

Table S1 Search strategy of PubMed (12 October 2023)

No.	Query	Results
#1	"Sarcopenia"[Mesh]	9,622
#2	Sarcopenia[Title/Abstract] OR Sarcopenias[Title/Abstract]	16,700
#3	#1 OR #2	17,703
#4	Skeletal Muscle Mass[Title/Abstract] OR SMM[Title/Abstract] OR Skeletal Muscle[Title/Abstract] OR Muscle Mass[Title/Abstract] OR Muscle[Title/Abstract] OR Mass[Title/Abstract] OR Lean Soft-tissue Mass[Title/Abstract] OR Lean Soft Tissue[Title/Abstract] OR LST[Title/Abstract] OR Lean Body Mass[Title/Abstract] OR Lean Mass[Title/Abstract] OR LM[Title/Abstract]	1,851,320
#5	"Body Composition"[Mesh]	64,130
#6	Body Composition[Title/Abstract] OR Body Compositions[Title/Abstract] OR Composition, Body[Title/Abstract] OR Compositions, Body[Title/Abstract]	47,743
#7	#5 OR #6	84,837
#8	#3 OR #4 OR #7	1,891,398
#9	"Absorptiometry, Photon"[Mesh]	26,031
#10	dual-energy X-ray absorptiometry[Title/Abstract] OR DXA[Title/Abstract] OR Absorptiometry, Photon[Title/Abstract] OR Photon Absorptiometry[Title/Abstract] OR Densitometry, X-Ray[Title/Abstract] OR Densitometry, X Ray[Title/Abstract] OR X-Ray Densitometry[Title/Abstract] OR Photodensitometry, X-Ray[Title/Abstract] OR Photodensitometry, X Ray[Title/Abstract] OR X-Ray Photodensitometry[Title/Abstract] OR X Ray Photodensitometry[Title/Abstract] OR Densitometry, Xray[Title/Abstract] OR Xray Densitometry[Title/Abstract] OR Single-Photon Absorptiometry[Title/Abstract] OR Absorptiometry, Single-Photon[Title/Abstract] OR Single Photon Absorptiometry[Title/Abstract] OR Dual-Energy X-Ray Absorptiometry Scan[Title/Abstract] OR Dual Energy X Ray Absorptiometry Scan[Title/Abstract] OR DXA Scan[Title/Abstract] OR DXA Scans[Title/Abstract] OR Scan, DXA[Title/Abstract] OR Scans, DXA[Title/Abstract] OR DEXA Scan[Title/Abstract] OR DEXA Scans[Title/Abstract] OR Scan, DEXA[Title/Abstract] OR Scans, DEXA[Title/Abstract] OR Dual-Photon Absorptiometry[Title/Abstract] OR Absorptiometry, Dual-Photon[Title/Abstract] OR Dual Photon Absorptiometry[Title/Abstract] OR Radiographic Absorptiometry, Dual-Energy[Title/Abstract] OR Radiographic Absorptiometry, Dual Energy[Title/Abstract] OR Absorptiometry, Dual-Energy Radiographic[Title/Abstract] OR Absorptiometry, Dual Energy Radiographic[Title/Abstract] OR Dual-Energy Radiographic Absorptiometry[Title/Abstract] OR Dual Energy Radiographic Absorptiometry[Title/Abstract] OR Absorptiometry, X-Ray[Title/Abstract] OR Absorptiometry, X Ray[Title/Abstract] OR X-Ray Absorptiometry[Title/Abstract] OR X Ray Absorptiometry[Title/Abstract] OR Dual-Energy X-Ray Absorptiometry[Title/Abstract] OR Dual Energy X Ray Absorptiometry[Title/Abstract] OR X-Ray Absorptiometry, Dual-Energy[Title/Abstract] OR X Ray Absorptiometry, Dual Energy[Title/Abstract] OR DPX Absorptiometry[Title/Abstract] OR Absorptiometries, DPX[Title/Abstract] OR Absorptiometry, DPX[Title/Abstract] OR Absorptiometry, Dual X-Ray[Title/Abstract] OR Absorptiometry, Dual X Ray[Title/Abstract] OR X-Ray Absorptiometry, Dual[Title/Abstract] OR Absorptiometry, Dual-Energy X-Ray[Title/Abstract] OR Absorptiometry, Dual Energy X Ray[Title/Abstract] OR Dual X-Ray Absorptiometry[Title/Abstract] OR Dual X Ray Absorptiometry[Title/Abstract]	35,685
