

DXA VFA focus guide- scan positioning

V1.0 2024

Introduction

Vertebral fractures are the most common osteoporotic fracture, increase morbidity and mortality and increase the risk of future fractures. They are often under-diagnosed, therefore opportunities to diagnose vertebral fracture within DXA services are important.

VFA scans, in the UK, are regulated under IR(ME)R and as such are subject to 'justification' and 'optimisation' as part of these regulations. Accurate and reliable VFA scan acquisition relies on *quality acquisition* technique by operators with training and expertise in the VFA, which is integral to 'optimisation' under IR(ME)R.

For centres to be confident their VFA scans are optimised and reliable:

- Scans must only be performed by a small team of well trained and skilled operators
- Robust protocols and standard operating procedures must be in place
- Routine evaluation, audit and review cycles of clinical practice should be embedded as culture

This focus guide is developed from the ROS National Training Scheme for Bone Densitometry lecture course and VFA scan protocols from clinical services.

Point and Purpose

This guide sets out the expected standards for optimal VFA scan positioning.

It is designed for DXA teams to be able to:

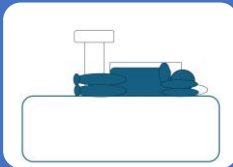
- Make reliable VFA scans
- Write and develop local standard operating procedures for scan acquisition
- Measure performance against the standards and integrate with quality improvement programmes
- Support delivery of quality improvements in VFA scanning technique

So that:

VFA scans are optimised and provide the best opportunity to identify vertebral fractures in appropriate patients and that they can access appropriate care to reduce the risk of further fractures.

VFA positioning guide

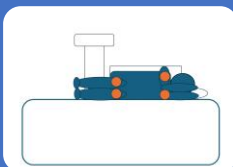
Positioning- lateral decubitus



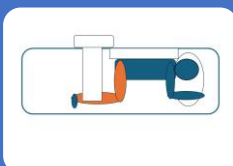
The patient lies in the lateral decubitus position, typically on their left with their head on a single pillow at the head end of the scanner table



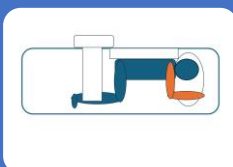
The spine should be rotated sufficiently so that it is flat against the positioning aid and in a true lateral position



The shoulders and hips should be aligned so that the right is directly superior/above the left (for the left lateral decubitus reverse for the right)



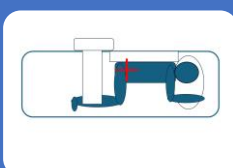
The hips and knees should be flexed to 90°



The elbows are flexed so that the hands are in front of the face and the humeri are perpendicular to the long axis of the table top



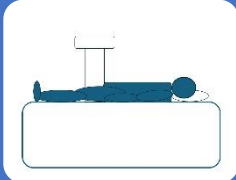
The patient should be stabilised with foam pads between the knees and under the waist if there is significant free space between the waist and table top (to reduce parallax effect of the spine)



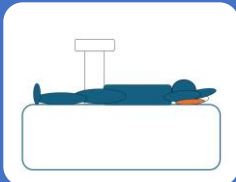
The laser positioning cross hairs should be centred approximately 10cm anterior to the posterior of the spine at a level approx 10cm inferior to the iliac crest to demonstrate the whole of L4 and superior portion of L5

Positioning- supine

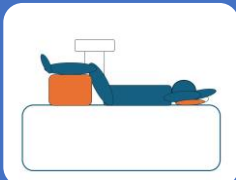
(where the equipment has a c-arm)



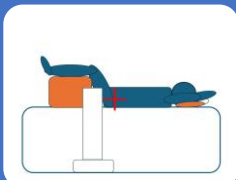
The patient lies in the supine position, centrally on along the midline of the table top



The arms are raised above their head with elbows bent, and may be supported by foam cushions



The lower legs are raised onto the lumbar spine positioning aid with knees flexed to 90°



The laser positioning cross hairs should be centred approximately 5-10cm anterior to the posterior of the spine at a level approx 10cm inferior to the iliac crest to demonstrate the whole of L4 and superior portion of L5