

# BONE HEALTH IN THE ELDERLY

## OSTEOPOROSIS AND FRACTURES

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### Bone Health in the Elderly: Osteoporosis and Fractures

Osteoporosis is a bone disease where parts of the bone become weak and prone to fracture. Fractures cause pain, agitation, immobility and transfers to hospital in older adults living in long-term care homes. Strategies to prevent fractures should be tailored to each resident's level of fracture risk, mobility, life expectancy, renal function and ability to swallow.

Risk factors for fractures in the elderly	Strategies to prevent fractures
<ul style="list-style-type: none"> <li>Prior fracture of the hip or spine <b>OR</b></li> <li>More than one prior fracture <b>OR</b></li> <li>One prior fracture and recent use of glucocorticoids <b>OR</b></li> <li>Identified as high risk and/or receiving osteoporosis treatment before admission to long-term care</li> </ul>	<ul style="list-style-type: none"> <li>Vitamin D and calcium supplementation</li> <li>Use of hip protectors</li> <li>Exercise</li> <li>Multifactorial interventions to prevent falls (i.e. use of canes/walkers/wheelchairs, installation of handles in bathrooms, etc.)</li> <li>Pharmacologic therapies</li> </ul>

### Recommendations

	All older residents	Older residents with high risk of fracture
<b>Calcium</b>	<ul style="list-style-type: none"> <li>For people &gt;70 years, the recommended dietary allowance for calcium is 1200 mg daily (3 servings of dairy or dairy equivalents)</li> </ul>	<ul style="list-style-type: none"> <li>If cannot meet the recommended dietary allowance for calcium through dietary intake, supplements of calcium up to 500 mg daily</li> <li>See "all older residents" section</li> </ul>
<b>Vitamin D<sub>3</sub></b>	<ul style="list-style-type: none"> <li>Supplements of 800-2000 IU vitamin D daily</li> </ul>	<ul style="list-style-type: none"> <li>See "all older residents" section</li> </ul>
<b>Pharmacologic therapy</b>	<ul style="list-style-type: none"> <li>Pharmacologic therapy not usually required for patient NOT at high risk of fractures</li> </ul>	<ul style="list-style-type: none"> <li><b>Alendronate</b> (weekly) or <b>risedronate</b> (weekly or monthly) to be used as first-line therapy</li> <li>If have difficulty taking oral medications, <b>zoledronic acid</b> or <b>denosumab</b> to be used as first-line therapy</li> <li><b>Teriparatide</b> is considered as second-line therapy</li> <li><b>Raloxifene &amp; etidronate</b> are <b>NOT</b> recommended</li> </ul>
<b>Hip protectors (hard and soft)</b>	<ul style="list-style-type: none"> <li>For mobile residents, hip protectors are suggested</li> <li>Strategies to improve adherence may be needed</li> </ul>	<ul style="list-style-type: none"> <li>For mobile residents, hip protectors are recommended</li> </ul>
<b>Exercise</b>	<ul style="list-style-type: none"> <li>It is recommended to practice balance, strength and functional training exercises to prevent falls</li> </ul>	<ul style="list-style-type: none"> <li>It is recommended to practice balance, strength and functional training exercises only when such exercises are part of a multifactorial intervention</li> </ul>
<b>Multifactorial intervention</b>	<ul style="list-style-type: none"> <li>It is recommended to use multifactorial interventions that are individually tailored to reduce the risk of falls and fractures. These interventions include: medication reviews, assessment of environmental hazards, use of assistive devices, exercise, management of urinary incontinence and educational interventions directed to staff</li> </ul>	<ul style="list-style-type: none"> <li>See "all older residents" section</li> </ul>

### References

Papaioannou, A., Santesso, N., Morin, S. N., Feldman, S., Adachi, J. D., Crilly, R. For the Scientific Advisory Council of Osteoporosis Canada. (2015). Recommendations for preventing fracture in long-term care. Retrieved August 25, 2017, from <http://www.cmaj.ca/content/early/2015/09/14/cmaj.141331>  
Cosman, F., de Beur, S. J., LeBoff, M. S., Lewiecki, E. M., Tanner, B., Randall, S., & Lindsay, R. (2014). Clinician's Guide to Prevention and Treatment of Osteoporosis. Osteoporosis International, 25(10), 2359–2381. <http://doi.org/10.1007/s00198-014-2794-2>