



# **The Q-Spot™: The Menopause Blueprint**

**A step-by step roadmap to mastering your certification exam**

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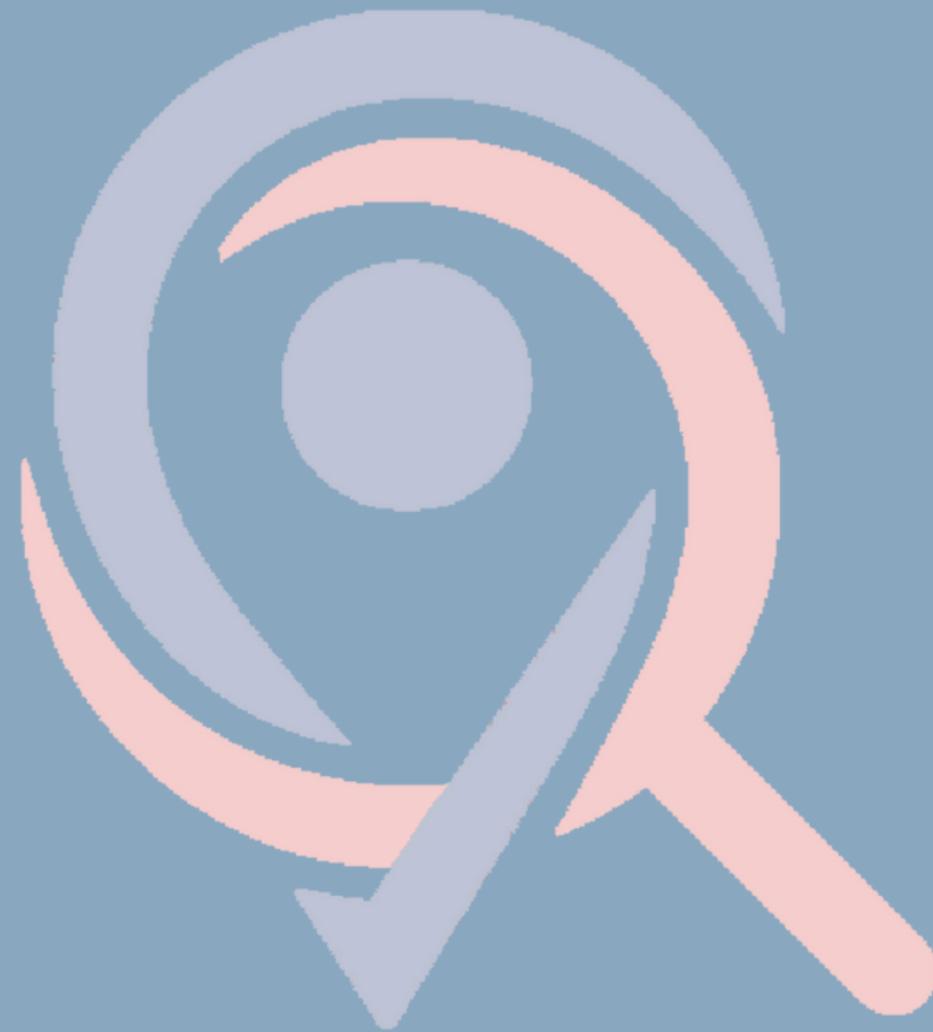
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**Section 3: Chapters 9-11**  
**The Q-Spot™: The Menopause**  
**Blueprint**

**A step-by step roadmap to mastering your certification exam**



## Chapter 9

# Cancers Common in Midlife Women

A comprehensive study guide for healthcare professionals based on the North American Menopause Society's  
Menopause Practice: A Clinician's Guide, 6th Edition

# Learning Objectives

## Cancer Review

Examine the most common malignancies affecting midlife women, understanding their epidemiology and clinical significance in this population.

## Risk Factors & Screening

Identify major risk factors and evidence-based screening guidelines to optimize early detection and prevention strategies.

## Survivorship Care

Recognize key survivorship issues and the critical role of primary care providers in long-term cancer survivor management.

## Prevention Strategies

Highlight evidence-based prevention and lifestyle modification strategies to reduce cancer incidence and improve outcomes.





# Cancer Burden in Midlife Women

33%

Lifetime Risk

One in three women will develop cancer during their lifetime, making it a significant health concern for the female population.

7

Major Cancer Types

Breast, endometrial, cervical, ovarian, lung, colorectal, and skin cancers represent the most common malignancies.

Aging and obesity emerge as the two primary drivers of cancer incidence in midlife women. The intersection of hormonal changes, cumulative environmental exposures, and metabolic factors creates a complex landscape requiring comprehensive screening and prevention strategies.



# The Importance of Survivorship Care

## Growing Survivor Population

Advances in early detection and therapeutic interventions have significantly improved survival rates across multiple cancer types. This success creates an expanding population of cancer survivors requiring specialized long-term care.

Primary care providers play a crucial role in survivorship care, providing ongoing screening, lifestyle counseling, and monitoring for treatment-related complications.

Comprehensive survivorship care encompasses bone health monitoring, cardiovascular risk assessment, psychosocial support, and coordination with oncology specialists to ensure optimal long-term outcomes and quality of life.



# Breast Cancer Overview

Breast cancer represents the most common malignancy in women worldwide, with significant clinical and public health implications. The Women's Health Initiative (WHI) findings fundamentally changed our understanding of the relationship between combined estrogen-progestin hormone therapy and breast cancer risk.

Following the publication of WHI results and subsequent decline in hormone therapy use, breast cancer incidence rates decreased notably. Concurrently, mortality rates have steadily declined due to improved screening programs, earlier detection, and advances in therapeutic interventions.

The breast cancer landscape continues to evolve with personalized medicine approaches, targeted therapies, and refined risk assessment tools that enable more precise prevention and treatment strategies.



# Breast Cancer Risk Factors

## Nonmodifiable Risk Factors

- Female sex and advancing age
- Genetic mutations (BRCA1, BRCA2, others)
- Family history of breast or ovarian cancer
- Early menarche and late menopause
- Dense breast tissue on mammography

## Modifiable Risk Factors

- Obesity, particularly postmenopausal
- Alcohol consumption (dose-dependent)
- Physical inactivity
- Nulliparity or late first pregnancy
- Limited breastfeeding duration

## Treatment-Related Factors

- Prior chest radiation therapy
- Combined hormone replacement therapy
- Certain chemotherapy agents
- Long-term oral contraceptive use



# Breast Cancer Screening & Detection

Mammographic screening guidelines vary among professional organizations, reflecting ongoing debates about optimal screening intervals and age thresholds. Despite these variations, there is universal agreement that early detection through organized screening programs provides substantial survival benefits.

The effectiveness of mammography screening is well-established, with studies consistently demonstrating reduced breast cancer mortality in screened populations. Supplemental screening modalities, including breast MRI and tomosynthesis, may be recommended for high-risk women.

Clinical awareness of breast cancer survivors' unique needs is essential for primary care providers, who often coordinate long-term survivorship care and monitoring for recurrence or secondary malignancies.



