

## Appendix

**Supplement Table 1. Biomarkers advanced to multivariable modeling:**

Domain	Biomarker	Categories
CART	Number of subregions with worsening in thickness across entire knee	<ul style="list-style-type: none"> <li>• 0 areas with worsening</li> <li>• 1 area with worsening</li> <li>• 2 areas with worsening</li> <li>• 3+ areas with worsening</li> </ul>
	Number of subregions with worsening in surface area (include within-grade change) across entire knee	<ul style="list-style-type: none"> <li>• 0 areas with worsening</li> <li>• 1 area with worsening</li> <li>• 2 areas with worsening</li> <li>• 3+ areas with worsening</li> </ul>
OST	Osteophyte : maximum change in osteophyte score $\geq 1$ across all locations in knee	<ul style="list-style-type: none"> <li>• No (no worsening in any subregion)</li> <li>• Yes (worsening in at least one subregion)</li> </ul>
MEN	Meniscal morphology: any regions with worsening	<ul style="list-style-type: none"> <li>• No (no worsening in any subregion)</li> <li>• Yes (worsening in at least one subregion)</li> </ul>
	Medial meniscal extrusion medially worsening	<ul style="list-style-type: none"> <li>• No (no worsening)</li> <li>• Yes (worsening)</li> </ul>
BML	Maximum change in BML score	<ul style="list-style-type: none"> <li>• Worsening by <math>&lt; 2</math> grades</li> </ul>

	across all subregions in knee	<ul style="list-style-type: none"> <li>• Worsening by 2+ grades</li> </ul>
SYN	Synovitis: change in Hoffa-synovitis category	<ul style="list-style-type: none"> <li>• Improvement/no change</li> <li>• Worsening</li> </ul>
EFF	Effusion: change in synovitis-effusion category	<ul style="list-style-type: none"> <li>• Improvement</li> <li>• No change</li> <li>• Worsening</li> </ul>