogen breakdown enzymes break CEE down less effectively
- CEE is ~200x more potent than E2!

HRT Studies (E or E+Progestin)

- Women’s Health Initiative (WHI)
  - E+P increased risk of breast cancer and VTE/Stroke
  - E+P increased risk of MI if initiated ≥ 10 years after menopause
  - E only did not cause breast cancer if used up to 7 years
  - E and E+P decreased hip and vertebral fractures
- Nurses’ Health Study (NHS)
  - E-only ≥ 5 years increases breast cancer risk
- Heart Estrogen/Progestin Replacement Study (HERS)
  - A 50% increase in cardiovascular events during first year
- Postmenopausal Estrogen/Progestin Interventions (PEPI)
  - All treatment groups: decreased LDL, decreased fibrinogen, increased HDL, increased CRP
  - 1/3 of women with a uterus assigned to unopposed estrogen developed adenomatous or atypical hyperplasias
- Million Women Study
  - Transdermal estrogen-only therapy did not increase risk of VTE

“"We do the best we can with the tools available to us at the time.
And, when we know better, we do better.”

~ Maya Angelou
**Bioidentical Hormone Therapy**

BHT

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**Hormone Therapy**

- Synthetic (HRT)
- Bio-Identical (BHT)

**Pharmaceutical Grade**
- Standard Pharmacy
- Insurance Coverage
- FDA Regulations
- Limited Studies

**Compounded Hormones**
- Out-of-pocket Expense
- Self-regulated
- Lacking Scientific Studies

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### “Bio-identical Hormones”

- **Definition**
  - Bio-identical: hormones that are chemically identical to the hormones produced by the body
  - 17-beta-estradiol, estrone, estradiol, progesterone, testosterone
  - Options
    - Pharmaceutical
      - 17-beta estradiol
      - Estrace, Vivelle, Estraderm, Climara
    - Progesterone
      - Prometrium
      - Crinone, Prochieve vaginal gels
      - OTC yam-based, i.e. Pro-Gest
    - Compounded
      - Bi-est, Tri-est creams
      - Progesterone creams, lozenges, sublingual

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### Statements from ACOG & ASRM

- The American College of Obstetricians and Gynecologists’ Committee on Gynecologic Practice and the Practice Committee of the American Society for Reproductive Medicine make the following conclusions and recommendations:
  - Evidence is lacking to support superiority claims of compounded bioidentical hormones over conventional menopausal hormone therapy.
  - Customized compounded hormones pose additional risks. These preparations have variable purity and potency and lack efficacy and safety data.
  - Because of variable bioavailability and bioactivity, both underdosage and overdosage are possible.
  - Conventional hormone therapy is preferred over compounded hormone therapy given the available data.
  - Despite claims to the contrary, evidence is inadequate to support increased efficacy or safety for individualized hormone therapy regimens based on salivary, serum, or urinary testing.

(ACOG Committee Opinion, No. 532, August 2012)
North American Menopause Society:

“The FDA has ruled that compounding pharmacies have made claims about the safety and effectiveness of BHT unsupported by clinical trial data and considered to be false and misleading. Pharmacies may not compound drugs containing estriol without an investigational new drug authorization. The FDA also states that there is no scientific basis for using saliva testing to adjust hormone levels.”

- NAMS, 2010

**Natural Estrogens**

<table>
<thead>
<tr>
<th>Natural Estrogens</th>
<th>To Remember:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estrone, E1</td>
<td>• “one” = 1  (“bad”)</td>
</tr>
<tr>
<td>Estradiol, 17β-estradiol, E2</td>
<td>• “Di” = 2  (“medium”)</td>
</tr>
<tr>
<td>Estriol, E3</td>
<td>• “Tri” = 3  (“best”)</td>
</tr>
</tbody>
</table>

**Estrogen**

- Different endogenous estrogens have different origins:
  - E1 (estrone) from adipose tissue
  - E2 (estradiol) from the ovary
  - E3 (estriol) from the placenta during pregnancy and from conversion of estrone

