

## **Meet the Professor - Bone Health in Perimenopausal Women**

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### **Learning Objectives:**

- Describe what happens to hormones and bones during the perimenopausal period
- Identify perimenopausal women at high risk for early bone disease
- State the pros and cons of primary prevention of osteoporosis in perimenopausal women
- Name the effects of non-pharmacologic and pharmacologic therapy in this population
- Apply quantitative fracture risk assessment and clinical judgment to decisions regarding treatment

### **Introduction:**

Menopausal bone loss is a major risk factor for osteoporosis and fractures in women. The accelerated bone resorption and bone loss which characterize the perimenopausal period lead to trabecular perforation, loss of horizontal trabeculae and microarchitectural deterioration which profoundly reduce bone strength. Recent data indicate that accelerated bone loss and disruption of trabecular architecture begin earlier in the perimenopause than previously thought, which might argue for early intervention in perimenopausal women at high risk for future osteoporosis. Most perimenopausal women, however, are at low risk for fractures within the next 10-15 years and would seem to have little to gain from costly interventions. In the absence of long-term fracture studies, calculating the benefits and costs of pharmacologic intervention for individual patients is problematic. Thus, a clear understanding of the pathophysiology of the perimenopausal transition, patterns and risk factors for bone loss and the effects of non-pharmacologic and pharmacologic agents in this population is needed to assist providers in making well-informed clinical decisions.

### **Outline:**

1. Understanding the perimenopause
  - Hormonal changes
  - Patterns of bone loss by DXA and QCT
  - Changes in bone structure
2. Fracture risk assessment in perimenopausal women
  - Guidelines for bone density testing
  - Interpreting BMD results- the ISCD position
  - Factors which increase and decrease the risk for rapid bone loss
  - Calculating individual 10-year fracture risk using BMD, clinical risk factors and clinical judgement
3. Effects of nonpharmacologic and pharmacologic therapies in perimenopausal women
  - Calcium

- Estrogen
- Bisphosphonates
- 4. Pros and Cons of therapeutic intervention:
  - Potential benefits
  - Uncertainties: duration of therapy? long-term benefits? risks?)
  - High cost: benefit ratio
- 5. Case discussions to illustrate and expand on the clinical issues involved in treatment decisions

**Note:** No non-FDA approved drugs or indications will be presented.