

SUPPLEMENTARY INFORMATION

ARTICLE TITLE: Machine learning and texture analysis of [¹⁸F]FDG PET/CT images for the prediction of distant metastases in non-small-cell lung cancer patients.

AUTHOR NAMES: Armin Hakkak Moghadam Torbati¹⁺, Sara Pellegrino¹⁺, Rosa Fonti¹, Rocco Morra², Sabino De Placido², Silvana Del Vecchio^{1*}.

¹Department of Advanced Biomedical Sciences, University of Naples "Federico II", Naples, Italy.

²Department of Clinical Medicine and Surgery, University of Naples "Federico II", Naples, Italy.

+ These authors contributed equally to this work

***CORRESPONDENCE:** Prof. Silvana Del Vecchio, Via Sergio Pansini 5, 80131 Naples, Italy; phone +390817463307; Fax: +390815457081, e-mail: delvecc@unina.it

Supplementary Table S1. Conventional and texture features derived from [¹⁸F]FDG PET/CT images by using LIFEx software

FEATURES			
SHAPE	HISTOGRAM	DERIVED FROM CONVENTIONAL	CONVENTIONAL
SHAPE Sphericity SHAPE Compacity SHAPE Volume	HISTO_Skewness HISTO_Kurtosis HISTO_Entropy-log ₁₀ HISTO_Energy	CoV (SD/SUVmean)	SUVmin SUVmax SUVmean SD mean SUVpeak MTV TLG
GLCM	GLRM	NGLDM	GLZLM
GLCM_Homogeneity GLCM_Energy GLCM_Contrast GLCM_Correlation GLCM_Entropy-log ₁₀ GLCM_Dissimilarity	GLRM_SRE GLRM_LRE GLRM_LGRE GLRM_HGRE GLRM_SRLGE GLRM_SRHGE GLRM_LRLGE GLRM_LRHGE GLRM_GLNU GLRM_RLNU GLRM_RP	NGLDM_Coarseness NGLDM_Contrast NGLDM_Busyness	GLZLM_SZE GLZLM_LZE GLZLM_LGZE GLZLM_HGZE GLZLM_SZLGE GLZLM_SZHGE GLZLM_LZLGE GLZLM_LZHGE GLZLM_GLNU GLZLM_ZLNU GLZLM_ZP

Supplementary Table S2. Accuracy of models using SVM method in the training dataset

	Number of combined features				
Lasso method	First feature	Two first features	Three first features	Four first features	Five first features
Fscchi2	81.1	78.3	81.1	83.7	83.7
Fscmrnr	75	73	75	71.4	78
Fscnca	75	73.1	78.4	79	-
Fsrftest	81.1	78.3	81.1	83.7	83.7
Fsrnca	75	73.1	78.4	79	-
Fsulaplacian	77.2	74	79	83.7	81.1
Relieff	75	72.1	80.5	78	83.7

Supplementary Table S3. Accuracy of models using SVM method in the final testing dataset

	Number of combined features				
Lasso method	First feature	Two first features	Three first features	Four first features	Five first features
Fscchi2	48	46.4	50.5	45	51.3
Fscmrnr	40	47	42	49	47
Fscnca	49	45.3	44	50.9	-
Fsrftest	48	46.4	50.5	45	51.3
Fsrnca	49	45.3	44	50.9	-
Fsulaplacian	49	43	47.2	49.3	50.9
Relieff	47	49	45.3	51	49.4