AGEING & HEALTH

OSTEOPOROSIS IN ELDERLY

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OSTEOPOROSIS

- Osteoporosis means porous bones
- Causes bones to become weak and brittle – so brittle that even mild stresses like bending over, lifting a vacuum cleaner or coughing can cause a fracture.
- Osteoporosis is the thinning of bone tissue and loss of bone density over time.
CAUSES

- Bone is continuously changing — new bone is made and old bone is broken down — a process called remodeling, or bone turnover.
- A full cycle of bone remodeling takes about 2-3 months.
- Osteoporosis occurs when the body fails to form enough new bone, when too much old bone is reabsorbed by the body, or both.
- Calcium and phosphate may be reabsorbed back into the body from the bones, which makes the bone tissue weaker.
- This can result in brittle, fragile bones that are more prone to fractures, even without injury.
RISK FACTORS

- Sex
- Family history
- Eating disorders
- Low calcium intake
- Excess soda consumption
- Other
SEX

Fractures from osteoporosis are about twice more in women than in men.

Risk in women at menopause (45 yrs) that accelerates bone loss. Risk in men is greater than age 75. Age.

The older, the higher risk of osteoporosis.

Bones become weaker as ages.
FAMILY HISTORY

- Osteoporosis runs in families.

- Parent or sibling with osteoporosis puts at greater risk, especially if having a family history of fractures.

- Men and women who are exceptionally thin or have small body frames tend to have higher risk because they may have less bone mass to draw from as they age.
Women and men with anorexia nervosa or bulimia are at higher risk of lower bone density in their lower backs and hips.
LOW CALCIUM INTAKE

- A lifelong lack of calcium plays a major role in the development of osteoporosis.
- Medical conditions and procedures that decrease calcium absorption.
- Stomach surgery (gastrectomy) can affect the ability to absorb calcium.
- Sedentary lifestyle.
- Children who are physically active and consume adequate amounts of calcium-containing foods have the greatest bone density.
The link between osteoporosis and caffeinated sodas clear, but caffeine may interfere with calcium absorption and its diuretic effect may increase mineral loss.

In addition, the phosphoric acid in soda may contribute to bone loss by changing the acid balance in the blood.
Medications

- Long-term use of the blood-thinning medication heparin, the cancer treatment drug methotrexate, some anti-seizure medications, diuretics and aluminum-containing antacids also can cause bone loss.

- Common treatments for chronic conditions – asthma, rheumatoid arthritis and psoriasis.

- Thyroid hormone. Too much thyroid hormone can cause bone loss.
Chronic alcoholism

- Alcoholism is one of the leading risk factors for osteoporosis.
- Excess consumption of alcohol reduces bone formation and interferes with the ability to absorb calcium.

Depression

- People who experience serious depression have increased rates of bone loss.
There are no symptoms in the early stages of the disease.

Symptoms occurring late in the disease include:

- Bone pain or tenderness
- Fractures with little or no trauma
- Loss of height (as much as 6 inches) over time
- Neck pain due to fractures of the spinal bones
- Stooped posture or kephosis, also called a “dowager’s hump”
TESTS AND DIAGNOSIS

- Bone Mineral Density Testing
- Spine CT,
- Quantitative Computed Tomography (QCT)
- Spine or Hip X-ray
- Blood and urine tests if osteoporosis is thought to be due to a medical condition, rather than simply the usual bone loss seen with older age
GOALS OF TREATMENT

- The goals of osteoporosis treatment are to:
  - Control pain from the disease
  - Slow down or stop bone loss
  - Prevent bone fractures with medicines that strengthen bone
  - Minimize the risk of falls that might cause fractures

- There are several different treatments for osteoporosis, including lifestyle changes and a variety of medications.
DRUGS

- **Hormone Therapy (HT) Prescription Medications** – Bisphosphonates, Raloxifene (Evista) / selective estrogen receptor modulators (SERMs), Calcitonin, Teriparatide (Forteo), Tamoxifen.

- **Emerging Therapies** – New physical therapy program combines the use of a device called a spinal Weighted Kypho-Orthosis (WKO), is worn daily for 30 minutes in the morning and afternoon.
Medications are used to strengthen bones:

- The most effective medications for osteoporosis that are approved by the FDA are anti-resorptive agents, which prevent bone breakdown.
- Antiresorptive medications inhibit bone removal (resorption), thus tipping the balance in favor of bone rebuilding and increasing bone density.
- Menopausal estrogen hormone therapy is one example of an antiresorptive agent.
- Others include Fosamax, Actonel, Evista, Boniva, Calcimar, and Reclast.
PREVENTION

- **Do exercise** – such as walking, running, skipping rope, jogging regularly.
- **Add soy in diet** – plant estrogens found in soy helps to maintain bone density and reduce the risk of fractures.
- **Avoid smoking** – it can reduce the levels of estrogen and increase bones Loss.
- **Avoid excessive alcohol**.
- **Avoid caffeine** – which is very harmful.
- Consider **Hormone Therapy**.
LIFESTYLE AND HOME REMEDIES

- **Maintain good posture** – which involves keeping the head held high, chin in, shoulders back, upper back flat and lower spine arched – helps to avoid stress on the spine.

- **When sit or drive** – place a rolled towel in the small of the back.

- **Don’t lean over** – while reading or doing handwork.

- **When lifting** – bend at the knees, not the waist, and lift with the legs, keeping the upper back straight.

- **Prevent falls**.

- **Manage pain** – don’t ignore chronic pain.
COMPLICATIONS

- Fractures are the most frequent and serious complication of osteoporosis.
- Often occurs in spine or hips – bones that directly support our weight.
- Hip fractures and wrist fractures from falls are common.
- Compression fractures can cause severe pain and require a long recovery.
- If many such fractures, can lose several inches of height as the posture becomes stooped.
LET'S SPREAD HAPPINESS