

# Supplementary material

## Inter-patient variations in relative biological effectiveness for cranio-spinal irradiation with protons

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Figure S1 and Figure S2 compares doses from photon and proton treatment plans for the same patient as illustrated in Figure 1 in the main manuscript.

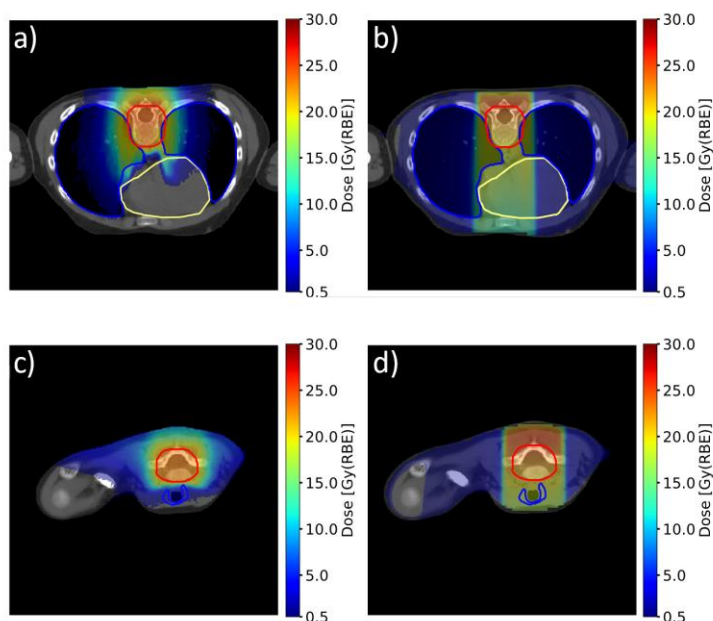


Figure S1: Dose distributions for intensity modulated proton therapy (IMPT) are shown in panel a) and c), while doses from photon treatment (3D-conformal radiotherapy) are shown in panel b) and d). 23.4 Gy(RBE) were prescribed to the target volumes. The IMPT plan was calculated using a constant RBE of 1.1. The spinal planning target volume, lungs, heart and thyroid are outlined in red, blue, yellow and blue, respectively.

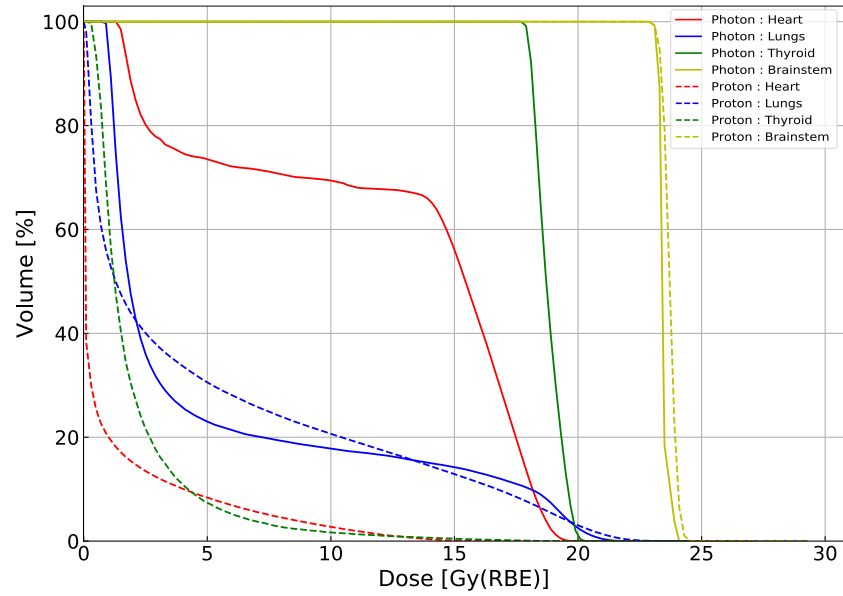


Figure S2: Dose volume histograms for the same patient as in Figure 1 and 1S are shown for the heart, lungs, thyroid and brainstem. Solid lines show the photon doses while dashed lines shows dose from protons calculated using a constant RBE of 1.1.