A collective of health practitioners mentoring one another in topics related to nutrition.
Anyone who wishes to join – You select yourself

Second Monday each Month 1 - 2pm

To share and build understanding of the common and uncommon knowledge of the practice of nutrition in the care and treatment of ourselves and the patients under our care.
Share your knowledge with each other.

Competition and knowledge hording only supports lost knowledge. This group endeavors to share knowledge and clinical experience to serve not only ourselves, but all people.
“If you want to learn something read about it.
If you want to understand something, write about it.
If you want to Master something, teach it.”

Yogi Bhajan
At some point we ask you to present a topic for presentation to the group. This presentation need only be 35-40 minutes in length with a power point or notes available in Word for the group. You should be able to do a Q&A with the group to follow.

Everyone will be encouraged to participate in the Q&A and it is asked that this become a roundtable type Q&A.

If you chose not to present, that is your decision and you will not be ousted from the group.
Push *6 now to mute your line

When the speaker is finished or asks for open input, or if you have a question or wish to add to the discussion, press *6 to unmute your line.
Osteoporosis

a progressive skeletal disease characterized by a reduction of bone mass, which can cause bone fractures and deformity
Osteoporosis Statistics

- Most osteoporosis is caused by increasing bone resorption that is due to decreased estrogen and progesterone production following menopause in women or decreased testosterone in men.

- 80% of those with osteoporosis are women.

- 40-50% of US women 50 years or older will suffer on osteoporosis related fracture within their lifetime.

- Bone reaches peak density at 25 years of age.

- Women lose 15-30% of bone mass on average between the ages of 30 to menopause.

- Up to 30% of patients suffering hip fracture will require long term nursing home care.

- 20% women with hip fracture will die in the subsequent year as an indirect result of the fracture.
Bone Physiology

Bone Composition

- 1/3 Water
- 1/3 Mineral
- 1/3 Protein

Cells in Bone

- Osteoblasts form new bone
- Osteocytes maintain bone
- Osteoclasts destroy old bone
- Disjunction between osteoblastic and osteoclastic activity.
- Should be 1:1 ratio. In osteoporosis, osteoclastic activity dominates.
Risk Factors

- Caucasians and Asians
- Thin women with a history of amenorrhea and low body fat
- Smoking
- Depression
- Low estrogen levels
- Corticosteroid use
- Sedentary lifestyle
- Caffeine
- Excessive alcohol consumption
- Family History
- Heavy metal toxicity
- Chronic antibiotic use
- Nulliparous women
- Low calcium diet

www.webmd.com
Medical Diagnostic Tests

**DEXA Scan (Dual X-ray Absorptiometry)**
The most common osteoporosis test is dual X-ray absorptiometry -- also called DXA or DEXA. It measures people’s spine, hip, or total body bone density to help gauge fracture risk. Read more.

**Beyond DEXA: Other Bone Mineral Density Tests**
Various methods can check bone density, including ultrasound and quantitative computed tomography (QCT). Bone density scores and cost may vary by testing method. Learn about these tests.

**Blood Test Markers**
Whether you're being screened or treated for osteoporosis, your doctor may order a blood or urine test to see the metabolism of bone. This provides clues to the progression of your disease.

**Bone Densitometry**
Bone densitometry is a test like an X-ray that quickly and accurately measures the density of bone.
DEXA scans

are the “Gold Standard” of medical diagnosis of osteoporosis.

• Are more accurate than regular X-rays. A person would need to lose 20-30% of their bone density before it would show up on an X-ray.

• Require less radiation exposure than CAT scans or Radiographic Absorptiometry. Radiation levels less than on a coast to coast airline flight.

• are less costly than CT. Currently the cost is usually about $250.00.
Bone density (or bone mineral density) is a medical term normally referring to the amount of mineral matter per square centimeter of bones. Bone density (or BMD) is used in clinical medicine as an indirect indicator of osteoporosis and fracture risk. This mineral bone density is not the true physical "density" of the bone, which would be computed as mass per volume.

It is measured by a procedure called densitometry, often performed in the radiology or nuclear medicine departments of hospitals or clinics. Measurements are most commonly made over the lumbar spine and over the upper part of the hip. The forearm may be scanned if the hip and lumbar spine are not accessible.
Calcaneus Ultrasound

- For screening purposes
- Less expensive than DEXA ($79 vs $250)
- Non-invasive
- Not as accurate (non-diagnostic) False negatives
Combines:

**Pyrilinks-D (DPD) urine test** which assesses bone breakdown with urinary assays for bone resorption markers

**Hormone saliva test** to measure hormone levels of estrogen, progesterone, DHEA, FSH, testosterone and two cortisols

$120 / [www.diagnostechs.com](http://www.diagnostechs.com) / 800-878-3787
Circulating Pyrilinks-D (DPD)

- Circulating DPD is a marker of bone resorption, when bone is broken down by **osteoclasts**.

