

Appendix B TNM classification of bone tumours (UICC TNM 9)¹

Appendix B provides information on staging using UICC TNM 9, which should be used for all tumours diagnosed after 1 January 2026 (no change from UICC TNM 8).

Primary tumour (T)

TX Primary tumour cannot be assessed T0 No evidence of primary tumour

Appendicular skeleton, trunk, skull and facial bones

T1 Tumour 8 cm or less in greatest dimension

T2 Tumour more than 8 cm in greatest dimension

T3 Discontinuous tumours in the primary bone site

Spine

The five vertebral segments are the: right pedicle; right body; left body; left pedicle; and posterior element.

T1 Tumour confined to a single vertebral segment or two adjacent vertebral segments

T2 Tumour confined to three adjacent vertebral segments

T3 Tumour confined to four adjacent vertebral segments

T4a Tumour invades into the spinal canal

T4b Tumour invades the adjacent vessels or tumour thrombosis within the adjacent vessels

Pelvis

The four pelvic segments are the: sacrum lateral to the sacral foramen; iliac wing; acetabulum/periacetabulum; and pubic rami/symphysis/ischium.

T1a Tumour 8 cm or less in size and confined to a single pelvic segment with no extraosseous extension

T1b Tumour greater than 8 cm in size and confined to a single pelvic segment with no extraosseous extension

- T2a Tumour 8 cm or less in size and confined to a single pelvic segment with extraosseous extension or confined to two adjacent pelvic segments without extraosseous extension
- T2b Tumour greater than 8 cm in size and confined to a single pelvic segment with extraosseous extension or confined to two adjacent pelvic segments without extraosseous extension
- T3a Tumour 8 cm or less in size and confined to two pelvic segments with extraosseous extension
- T3b Tumour greater than 8 cm in size and confined to two pelvic segments with extraosseous extension
- T4a Tumour involving three adjacent pelvic segments or crossing the sacroiliac joint to the sacral neuroforamen
- T4b Tumour encasing the external iliac vessels or gross tumour thrombus in major pelvic vessels

Regional lymph nodes (N)

- NX Regional lymph nodes cannot be assessed N0 No regional lymph node metastasis
- N1 Regional lymph node metastasis

Distant metastasis (M)

- MX Distant metastasis cannot be assessed M0 No distant metastasis
- M1 Distant metastasis
- M1a: Lung
- M1b: Other distant sites

Histologic grade (G)

- GX Grade cannot be assessed G1 Well differentiated – low grade
- G2 Moderately differentiated – low grade G3 Poorly differentiated – high grade
- G4 Undifferentiated – high grade*

*Ewing sarcoma is classified as high grade.

Stage grouping

Appendicular skeleton, trunk, skull and facial bones

Stage IA	T1	N0	M0	G1, GX low grade
Stage IB	T2, T3	N0	M0	G1, GX low grade
Stage IIA	T1	N0	M0	G2, G3 high grade
Stage IIB	T2	N0	M0	G2, G3 high grade
Stage III	T3	N0	M0	G2, G3 high grade
Stage IVA	Any T	N0	M1a	Any G
Stage IVB	Any T	N1	Any M	Any G
	Any T	Any N	M1b	Any G

Spine and pelvis

There is no stage for bone sarcomas of the spine or pelvis.

Residual tumour (R)

An R classification can be used to record the presence/absence of tumour remaining after curative therapy.²

RX Presence of residual tumour cannot be assessed

R0 No residual tumour

R1 Microscopic residual tumour

R2 Macroscopic residual tumour

References

1. Brierley JD, Giuliani M, O'Sullivan B, Rous B, Van Eycken L (eds.). *TNM Classification of Malignant Tumours* (9th edition). Oxford, UK: Wiley-Blackwell; 2025.
2. Antonscu C, Dickson BC, Swanson D, Baumhoer D, Amary F, Flanagan A et al. Advances in sarcoma diagnosis in the era of genomic approaches: Bridging morphology to genetics in routine practice. *Genes Chromosome Cancer* 2019;58:71–136