FRAX Based Kuwait Osteoporosis Guidelines - 2018

Postmenopausal women and men aged ≥ 50 years

No history of fragility fracture

Apply FRAX (see fracture probability table)

History of fragility fracture
(Spine, hip or ≥ 2 other fractures)

Treat ± DXA

Below lower assessment threshold

Reassure and repeat FRAX after 5 years or when clinical condition changes

Between assessment thresholds

DXA

Treat ± DXA

Above upper assessment threshold

Reassess probability

No treatment

Consider treatment

Measure BMD

Intervention threshold

UAT

IT

LAT

Ten year probability (%)

Age (years)

0  5  10  15  20  25  30  35  40  45  50  55  60  65  70  75  80  85  90

Ten year probability (%)

Intervention threshold

Lower assessment threshold (LAT)

Upper assessment threshold (UAT)

<table>
<thead>
<tr>
<th>Age (years)</th>
<th>Intervention threshold (IT)</th>
<th>Lower assessment threshold (LAT)</th>
<th>Upper assessment threshold (UAT)</th>
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</tbody>
</table>
**FRAX Based Kuwait Osteoporosis Guidelines - 2018**

**Fracture risk elevated based on FRAX assessment ± DXA scan**

**History of fragility fracture (Spine, hip or ≥ 2 other fractures)**

**NON PHARMACOLOGICAL:**
1) Discontinue/limit smoking, alcohol, excess caffeine.
2) Weight-bearing exercises 30 minutes/day (walking, jogging, dancing, strength/resistance training).
3) Measures to reduce the risk of falling.
4) Use hip protectors in individuals with high risk of falling.

**PHARMACOLOGICAL:**
1) Treat vitamin D deficiency if present & maintain on 50,000 IU/month or equivalent dose to achieve Serum 25-OH vitamin D level between 75-150 nmol/L.
2) Maintain on calcium 1200 mg/day (preferably through diet, if not then through supplements).
3) One-Alfa should only be used in cases of chronic renal impairment and hypoparathyroidism.

**First choice** (alphabetical order)
- Alendronate (Fosamax)
- Denosumab (Prolia)\(^{(1)}\)
- Zoledronic Acid (Aclasta)\(^{(2)}\)

**Second choice** (alphabetical order)
- Ibandronate (Bonviva)\(^{(3)}\)
- Raloxifene (Evista)\(^{(4)}\)

**Evidence for Fracture Risk Reduction by Randomized Trials**
- Vertebral
- Nonvertebral
- Hip
- Men

**Teriparatide (Forteo)**
- 20 mcg s/c daily for 18 - 24 months (once in a lifetime)

**Contraindications to PTH:**
- Hypercalcemia
- Hyperparathyroidism
- Skeletal malignancy
- Paget’s disease
- Radiation therapy

**Treatment should be followed by an antiresorptive agent**

**TREATMENT MONITORING**
- Repeat DXA every 2 years on same machine & if possible with same technologist.
- Monitor changes at lumbar spine, total hip BMD. Compare BMDs and not T-scores.

**TREATMENT ASSESSMENT**

**TREATMENT FAILURE**
1) Declining BMD
2) Occurrence of >1 fragility fracture

**Rule out:**
- Non adherence
- Secondary causes including medications

**TREATMENT SUCCESS**
1) Stable or increasing BMD
2) Absence of fragility fractures

**Combination therapy is not advised**

\(^{(1)}\) Preferred drug in renal insufficiency (Ccr < 35 ml/min)
\(^{(2)}\) Preferred drug after hip fracture
\(^{(3)}\) Post-hoc analysis
\(^{(4)}\) Preferred drug in women with strong family history of breast malignancy

NAE: Not Adequately Evaluated

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NAE: Not Adequately Evaluated
INITIAL EVALUATION

- History and physical examination.
- Height and weight measurements.
- Laboratory tests: CBC + ESR, RFT, LFT, mineral profile, ALP, PTH-I, TFT, 25OH Vitamin D ± Gonadal hormones.

GENERAL MEASURES

- Reduce dose and/or change route of glucocorticoids when possible and consider glucocorticoid sparing therapy.
- Smoking and alcohol cessation and limitation of caffeine to < 3 cups/day.
- Weight-bearing exercises 30 minutes/day (walking, jogging, dancing, strength/resistance training).
- Treat vitamin D deficiency if present and maintain on an equivalent dose of 1000 IU/day to achieve serum 25-OH vitamin D level between 75-150 nmol/L.
- Maintain a calcium intake of 1000-1200 mg/day, preferably through diet, if not then through supplements.

POSTMENOPAUSAL

- Postmenopausal women and men ≥ 50 years exposed to systemic glucocorticoids.

PREMENOPAUSAL

- Adult (age ≥ 18 years) premenopausal women and men younger than 50 years using systemic steroids treatment ≥ 3 month.

FOLLOW UP MEASURES

- Height measurement every 6-12 months with prospective height loss ≥ of 2 cm, consider vertebral fracture assessment (VFA) or plain x-rays.
- Vitamin D measurements every 6–12 months.
- If glucocorticoids continued, repeat DXA scan after every 1–3 years.
- Assessment of new fractures (ribs and vertebrae).
- Active pharmacological treatment should be continued until no further exposure to glucocorticoid.
- For adults > 40 years, DXA scan should be done every 2-3 years after glucocorticoids and osteoporosis treatment has been discontinued.

<table>
<thead>
<tr>
<th>Postmenopausal</th>
<th>Premenopausal</th>
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<tbody>
<tr>
<td>Treatment ≥ 3 months</td>
<td>Treatment &lt; 3 months</td>
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<tr>
<td>Any of below risk factors available?</td>
<td>History of fragility fracture (spine, hip or ≥ 2 other fractures)</td>
</tr>
<tr>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>FRAX above intervention threshold (GC-adjusted)</td>
<td></td>
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<tr>
<td>No</td>
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<tr>
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<tr>
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</tr>
<tr>
<td>Alendronate</td>
<td>Zoledronic acid</td>
</tr>
<tr>
<td>Denosumab</td>
<td>Teriparatide</td>
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<tr>
<td>Refer to general guidelines</td>
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</table>

<table>
<thead>
<tr>
<th>Women with childbearing potential</th>
<th>Women with no childbearing potential and men</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monitor with DXA scan every 1-3 years depending on risk factors</td>
<td>Monitor with FRAX &amp; DXA scan every 1-3 years depending on risk factors</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Women with childbearing potential in treatment period</th>
<th>Women with no childbearing potential and men</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment recommended</td>
<td>Treatment recommended</td>
</tr>
<tr>
<td>Alendronate</td>
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<tr>
<td>Denosumab</td>
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<tr>
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</tbody>
</table>

(1) Preferred drug in renal insufficiency (Clcr < 35 ml/min) and in women with childbearing potential
(2) Preferred drug in cases with fragility fracture
Kuwait Osteoporosis Guidelines 2018

**INDICATIONS FOR VERTEBRAL IMAGING**

Consider vertebral imaging tests, by *Vertebral Fracture Assessment (VFA)* or lateral thoracic and lumbar spine x-ray, in the following individuals:

- In all women age 70 and older and all men age 80 and older.
- In women and men age >50 with specific risk factors:
  - Low trauma fracture
  - Historical height loss of 4 cm or more
  - Prospective height loss of 2 cm or more
  - Recent or ongoing long term glucocorticoid treatment

Adopted from the National Osteoporosis Federation 2013