# Breast Cancer Survivorship

## US Survivors

Current number of breast cancer survivors in the United States

### **Key Survivorship Concerns**

- Bone Health: Treatment-induced bone loss requires monitoring and intervention
- Cardiovascular Risk: Certain therapies increase cardiac complications
- Psychosocial Well-being: Depression, anxiety, and cognitive changes are common
- Secondary Malignancies: Increased risk of contralateral breast and other cancers
- Menopausal Symptoms: Treatment-induced menopause requires specialized management
- Effective survivorship care requires coordination between oncology specialists and primary care providers to address both cancer-related and general health needs throughout the survivor's lifespan.



# Endometrial Cancer Classification

Endometrial cancer presents as two distinct pathological entities with markedly different clinical behaviors, risk factors, and prognoses. This dualistic classification system has significant implications for treatment planning and patient counseling.

## Type 1 Endometrioid (80%)

Estrogen-related tumors typically associated with prolonged estrogen exposure. These cancers generally present at earlier stages and have more favorable prognoses.

- Lower histologic grade
- Better overall survival
- Associated with metabolic factors

## Type 2 Non-endometrioid (20%)

Aggressive tumors that are hormone receptor-negative with significantly worse prognoses. These cancers often present at advanced stages.

- High-grade histology
- Poor overall survival
- Independent of estrogen exposure



# Endometrial Cancer Risk Factors

## Primary Risk Factors

- **Obesity:** Central adiposity increases estrogen production through aromatization
- **Metabolic Syndrome:** Insulin resistance and hyperinsulinemia promote tumor growth
- **Unopposed Estrogen:** Estrogen replacement without progestin opposition
- **Tamoxifen:** Selective estrogen receptor modulator with uterotrophic effects
- **Genetic Predisposition:** Lynch syndrome and other hereditary cancer syndromes

📄 **Protective Factor:** Cigarette smoking appears to have a modest protective effect against endometrial cancer, likely due to its antiestrogenic properties and effects on body weight. However, this should never be recommended given smoking's overwhelming health risks.



# Endometrial Cancer: Presentation & Diagnosis

90%

AUB Presentation

Abnormal uterine bleeding is the presenting symptom in the vast majority of cases

## Diagnostic Evaluation

### o Clinical Assessment

<sup>1</sup> Thorough history focusing on bleeding patterns, risk factors, and family history

### o Endometrial Biopsy

<sup>2</sup> Office-based sampling procedure with high sensitivity for detecting malignancy

### o Imaging Studies

<sup>3</sup> Transvaginal ultrasound, sonohysterography, or MRI to assess extent of disease

### o Hysteroscopy

<sup>4</sup> Direct visualization when biopsy is inadequate or clinical suspicion remains high

Staging follows the FIGO (International Federation of Gynecology and Obstetrics) system, which incorporates surgical and pathological findings to determine prognosis and guide treatment decisions.



# Cervical Cancer: Screening Success Story

Cervical cancer represents one of medicine's greatest screening success stories. The implementation of systematic Pap testing and HPV screening has dramatically reduced both incidence and mortality rates in countries with organized screening programs.

Despite these advances, cervical cancer remains a major cause of cancer-related death in regions where screening is limited or unavailable. This disparity underscores the importance of accessible, high-quality screening programs and HPV vaccination initiatives.

The integration of HPV testing with cytology has further improved screening effectiveness, allowing for extended screening intervals while maintaining high sensitivity for detecting high-grade lesions and invasive cancer.



# Cervical Cancer Screening Guidelines

- 1** — Ages 21-29  
Cytology (Pap test) every 3 years. HPV testing not recommended as primary screening due to high prevalence of transient infections.
- 2** — Ages 30-65  
Preferred: Co-testing (cytology + HPV) every 5 years. Alternative: Cytology every 3 years if co-testing unavailable.
- 3** — After Age 65  
Discontinue screening if adequate negative screening history and no high-grade lesions in past 20 years.

These evidence-based guidelines balance screening effectiveness with resource utilization, minimizing both overscreening and underscreening while maintaining optimal cancer prevention outcomes.



# Cervical Cancer: Clinical Presentation

## Early Symptoms

- **Watery Discharge:** Often the earliest symptom, may be blood-tinged
- **Intermenstrual Spotting:** Bleeding between regular menstrual cycles
- **Postcoital Bleeding:** Bleeding after sexual intercourse
- **Postmenopausal Bleeding:** Any bleeding after menopause cessation





# Ovarian Cancer: The Silent Killer

Ovarian cancer has earned the sobriquet "silent killer" due to its tendency toward late-stage diagnosis. The absence of specific early symptoms and lack of effective screening methods contribute to its high mortality rate compared to other gynecologic malignancies.

Symptoms, when present, are often nonspecific and easily attributed to common conditions such as irritable bowel syndrome, gastroesophageal reflux, or normal aging. These include abdominal bloating, early satiety, urinary frequency, and pelvic discomfort.

The challenge in early detection has led to increased focus on identifying high-risk populations and implementing risk-reduction strategies for women with hereditary cancer syndromes or strong family histories of ovarian and breast cancer.



# Ovarian Cancer: Risk Assessment & Prevention

## High-Risk Factors

- **BRCA1/BRCA2 Mutations:** Lifetime risk 15-40% for ovarian cancer
- **Lynch Syndrome:** Hereditary nonpolyposis colorectal cancer syndrome
- **Family History:** Multiple affected first-degree relatives
- **Personal History:** Prior breast cancer diagnosis

## Risk Reduction Strategy

Prophylactic bilateral salpingo-oophorectomy represents the most effective risk reduction strategy for high-risk women, reducing ovarian cancer risk by 80-90%. This procedure is typically recommended after childbearing is complete or by age 35-40 in BRCA carriers.

Unfortunately, no effective population-wide screening method exists for ovarian cancer. Transvaginal ultrasound and CA-125 levels have insufficient sensitivity and specificity for routine screening in average-risk women.



# Lung Cancer in Women

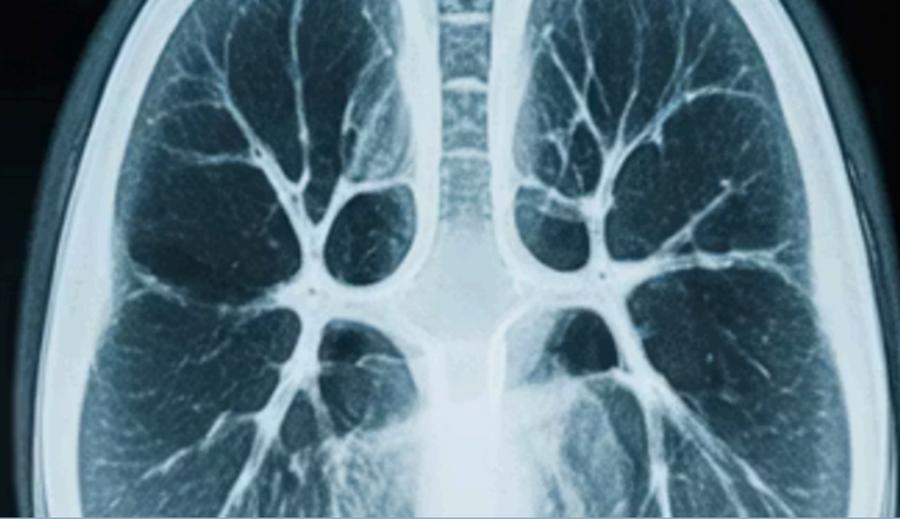
Lung cancer has emerged as the leading cause of cancer death among women, surpassing breast cancer mortality in the 1980s. This shift reflects historical changes in smoking patterns, with increased tobacco use among women beginning in the mid-20th century.

