

Canine MCT Grading Systems

3-TIER GRADING Patnaik et al. (1984)

- **Grade I (93% survival > 1500 days)**
 - » Confined to dermis
 - » Well differentiated MCs
 - » No mitosis
 - » No or minimal necrosis/edema
- **Grade II (47% survival > 1500 days)**
 - » Dermis and subcutis
 - » Moderately pleomorphic MCs (some spindle/giant cells)
 - » Mitosis (0-2/hpf)
 - » Edema and necrosis
- **Grade III (6% survival > 1500 days)**
 - » Highly cellular & pleomorphic MCs
 - » Variable number of granules
 - » Abundant stroma
 - » Mitosis (3-6/hpf)
 - » Common edema, hemorrhage, necrosis

2-TIER GRADING

Kiupel et al. (2011)

- **Only two grades (low and high) based on:**
 - » Mitotic index (MI): ≤ 7 $>/10$ hpf
 - » Multinucleated cells: < 3 $>/10$ hpf
 - » Bizarre nuclei: < 3 $>/10$ hpf
 - » Karyomegaly: $< 10\%$ \geq
- **Tries to reduce the interobserver subjectivity of the 3-tier grading**
- **High grade MCTs:**
 - » Shorter time to metastasis
 - » Shorter survival time
 - » Shorter time to new tumor development