



Diagnosis of Osteoporosis

DEXA

A Dual Energy X-ray Absorptiometry scan (DEXA scan) is a specialised x-ray technique, which specifically measures bone mineral density (bone mineral content) and provides the most accurate way currently available to diagnose osteoporosis. It is a specialised X-Ray and is not painful.

It is used:

- To confirm the diagnosis of osteoporosis.
- To estimate severity of bone loss.
- To determine whether the patient is responding to treatment.

It is a fast scan, has high resolution, is easily reproducible and has lower radiation dose compared to other methods.

Usually only the lumbar spine (lower back) and proximal femur (hip region) are measured.

DEXA BMD VALUES	DEFINITION
T score > -1.0 S.D	Normal bone mineral density
T score between -1.0 and -2.5 SD	Osteopaenia
T score ≤ - 2.5 SD	Osteoporosis
T score ≤ - 2.5 SD with 1 or more fragility fractures	Severe osteoporosis

(WHO Working Group Definition of Osteoporosis)²⁵

Understanding Your DEXA Study Result

T scores are complicated statistical scores, that help define on DEXA study the condition of an individual's bones. When a DEXA study is performed, the bone mineral density is measured and compared to the bone mineral density of twenty year olds of the same sex. Twenty year olds are used for comparison as they have the greatest peak bone mass.

A T score which is positive or only minus 1 standard deviation (up to 1 step below normal) from the normal bone mineral density of a 20 year old is regarded as being a normal bone mineral density, for the site that it is measured at.

If the T Score is minus 1.0 to minus 2.5 standard deviations (between 1 and 2½ steps) below the normal bone mineral density of a 20 year old, this indicates the presence of osteopaenia. Osteopaenia is not osteoporosis. It represents a stage when the bones have lost some bone mineral strength and are weaker, but not as weak as in osteoporosis. It can be regarded as the phase before the occurrence of osteoporosis.

If the T score is greater than minus 2.5 standard deviations (greater than 2½ steps) below the normal bone mineral density of a 20 year old, this indicates the presence of osteoporosis.