

The following guideline recommends assessment and management of patients with osteopenia and osteoporosis.

Eligible Population	Key Components	Recommendation and Level of Evidence	Frequency		
Patients at high risk for osteoporosis	Assessment	<ul style="list-style-type: none"> <li>■ Assess for loss of height (&gt; 1.5 inches) and back pain</li> <li>■ Assess other risk factors:               <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <b>Modifiable:</b> <ul style="list-style-type: none"> <li>◆ Current cigarette smoking</li> <li>◆ Low body weight (&lt; 127 lbs or BMI ≤ 20)</li> <li>◆ Endocrine disorders                   <ul style="list-style-type: none"> <li>◆ Premature or surgical menopause</li> <li>◆ Chronic corticosteroid therapy</li> <li>◆ Estrogen or testosterone deficiency</li> <li>◆ Excessive thyroid hormone replacement</li> </ul> </li> <li>◆ Calcium or vitamin D deficiency</li> <li>◆ Excessive alcohol intake (more than two drinks per day)</li> <li>◆ Inadequate physical activity</li> </ul> </td> <td style="width: 50%; vertical-align: top;"> <b>Non-Modifiable:</b> <ul style="list-style-type: none"> <li>◆ Family history of osteoporosis</li> <li>◆ Caucasian or Asian race</li> <li>◆ Advanced Age (&gt; age 65)</li> <li>◆ Female gender</li> <li>◆ History of atraumatic fracture</li> </ul> </td> </tr> </table> </li> <li>■ Bone mineral density (BMD) testing using DEXA spine &amp; total hip</li> <li>■ CT scan for screening is not recommended</li> </ul>	<b>Modifiable:</b> <ul style="list-style-type: none"> <li>◆ Current cigarette smoking</li> <li>◆ Low body weight (&lt; 127 lbs or BMI ≤ 20)</li> <li>◆ Endocrine disorders                   <ul style="list-style-type: none"> <li>◆ Premature or surgical menopause</li> <li>◆ Chronic corticosteroid therapy</li> <li>◆ Estrogen or testosterone deficiency</li> <li>◆ Excessive thyroid hormone replacement</li> </ul> </li> <li>◆ Calcium or vitamin D deficiency</li> <li>◆ Excessive alcohol intake (more than two drinks per day)</li> <li>◆ Inadequate physical activity</li> </ul>	<b>Non-Modifiable:</b> <ul style="list-style-type: none"> <li>◆ Family history of osteoporosis</li> <li>◆ Caucasian or Asian race</li> <li>◆ Advanced Age (&gt; age 65)</li> <li>◆ Female gender</li> <li>◆ History of atraumatic fracture</li> </ul>	<ul style="list-style-type: none"> <li>◆ Adult height assessments at periodic well exams</li> <li>◆ BMD test for initial diagnosis [D]</li> </ul>
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Core Principles of Treatment and Prevention	<b>Regardless of risk factors:</b> <ul style="list-style-type: none"> <li>◆ Dietary calcium 1200 mg/d and 800 - 1000 IU vitamin D<sub>3</sub> [B]</li> <li>◆ Weight-bearing exercise [A]</li> <li>◆ Address modifiable risk factors above</li> </ul>	<ul style="list-style-type: none"> <li>◆ BMD testing more often than every two years is generally not useful</li> <li>◆ Consider rechecking BMD after at least two years of pharmacologic treatment to monitor effectiveness [D]</li> </ul>			
Patients requiring therapy to reduce high risk of fracture	Patient Selection for Pharmacological Management Based on DEXA	<ul style="list-style-type: none"> <li>◆ Treatment to prevent fractures in osteopenia [T-score between -1 and -2.0] without risk factors is not useful [D]</li> <li>◆ Treat patients on corticosteroid therapy with a T-score ≤ -1.0 [A]</li> <li>◆ Treat patients with osteopenia and a T-score between -2.0 and -2.5 at increased risk [D]</li> <li>◆ Patients with osteoporosis [T-score &lt; -2.5] (Osteopenia associated with atraumatic fracture should be treated as osteoporosis [D])</li> </ul>			
	Pharmacological Management	<ul style="list-style-type: none"> <li>◆ Consider oral biphosphonate, generic if available<sup>1</sup></li> <li>◆ Consider referral to endocrine or bone and mineral metabolism specialist if patient does not tolerate treatment or shows progression or recurrent fracture after 2 years on treatment</li> </ul>			

<sup>1</sup> Use caution in patients with active upper GI disorders. Take medication on an empty stomach with water, remain upright, no food or beverage for 30 minutes, (60 minutes for Ibandronate)

**Levels of Evidence for the most significant recommendations:** A = randomized controlled trials; B = controlled trials, no randomization; C = observational studies; D = opinion of expert panel

This guideline represents core management steps. It is based on The Guide to Clinical Preventive Services 2007, Recommendations of the U.S. Preventive Services Task Force ([www.preventiveservices.ahrq.gov](http://www.preventiveservices.ahrq.gov)) and the Diagnosis and Treatment of Osteoporosis Guideline, Institute for Clinical Systems Improvement, 2006 ([www.icsi.org](http://www.icsi.org)). Individual patient considerations and advances in medical science may supersede or modify these recommendations.