AI-Driven Bone and Marrow Segmentation on FLT-PET/CT: Technical Multi-organ Validation in AML and HCT

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Supplementary:

Table S1. Mean ± SD SUV values of bone ROIs across 20 patients (12 whole-body scans and 10 additional upper-body scans).

Bone					
ROI		**Mean ± SD**	**ROI**		**Mean ± SD**
Sacrum		3.396 ± 2.08	**Trabecular**	**T1**	7.084 ± 3.6
All_Bone		2.278 ± 1.13		**T2**	7.555 ± 3.9
All_Bone_No Arms		2.465 ± 1.2		**T3**	8.135 ± 3.77
L_Arm_Bone		0.5461 ± 0.34		**T4**	8.421 ± 4.51
R_Arm_Bone		0.547 ± 0.25		**T5**	8.208 ± 4.06
Cortical	**T1**	4.17 ± 2.12		**T6**	8.098 ± 4.47
	T2	4.803 ± 2.37		**T7**	8.466 ± 4.34
	T3	4.933 ± 2.39		**T8**	8.622 ± 4.52
	T4	5.122 ± 2.54		**T9**	8.321 ± 4.39
	T5	5.17 ± 2.48		**T10**	8.563 ± 4.54
	T6	5.162 ± 2.62		**T11**	8.403 ± 4.58
	T7	5.425 ± 2.68		**T12**	7.925 ± 4.43
	T8	5.339 ± 2.67		**L1**	7.701 ± 4.69
	T9	5.157 ± 2.58		**L2**	7.335 ± 4.26
	T10	5.140 ± 2.57		**L3**	7.236 ± 4.17
	T11	5.066 ± 2.55		**L4**	6.91 ± 4.17
	T12	4.726 ± 2.56		**L5**	5.991 ± 4.06
	L1	4.365 ± 2.61		**Sacrum**	5.304 ± 3.47
	L2	4.244 ± 2.45		**L_Femur_Shaft**	1.036 ± 0.44
	L3	4.292 ± 2.39		**R_ Femur_Shaft**	1.062 ± 0.44
	L4	4.001 ± 2.28		**L_ Femur _Head**	1.783 ± 1.59
	L5	4.043 ± 2.53		**R_ Femur _Head**	1.817 ± 1.59
	Sacrum	3.082 ± 1.82		**L_ Femur _Neck**	2.266 ± 1.68
	L_Hip_Bone	3.16 ± 1.81		**R_ Femur _Neck**	2.365 ± 1.78
	R_Hip_Bone	3.097 ± 1.74		**All_Bone**	1.378 ± 0.73

Table S2. Mean ± SD SUV values of muscle, bone and adipose ROIs across 20 patients (12 whole-body scans and 10 additional upper-body scans).

Muscle			
ROI	**Mean ± SD**	**ROI**	**Mean ± SD**
All_Fat	0.485 ± 0.23	**RPECMNR**	0.776 ± 0.28

All_Fat_No Arms	0.494 ± 0.24	**LTEMPORALIS**	0.717 ± 0.28
LLWLGIMAT	0.377 ± 0.1	**RTEMPORALIS**	0.673 ± 0.24
RLWLGIMAT	0.382 ± 0.09	**LMASSETER**	0.664 ± 0.25
All Fat	0.378 ± 0.14	**RMASSETER**	0.638 ± 0.24
VAT	4.134 ± 1.97	**LSCM**	0.631 ± 0.25
All_SKM [-29,150] LB	0.511 ± 0.07	**RSCM**	0.655 ± 0.27
All_SKM [-150, -50] LB	3.874 ± 1.88	**LASKM**	0.455 ± 0.19
VAT [-150, -50]	0.297 ± 0.07	**RASKM**	0.465 ± 0.17
VAT	0.919 ± 0.45	**PaAT**	0.937 ± 0.36
EpAT	0.783 ± 0.31	**ThAT**	0.773 ± 0.26
SAT [-190, -30]	0.449 ± 0.07	**SAT**	0.345 ± 0.15
All_IMAT [-190, -30] _No Arms	1.076 ± 0.48	**LASAT**	0.299 ± 0.12
LLWLGSKM	0.458 ± 0.09	**RASAT**	0.299 ± 0.11
RLWLGSKM	0.461 ± 0.08	**All_IMAT_No Arms**	0.707 ± 0.25
LUPLGIMAT	0.594 ± 0.23	**All_IMAT [-190, -30]**	0.672 ± 0.24
RUPLGIMAT	0.605 ± 0.23	**L_Arm_IMAT**	0.414 ± 0.19
LUPLGSKM	0.615 ± 0.24	**R_Arm_IMAT**	0.412±0.18
RUPLGSKM	0.623 ± 0.25	**VAT [-150, -50]**	0.914 ± 0.45
LILIOPSOAS	0.774 ± 0.38	**SAT [-190, -30]**	0.344 ± 0.15
RILIOPSOAS	0.765 ± 0.39	**All_SKM [-29,150] UB**	0.66 ± 0.24
All_SKM_UB_No Arms	0.687 ± 0.26	**All_SKM_UB**	0.666 ± 0.24
All_SKM [-29, 150] UB_No Arms	0.683 ± 0.26	**LPECMJR**	0.556 ± 0.21
All_IMAT [-190, -30] _No Arms	0.699 ± 0.25	**RPECMJR**	0.597 ± 0.22
VAT [-150, -50]-U-SAT [-190, -30]	0.462 ± 0.24	**LPECMNR**	0.692 ± 0.27
All_IMAT	0.678 ± 0.24	**---**	-----