- The occurrence for bone loss arises if osteoclast action (breaking down of bone) outpaces osteoblast action (the deposit of new bone).

- Found within collagen, DPD provides strength to the collagen matrix. When collagen is broken down, the residue enters the bloodstream and is eliminated via urine.
Hair Analysis

Heavy metal toxicity:
cadmium, arsenic, mercury, lead, aluminum

Mineral assay at a cellular level including: calcium, boron, magnesium, manganese, phosphorus, zinc, vanadium

Feedback on: carbohydrate metabolism, adrenal, thyroid, hormone balance, tissue catabolism markers at a cellular level

Analytical Research Labs / www.arltma.com / 800-528-4067
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### Significant Mineral Ratios

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**Note:** Mixed Oxidizer, Fast Oxidizer, Slow Oxidizer
Blood:
Calcium/Phosphorus Ratio

• The ideal Calcium/Phosphorus Ratio is 10 parts calcium to 4 parts phosphorus, creating a 2.5 ratio

• Is a useful index in detecting subtle hormone imbalance that may underlie bone decline

• Serum phosphorus is not routinely included in a CBC, be sure to ask that it be added

From Mastering Nutrition with Blood Chemistry (IFNH)
↑ Calcium ↓ Phosphorus

Seen most often in female hormonal dysfunction

Needs support:
• Insulin
• Posterior Pituitary
• Adrenal Cortex
• Parathyroid
↓ Calcium ↑ Phosphorus

Needs Support:
• Anterior pituitary
• Adrenal
• Thyroid
• Male Sex Hormones
Calcium Cuff Test

- Testing tissue calcium – how calcium is being absorbed into the tissues – Bone, Blood and Muscle

- Place blood pressure cuff on the calf, instructing patient to let you know when they feel a sharp, cramping type pain.

- Being able to withstand less than 200 millibars of pressure is indicative of a deficiency of tissue calcium.
Orthodox Medical Management

“Bone Friendly” Drugs, plus C, D, E, F

• (C) Calcium
• (D) vitamin D
• (E) weight-bearing Exercise
• (F) prevention of Falls

No treatment cures osteoporosis. Prevention is key.
Osteoporosis Medications

- Bisphosphonates (Fosamax, Boniva, Actonel, Atelvia)
- Estrogen (ET) or Hormone Therapy (HT)
- Selective Estrogen Receptor Modulators: “SERM’s” (Evista, Forteo)
- Calcitonin (Miacalcin)
Bisphosphonates

Bisphosphonates are some of the most commonly used drugs for osteoporosis. They work by slowing the breakdown of bone by killing osteoclasts.

These medications can be inconvenient to take. Because they can cause irritation and damage to the esophagus, you must stay upright for a certain period of time after each dose (usually 30 minutes to an hour, depending on the medication).

Also, because they interact with many foods and medications, you must take them with plain water on an empty stomach, and you cannot eat or drink anything other than plain water for a while after each dose (usually an hour).

- **Alendronate** *(Fosamax®, Fosamax Plus D™)*
- **Ibandronate** *(Boniva®)*
- **Risedronate** *(Actonel®, Actonel With Calcium®)*
- **Risedronate delayed-release** *(Atelvia™)*.

**Adverse Drug Reactions**

The bisphosphonates are associated with gastrointestinal effects, acute phase reactions musculoskeletal pain, and rarely: atrial fibrillation subtrochanteric fracture osteonecrosis of the jaw cutaneous hypersensitivity reactions renal impairment.
FOSAMAX ADR’S

Adverse Reactions

• **CNS**  Headache (3%); asthenia, dizziness, malaise, vertigo (postmarketing).

• **Dermatologic**  Photosensitivity, pruritus, rash, Stevens-Johnson syndrome, toxic epidermal necrolysis (postmarketing).

• **EENT**  Episcleritis, scleritis, uveitis (postmarketing).

