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CLINICIAN NOTE

EVIDENCE SUMMARY

Bone health in perimenopause

Bones before they break · lecture preparation · 15 October 2026 · For discussion, not a prescription



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Women lose bone fastest in the few years around the last period. What happens in these years shapes fracture risk two decades later. This article sets out what is known, what to do for every woman, and when to do more.

Why perimenopause matters for bone

~10% in 10 y

THE TRANSMENOPAUSE WINDOW

The US SWAN cohort followed women through the transition with repeated DXA scans. Bone loss began about 1 year before the final menstrual period and slowed, but did not stop, about 2 years after it. Over 10 years, women lost 10.6% of spine BMD and 9.1% of hip (femoral neck) BMD. About two-thirds of that loss happened in the 3-year window around the last period [1].

Loss was slower in women with a higher BMI and faster in Chinese and Japanese women [1]. No similar long-term DXA cohort exists for Indian women.

NO INDIAN DATA *No Indian data; outside-India figure: SWAN (US white, Black, Chinese and Japanese women) found 10.6% spine and 9.1% hip BMD loss over 10 years, faster in Chinese and Japanese women [1]. Use as a guide.*

CERTAINTY: MODERATE *Prospective cohort; US women of four ethnic groups.*

The Indian picture

46.6 years

EARLIER MENOPAUSE, EARLIER FRACTURES

- Average age at natural menopause in India is about 46.6 years, from a systematic review of household surveys [2].

  OUTSIDE INDIA *Outside India: mean age at natural menopause was 48.8 years across 46 studies in 24 countries, lower in Asia, Africa and Latin America (meta-analysis) [3]. Not Indian data; use as a guide.*

- IMS India 2026 reports that hip fractures in India occur about a decade earlier than in the West (mean age 65 to 71 years against over 75 to 80) [4]. ISBMR makes the same observation [5].
- IMS India estimates that about 3 in 4 women eat less calcium than the recommended amount and about 2 in 3 are vitamin D deficient [4]. A South Asian meta-analysis found a pooled deficiency rate of 68% [6].

  OUTSIDE INDIA *Outside India: in a worldwide review of 195 studies from 44 countries, 37.3% of studies reported a mean 25(OH)D below 50 nmol/L [7]. Not Indian data; use as a guide.*

CERTAINTY: LOW *Indian estimates come from varied, mostly hospital or regional studies.*

Who needs assessment

Targeted

CASE-FINDING, NOT MASS SCREENING

Irregular periods alone are not a reason for DXA. Assess women with a fragility fracture, glucocorticoid use, early menopause or premature ovarian insufficiency, low body weight, a parent with hip fracture, or another secondary cause [4,8]. USPSTF advises screening at 65, and earlier after menopause when risk is raised [9].

In India, IMS suggests a stepwise approach: OSTA (age and weight) in primary care, FRAX without BMD in secondary care, and FRAX with DXA where a treatment decision is needed. FRAX India probably underestimates risk [4].

OUTSIDE INDIA *Outside India: FRAX was built from 9 population cohorts and checked in 11 more. Clinical risk factors plus hip BMD gave a hip-fracture gradient of risk of 4.2 per SD at age 50 (Kanis 2007) [10]. Not Indian data; use as a guide.*

CERTAINTY: MODERATE *USPSTF grade B; IMS India Grade B.*

What every woman should do — Food first

LIFESTYLE FOR LOADING THE BONE

- **Calcium from food.** Aim for at least 800 mg a day, the IMS India target, from milk, curd, paneer, ragi, sesame, greens and dal. Average Indian intake is about 400 mg [4]. Supplement only the gap.
- **Vitamin D.** Correct deficiency. IMS India suggests 1000 to 2000 IU a day for Indian adults [4]. Routine vitamin D did not prevent fractures in a large trial of adults who were not deficient [11].
- **Exercise.** Progressive resistance and impact training raise BMD. In LIFTMOR, supervised training raised spine BMD by 2.9% while controls lost 1.2% [12]. Walking alone is not enough for bone [4].
- **Falls, smoking and alcohol.** Balance work prevents falls; stopping smoking and keeping alcohol low reduce fracture risk [4,8].

CERTAINTY: LOW *BMD benefits are shown; fracture benefit from lifestyle alone is not proven in trials [13,14].*

Hormone therapy and bone — HR 0.66 hip

THE STRONGEST BONE EFFECT IN THIS AGE GROUP

Oestrogen stops the bone loss of the transition. In WHI, combined therapy lowered hip fracture (hazard ratio 0.66) and all fractures (hazard ratio 0.76), in women not chosen for low bone density [15,16]. The benefit faded after treatment stopped [17].

Guidelines agree MHT suits women under 60 or within 10 years of menopause who have symptoms, and that bone protection is an added benefit [8,18]. They disagree on MHT for bone alone: USPSTF recommends against it for prevention (grade D) [19], while IMS India lists it as a first-line option for women at raised risk within 10 years of menopause [4]. Article 4 covers the risks.

CERTAINTY: MODERATE *RCT fracture data, but mostly in women over 60.*

When to start a bone drug — FRAX

FRACTURE RISK DECIDES

A fragility fracture, a T-score of -2.5 or lower, or a high FRAX score (IMS India: hip above 3% or major fracture above 20% in 10 years) calls for treatment [4]. IMS India lists bisphosphonates or denosumab as first line, with MHT as an option within 10 years of menopause [4]. Alendronate cut new vertebral fractures from 15.0% to 8.0% in women with a prior vertebral fracture [20].

Denosumab needs a planned exit. Stopping it without follow-on treatment raised vertebral fracture rates from 1.2 to 7.1 per 100 patient-years [21].

CERTAINTY: HIGH *Placebo-controlled RCTs.*

Follow-up — 1-5 years

MONITORING

Repeat DXA between 1 and 5 years depending on risk, on the same machine [4]. Review bisphosphonates after some years rather than stopping by default [8].

EXPERT CONSENSUS

Take-home points

FOR THE LECTURE

KEY MESSAGES

- Bone loss is fastest from 1 year before to 2 years after the last period [1].
- Indian women reach menopause and fracture earlier [2,4].
- Screen by risk, not by age of periods; FRAX India may underestimate risk [4].
- Food calcium, vitamin D repletion, resistance training and fall prevention for all.
- MHT protects bone; bone alone as the reason is contested [18,19].
- Fracture or T-score -2.5: start a drug; plan the end of denosumab [21].

WHERE THE EVIDENCE IS WEAK

- No Indian long-term cohort of bone loss through the transition.

  NO INDIAN DATA *No Indian data; outside-India figure: SWAN (US white, Black, Chinese and Japanese women) found 10.6% spine and 9.1% hip BMD loss over 10 years, faster in Chinese and Japanese women [1]. Use as a guide.*

- Fracture trials of MHT are in women around 63 years on average, not in perimenopause [22].
- Calcium and vitamin D advice rests on consensus and deficiency correction, not fracture trials [11,14].

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VERIFIED BY PMID AND DOI · VANCOUVER STYLE

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