Women demonstrate unique susceptibility patterns to lung cancer, with higher risks from secondhand smoke exposure and certain genetic variants. Additionally, women are more likely to develop adenocarcinoma, the most common histologic subtype in never-smokers.

## Primary Risk Factors

- **Tobacco Exposure:** Direct smoking remains the predominant risk factor
- **Secondhand Smoke:** Environmental tobacco smoke increases risk by 20-30%
- **Occupational Exposures:** Asbestos, radon, diesel exhaust, and other carcinogens
- **Genetic Factors:** Family history and inherited genetic variants





# Lung Cancer Screening & Prevention

The United States Preventive Services Task Force (USPSTF) recommends annual low-dose computed tomography (LDCT) screening for adults aged 50-80 years with a 20 pack-year smoking history who currently smoke or have quit within the past 15 years.

LDCT screening has demonstrated significant mortality reduction in high-risk populations, with the National Lung Screening Trial showing a 20% reduction in lung cancer deaths among screened individuals.

## Prevention Strategies

### Smoking Cessation

Primary prevention through comprehensive tobacco cessation programs, including pharmacotherapy and behavioral interventions

### Environmental Risk Reduction

Minimize exposure to secondhand smoke, radon, occupational carcinogens, and air pollution

### Lifestyle Modification

Promote healthy diet, regular physical activity, and weight management to reduce overall cancer risk



# Colorectal Cancer in Women

Colorectal cancer ranks as the third most common cancer diagnosis in women and represents a significant cause of cancer-related morbidity and mortality. The incidence has been declining in older adults due to effective screening programs but paradoxically increasing in younger populations.

Women-specific considerations include the impact of hormonal factors, with some studies suggesting protective effects of hormone replacement therapy and oral contraceptive use. Additionally, women may present with different symptom patterns and tumor locations compared to men.

## Key Risk Factors

- **Obesity:** Particularly central adiposity and insulin resistance
- **Family History:** First-degree relatives with colorectal cancer or adenomas
- **Inflammatory Bowel Disease:** Ulcerative colitis and Crohn's disease
- **Lifestyle Factors:** High-fat diet, processed meat consumption, physical inactivity
- **Hereditary Syndromes:** Lynch syndrome, familial adenomatous polyposis





# Colorectal Cancer Screening

Major medical organizations recommend initiating colorectal cancer screening between ages 45-50 for average-risk individuals. This recommendation reflects recent trends showing increasing incidence in younger adults and the effectiveness of early detection.

- Colonoscopy

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<sup>1</sup> Gold standard screening method every 10 years, allowing direct visualization and polyp removal

- Stool-Based Testing

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<sup>2</sup> Fecal occult blood test (FOBT) or fecal immunochemical test (FIT) annually

- Flexible Sigmoidoscopy

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<sup>3</sup> Every 5 years, often combined with annual FOBT

- CT Colonography

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<sup>4</sup> Virtual colonoscopy every 5 years for patients unable to undergo conventional colonoscopy



# Skin Cancer: Most Common Overall

Skin cancer represents the most common cancer overall, though basal cell and squamous cell carcinomas are often not tracked in cancer registries due to their typically non-fatal nature and high cure rates when detected early.

Melanoma, while less common than non-melanoma skin cancers, poses the greatest mortality risk and requires particular vigilance in detection and treatment. Women show different patterns of melanoma development, with lesions more commonly occurring on the lower extremities.

## Melanoma Risk Factors

- **UV Exposure:** Both chronic sun exposure and intense intermittent exposure
- **Fair Skin Type:** Light skin, hair, and eye color with poor tanning ability
- **Family History:** Genetic predisposition and familial atypical mole syndrome
- **Personal History:** Previous melanoma or non-melanoma skin cancer
- **Immunosuppression:** Organ transplant recipients and immunocompromised patients



# Skin Cancer Diagnostic Mnemonics

## Melanoma: ABCDE Criteria

- **A**symmetry: One half unlike the other
- **B**order: Irregular, scalloped, or poorly defined
- **C**olor: Varied shades of tan, brown, black, red, white, or blue
- **D**iameter: Larger than 6mm (pencil eraser)
- **E**volving: Changes in size, shape, elevation, or color



# Quick Reference for the Exam

## High-Yield Facts

- ❑ **CVD #1 killer** of women (>all cancers combined)
- ❑ **Early menopause** = independent CVD risk factor
- ❑ **HT safe <60 or within 10 years** of menopause
- ❑ **New BP target <130/80** for most patients
- ❑ **Risk-based statin therapy** using ASCVD calculator  $\geq 7.5\%$
- ❑ **Lifestyle intervention** prevents 58% of diabetes cases
- ❑ **Aspirin NOT routinely recommended** for primary prevention
- ❑ **Metabolic syndrome** affects 50-85% of postmenopausal women





# **Chapter 10**

## **Vitamins, Minerals & Dietary Supplements in Menopause**

A comprehensive study guide for healthcare professionals based on the North American Menopause Society's  
Menopause Practice: A Clinician's Guide, 6th Edition

# Overview

## **Regulatory Framework**

Understanding supplement regulation, claims, and quality control

## **Essential Nutrients**

Evidence-based recommendations for vitamins and minerals during menopause

## **Popular Supplements**

Review of commonly used supplements and their efficacy in menopause

## **Clinical Application**

Assessment, counseling, documentation and special considerations

This presentation will equip you with the knowledge needed to effectively counsel menopausal patients about supplement use and prepare you for the certification exam.



# The Regulatory Landscape

## Key Legal Framework: DSHEA (1994)

- FDA has LIMITED authority over supplements vs. prescription drugs
- Manufacturers are responsible for safety and claims
- No pre-market safety testing required
- USP and NSF certification indicate reliable quality

## Critical Distinctions in Claims

- Structure/Function Claims: "Supports women's health" (allowed)
- Drug Claims: "Treats hot flashes" (requires FDA approval)

**Exam Tip:** Understand that supplements are NOT regulated like prescription drugs



# Supplement Use in Menopause

## The Reality of What Women Are Taking

### Prevalence and Patterns

Many women use supplements instead of or alongside proven therapies, often without informing healthcare providers. Studies show 50-80% of menopausal women use at least one supplement.

### Patient Perceptions

Women often view supplements as "natural" and therefore safer alternatives to hormone therapy, despite limited evidence for efficacy and safety.

