

# MON (Maz Oxford Nuffield) Pin Infection Grading System ©

<i>Minor Grades</i>	<i>Signs &amp; Symptoms</i>	<i>Treatment</i>
<b>Grade 1</b> NOT thought as clinically infected but as a reaction	Slight redness +/- slight discharge	Increased local pin site care only “watch site for changes”
<b>Grade 2</b> Clinically thought as infected at the pin skin infection	Tenderness at pin site. Able to mobilise with analgesia. Increasing redness +/- discharge of serous / purulent discharge.	Increased local pin site care. Swab for MC&S (Micro culture & sensitivities). Immediate commencement on anti-staphylococcal antibiotic.
<b>Grade 3</b>	Intensive redness + Pain +/- discharge of purulent discharge +/- swelling. Unable to mobilise on current analgesia. Periosteal reaction on x-ray? Pin loose?	Intensive local pin care. Admit, IV antibiotics 5-7 days; Limb elevation; X-ray to exclude periosteal reaction or loosening of pin, if X-ray signs positive, move to grade 4
<i>Major Grades</i>		
<b>Grade 4</b>	Severe soft tissue involvement > 1 pin Periosteal reaction present Check for bone lysis	No response to local treatment or antibiotics. Removal of pin; IV antibiotics 5-7 days; second stage plan of new pin placement
<b>Grade 5</b>	Severe soft tissue involvement > 1 pin + Osteomyelitis	Pin removal: Further surgery to control bone infection. Samples for MC&S; IV antibiotic (long course)
<b>Grade 6</b>	Sequestrum +/- sinus formation while frame treatment still ongoing	Potential Removal of fixator; Debridement of sequestrum & sampling for MC&S. Limb salvage treatment. Long course of IV antibiotics.
<b>Following Frame Removal:</b> <b>Grade 6B</b>	Pain / tenderness over old pin tract +/- sinus formation Sequestrum at old pin tract on x-ray	Debridement of pin tract; samples for MC&S; 3 perio-op IV antibiotics; oral antibiotic 2 week