**Estrone (E1)**

- Estrone (E1)
  - The main estrogen the body makes after menopause
  - High levels stimulate breast & uterine tissue
  - Before menopause: Made in ovaries, adrenals, liver, fat cells; converted to E2 in ovaries
  - After menopause: Made in fat cells, liver, adrenal; little conversion to E2
<table>
<thead>
<tr>
<th>Estrone (E1)</th>
<th>Estradiol (E2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Estrone (E1)</td>
<td>- Estradiol (17β-estradiol; E2)</td>
</tr>
<tr>
<td>- Obesity: increased E1:E2 ratio</td>
<td>- Strongest estrogen</td>
</tr>
<tr>
<td>- Alcohol consumption shifts production to E1</td>
<td>- 1.2x stronger than E1</td>
</tr>
<tr>
<td>- Selectively activates estrogen receptor sites that increase cell proliferation; has greatest risk of stimulating breast cancer</td>
<td>- 80x stronger than E3</td>
</tr>
<tr>
<td></td>
<td>- Predominant estrogen before menopause</td>
</tr>
<tr>
<td></td>
<td>- High levels associated with increased risk breast &amp; uterine cancer</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Estriol (E3)</th>
<th>Estriol (E3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Estriol (E3)</td>
<td>- Provides less bone, heart, brain protection than E2</td>
</tr>
<tr>
<td>- Least stimulating effect on breast and endometrium</td>
<td>- Has been shown to have some positive effect on bone and cholesterol</td>
</tr>
<tr>
<td>- Shown not to promote breast cancer</td>
<td></td>
</tr>
<tr>
<td>- Evidence indicates protective effect against breast cancer by blocking estrone in estrogen receptor sites on breast cells</td>
<td></td>
</tr>
<tr>
<td>- Asian &amp; vegetarian women have higher levels of E3, much lower rates of breast cancer</td>
<td></td>
</tr>
</tbody>
</table>
Estrogen metabolism

Important Estrogen Metabolites

- Estrone breaks down via three competing pathways:
  - 2-hydroxyestrone
  - 16-hydroxyestrone
  - 4-hydroxyestrone
### Important Estrogen Metabolites

- **2-Hydroxyestrone**
  - "Good" estrogen
  - Does not stimulate cell division
  - May inhibit other estrogen products from binding to receptors
  - Felt to be “anti-cancerous”

- **16-Hydroxyestrone**
  - "Bad" estrogen
  - Highly active
  - Strong stimulatory effect on cell division
  - Associated with increased risk of breast cancer
  - Permanently binds to receptors (unlike other estrogens)

- **2:16 Hydroxyestrone ratio**
  - Low 2:16 Hydroxyestrone ratio associated with higher breast cancer risk
  - Breast cancer survival rate is greater in women with higher ratios
  - For 2-hydroxyestrone to be protective, must be methylated by enzyme, COMT
  - Elevated serum homocysteine suggests poor methylation

### Important Estrogen Metabolites, cont.

- **16-Hydroxyestrone, cont.**
  - Obesity
  - Hypothyroidism
  - Pesticide toxicity (organochlorines)
  - Omega-6 fatty acid excess
  - Inflammatory cytokine production
  - But... small amount necessary for osteoporosis protection
**Factors that support methylation (promote higher 2:16 Hydroxyestrone ratio)**
- S-adenosyl-L-methionine (SAMe)
- Methionine
- Vitamins B2, B6, B12
- Folic Acid
- Reducing catecholamine production by decreasing stress

**Important Estrogen Metabolites**

**4-Hydroxyestrone pathway**
- Minor pathway
- May enhance cancer development
- Higher in patients deficient in methionine and Folic acid
- Women with uterine fibroids may have increased levels of 4-hydroxyestrone
- Equine estrogens increase metabolism to 4-hydroxyestrone
- Studies show equine estrogen causes mutagenic damage 5x more rapidly than natural forms of 4-hydroxyestrone

**How can we elevate 2-hydroxyestrone levels (and raise 2:16 ratio)?**
- Moderate exercise
- Cruciferous vegetables
- Flax
- Soy
- Kudzu (source of isoflavones)
- Rosemary, turmeric
- Weight loss

**Broccoli derivatives**
- Indole-3-carbinol
- Diindolymethane (DIM); metabolite of I-3-C
- Sulforaphane glucosinolate
- High-protein diet
- Omega-3 Fatty Acids
- Vitamins B6, B12 and Folate
### Medical Risks of NOT Taking Estrogen