### Provider Responsibilities

- Ask about supplement use at every visit
- Understand potential interactions
- Guide evidence-based decisions
- Know when supplements may be beneficial





# Essential Vitamins for Postmenopausal Women

## Vitamin D

- 600-800 IU daily recommended
- Critical for calcium absorption
- Many women are deficient
- Target 25(OH)D: 20-30 ng/mL

## Vitamin B12

- 2.4 mcg daily recommended
- Absorption decreases with age
- Risk factors: PPI use, metformin, vegetarian diet
- Consider testing in older women

## Folate

- 400 mcg daily recommended
- Important if pregnancy possible
- May reduce cardiovascular risk
- Works synergistically with B12



# Calcium - The Bone Health Foundation

## Recommended Intake

- Ages 51-70: 1,200 mg/day for women
- Dietary sources preferred over supplements
- Dairy = primary source (300mg per serving)
- Non-dairy sources: fortified foods, leafy greens

## Absorption Factors

- Peaks at ~35% with 400mg intake
- Take with meals for best absorption
- Vitamin D required for optimal use
- Divide large doses throughout day

## Safety Concerns

- Upper limit: 2,000-2,500 mg/day
- Potential cardiovascular risk with high-dose supplements
- Kidney stone risk in susceptible individuals
- May interfere with medication absorption



# Vitamin D - Beyond Bone Health



## Primary Function

Essential for calcium absorption and bone mineralization, preventing osteoporosis



## Muscle Function

Supports muscle strength and may reduce fall risk in elderly women



## Immune Support

Modulates immune function with potential impact on autoimmune conditions



## Cardiovascular Health

May have protective effects on cardiovascular system, though evidence is mixed

**Exam Focus:** Know the RDA values (600 IU for ages 51-70, 800 IU for ages >70) and optimal serum levels (20-50 ng/mL 25(OH)D)



# Vitamin D Guidelines

## Dosing Guidelines

- 600 IU (ages 51-70)
- 800 IU (ages >70)
- Higher doses for deficiency (1,000-2,000 IU)
- D3 preferred over D2 (4x more potent)
- Supplementation often necessary, especially in northern latitudes

## Clinical Assessment

- 25(OH)D is the biomarker for vitamin D status
- Optimal range: 20-50 ng/mL
- Deficiency common in postmenopausal women
- Risk factors: obesity, limited sun exposure, dark skin
- Retest 3-6 months after starting supplementation



# B Vitamins - The Energy Complex

- **Vitamin B6 (Pyridoxine)**

- 1.5 mg daily for women >50
- May help mood and PMS symptoms
- High doses can cause neuropathy (>100mg)
- Found in poultry, fish, potatoes, and bananas

- **Vitamin B12 (Cyanocobalamin)**

- 2.4 mcg daily recommended
- Deficiency increases with age
- Absorption requires stomach acid
- Consider sublingual/injection for malabsorption
- Found in animal products (meat, fish, dairy, eggs)

- **Folate**

- 400 mcg daily recommended
- Works with B12 for DNA synthesis
- May reduce homocysteine levels
- Important for cardiovascular health
- Found in leafy greens, legumes, and fortified foods

**Clinical Pearl:** B vitamin deficiencies can mimic depression and cognitive decline in menopausal women



# Antioxidant Vitamins - Proceed with Caution

When More Isn't Better



1

## Vitamin C

- 75 mg daily for women
- Food sources best (citrus, vegetables)
- High doses may increase kidney stones

2

## Vitamin E

- 15 mg daily (22.5 IU)
- USPSTF recommends AGAINST supplementation
- High doses may increase bleeding risk

3

## Beta-

~~Carotene~~ Carotene supplements - potential harm

- Get from food sources (safe and effective)
- May increase lung cancer risk in smokers





# Multivitamins - One-Stop Shopping?

## Evidence Limitations

- USPSTF finds insufficient evidence for disease prevention
- WHI study showed no benefit for CVD/cancer/mortality
- Not a substitute for healthy diet
- May create false sense of security

## Who Might Benefit

- Older adults with poor absorption
- Vegetarians/vegans
- Those with restricted diets
- Known deficiencies

Multivitamins provide convenience but cannot replace the complex nutritional profile of whole foods. A "food first" approach remains superior for most patients.



# Popular Supplements - Fish Oil & CoQ10

## Fish Oil/Omega-3

May benefit high triglycerides (3-4g daily needed). Mixed evidence for cardiovascular disease - VITAL trial showed no significant CV benefit. Monitor for bleeding risk at high doses, especially with anticoagulants.



## Coenzyme Q10

May help certain heart conditions, particularly statin-induced myalgia. Limited evidence for general use. Typical dosing: 30-300 mg daily. Generally safe but expensive, with benefits often overstated in marketing.

## Plant Sterols/Stanolols

May lower LDL cholesterol by 5-15% at 2-3g daily. Work by blocking cholesterol absorption. Found in fortified foods and supplements. Best used as adjunct to diet and medication therapy.

These supplements have specific indications but are often marketed beyond their evidence base. Counsel patients about realistic expectations and potential interactions.

# Joint Health Supplements

## Glucosamine & Chondroitin

### Current Evidence

- Mixed results for osteoarthritis
- May help moderate-severe pain (some studies)
- Glucosamine sulfate most studied form
- Chondroitin benefits unclear
- 3-6 month trial reasonable for symptomatic patients

### Dosing

- Glucosamine: 1,500 mg daily
- Chondroitin: 1,200 mg daily
- Often combined in products
- Effect may take 2-3 months to manifest

### Safety Concerns

- Shellfish allergy (glucosamine source)
- May affect warfarin (increased INR)
- Blood sugar concerns largely unfounded
- Generally well-tolerated
- Avoid in pregnancy (limited data)



# Sleep & Mood Supplements

## Melatonin

- Regulates circadian rhythms
- 0.5-5 mg 1-2 hours before bed
- May help sleep latency in older adults
- Not regulated as hormone in US
- Short-term use preferred over chronic use

## SAM-e (S-Adenosylmethionine)

- May help depression (limited evidence)
- 800-1,600 mg daily for mood
- Generally well tolerated
- Expensive compared to proven treatments
- May interact with antidepressants

## Valerian Root

- Commonly used for sleep and anxiety
- 300-600 mg 30-60 minutes before bedtime
- Inconsistent evidence for efficacy
- Generally safe but can cause headache
- Avoid with benzodiazepines and alcohol

**Key Point:** Limited evidence for menopause-specific sleep benefits. Address sleep hygiene before supplements.



# Supplement Safety & Interactions

## Critical Clinical Considerations



### Major Drug Interactions

- Vitamin K vs. Warfarin (antagonistic)
- Fish oil + anticoagulants (bleeding risk)
- Calcium + antibiotics (absorption interference)
- Iron + thyroid medications (separate by 4 hours)
- St. John's Wort + multiple drugs (induces CYP450)



### Safety Red Flags

- High-dose fat-soluble vitamins (A,D,E,K can accumulate)
- Multiple supplements (risk of overdose)
- "Mega-dose" formulations
- Products marketed for sexual enhancement or weight loss
- Products claiming to treat or cure diseases



### Quality Issues

- Contamination with unlisted ingredients
- Inaccurate labeling
- Variable potency
- Heavy metal contamination
- Undisclosed pharmaceutical ingredients



# Evidence-Based Recommendations

## Strong Evidence FOR

- Calcium + Vitamin D for bone health
- Vitamin D for deficiency prevention
- B12 for confirmed deficiency
- Folic acid for neural tube defect prevention

## Insufficient Evidence

- Multivitamins for disease prevention
- Antioxidants for cardiovascular disease
- Most "anti-aging" supplements
- Black cohosh for hot flashes

## Evidence AGAINST

- Beta-carotene supplements
- High-dose vitamin E
- Vitamin C for common cold prevention
- High-dose calcium for cardiovascular health

**Clinical Approach:** Focus on proven deficiencies, not theoretical benefits



# Clinical Assessment & Counseling

## Assessment Questions

- "What supplements do you take?" (including doses)
- "Why did you start taking them?"
- "Do you take them with medications?"
- "Have you noticed any effects?"