• **GI**  Abdominal pain (7%); dyspepsia, nausea (4%); constipation, diarrhea, flatulence, gastroesophageal reflux disease (3%); esophageal ulcer (2%); abdominal distention, dysphagia, vomiting (1%); duodenal ulcers, esophageal erosions, esophageal perforation or stricture, esophageal ulcers, esophagitis, gastric ulcers, oropharyngeal ulceration (postmarketing).

• **Lab Tests**  Mild, transient decreases in serum calcium (18%) and phosphate (10%); symptomatic hypocalcemia (postmarketing).

• **Musculoskeletal**  Bone, muscle, or joint pain (4%); joint swelling, myalgia (postmarketing).

• **Miscellaneous**  Fever, hypersensitivity (including urticaria and angioedema), localized osteonecrosis of the jaw often associated with tooth extraction and/or local infection with delayed healing, peripheral edema (postmarketing).

WWW.DRUGS.COM
Boniva has been studied thoroughly in clinical trials, in which a group of people taking the drug have side effects documented and compared to another group not taking the medicine. This way, it is possible to see what side effects occur, how often they appear, and how they compare to the group not taking the medicine.

In these studies, the most common side effects of Boniva included:

• **Back pain** -- in up to 13.5 percent of people
• Indigestion or heartburn **-- up to 11.9 percent**
• Bronchitis -- up to 10 percent
• Arm or leg pain -- up to 7.8 percent
• Abdominal pain (stomach pain) -- up to 7.8 percent
• Diarrhea -- up to **6.8 percent**
• Headache -- up to **6.5 percent**

Other common Boniva side effects (occurring in 2 to 6 percent of people) included:

• Infections
• Weakness
• Vomiting
• **High cholesterol**
• Muscle pain
• Arthritis
• Dizziness
• A spinning sensation (vertigo)
• Pneumonia
• Sore throat
• Bladder infection (urinary tract infection or UTI)
• Constipation
• **Insomnia (see Boniva and Insomnia)**.
Estrogen Therapy (ET) and Hormone Therapy (HT) have been shown to reduce bone loss, increase bone density in both the spine and hip, and reduce the risk of hip and spine fractures in postmenopausal women. ET and HT are approved for preventing postmenopausal osteoporosis and are most commonly administered in the form of a tablet or skin patch. Estrogen alone increases a woman's risk of developing cancer of the uterine lining (endometrial cancer). To reduce this risk, women who still have a uterus (who have not had a hysterectomy) should usually take a progestin in combination with estrogen (this is known as hormone therapy or HT).

**Adverse Drug Effects**

Deep vein thrombosis (blood clots), pulmonary thrombosis, uterine cancer, breast cancer, abnormal vaginal bleeding, heart attack and stroke.

Any estrogen therapy or hormone therapy should be prescribed for the shortest amount of time possible. Taken for the prevention of postmenopausal osteoporosis, any ET or HT regimen should only be considered for women who have a significant risk of osteoporosis, and nonestrogen osteoporosis drugs should be carefully considered first.

WWW.DRUGS.COM
Hormone Therapy

Even though HT lowers “bad” cholesterol (LDL) and raises “good” cholesterol (HDL),

**HRT increases the risk of heart attack in women with and without known heart disease.**

[www.medicinenet.com/hormone_therapy/page2](http://www.medicinenet.com/hormone_therapy/page2)
Selective Estrogen Receptor Modulators (SERMS) are drugs that act like estrogen at some receptors, but act like an anti-estrogen at others. It acts like estrogen for preventing bone loss and improving cholesterol, but acts like an anti-estrogen for treating breast cancer or uterine cancer. Currently, there is only one SERM that is approved to prevent and treat osteoporosis --

Raloxifene (Evista)

Teriparatide (Forteo) is self-injected into the skin. Because long-term safety is not yet established, it is only FDA-approved for 24 months of use.

Adverse Drug Effects The selective estrogen receptor modulators may induce hot flushes and leg cramps, and--more rarely--venous thromboembolism and stroke.
Calcitonin Therapy

- **Calcitonin** is a naturally occurring hormone that affects the bones. Calcitonin analogues (which are manufactured versions of calcitonin) can be useful for treating osteoporosis by slowing the breakdown of bone. Because calcitonin is a delicate molecule that would be destroyed by the digestive tract, it must be taken by nasal spray or by injection. Currently, calcitonin analogues approved to treat osteoporosis include calcitonin salmon nasal spray (Miacalcin® Nasal Spray, Fortical®) and calcitonin salmon injection (Miacalcin® Injection).