- Sexual dysfunction
- Hair loss, facial hair
- Premature wrinkling
- Dry, thinning skin
- Incontinence
- Depression, anxiety
- Loss of teeth
- Loss of vision
- Heart disease
- Stroke
- Decreased memory
- Decreased cognition
- Alzheimer’s disease
- Osteoporosis
- Insulin resistance
- Diabetes
- Colon cancer
- Reduced lung function
- Osteoarthritis
- Falls
- Gout
- Increased mortality

### Estrogen – Potential Side Effects

- Irregular bleeding
- Nausea & vomiting
- Weight gain
- Fluid retention or swelling
- Pounding headaches
- Breast tenderness & swelling
- Hot flashes, sweats, insomnia
- Anxiety, depression
- Mood swings and irritability
- Palpitations
- Excess vaginal bleeding
- Recurrent vaginal yeast infections
- Bleeding
- Joint pain
- Elevated triglycerides
- Unstable blood sugar
- Deep Vein Thrombosis (DVT)
- Pulmonary Embolism (PE)
- Stroke
- Myocardial Infarction with underlying CVD
- Breast cancer
- Uterine cancer
- Ovarian cancer

### Estrogen - Contraindications

- Undiagnosed bleeding
- Estrogen-dependent neoplasia
- Breast Cancer
- Thromboembolic disorder
- Liver dysfunction
- Pregnancy
- Hypersensitivity to treatment

### Estrogen Therapy

#### Synthetic

- Premarin (CEE) (po, pv)
- Menest
- Cenestin
- Enjuvia
- Ogen
- Femring
- Combo (CEE+Progestin)
  - Premphase, Prempro
- Combo (E2 + Progestin)
  - Advilrelle, Angelique, Climara
  - Pro, CombiPatch, Fem HRT, Prefest

#### Bio-identical

- Manufactured (all E2)
  - Estradiol (po, pv)
  - Estrace (po, pv)
  - Vivelle Dot, Climara, Estraderm
  - Evamist
  - Estraderm
  - Estrace and Estriol
  - Vagifem
- Compounded
  - E1 (estrone)
  - E2 (estradiol)
  - E3 (estriol)
Estrogen

- Note:
  - Pharmaceutical grade BHT products only contain estradiol.
  - Compounding pharmacies may offer Bi-Est (E2/E3) or Tri-Est (E1/E2/E3) creams, tablets, etc.

Benefits of Natural Progesterone
(Even if there is no UTERUS)

- Regulates:
  - Menstrual cycle
  - Fluid balance (natural diuretic)

- Protects against:
  - Endometrial cancer
  - Fibrocystic breast changes
  - Breast Cancer
  - Bone loss

Benefits of Natural Progesterone
(Even if there is no UTERUS)

- Supports:
  - Healthy skin, hair nails; prevents hair loss
  - Mental state; natural anti-depressant
  - Thyroid health

Progesterone Therapy

Progesterone occurs naturally with estrogen and should be prescribed concurrently to balance estrogen.
Progesterone – Potential Side Effects

- Bloating, diarrhea
- Nausea, vomiting
- Fatigue, drowsiness
- Dizziness
- Fluid retention
- Weight gain
- Headache
- Mental foginess
- Irritability
- Mild hair loss
- Muscle pain
- Irregular bleeding

Progesterone - Contraindications

- Undiagnosed bleeding
- Progesterone receptor (+) neoplasia
- Breast Cancer
- Thromboembolic disorder
- Liver dysfunction
- Pregnancy
- Hypersensitivity to treatment

Progesterone

- Made in ovaries before menopause
- Some made in adrenals after menopause
- One study showed use of synthetic progesterone increased the risk of breast cancer by 800% compared with use of estrogen alone
- Is the first hormone to wane in the peri-menopause years