## When to Test

- Vitamin D (25-OH D) - most women
- B12 - if risk factors present
- Iron studies - if fatigue/anemia suspected
- Don't routinely test most vitamins

## Counseling Points

- Food first philosophy
- Quality matters (USP, NSF certification)
- More is not better
- Report to all providers
- Set realistic expectations about benefits



# Special Populations

## Tailored Recommendations

### Early Menopause/POI

Standard recommendations apply with emphasis on bone health (calcium, vitamin D). Consider longer duration of supplementation.

Increased risk of osteoporosis may warrant more aggressive prevention.

### Medication Interactions

**PPIs:** Increase B12, iron, magnesium needs

**Metformin:** Monitor B12 status

**Diuretics:** May affect magnesium, potassium

**Anticoagulants:** Caution with vitamin K, fish oil, vitamin E

1

2

3

### Chronic Diseases

**Diabetes:** Monitor B12 if on metformin (increased deficiency risk)

**Osteoporosis:** Calcium + vitamin D essential; consider magnesium

**CVD:** Omega-3 for high triglycerides only; avoid high-dose antioxidants



# Red Flags & When to Avoid

## Protecting Patients from Harm

- ⊗ Avoid
  - Taking warfarin (vitamin K supplements)
  - History of kidney stones (high-dose calcium, vitamin C)
  - Scheduled for surgery (fish oil, vitamin E)
  - Multiple medications (high interaction risk)
  - Pregnancy or lactation (unless specifically recommended)

## When to Stop

- New symptoms after starting
- Abnormal lab values
- Upcoming surgery (2 weeks prior)
- If no benefit after adequate trial

## Warning Signs of Problematic Products

- "Cures everything" claims
- Extremely high doses
- Proprietary blends (hidden ingredients)
- MLM/network marketing products
- "Secret formula" or "breakthrough" claims
- Products marketed primarily through testimonials
- Rapid results promised



# Cost-Effectiveness & Priorities

## Making Smart Recommendations

\$4

### Vitamin D

Monthly cost for standard 1000 IU supplement - highly cost-effective when deficiency present

\$10

### Generic Multivitamin

Monthly cost for basic formulation - reasonable for those with poor diet

\$40+

### Specialized Formulas

Monthly cost for proprietary "women's formulas" - questionable additional value

\$0

### Food Sources

Additional cost when incorporating nutrient-dense foods into existing diet

**Patient Education:** Money better spent on healthy food than expensive supplements. Focus on correcting known deficiencies first.



# Documentation & Follow-up

## Documentation Needs

- List all supplements in medication record
- Include doses and frequency
- Note reason for use
- Document any adverse effects
- Record recommendations provided

## Follow-up Strategy

- Review supplement list at each visit
- Monitor for interactions with new prescriptions
- Reassess need periodically
- Track outcomes if taken for specific symptoms

## Patient Resources

- NIH Office of Dietary Supplements (ODS)
- ConsumerLab.com for independent testing
- Pharmacist consultation for interactions
- Registered dietitian for nutrition assessment

Thorough documentation helps prevent adverse events and ensures continuity of care across providers.



# Case Study: Optimizing Supplement Use

**Patient:** 55-year-old woman, 2 years post-menopause with osteopenia and family history of osteoporosis. Currently taking multiple supplements purchased after reading about menopause relief online.

## Assessment

Patient takes calcium (1000mg), vitamin D (400 IU), black cohosh, evening primrose oil, and a multivitamin. 25(OH)D level: 18 ng/mL. No drug interactions identified.

1

2

## Recommendations

Increase calcium to 1200mg daily (ideally through diet). Increase vitamin D to 1000 IU daily. Discontinue black cohosh and evening primrose oil (limited evidence). Continue multivitamin if desired.

## Follow-up

Recheck 25(OH)D in 3 months. Assess bone health annually. Monitor for supplement adherence and side effects at regular visits.

3



# Key Exam Points



## Regulation

- DSHEA (1994) limited FDA authority over supplements
- Structure/function claims allowed, drug claims prohibited
- USP/NSF indicate quality manufacturing
- Manufacturers responsible for safety



## Evidence-Based Recommendations

- Calcium 1,200 mg + Vitamin D 600-800 IU for bone health
- B12 deficiency common in older adults
- Antioxidant supplements not recommended
- Food sources preferred over supplements



## Safety Priorities

- Drug interactions with warfarin, anticoagulants, PPIs
- Quality concerns with unregulated products
- More is not better - avoid mega-doses
- Documentation of all supplements essential

**Bottom Line:** Supplements can be helpful for specific deficiencies but are not substitutes for healthy lifestyle or proven medical therapies



# Study Tips for Success

1

## **Know the Regulatory Framework**

Understand DSHEA fundamentals and the distinction between structure/function claims vs. drug claims. FDA has limited authority compared to regulation of pharmaceuticals.

2

## **Memorize Key RDA Values**

Focus on calcium (1200mg), vitamin D (600-800 IU), B12 (2.4mcg), and iron (8mg post-menopause vs 18mg pre-menopause).

3

## **Understand Drug Interactions**

Know major interactions, especially with warfarin, PPIs, anticoagulants, and thyroid medications. Recognize which supplements present bleeding risks.

4

## **Focus on Evidence-Based Recommendations**

Distinguish between supplements with strong evidence (vitamin D for deficiency) vs. those with insufficient or negative evidence (antioxidants for CVD).





## **Chapter 11**

# **Prescription Therapies for Menopause**

A comprehensive study guide for healthcare professionals based on the North American Menopause Society's  
Menopause Practice: A Clinician's Guide, 6th Edition

# Learning Objectives

1

## Contraceptive Options

Identify appropriate contraceptive options for perimenopausal women and understand their specific advantages in this population

3

## Progestogens & EPT

Explain progestogen therapy mechanisms, indications, and various estrogen-progestogen therapy regimens

Upon completion, you will be prepared to make evidence-based clinical decisions regarding prescription therapies for perimenopausal and menopausal patients.

2

## Hormone Therapy

Understand hormone therapy types, terminology, routes of administration, and evidence-based prescribing practices

4

## SERMs & Statins

Discuss selective estrogen receptor modulators and appropriate statin therapy guidelines for postmenopausal women



# Contraceptives in Perimenopause

## Key Considerations

- Pregnancy remains possible until menopause is definitively reached
- Special considerations exist for women over 40 years
- Lower contraceptive failure rates due to decreased fertility
- No contraceptive methods are contraindicated based on age alone

## Optimal Contraceptive Options

- Long-acting reversible contraceptives (LARCs): IUDs, implants
- Hormone contraceptives: Combined or progestin-only pills
- IUDs: Provide highly effective, convenient, long-term protection



# Intrauterine Devices (IUDs)

## Levonorgestrel-releasing IUS (LNG-IUS)

- 52mg device: FDA-approved for 5-7 years
- Significantly reduces menstrual bleeding
- Effectively treats heavy menstrual bleeding
- Can be used off-label for endometrial protection with estrogen therapy

## Copper IUD

- T 380A model: Approved for 10 years, effective for 12+ years
- Non-hormonal option for hormone-sensitive patients
- May increase cramping and menstrual flow
- Does not provide protection against endometrial hyperplasia

IUDs offer superior contraceptive effectiveness (>99%), high patient satisfaction, and convenient office-based placement, making them ideal for perimenopausal women.



