

Enneking classification

Enneking [classification](#) has been used for the classification of benign and malignant tumors of the [musculoskeletal system](#) for over 30 years.

In Enneking classification, benign tumors are indicated with arabic numbers (1, 2, 3) according to the nature of tumor and its histopathological grade. Benign tumors are classified as inactive (latent), active and aggressive. Malignant tumors are indicated with Roman numbers (I, II, III) according to histopathological grade, localization and the relationship of tumor with natural barriers and whether the tumor metastasizes or not ¹⁾.

Enneking classification in treatment of spine tumors has been found to be insufficient for surgical planning over time. Because of that, in 1997, Boriani et al have published a study about the new terminology and surgical staging for primary tumors of the spine. The authors stated a new classification system known as [Weinstein Boriani Biagini classification](#), which is still actively in use today ²⁾.

In a evaluation of the largest multicenter cohort of [spinal osteoblastomas](#), local recurrence was found to be strongly associated with mortality. Application of the Enneking classification as a treatment guide for preventing local recurrence was not validated ³⁾.

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Enneking WF, Spanier SS, Goodman MA. A system for the surgical staging of musculoskeletal sarcoma. Clin Orthop Relat Res. 1980 Nov-Dec;(153):106-20. PubMed PMID: 7449206.

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Boriani S, Weinstein JN, Biagini R. Primary bone tumors of the spine. Terminology and surgical staging. Spine (Phila Pa 1976). 1997 May 1;22(9):1036-44. Review. PubMed PMID: 9152458.

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Versteeg AL, Dea N, Boriani S, Varga PP, Luzzati A, Fehlings MG, Bilsky MH, Rhines LD, Reynolds JJ, Dekutoski MB, Gokaslan ZL, Gersmeyer NM, Fisher CG. Surgical management of spinal osteoblastomas. J Neurosurg Spine. 2017 Sep;27(3):321-327. doi: 10.3171/2017.1.SPINE16788. Epub 2017 Jul 7. PubMed PMID: 28686147.

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