Estrogen + Progesterone

- Perimenopause and Hormones

Hormone levels
Bith- Teenage- Adulthood- Older ages

[Graph showing hormone levels during different life stages]
Progesterone Therapy

<table>
<thead>
<tr>
<th>Synthetic</th>
<th>Bio-identical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provera (MDPA)</td>
<td></td>
</tr>
<tr>
<td>2.5, 5, 10 mg</td>
<td></td>
</tr>
<tr>
<td>Norethindrone (Micronor)</td>
<td>0.35 mg</td>
</tr>
<tr>
<td>N. acetate (Aygestin)</td>
<td>5 mg</td>
</tr>
<tr>
<td>Norgestrel (Ovrette)</td>
<td>0.075 mg</td>
</tr>
<tr>
<td>Megestrol acetate (Megace)</td>
<td>20, 40 mg</td>
</tr>
<tr>
<td>Levonorgestrel (Mirina IUD)</td>
<td>0.02 mg/d</td>
</tr>
<tr>
<td>Norethindrone (Micronor)</td>
<td>0.35 mg</td>
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Key Points

- **Manufactured**
  - Prometrium 100, 200 mg
  - Progesterone 100, 200 mg
  - Prostaire gel 4%, 8%
  - Crinone 4%, 8%
  - OTC, e.g., “Pro-gest”
- **Compounded**
  - Cream 3%, 4%, 8%
  - Capsules
  - Sublingual drops
  - Tablets
  - Troches

Testosterone

- Made in ovaries and adrenals
- Reduced levels with age
- E2 levels must be optimized for testosterone to be effective; without E2, testosterone cannot attach to brain receptors
- Given with E2 lowers cardiac risk
- Given alone, increases atherogenic plaque formation
- Natural testosterone recommended as Methyltestosterone (synthetic) may increase liver cancer risk
- Natural testosterone

Measuring Hormones

- Urine and salivary hormone assays are not scientifically validated
- Measuring serum levels of estradiol and progesterone levels are somewhat controversial but can be helpful
Measuring Hormones

Premenopausal guidelines (still menstruating)
- Day 3
  - FSH > 20 c/w menopause
  - LH > 30 c/w menopause
- Day 21
  - Estradiol
  - Progesterone
  - Testosterone

Premenopausal Hormone Guidelines:

<table>
<thead>
<tr>
<th>Hormone</th>
<th>Normal Range*</th>
<th>Optimal</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estradiol</td>
<td>80-240 pg/ml</td>
<td>90-120</td>
<td>(This value should be lower the closer to menses, but not &lt; 80.)</td>
</tr>
<tr>
<td>Progesterone</td>
<td>2.0-17.0 ng/ml</td>
<td>5.0-17.0</td>
<td>(Should be lower the closer to menses but not &lt; 2.0. Peaks second day of cycle.)</td>
</tr>
<tr>
<td>Testosterone</td>
<td>2.2-6.0 ng/dl</td>
<td>3.0-5.0</td>
<td>(Remains fairly stable throughout cycle; test in am if possible. Most women experience optimal libido around 4.0)</td>
</tr>
</tbody>
</table>

*Samples taken within three to twelve days before menses; if hysterectomy or endometrial ablation consider repeating 2 weeks later.

Where to Start

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Case Study 1: Cheryl

- Peri-menopause, irregular bleeding, heavy bleeding, hot flashes, night sweats, sleep disruption, weight gain, irritability, decreased libido
Cheryl

- **CC:** Cheryl is a 45 y.o. G0P0 who presents with irregular bleeding, hot flashes, night sweats, sleep disruption, weight gain, irritability, decreased libido

- **OBGyn Hx:** No pregnancy, same-sex partner, no hx STD, no gyn surgery, no contraception

- **MedHx:** Obesity, anxiety, sleep apnea

- **FamHx:** NC

Cheryl

- **Meds:** Ibuprofen prn for headaches

- **SHx:** Law student, same-sex partner x 12 years, significant stress with no contact from family; EtOH 1-2 glasses of wine per night, no smoking or drugs; Exercise: “walks to school and back every day (1 mile total)”; Diet: 0-1 vegetables daily, fast food 7-10 times per week, 1-2 sodas per day

- **Labs:** Day 3 labs: FSH 15, LH 6; Day 21: estradiol 328, progesterone 0.76

- **PE:** Normal VS, obese, normal affect

Goals

- Become less irritable
- Regulate menses, decrease bleeding
- Sleep better
- Decrease hot flashes

Peri-Menopause

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*FMP = Final Menstrual Period
Estrogen Dominance

