

Appendix 2: QIICR PET SUV measurements of interest and their corresponding codes

Research codes corresponding to the measurements match those in the source code of the QuantitativeIndicesCLI tool performing the calculations¹. Recently an error has been discovered in the UCUM codes specified in the current DICOM standard for SUVbw units, specifically “g/ml{SUVbw}” should be used in place of “{SUVbw}g/ml”, due to the UCUM lexical construction rules. A proposed correction to the DICOM standard is in progress (CP 1535 [<http://www.dclunie.com/dicom-status/status.html#CP1535>]), and when it is approved, the DICOM SR and RWVM files in the repository will be updated with corrected codes for the units. The numeric values are not affected.

Measurement type research code	Measurement code	Modifier relationship	Modifier code	Units code
Mean_s	(126401,DCM,SUVbw)	(121401,DCM,Derivation)	(R-00317,SRT,"Mean")	{{SUVbw}g/ml,UCUM,"Standardized Uptake Value body weight")
Min_s	(126401,DCM,SUVbw)	(121401,DCM,Derivation)	(R-404FB,SRT,"Minimum")	— “ —
Max_s	(126401,DCM,SUVbw)	(121401,DCM,Derivation)	(G-A437,SRT,"Maximum")	— “ —
Std_Deviation_s	(126401,DCM,SUVbw)	(121401,DCM,Derivation)	(R-10047,SRT,Standard Deviation)	
Volume_s	(G-D705,SRT,Volume)	(G-C036,SRT,Measurement Method)	(126030,DCM,"Sum of segmented voxel volumes")	(ml,UCUM,"Milliliter")
RMS_s	(126401,DCM,SUVbw)	(121401,DCM,Derivation)	(C2347976,UMLS,"RMS")	{{SUVbw}g/ml,UCUM,"Standardized Uptake Value body weight")
Peak_s	(126401,DCM,SUVbw)	(121401,DCM,Derivation)	(126031,DCM,"Peak Value Within ROI")	{{SUVbw}g/ml,UCUM,"Standardized Uptake Value body weight")
Median_s	(126401,DCM,SUVbw)	(121401,DCM,Derivation)	(R-00319,SRT,"Median")	{{SUVbw}g/ml,UCUM,"Standardized Uptake Value body weight")
Upper_Adjacent_s	(250139,99PMP,Upper Adjacent Value)	n/a	n/a	(%,UCUM,"Percent")
Q1_Distribution_s	(250140,99PMP,Percent Within First Quarter of Intensity Range)	n/a	n/a	(%,UCUM,"Percent")
Q2_Distribution_s	(250141,99PMP,Percent Within Second Quarter of Intensity Range)	n/a	n/a	(%,UCUM,"Percent")
Q3_Distribution_s	(250142,99PMP,Percent Within Third Quarter of Intensity Range)	n/a	n/a	(%,UCUM,"Percent")

¹ <https://github.com/QIICR/PET-IndiC/blob/master/QuantitativeIndicesCLI/QuantitativeIndicesCLI.cxx>

Q4_Distribution_s	(250143,99PMP,Percent Within Fourth Quarter of Intensity Range)	n/a	n/a	(%,UCUM,"Percent")
TLG_s [1]	(126033,DCM,Total Lesion Glycolysis)	n/a	n/a	(g,UCUM,"Gram")
Glycolysis_Q1_s	(250145,99PMP,Glycolysis Within First Quarter of Intensity Range)	n/a	n/a	(g,UCUM,"Gram")
Glycolysis_Q2_s	(250146,99PMP,Glycolysis Within Second Quarter of Intensity Range)	n/a	n/a	(g,UCUM,"Gram")
Glycolysis_Q3_s	(250147,99PMP,Glycolysis Within Third Quarter of Intensity Range)	n/a	n/a	(g,UCUM,"Gram")
Glycolysis_Q4_s	(250148,99PMP,Glycolysis Within Fourth Quarter of Intensity Range)	n/a	n/a	(g,UCUM,"Gram")
SAM_s	(126037,DCM, Standardized Added Metabolic Activity)	n/a	n/a	(g,UCUM,"Gram")
SAM_Background_s	(126038,DCM, Standardized Added Metabolic Activity Background)	n/a	n/a	{{SUVbw}g/ml,UCUM,"Standardized Uptake Value body weight")

References

1. Larson SM, Erdi Y, Akhurst T, Mazumdar M, Macapinlac HA, Finn RD, et al. Tumor Treatment Response Based on Visual and Quantitative Changes in Global Tumor Glycolysis Using PET-FDG Imaging. The Visual Response Score and the Change in Total Lesion Glycolysis. Clin Positron Imaging. 1999;2: 159–171. Available: <http://www.ncbi.nlm.nih.gov/pubmed/14516540>