

Vitamin D Prescribing Criteria

Preventing falls for older adults in residential care

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Older adults living in residential care fall frequently. Vitamin D supplementation is an efficient, safe and proven method to reduce falls and fall-related injuries in this population.

Key information

Low Vitamin D levels are common in older adults in residential care and in some sub-groups within the community. Low levels lead to muscle weakness and atrophyⁱ, (particularly in fast twitch muscle fibresⁱⁱ), an increase in postural swayⁱⁱⁱ and impaired psychomotor function^{iv}. Vitamin D insufficiency also increases bone turnover which leads to osteoporosis.

International research has indicated that muscle weakness and poor balance underlie most falls that occur in older adults^v. Muscle strength has been shown to decline with age^{vi} and a significant association between muscle strength and Vitamin D levels exists^{vii}.

Vitamin D supplements have been shown to significantly reduce falls in older adults^v.

Prescribing criteria for residential care

Prescribing inclusion criteria: Living in a long-term residential care facility

Prescribing exclusion criteria: Those currently on Vitamin D preparations, those with known hypercalcaemia.

Dosage: Loading dose of 2 x 50,000IU¹ Vitamin D₃² in first month
Maintenance dose of 50,000IU Vitamin D₃ per month thereafter for life

Note: No requirement to measure Vitamin D levels prior to or during treatment

Recommendations for community dwelling older adults

Vitamin D may also be offered to those outside residential care who are frail, have a chronic condition or limited mobility.

1. 50,000IU or 1.25mg
2. Vitamin D₃- Cholecalciferol or Calciferol

This guideline was developed by Professor John Campbell, Associate Professor Ngaire Kerse, Professor Ian Reid, Associate Professor Robert Scragg, Laird Madison and ACC.



References

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- ii Scragg & Bartley 2007. Vitamin D - how do we define deficiency and what can we do about it in New Zealand? *The New Zealand Medical Journal*. 120:1262.
- iii Pfeifer M et al. (2002) Vitamin D and muscle function. *Osteoporosis International*. 13:187-194.
- iv Dhesi et al (2002). Neuromuscular and Psychomotor Function in Elderly Subjects Who Fall and the Relationship With Vitamin D Status *Journal of Bone and Mineral Research*. 17:891-897.
- v Robertson & Campbell (2007). Optimisation of ACC's Fall Prevention Programmes for Older People. Report 15th September.
- vi Murray et al (1985) Age Related Differences in Knee Muscle Strength in Normal Women. *Journal of Gerontology*. 40;257-80.
- vii Inderjeeth et al (2007) Vitamin D and muscle strength in patients with previous fractures. *The New Zealand Medical Journal*. 120, n01262.