- Perimenopausal symptoms
  - Progesterone 100 mg qhs days 1-25 (with break for menses)
  - Estrogen dominance
  - Dietary recommendations
    - DIM 100 mg daily
  - Vitamin D deficiency
    - Ergocalciferol 50,000 IU weekly x 6 months then recheck vitamin D serology
  - Vitamin B deficiency
    - IM injections 1000 mg weekly x 4 then monthly x 5; recheck B12 in 6 months
  - Obesity
    - Reduce fast food to 3 days weekly; 3 day food diary, Mediterranean Diet, reduce alcohol consumption to <5 oz daily
    - Exercise daily: 10,000 steps per day

- F/u 3 months with preclinical labs
  - Progesterone

Cheryl: A&P

- Perimenopausal symptoms
- Estrogen dominance
- Dietary recommendations
- DIM 100 mg daily
- Vitamin D deficiency
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- Reduce fast food to 3 days weekly; 3 day food diary, Mediterranean Diet, reduce alcohol consumption to <5 oz daily
- Exercise daily: 10,000 steps per day
- F/u 3 months with preclinical labs

Case Study 2: Bridgette

- Unknown menopausal status due to hysterectomy: hot flashes, night sweats, difficulty sleeping, vaginal dryness, impaired memory, anxiety, weight gain and palpitations

Bridgette

- CC: Bridette is a 52 year old female G3P2012 who presents for evaluation of worsening hot flashes, night sweats, vaginal dryness, dyspareunia with deep penetration; feels dry, weight gain, decreased concentration, impaired sleep, fatigue, decreased libido, palpitations
- OB/Gyn Hx: NSVD x 2 c/b postpartum depression, LMP 3.5 years ago at time of hysterectomy
- PMHx: Obesity, transient hypothyroidism, vaginal hysterectomy for pelvic organ prolapse, depression
- FHx: mother with breast cancer at age 55, MGM osteoporosis, Mother and brother hypothyroidism, no clotting disorders, multiple relatives with depression/anxiety
Bridgette

- **Medications**: Zoloft 50 mg, MV
- **Social Hx**: married, difficult relationship with spouse, caring for elderly parents, two children in college, works full time as bank executive, husband is a tradesman (plumber) and currently not working
- **Labs**: estradiol 18, progesterone 0.15, FSH 89, LH 32
- **Physical Exam**: obese, normo-tensive, no thyromegaly, mild facial acne, vaginal atrophy

**Goals:**
- Lose weight
- Sleep better (night sweats, nocturia)
- Reduce hot flashes and night sweats
- Get back to being myself again

**Where to Start**

- **Menarche**: 8-16 years
- **Premenopause**: 35-45 years
- **Menopause**: 45-55 years
- **Menstrual Change**: Date of FMP = Menopause
- **Menopause**: 55 years
- **Menstrual Change**: 35-45 years
- **Premenopause**: 35-45 years
- **P**: Progesterone
- **E+P**: Estradiol + Progesterone

- **Likely menopausal**
  - Vivelle Dot 0.05 mg /day changed 2 x weekly
  - Progesterone 200 mg qhs
- **Obesity**
  - Bring in 3 day food diary to next visit
- **Stress**
  - Stress reduction tips
  - Mindfulness Meditation classes
- **Vitamin D insufficiency**
  - 50,000 IU ergocalciferol x 12 weeks then 5,000 IU daily; goal range 40-80 ng/mL
Bridgette: A & P

- Decreased libido likely multifactorial: fatigue, dyspareunia, hormone imbalance, SSRIs
  - Consider d/c Zoloft
  - Consider testosterone therapy
- Dyspareunia
  - Lubricants: Good Clean Love or Liquid Silk
  - DHEA 5 mg per vagina qhs x 4 weeks then MWF
- Sleep dysfunction
  - Melatonin 0.5 mg po qhs increase by 0.5 mg nightly until adequate and not feeling sleepy in the a.m.; average dose 1-3 nightly
  - Sleep hygiene recommendations
- Handouts: Menopause packet, Symptom diary, 3 day food diary

Case Study 3: Donna

- Menopausal with sexual dysfunction: decreased libido, severe dyspareunia, postcoital bleeding, vaginal discharge.

