OSTEOPOROSIS

Understand the disease. Protect your bones. Prevent the next fracture.

A fragility fracture is a warning sign

- A broken bone from a low energy mechanism (i.e. fall from standing height or less) may mean osteoporosis—even if you feel well
- Ask about a bone-health evaluation and treatment to lower the chance of another fracture.

WHAT IS HAPPENING INSIDE THE BONE?

Osteoporosis means bone has lost strength and its internal framework has become thinner and more fragile. It is often "silent" until a fracture occurs.

OSTEOCLASTS	OSTEOBLASTS	OSTEOCYTES
- removes old or damaged bone - "bone-eating" cells.	- make and mineralize new bone - bone-building cells.	- mature bone cells that sense strain and help coordinate repair.

With aging—especially after menopause—osteoclast activity can outpace osteoblast rebuilding. Osteoblast number/function decline, repair becomes less complete, and bone slowly loses density and structure.

THE FOUNDATION: FOOD, MOVEMENT & FALL PREVENTION

Calcium

Aim for the total from food + supplements

- 1,000 mg/day for men 50–70
- 1,200 mg/day for women 51+ and men 71+

Vitamin D3

- Helps gut absorb calcium and supports muscle
- Many adults 50+ with low bone mass are advised 800–1,000 IU/day; your blood level and clinician may change the dose

Magnesium + protein

- Magnesium supports bone metabolism
- Protein supports bone and muscle.
- Nuts, seeds, beans, whole grains, greens, dairy/fortified foods, fish, eggs, or lean meats

Load the skeleton safely

- Weight-bearing activity, resistance exercise, balance training
- Eliminate smoking, limit alcohol
- Vision/medication review, and home fall-proofing help protect against fractures.

MEDICATIONS: SLOW BREAKDOWN OR BUILD NEW BONE

	BISPHOSPHONATES	PTH / PTHrP ANALOGS
Examples	Alendronate, risedronate, zoledronic acid (generic names)	Teriparatide (PTH) and abaloparatide (PTHrP).
How they work	Attach to bone and reduce osteoclast-driven breakdown. Turn off the bone-eating cells	Anabolic: daily pulses stimulate osteoblast activity and new bone formation. Restores balance of bone eating and bone making
Often used for	Common first-line choices for many people at high fracture risk; pills or injection, depending on the drug.	- Very high fracture risk, severe/multiple vertebral fractures - Failure/intolerance of other therapy; daily self-injection.
Important points	Oral dosing has strict instructions - Kidney function and calcium must be checked - Rare side effects: jaw osteonecrosis and atypical femur fracture - Medications are not forever. Usually a limited course	Usually a limited course (often up to 2 years), then an antiresorptive is needed to preserve gains. Possible dizziness, nausea, and calcium changes; not appropriate for everyone.

Supplements support the plan—but they do not replace osteoporosis medication when fracture risk is high.

Do not start or stop a medicine or supplement without your clinician. Kidney disease, kidney stones, dental procedures, and other medicines may change what is safest.