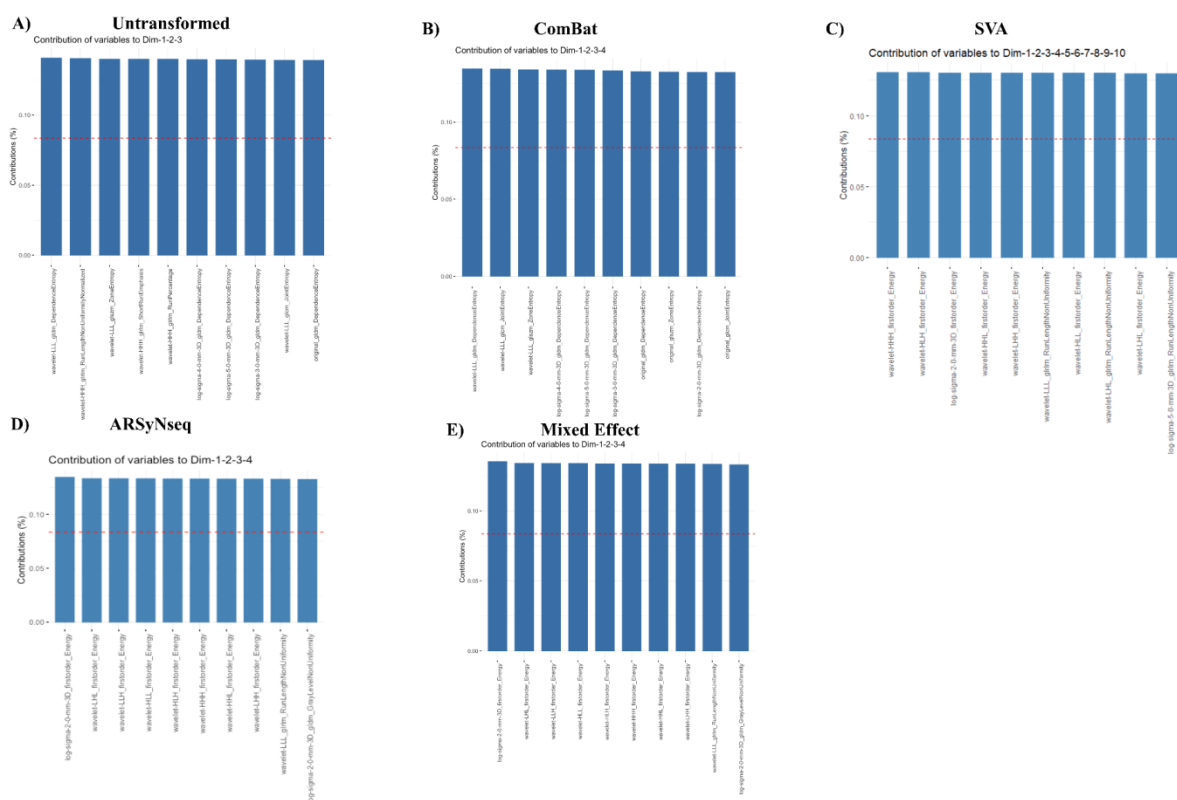


## Supplementary Material

### MRI acquisition details

For centre 1, the acquisition parameters T2WI included: repetition time (TR)/echo time (TE) = 4740/102 ms, flip angle =  $137^\circ$ , matrix size =  $320 \times 288$ , field of view (FOV) =  $200 \times 200 \text{ mm}^2$ , slice thickness = 3 mm for sagittal plane acquisition; TR/ TE = 5610/102 ms, flip angle =  $123^\circ$ , matrix size =  $320 \times 310$ , FOV =  $200 \times 200 \text{ mm}^2$ , slice thickness = 3 mm for axial plane acquisition; repetition time TR/TE = 4000/102 ms, flip angle =  $138^\circ$ , matrix size =  $320 \times 310$ , FOV =  $200 \times 200 \text{ mm}^2$ , slice thickness = 3 mm for coronal plane acquisition. The parameters for DWI included: TR/TE = 4624/77 ms, flip angle =  $90^\circ$ ; matrix size =  $128 \times 128$ , FOV =  $250 \times 250 \text{ mm}^2$ , slice thickness = 3 mm, b = 50, 400 and  $1000 \text{ s/mm}^2$ . Volumetric Interpolated Breath-hold Examination (VIBE) sequences at variable flip angles (FAs) for T1 mapping were performed with the following parameters: TR/ TE = 5.5/2.34 ms, flip angle = (2, 5) $^\circ$ , matrix size =  $320 \times 112$ , FOV =  $208 \times 417 \text{ mm}^2$ , slice thickness = 3.5 mm. DCE MRI was performed using T1 VIBE axial dynamic sequence after injecting 0.1 mL/kg of Gadoteridol (Gd-HP-DO3A; Pro Hance, Bracco Diagnostics, Princeton, NJ, USA) and the acquisition parameters included: TR/ TE = 5.5/2.34 ms, flip angle =  $10^\circ$ , matrix size =  $320 \times 112$ , FOV =  $208 \times 417 \text{ mm}^2$ , slice thickness = 3.5 mm with 32 measurements on axial plane.

For centre 2, the acquisition parameters T2WI included: TR/TE = 3430-7270/89-112 ms, flip angle =  $140^\circ$ , matrix size =  $320 \times 320$ , FOV =  $180 \times 180 \text{ mm}^2$ , slice thickness = 2-3.5 mm for sagittal plane acquisition; TR/ TE = 5000-6500/93-112 ms, flip angle =  $140^\circ$ , matrix size =  $320 \times 320$ , FOV =  $180 \times 180 \text{ mm}^2$ , slice thickness = 3 mm for axial plane acquisition; repetition time TR/TE = 4400-6010/91-112 ms, flip angle =  $140^\circ$ , matrix size =  $320 \times 320$ , FOV =  $180 \times 180 \text{ mm}^2$ , slice thickness = 2-3.5 mm for coronal plane acquisition. VIBE sequences for T1 mapping were performed with the following parameters: TR/ TE = 4.13/1.23 ms, flip angle =  $9^\circ$ , matrix size =  $320 \times 187$ , FOV =  $332 \times 425 \text{ mm}^2$ , slice thickness = 2-3.5 mm. The parameters for DWI included: TR/TE = 7000-1200/75-93 ms, flip angle =  $90^\circ$ ; matrix size =  $128 \times 128$ , FOV =  $250 \times 250 \text{ mm}^2$ , slice thickness = 2-3.5 mm, b-values = [0-2000]  $\text{s/mm}^2$ .



**Supplementary Figure S1.** Top 10 radiomic features that contributed to the PCs. **(A)** Untransformed only scaled; **(B)** ComBat; **(C)** SVA; **(D)** ARSyNseq and **(E)** Mixed effect model.