



S1. LVH Evaluation for GTV and HD-PTV in small and large pelvic sarcomas/chordomas A relative-volume cumulative LVH for (a) GTV and (d) HD-PTV of small and large pelvic sarcoma (mean \pm SD), with LVH plot showing difference in LETd distribution. An absolute-volume LVH plots of individual cases shifted with respect to largest (b) GTV and (e) HD-PTV (Vtotal = volume of largest HD-PTV/GTV), demonstrating distinct separation between LVH plots of large and small tumors. An absolute-volume cumulative LVH for (c) GTV and (f) HD-PTV of small and large pelvic sarcoma (mean \pm SD), showing a statistically significant difference ($p < 0.05$) between interval of max tumor volume of at least 56 cm³, for HD-PTV and 9 cm³, for GTV that should receive LETd of at least ≥ 33 -42 keV/μm.