

# Bone health assessment practices in older patients and patients with a lower limb amputation on a regional vascular surgery ward

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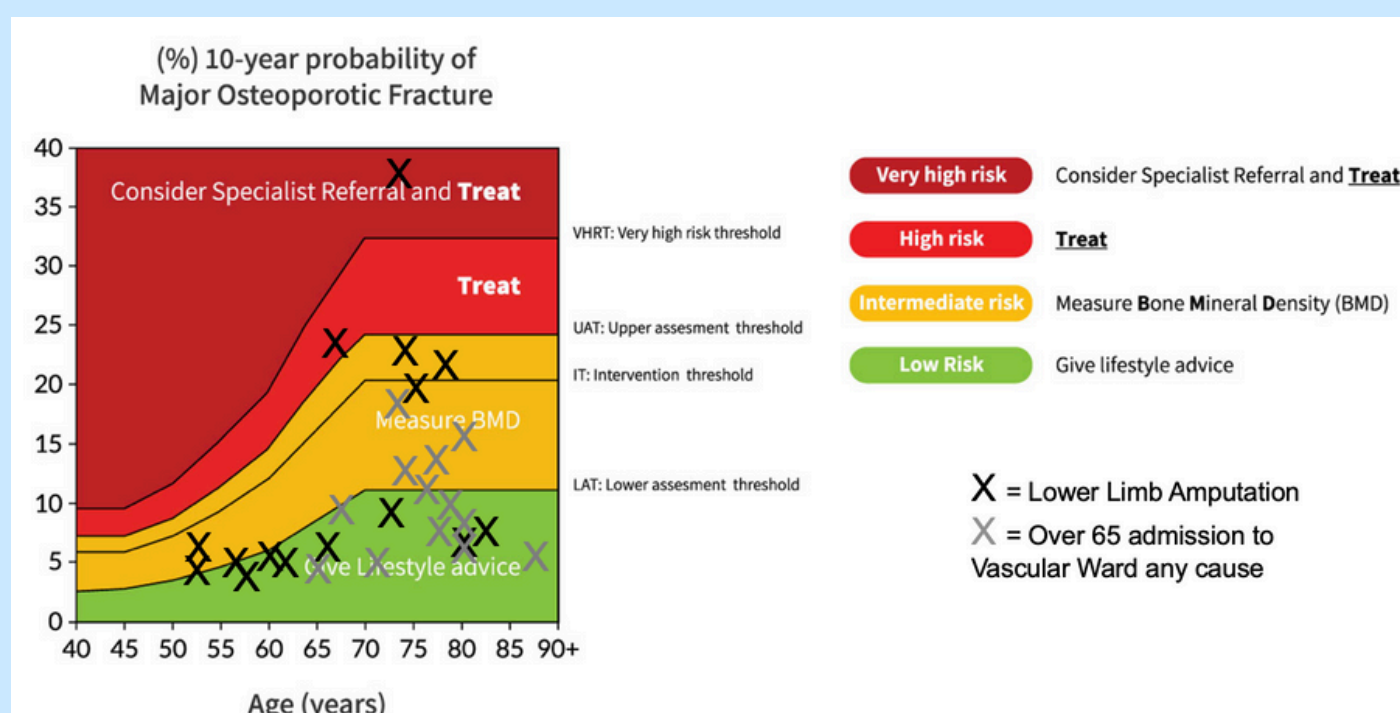
## Introduction

Increasing numbers of older people are undergoing major arterial surgery and major lower limb amputations for peripheral vascular disease (PVD). Osteoporosis and PVD share several common risk factors. In 2024, the National Osteoporosis Guideline Group (NOGG) updated their recommendations to include lower limb amputation as an additional clinical risk factor that should prompt proactive bone health assessment in this group. Perioperative Comprehensive Geriatric Assessment (CGA) provides a context where this can occur.

## Method

Data were collected prospectively as part of a service evaluation in the Cardiff Regional Vascular Unit, University Hospital of Wales (UHW). 29 patients aged over 65 and those with a lower limb amputation were included. A FRAX score was calculated to assess each patients 10-year probability of a major osteoporotic fracture and/or hip fracture and classified as low, intermediate, high or very high risk on an intervention threshold graph (Figure 1). Details of additional clinical risk factors for osteoporosis not included in FRAX but referenced in NOGG guidelines were also reviewed.

Figure 1: NOGG assessment, intervention and risk thresholds for major osteoporotic fracture probability in the UK with the use of FRAX.



## Results

Three women had a pre-existing diagnosis of osteoporosis. None of the patients reviewed had undergone a bone health assessment during their admission. Based on FRAX scoring, 17 patients fell into the low-risk category (requiring lifestyle advice), 10 into the intermediate-risk category (indicating bone mineral density measurement), 1 into the high-risk category (requiring treatment), and 1 into the very high-risk category (warranting consideration for specialist referral and treatment) (Table 1). Two patients were identified as being above the treatment threshold and were not on treatment. The most common additional clinical risk factors were type 2 diabetes and lung disease.

Table 1: Patient results of service evaluation

Risk Threshold	Male overall	Female overall	Male LL* amputation	Female LL* amputation	Male over 65	Female over 65
Low	15	2	8	0	7	2
Intermediate	2	8	0	5	2	3
High	0	1	0	1	0	0
Very high	1	0	1	0	0	0
Over treatment threshold	1	3	1	3	0	0
Over treatment threshold, not on treatment	0	2	0	2	0	0

\*LL= lower limb

## Conclusion

Perioperative CGA can provide a context for bone health assessments, however, in the acute and emergent setting this may be deprioritised. This project has identified a local need for quality improvement activity in this area. Comprehensive risk assessment that references NOGG guidance is important in this patient group to ensure that additional risk factors for osteoporosis that are prevalent in vascular surgery patient cohorts are not overlooked.

## Acknowledgements

Many thanks to my supervisor, Dr Stephanie Wells, and the team at Cardiff Regional Vascular Unit, UHW for supporting this project.