# Hormone Therapy Terminology

## **ET (Estrogen Therapy)**

Unopposed estrogen therapy prescribed for women who have had a hysterectomy and therefore do not require endometrial protection.

## **EPT (Estrogen-Progestogen Therapy)**

Combined hormone therapy for women with an intact uterus, requiring progestogen to protect against endometrial hyperplasia and cancer.

## **HT (Hormone Therapy)**

Umbrella term encompassing all forms of hormone treatments used for menopausal symptom management.

## **TSEC (Tissue-Selective Estrogen Complex)**

Combination of estrogen with a selective estrogen receptor modulator (SERM), providing targeted tissue effects.

**Important Note:** We no longer use "replacement" terminology as postmenopausal estrogen levels are naturally low, not deficient (except in premature/early menopause).



# Estrogen Types and Sources

## Human Estrogens

<b>17<math>\beta</math>-estradiol</b>	Most biologically active estrogen, considered bioidentical
<b>Estrone</b>	50-70% less active than estradiol
<b>Estriol</b>	Only 10% as active as estradiol

## Other Estrogen Sources

<b>Conjugated Equine Estrogens (CEE)</b>	Derived from pregnant mare urine
<b>Synthetic estrogens</b>	Esterified estrogens, synthetic CE
<b>Plant-based</b>	Phytoestrogens (not prescription products)

Understanding the different types and sources of estrogen is crucial for prescribing appropriate hormone therapy. Each form has distinct receptor binding profiles, metabolism patterns, and clinical effects.



# Routes of Estrogen Administration - Oral

## Advantages

- Familiar and easy administration for patients
- Beneficial effects on HDL-C and total cholesterol
- Extensive safety and efficacy data available
- Generally lower cost than other formulations
- Convenient once-daily dosing

## Disadvantages

- First-pass hepatic metabolism alters bioavailability
- Increased risk of venous thromboembolism and stroke
- Elevates triglycerides and inflammatory markers
- May reduce libido through increased SHBG production
- Associated with increased risk of gallstones

Oral estrogen undergoes significant metabolism in the liver, resulting in the "first-pass effect" that produces higher estrone:estradiol ratios compared to non-oral routes.



# Routes of Estrogen Administration - Transdermal

## Advantages

- Bypasses first-pass hepatic metabolism
- Provides more stable serum estradiol levels
- Minimal effect on triglycerides and liver proteins
- Significantly lower VTE risk compared to oral formulations
- Less impact on SHBG (potentially better for libido)

## Disadvantages

- Possible skin irritation with adhesive patches
- Typically higher cost than oral formulations
- Risk of unintended transfer with gels and creams
- Less increase in HDL-C than oral administration
- Patient compliance may be more challenging

Transdermal estrogen delivery may be preferred for women with hypertriglyceridemia, liver disease, history of VTE, or those at higher risk for cardiovascular events.



# Vaginal Estrogen Therapy

1

## Creams

- Estrace (17 $\beta$ -estradiol)
- Premarin (conjugated estrogens)
- Flexible dosing
- May be messier to apply

2

## Tablets

- Vagifem (10  $\mu$ g estradiol)
- Precise dosing
- Less messy than creams
- Requires applicator

3

## Rings

- Estring (7.5  $\mu$ g/24hr)
- Local effects with minimal systemic absorption
- Continuous release for 90 days
- Patient inserts/removes

4

## Inserts

- Imvexxy (4 or 10  $\mu$ g)
- Smallest available dose
- Soft gel technology
- Less messy application

Low-dose vaginal estrogen provides effective relief for genitourinary syndrome of menopause (GSM) with minimal systemic absorption. Generally, progestogen is not needed with low-dose products, and they can be used long-

# Progestogen Therapy

## Purpose

- Protect endometrium from unopposed estrogen
- ~~Significantly~~ significantly reduce endometrial cancer risk
- Secondary use for treating vasomotor symptoms
- Regulate menstrual bleeding patterns

## Routes of Administration

- Oral: Tablets (Prometrium, Provera)
- Intrauterine: LNG-IUD
- Vaginal: Gels, suppositories
- Injection: Depot formulations

## Types of Progestogens

<b>Progesterone</b>	Bioidentical
<b>Progestins</b>	(Prometrium) Synthetic compounds
	• Medroxyprogesterone acetate (MPA)
	• Norethindrone acetate
	• Drospirenone
	• Levonorgestrel

**Key Clinical Point:** All women with an intact uterus taking systemic estrogen therapy must receive adequate progestogen protection to prevent endometrial hyperplasia and cancer.



# EPT Regimens

1

## Continuous-Cyclic (Sequential)

Estrogen daily + progestogen 12-14 days/month

- Results in predictable withdrawal bleeding
- Approximately 80% experience bleeding when progestogen is withdrawn
- Mimics normal menstrual cycling
- May be preferred for women early in menopause transition

2

## Continuous-Combined

Both hormones taken daily, without interruption

- Goal is amenorrhea after several months of therapy
- Lower endometrial hyperplasia rates (<1%)
- May have initial irregular bleeding
- Better for women further from final menstrual period

3

## Intermittent-Combined

3 days on/3 days off progestogen pattern

- Designed to minimize bleeding episodes
- May reduce progestogen-related side effects
- Less common regimen in clinical practice
- Limited long-term safety data compared to other regimens

