



Figure S1 An illustration of the ROIs placement. (A) ROIs (height of cylinders =9 mm) of BMD measurement with QCT. (B) manual annotation of vertebral bodies. (C) ROIs (height of cylinders =9 mm) of CT attenuation measurement, all located in the center of the vertebral bodies. ROI, region of interest; BMD, bone mineral density; QCT, quantitative computed tomography; CT, computed tomography.

Table S1 The performance comparison of CT attenuation cutoff thresholds in HU, for distinguishing low BMD (osteopenia and osteoporosis) from normal in the gender and age groups

Vertebrae	Gender group		P values	Age group		P values
	Female (n=369)	Male (n=743)		<60 y (n=721)	≥60 y (n=391)	
Avg. T11–T12						
Cutoff HU	≤156 (0.784 ^y)	≤157 (0.719 ^y)		≤159 (0.760 ^y)	≤155 (0.713 ^y)	
Sensitivity, %	87.12	86.33		89.29	85.77	
Specificity, %	91.26	85.55		86.67	85.48	
AUC mean, (95% CI)	0.955 (0.929 to 0.974)	0.933 (0.913 to 0.950)	0.10	0.939 (0.919 to 0.955)	0.921 (0.890 to 0.946)	0.31
Avg. L1–L2						
Cutoff HU	≤138 (0.824 ^y)	≤135 (0.750 ^y)		≤138 (0.764 ^y)	≤132 (0.770 ^y)	
Sensitivity, %	90.18	81.33		84.18	85.02	
Specificity, %	92.23	93.68		92.19	91.94	
AUC mean, (95% CI)	0.965 (0.941 to 0.981)	0.940 (0.921 to 0.956)	0.05	0.944 (0.924 to 0.959)	0.929 (0.899 to 0.953)	0.41
P values	0.07	0.35		0.53	0.40	

^y represented Youden index and corresponding cutoff is optimal cutoff. CT, computed tomography; HU, Hounsfield units; BMD, bone mineral density; y, years; Avg., average CT attenuation values of each vertebral combination; AUC, area under the curve; CI, confidence interval.