- **Adverse reactions** Side effects are often mild, but commonly occur in about 10% of patients and may occur in up to 30%. About one third of treated patients discontinue the drug due to side effects. Calcitonin is a large, manufactured peptide. A certain percentage of what is produced during manufacturing may be "error peptides" which may increase or change the side effects.

- Too numerous to detail, including symptoms of the following systems: GI, cardiovascular, nervous system, respiratory, renal, dermatologic, metabolic, musculoskeletal and hypersensitivity reactions including death by anaphylaxis (rare).
# Calcium RDA’s

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<tr>
<td>11-24</td>
<td>1200 mg/day</td>
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<td>Men, Pre-menopausal women, Post-menopausal women on HRT</td>
<td>1000 mg/day</td>
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<td>Post-menopausal women</td>
<td>1500 mg/day</td>
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<td>Pregnant and nursing women</td>
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1 Tbsp. Calcium Lactate Powder supplies 800 mg Ca
### Vitamin D RDA's

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<td>800 IU /day</td>
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1 tablet Cataplex D supplies 800 IU D3 per tablet
**Cataplex D**

Encourages healthy calcium absorption from the intestinal tract into the blood

- Supports a healthy immune response
- Supports and maintains healthy bone density
- Needed by almost every cell in the body for development and transcription

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<th>Amount per Serving</th>
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<td>Calcium</td>
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Primary Factors in Osteoporosis

**Poor Hydration** Helpful solution: Filtered water consumption should be 1/2 of the individuals average weight in ounces daily.

**Lack of Weight Bearing Exercise**
Helpful solution: Walking 15 - 30 minutes daily. Trampoline in winter 15 - 20 minutes daily.

**Limited Calcium Absorption**
Product: Zypan (hcl source)
Helpful solution: Use apple cider vinegar and oil on salads at 2 meals daily.

**Faulty Utilization of Calcium**
Product: Cataplex D (should be a natural from of Vitamin D from lanolin, balanced with Vitamin A)

**Decline in hormone production, primarily estrogen**
Products: Symplex F, Wild Yam Complex Note: The adrenals glands assume primary responsibility of Estrogen production pre-post menopause.

**Inadequate Protein Balance**
Products: Protefood, Calcifood Powder, and Whey Pro Complete Note: 1/3 of daily nourishment should be protein. 22 amino acids provide the essential building blocks for protein. 8-10 amino acids (heat labile) are destroyed by heating foods, primarily proteins, above body temperature.

**Mineral Deficiency**
Products: Calcium Lactate Powder (provides blood serum calcium, 2% of total body calcium), Calcifood Powder (provides bone calcium, 98% of total body calcium, trace minerals and raw protein), Cruciferous Complete (trace minerals from vegetables), and/or Trace Minerals B-12.

**Insufficient fat soluble vitamin K**
Products: Chlorophyll Perles or Cruciferous Complete (dark green leafy vegetables) Note: Vitamin K assists new bone material to adhere to old bone substance.
ADDITIONAL PRODUCTS
(daily, listed in order of importance)

6-8  Symplex F (SP)
1-2  Protefood (SP)
2-4  Cataplex D (SP)
3   Wild Yam Complex (MH)
2   Bone Complex (MH)
3-6  Zypan (SP)
4-6  Chlorophyll Perles (SP)
2-4  Trace Minerals B-12 (SP)
2-4  Cruciferous Complete (SP)
Primary Osteoporosis Protocol

(requires 6-12 months before results start to become evident):

1 Tbsp. **Calcifood Powder**
(600 mg bone calcium)

1 Tbsp. **Calcium Lactate Powder**
(800 mg blood calcium)

2 Tbsp. **SP Complete**
(200 mg calcium, 10 g protein)

or 2 Tbsp. **Whey Pro Complete**
(40 mg calcium, 15 g protein)

1 Tbsp. **EFA**: Flax Oil or
or 4-6 capsules **Linum B6, Calamari or Tuna Oil**

- 8 oz **water** (increase for desired consistency)

- 1 c fresh or frozen **fruit** or **vegetables**
  (optional, best when kept to low glycemic choices)
Bone Health Daily Fundamentals

Bone Health Daily Fundamentals provide convenient maintenance support to keep bones strong and healthy. Boxes include a 30-day supply of individual packs containing:

- **Calcifood** (3 wafers) to support calcium absorption
- **Cataplex D (1 tablet)** to support and maintain healthy bone density
- **Cruciferous Complete (1 capsule)** to help move calcium into bones
- **Ostrophin PMG** (2 tablets) to support healthy bone function
- Adequate calcium, as part of a healthful diet, along with physical activity, may reduce the risk of osteoporosis in later life.