All SKM = all skeletal muscles; All SKM[-29,150] = all skeletal muscles within HU -29 to 150; No Arms = excluding upper limbs; UB=Upper body; LW=Lower Body; LPECMJR/RPECMJR = left/right pectoralis major; LPECMNR/RPECMNR = left/right pectoralis minor; LTEMPORALIS/RTEMPORALIS = left/right temporalis; LMASSETER/RMASSETER = left/right masseter; LSCM/RSCM = left/right sternocleidomastoid; LILIOPSOAS/RILIOPSOAS = left/right iliopsoas; LUPLGSKM/RUPLGSKM = left/right upper limb muscles;

LLWLGSKM/RLWLGSKM = left/right lower limb muscles; LASKM/RASKM = left/right abdominal muscles; VAT = visceral adipose tissue; VAT[-150,-50] = visceral fat within HU -150 to -50; EPAT = epicardial/pericardial fat; PAAT = periaortic fat; THAT = thoracic fat; SAT = subcutaneous fat; SAT[-190,-30] = subcutaneous fat within HU -190 to -30; LASAT/RASAT = left/right abdominal subcutaneous fat. IMAT = intramuscular adipose tissue; All_IMAT [-190, -30] = IMAT within HU -190 to -30; LUPLGIMAT/RUPLGIMAT = left/right upper limb IMAT; LLWLGIMAT/RLWLGIMAT = left/right lower limb IMAT; LAIMAT/RAIMAT = left/right abdominal IMAT.

Table S3. Mean ± SD SUV values of organ ROIs across 20 patients (12 whole-body scans and 10 additional upper-body scans).

Organ				
ROI	**Mean ± SD**	**ROI**		**Mean ± SD**
AOC-U-CAAC	0.923 ± 0.4	**Lung**	**R_Superior Lobe**	0.531 ± 0.17
Aortic calcification	0.852 ± 0.41		**R_Middle Lobe**	0.627 ± 0.2
CAAC	1.041 ± 0.35		**R_Inferior Lobe**	0.964 ± 0.33
Spleen	2.643 ± 1.34		**L_Superior Lobe**	0.529 ± 0.18
L_Kidney	2.432 ± 1.11		**L_Inferior Lobe**	0.744 ± 0.24
R_Kidney	2.772 ± 1.42	**Esophagus**		1.365 ± 0.48
Gall Blader	1.712 ± 1.12	**Stomach**		1.057 ± 0.56
Pancreas	0.949 ± 0.53	**Liver**		3.94 ± 1.66
Brain	0.31 ± 0.12	**Bowel**		1.079 ± 0.62
Heart	0.959 ± 0.38	**Skin**		0.299 ± 0.12
Aorta	0.945 ± 0.39	**L_Adrenal Gland**		1.045 ± 0.59
Inferior Vena Cava	1.422 ± 0.61	**R_Adrenal Gland**		1.641 ± 0.86
Thyroid Gland	0.858 ± 0.35	**L_Parotid Gland**		0.832 ± 0.39
All_L_Lung	0.619 ± 0.2	**R_Parotid Gland**		0.825 ± 0.37
All_R_Lung	0.712 ± 0.22	**L_Submandibular Gland**		1.149 ± 0.48
Bladder	65.45 ± 43.39	**R_Submandibular Gland**		1.157 ± 0.5
Prostate	4.403 ± 4.21	**pleural effusion**		**NA**
Trachea	0.721 ± 0.26	**ascites**		**NA**

AOC-U-CAAC= enables AOC-CAAC-based agatston score; CAAC= Cardiac aggregate calcium