Donna

- CC: Donna is a 64 year old married female, retired primary school teacher. She presents with decreased libido, severe dyspareunia, small amount of postcoital bleeding (“tissues ripping”) and vaginal discharge. Not SA x 6 months due to pain. Previously intercourse 3 x per month. KY Jelly lubricant doesn’t help. Husband has impaired erections.
- OB/GynHx: NSVD x 4, uncomplicated, Gyn Hx: menopausal at age 52, took HRT for a little over 1 year but discontinued due to fear of getting breast cancer, worsening stress incontinence
- PMHx: HTN, overweight, hypothyroid, osteopenia
- FHx: Mother died at the age of 62 from a stroke, father had prostate cancer, sister and brother with thyroid dysfunction

Donna

- Medications: Women’s MV, Vitamin D, B Complex, Fish oil, Niacin
- Soc Hx: Married x 42 years, stable relationship. Children are all grown, self-sufficient, local. Two grandchildren. Parents are both deceased. Husband continues to work fulltime, he owns three fast food restaurants; experiencing erectile dysfunction x 6 months.
- Physical Exam: overweight, mild hypertension, no thyreomegaly, vaginal atrophy, pH 7.4, parabasilar cells, vestibular tenderness, pelvic floor dysfunction
- Labs: estradiol 5, progesterone 0.12, FSH 42, LH 38, etc.
Donna

- Goal:
  - Have a meaningful sex life with her husband again

Post Menopause

<table>
<thead>
<tr>
<th>Menarche</th>
<th>Menstrual Change</th>
<th>Date of FMP* = Menopause</th>
</tr>
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<tbody>
<tr>
<td>8-16 years</td>
<td>35 - 45 years</td>
<td>45 - 55 years</td>
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</tbody>
</table>

Premenarche | Pre-Menopause | Peri-Menopause | Post-Menopause

Menopausal Genital Atrophy

- Menopause
- Decreased libido multifactorial
- Dyspareunia
- Partner’s erectile dysfunction – referral to Urology
- Dyspareunia
- Vaginal dryness – Use vaginal DHEA 5 mg qhs x 14 days then MWF, continue vaginal lubrication with Good Clean Love or Liquid Silk
- GBS vaginitis – PCN 500mg po tid x 14 days + Florajen 1 capsule daily
- Vaginal dryness – Estrace cream / Testosterone 2% cream alternating to vestibule qod
- Vestibulodynia – Pelvic rest for now, referral for pelvic floor physical therapy
- Vaginismus – Pelvic rest for now, referral for pelvic floor physical therapy
- Pelvic Floor Dysfunction – referral for pelvic floor physical therapy
- Suboptimal thyroid function – consider supplement
- Suboptimal Vitamin D – increase supplementation by 1000 IU daily

Donna: A&P
Key Points

- There is no valid role for salivary and urine hormone testing
- Transdermal progesterone is NOT adequate for endometrial protection
- "Yam" preparations must contain USP Progesterone
- Additional Estrone (E1) (e.g. in “Tri-est”) of little benefit due to breast/uterine stimulation

Be well...

Eat less and eat better.
Move more and sleep more.
Surround yourself with good thoughts, good people and good air.
Seek balance.

Resources

- Institute for Functional Medicine
  - http://www.functionalmedicine.org/
- USDA: Choose My Plate.gov
  - http://www.choosemyplate.gov
- NIH Office of Dietary Supplements:
  - http://ods.od.nih.gov/
- Environmental Working Group
  - "Dirty Dozen & Clean Fifteen"
  - http://www.ewg.org
- Natural Medicine Comprehensive Database
  - Herbal and Supplements Reviewed
  - http://naturaldatabase.therapeuticresearch.com
- North American Menopause Society
  - Information and support
  - http://www.menopause.org
- Oldways
  - Information about the Mediterranean Diet
  - http://www.oldwayspt.org/mediterraneandiet

Text References

- Balance Your Hormones, Balance Your Life
  ~ Claudia Welch, MSOM
- Botanical Medicine for Women's Health
  ~ Aviva Romm, MD
- The Hormone Survival Guide for Perimenopause
  ~ Nisha Jackson, PhD
- Integrative Medicine
  ~ David Rakel, MD
- Menopausal Years: The Wise Woman Way
  ~ Susan S. Weed
  ~ North American Menopause Society
- Outliving Your Ovaries
  ~ Marina Johnson, MD
<table>
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