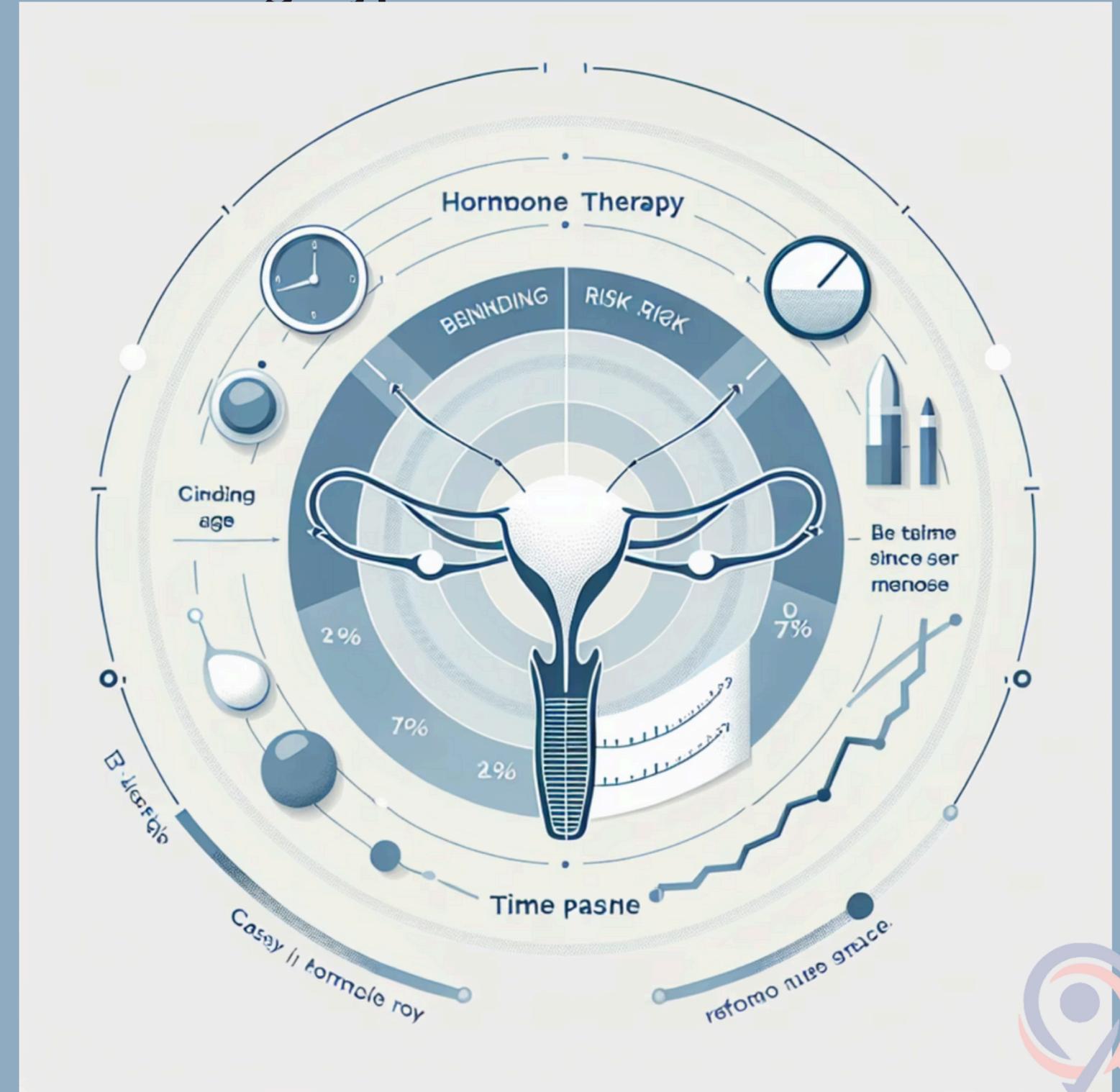


# Hormone Therapy Safety & Timing

## Absolute Contraindications

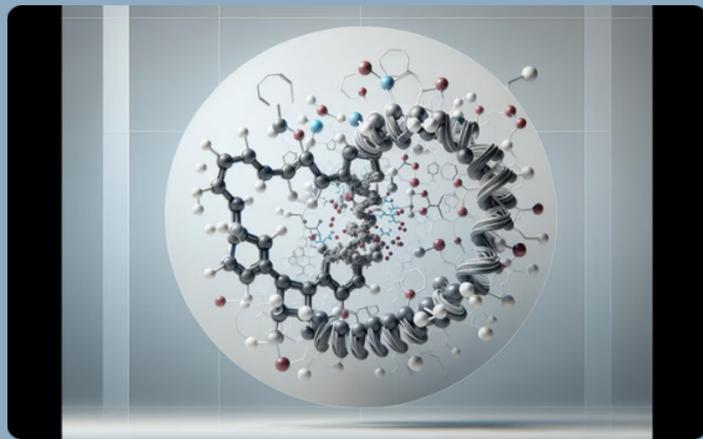
- Undiagnosed abnormal uterine bleeding
- Known or suspected breast cancer
- Active venous thromboembolism or stroke
- Significant liver dysfunction
- Pregnancy
- Active or recent arterial thromboembolic disease

## The Timing Hypothesis



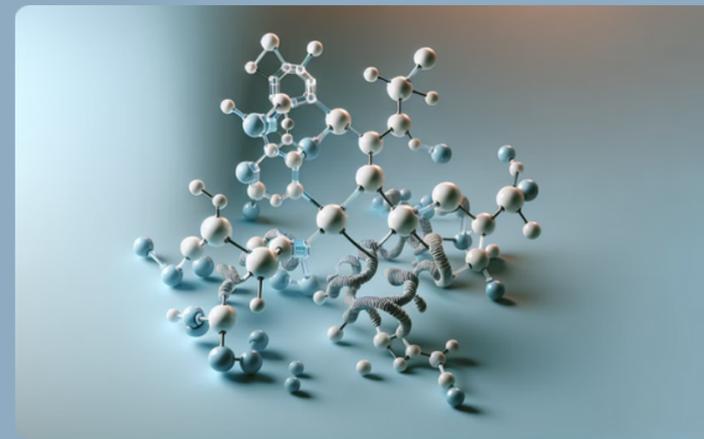
# Selective Estrogen Receptor Modulators (SERMs)

SERMs exhibit tissue-selective estrogen receptor effects, functioning as agonists in some tissues and antagonists in others.



## Tamoxifen

- Breast cancer prevention/treatment
- Antagonist in breast tissue
- Agonist in endometrium (↑ cancer risk)
- Increases hot flashes



## Raloxifene

- Osteoporosis treatment
- Breast cancer risk reduction
- Neutral on endometrium
- Increases VTE risk



## Bazedoxifene

- Combined with CEE (DuaVee)
- Antagonist in endometrium
- Neutral to slight antagonist in breast
- Maintains bone density



## Ospemifene

- Treatment for dyspareunia
- Agonist in vaginal tissue
- Minimal endometrial effect
- Oral administration