**Suggested Use:** Contents of 1 pack each morning and evening.
Dietary Essentials

• Quality proteins: raw is best choice: runny egg yolk, raw milk, rare meats

• Vegetables: green leafy

• Quality fats: both saturated and unsaturated are necessary

• Reduce/Eliminate: candy, soda, sugar and refined foods

• Consider Wheat/Gluten as an underlying intestinal disrupter

(read Wheat Belly by William Davis, MD)
Dietary essentials

• What you eat affects your bones.

• Getting calcium from food or food-plus-supplements works best, creating stronger bones than when just supplements are taken.

• A wholesome, varied, nutrient dense, real food diet is important to provide the plethora of nutrients and other food factors needed for the complex processes that maintain the integrity of our bone.

• A Mediterranean diet rich in plant foods, fish and olive oil appears to improve bone mass.

Recommended: Nutrition New and Views
SP Calcium Products

Muscle & Immune Support

**Calcium Lactate or Calcium Lactate Powder** is comprised of calcium lactate and magnesium citrate. Calcium lactate is a highly soluble calcium salt. It needs very little stomach acid to be converted into an ionizable form of calcium, which is the only form that will be absorbed. The magnesium helps in the uptake of calcium lactate. This is also a vegetarian product, not derived from a dairy source.

Bone Building

**Calcifood® or Calcifood®** Powder is more than just a calcium supplement. It contains the vitamins, minerals, proteins, and enzymes found in bone. These nutrients are essential for the body to build strong, healthy bones.* Bio-Dent® contains amino acids and specific bone proteins that directly support the health of the skeletal system. The amino acids found in Bio-Dent address the energy needs of muscle tissue and aid in the maintenance of healthy muscle, bone, and skin.

**Calsol®** is a vegetarian bone-building product containing calcium, magnesium, carbamide, and phosphorus to support gallbladder function, as well as the digestive, musculoskeletal, and central nervous systems.

Assists in Calcium Utilization/Absorption

**Cal-Ma Plus®** provides concentrated nutrients to support the parathyroid. Healthy parathyroid function is required for the proper regulation of calcium metabolism.
Calcifood® or Calcifood® Powder—Bone is specialized tissue formed from much more than calcium. To build bone properly, you need to supply your body with all the vitamins, minerals, proteins, and enzymes found in bone. Calcifood is a unique product that contains these nutritional components to help your body build strong, healthy bones.

Cataplex® D—Vitamin D is important in moving the ionized calcium from your intestinal tract into the blood. Cataplex D contains vitamin D plus other important nutrients to help maintain a healthy blood-calcium level.

Cruciferous Complete®—Vitamin K is very important in moving calcium from the blood into the bone. Vitamin K is found in dark green, leafy vegetables like kale and Brussels sprouts. Cruciferous CompleteTM is a whole food supplement containing organic kale and Brussels sprouts for those who do not eat these important foods.

Cataplex® C—Vitamin C is crucial for optimal collagen (bone protein) formation. Together, calcium and collagen form a durable and flexible living tissue—bone. Cataplex C is comprised of whole food vitamin C sources, so you not only receive ascorbic acid, but all the natural vitamins, minerals, and amino acids that are part of the whole food complex.

Ostrophin PMG®—The natural bone proteins and other organic factors that naturally occur in bone are important for optimal bone health. Ostrophin PMG® contains veal bone PMGMTM to maintain bones in a good state of health to support healthy bone function.*
Exercise for strong bones

Two types of exercises are important for building and maintaining bone density:

**Weight-bearing exercises**
30 minutes on most days of the week. Do a 30-minute session or multiple sessions spread out throughout the day. The benefits to your bones are the same. These exercises include activities that make you move against gravity while staying upright. Weight-bearing exercises can be high-impact or low-impact.

**Muscle-strengthening exercises**
Two to three days per week. If you don’t have much time for strengthening/resistance training, do small amounts at a time. You can do just one body part each day. For example do arms one day, legs the next and trunk the next. You can also spread these exercises out during your normal day.
Low Impact Exercises

• Low impact exercises can also help keep bones strong and are a safe alternative if you cannot do high-impact exercises. Examples of low-impact weight-bearing exercises are:

1. Elliptical training machines
2. Low-impact aerobics
3. Stair-step machines
4. Fast walking on a treadmill or outside