

Histological tumour grade (Core)

Histologic tumour grade offers important prognostic information. While several different grading systems exist, the French¹ grading system is the most widely used (see Table 2). This system is based on the assessment of differentiation, mitotic count, and necrosis.¹ Importantly, the system only applies to specific histotypes (see Table 3). Many other histotypes are not gradable. Reliable tumour grading is not possible after neoadjuvant therapy.

Table 2: Tumour Differentiation Score According to Histologic Type in the Updated Version of the French Federation of Cancer Centers Sarcoma Group System.¹

Histologic type	Score
Atypical lipomatous tumour/Well-differentiated liposarcoma	1
Well-differentiated leiomyosarcoma	1
<i>Malignant neurofibroma</i>	1
<i>Well-differentiated fibrosarcoma</i>	1
Myxoid liposarcoma	2
Conventional leiomyosarcoma	2
Conventional fibrosarcoma	2
Myxofibrosarcoma	2
High-grade myxoid (round cell) liposarcoma	3
Pleomorphic liposarcoma	3
Dedifferentiated liposarcoma	3
Pleomorphic rhabdomyosarcoma	3
Poorly differentiated/pleomorphic leiomyosarcoma	3
Biphasic/monophasic/poorly differentiated Synovial sarcoma	3
Mesenchymal chondrosarcoma	3
Extraskeletal osteosarcoma	3
Extraskeletal Ewing sarcoma	3
Malignant rhabdoid tumour	3
Undifferentiated pleomorphic sarcoma	3
Undifferentiated sarcoma, not otherwise specified	3

Table 3: Guidelines for grading soft tissue sarcomas.

Tumours which are by definition high grade <ul style="list-style-type: none">• Ewing sarcoma• Rhabdomyosarcoma (all types)• Angiosarcoma• Pleomorphic liposarcoma• Soft tissue osteosarcoma• Mesenchymal chondrosarcoma• Desmoplastic small cell tumour• Extra-renal rhabdoid tumour• Intimal sarcoma	Tumours of varying behaviour for which grading or tumour-specific risk assessment may be prognostically useful <ul style="list-style-type: none">• Myxoid liposarcoma• Leiomyosarcoma• Malignant peripheral nerve sheath tumour• Solitary fibrous tumour• Myxofibrosarcoma• Dedifferentiated liposarcoma^a
Tumours which are by definition low grade <ul style="list-style-type: none">• Well differentiated liposarcoma/atypical lipomatous tumour• Dermatofibrosarcoma protuberans^b• Infantile fibrosarcoma	Tumours of varying behaviour for which grading parameters are not yet well defined <ul style="list-style-type: none">• Epithelioid hemangioendothelioma• Extraskeletal myxoid chondrosarcoma
Tumours which are not gradable but which often metastasize within 10-20 years of follow-up <ul style="list-style-type: none">• Alveolar soft part sarcoma• Clear cell sarcoma• Epithelioid sarcoma• Synovial sarcoma^a• 'Low-grade' fibromyxoid sarcoma• Sclerosing epithelioid fibrosarcoma	

^a Some studies have shown prognostic difference between Grades 2 and 3 using the French grading system.

^b Fibrosarcomatous Dermatofibrosarcoma Protuberans (DFSP) is usually regarded as intermediate grade.

Reference

- 1 Guillou L, Coindre JM, Bonichon F, Nguyen BB, Terrier P, Collin F, Vilain MO, Mandard AM, Le Doussal V, Leroux A, Jacquemier J, Duplay H, Sastre-Garau X and Costa J (1997). Comparative study of the National Cancer Institute and French Federation of Cancer Centers Sarcoma Group grading systems in a population of 410 adult patients with soft tissue sarcoma. *J Clin Oncol* 15(1):350-362.