# Tissue-Selective Estrogen Complex (TSEC)

DuaVee Composition

Bazedoxifene 20mg + Conjugated Equine Estrogens

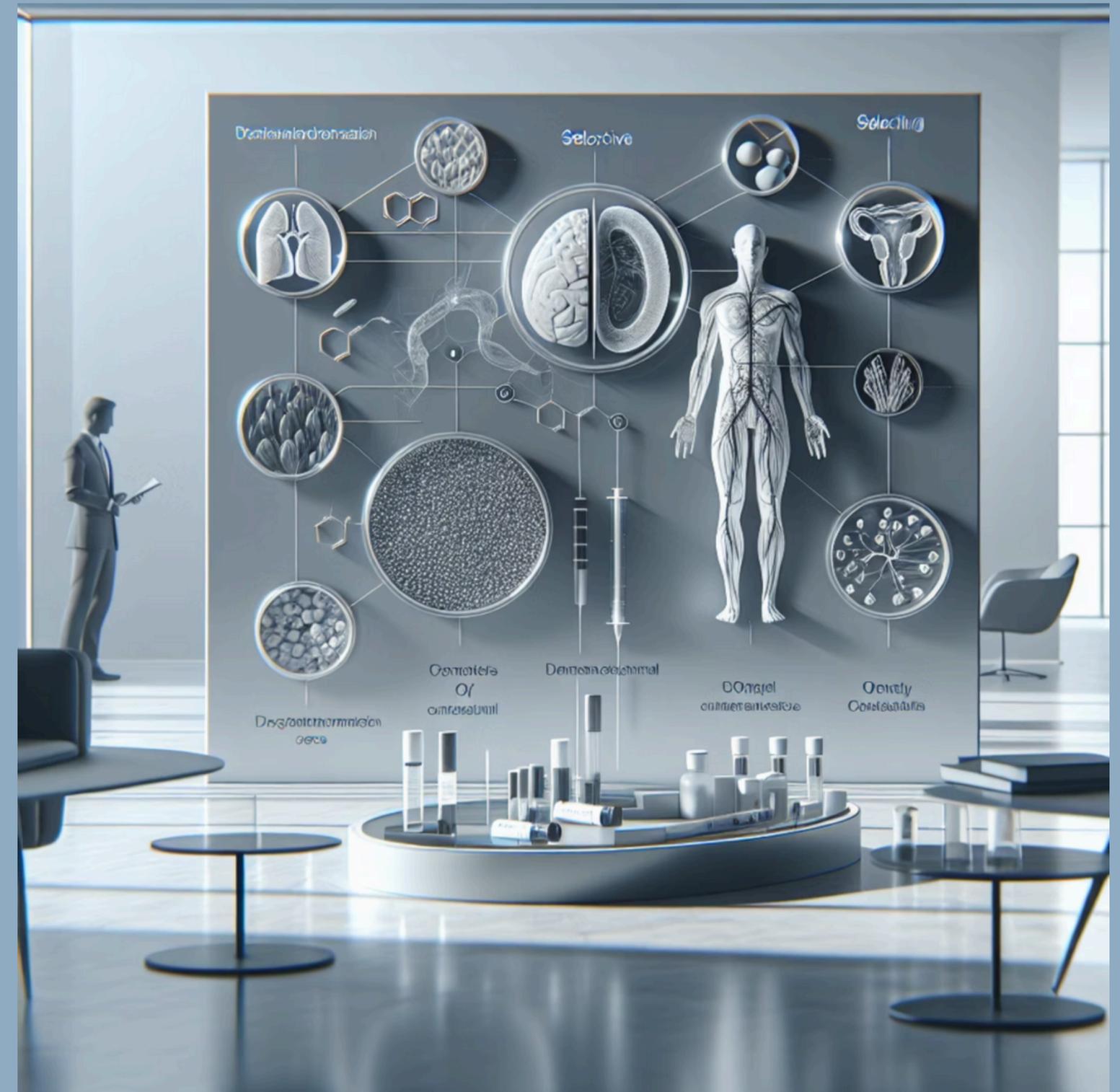
0.45mg

## FDA Approved Indications

- Treatment of moderate to severe vasomotor symptoms
- Prevention of postmenopausal osteoporosis
- Safe for women with intact uterus (no separate progestogen needed)

## Ideal Candidates

Women who cannot tolerate progestogens due to side effects such as mood changes, bloating, or breast tenderness



Clinical

# Bioidentical Hormone Therapy



## Definition Confusion

**Scientific definition:** Hormones that are chemically identical to those produced by the human body

**Marketing definition:** Custom-compounded preparations made by specialty pharmacies, often promoted as "natural" alternatives



## FDA-Approved Bioidentical Options

- 17 $\beta$ -estradiol (available as patches, gels, tablets, sprays)
- Micronized progesterone (Prometrium)
- Estradiol/progesterone combination (Bijuva)



## Custom-Compounded Concerns

- Not FDA-regulated for safety, efficacy, or manufacturing quality
- Inconsistent dosing, purity, and sterility standards
- Often higher costs with limited insurance coverage
- No scientific evidence of superiority over FDA-approved products
- Inadequate safety monitoring and oversight





# Statin Prescribing Guidelines

## Primary Prevention (no known CVD)

- Age 40-75 years with  $\geq 1$  risk factor and 10-year ASCVD risk  $\geq 10\%$
- Use low-to-moderate intensity statins
- Consider patient preferences and potential drug interactions
- Re-evaluate risk every 4-6 years

## Secondary Prevention (known CVD)

- High-intensity statins recommended for all eligible patients
- Use moderate-intensity if high-intensity not tolerated
- Goal is to reduce LDL-C by  $\geq 50\%$  from baseline
- Consider additional agents if targets not met

## Special Populations

- Diabetes mellitus: Moderate-intensity regardless of baseline LDL
- LDL  $\geq 190$  mg/dL: High-intensity statin
- Chronic kidney disease: Moderate-intensity statin
- Older adults ( $>75$ ): Consider risk/benefit and frailty



# Statin Safety & Side Effects

## Common Side Effects

<b>Myalgias</b>	3-5% of patients; muscle pain with normal CK levels
<b>New-onset diabetes</b>	9-27% increased risk, especially with risk factors
<b>Hepatotoxicity</b>	Very rare (<1%); typically reversible
<b>Cognitive effects</b>	Reported but not clearly established in trials

## Management Strategies

- Try different statin molecule or lower dose
- Consider alternate-day dosing for intolerant patients
- Monitor for potential drug interactions (especially with HT)
- Provide comprehensive patient education for adherence
- Emphasize that benefits usually outweigh risks



# Key Clinical Pearls

## Contraception

- LARCs are the gold standard for perimenopausal women
- LNG-IUS can treat heavy bleeding and provide endometrial protection
- Combined OCs offer non-contraceptive benefits through perimenopause
- Continue contraception until 1 year after final menstrual period if >50 years or 2 years if <50

## Hormone Therapy

- Individualize based on symptoms, timing, and risks
- Transdermal routes may be safer than oral for VTE risk
- All women with intact uterus need progestogen with systemic ET
- Use lowest effective dose for shortest duration consistent with goals

## SERMs & Statins

- Consider SERMs for women who cannot take traditional HT
- DuaVee offers advantages for women with intact uterus
- Statins are essential for CV risk reduction post-menopause
- Use ASCVD risk calculator to guide statin decisions



# Exam Focus Areas

1

## IUD Types and Durations

Memorize the specific durations for each IUD type:

- LNG-IUS 52mg: 5-7 years
- Copper T380A: 10-12+ years

2

## HT Contraindications

Know the absolute contraindications to hormone therapy:

- Unexplained vaginal bleeding
- Breast cancer
- Active VTE
- Liver dysfunction
- Recent CVA/MI

3

## EPT Regimen Types

Understand the bleeding patterns associated with each regimen:

- Continuous-cyclic: Predictable withdrawal bleeding
- Continuous-combined: Goal of amenorrhea
- Intermittent-combined: Reduced bleeding episodes

4

## Estrogen Routes

Know the specific advantages and disadvantages of:

- Oral: First-pass effect, higher VTE risk
- Transdermal: Bypasses liver, stable levels
- Vaginal: Local effects, minimal absorption



# Summary & Next Steps

## Key Takeaways

- Multiple effective prescription options exist for managing menopausal symptoms
- Safety and efficacy profiles vary by route, timing, and individual factors
- Shared decision-making is essential for treatment success
- Regular monitoring and reassessment are required components of care
- Individualized approach is the cornerstone of menopausal management

## Study Tips

- Practice with clinical case scenarios
- Memorize key numbers (doses, durations, percentages)
- Understand contraindications and warnings
- Focus on individualized risk-benefit analysis

Good luck on your Menopause Society certification exam!

