



Figure 3 - Supplement 2. Screenshot depicting the graphical user interface used for longitudinal tracking of spines across multiple days of imaging. A spine identified in the first imaging session (pink star, top central panel) is presented to the user for scoring. The same spine is manually tracked across subsequent days (rows). For each day, multiple frames above and below the estimated z-plane corresponding to that spine, Z_0 , are also presented (columns). For each timepoint, the user then clicks on the spine's head using the frame that best captures the spine. In this case, the frame jump, Δz , was set to 1, and 4 neighboring frames are presented; these parameters can be adjusted as necessary.