

DEXA Bulletin

As a reminder, a vertebra should only be eliminated from DXA evaluation if it is more than one standard deviation above BOTH adjacent vertebrae. Obviously this doesn't apply to L1 and L4 since they only have one adjacent measured vertebra.

Ideally the eliminated vertebra(e) should have a T-score more than 1 standard deviation greater than all the vertebrae that are ultimately used for the T-score calculation.

See examples ISCD guidelines below and note that the second to last bullet point says adjacent vertebrae, not vertebra.

Spine Region of Interest (ROI)

- Use PA L1-L4 for spine BMD measurement
- Use all evaluable vertebrae and only exclude vertebrae that are affected by local structural change or artifact. Use three vertebrae if four cannot be used and two if three cannot be used
- BMD based diagnostic classification should not be made using a single vertebra.
- If only one evaluable vertebra remains after excluding other vertebrae, diagnosis should be based on a different valid skeletal site

Anatomically abnormal vertebrae may be excluded from analysis if:

- They are clearly abnormal and non-assessable within the resolution of the system; or
- There is more than a 1.0 T-score difference between the vertebra in question and adjacent vertebrae

When vertebrae are excluded, the BMD of the remaining vertebrae is used to derive the T-score

EXAMPLE #1

L1 T-score = -0.9

L2 T-score = -0.2

L3 T-score = -1.3

L4 T-score = -1.3

Even though L2 is more than 1 standard deviation above L3 and L4, it is within 1 standard deviation of L1 and should NOT be eliminated.

EXAMPLE #2

L1 T-score = -0.9

L2 T-score = 0.5

L3 T-score = -1.3

L4 T-score = -1.3

L2 should be eliminated.

EXAMPLE #3

L1 T-score = -0.2

L2 T-score = -0.2

L3 T-score = -1.3

L4 T-score = -1.3

L1 and L2 should be eliminated.