#11	#9 OR #10	43,516
#12	Bioimpedance analysis[Title/Abstract] OR BIA[Title/Abstract] OR Bioimpedance electrical analysis[Title/Abstract] OR Bioelectrical impedance analysis[Title/Abstract] OR bio-electrical impedance analysis[Title/Abstract]	8,240
#13	"Ultrasonography"[Mesh]	489,088
#14	Ultrasound[Title/Abstract] OR US[Title/Abstract] OR Ultrasonography[Title/Abstract] OR Diagnostic Ultrasound[Title/Abstract] OR Diagnostic Ultrasounds[Title/Abstract] OR Ultrasound, Diagnostic[Title/Abstract] OR Ultrasounds, Diagnostic[Title/Abstract] OR Ultrasound Imaging[Title/Abstract] OR Imaging, Ultrasound[Title/Abstract] OR Imagings, Ultrasound[Title/Abstract] OR Echotomography[Title/Abstract] OR Ultrasonic Imaging[Title/Abstract] OR Imaging, Ultrasonic[Title/Abstract] OR Sonography, Medical[Title/Abstract] OR Medical Sonography[Title/Abstract] OR Ultrasonographic Imaging[Title/Abstract] OR Imaging, Ultrasonographic[Title/Abstract] OR Imagings, Ultrasonographic[Title/Abstract] OR Ultrasonographic Imagings[Title/Abstract] OR Echography[Title/Abstract] OR Diagnosis, Ultrasonic[Title/Abstract] OR Diagnoses, Ultrasonic[Title/Abstract] OR Ultrasonic Diagnoses[Title/Abstract] OR Ultrasonic Diagnosis[Title/Abstract] OR Echotomography, Computer[Title/Abstract] OR Computer Echotomography[Title/Abstract] OR Tomography, Ultrasonic[Title/Abstract] OR Ultrasonic Tomography[Title/Abstract]	926,402
#15	#13 OR #14	1,200,745
#16	"Magnetic Resonance Imaging"[Mesh]	536,942
#17	magnetic resonance imaging[Title/Abstract] OR MRI[Title/Abstract] OR Magnetic Resonance Imaging[Title/Abstract] OR Imaging, Magnetic Resonance[Title/Abstract] OR NMR Imaging[Title/Abstract] OR Imaging, NMR[Title/Abstract] OR Tomography, NMR[Title/Abstract] OR Tomography, MR[Title/Abstract] OR MR Tomography[Title/Abstract] OR NMR Tomography[Title/Abstract] OR Steady-State Free Precession MRI[Title/Abstract] OR Steady State Free Precession MRI[Title/Abstract] OR Zeugmatography[Title/Abstract] OR Imaging, Chemical Shift[Title/Abstract] OR Chemical Shift Imagings[Title/Abstract] OR Imagings, Chemical Shift[Title/Abstract] OR Shift Imaging, Chemical[Title/Abstract] OR Shift Imagings, Chemical[Title/Abstract] OR Chemical Shift Imaging[Title/Abstract] OR Magnetic Resonance Image[Title/Abstract] OR Image, Magnetic Resonance[Title/Abstract] OR Magnetic Resonance Images[Title/Abstract] OR Resonance Image, Magnetic[Title/Abstract] OR Magnetization Transfer Contrast Imaging[Title/Abstract] OR MRI Scans[Title/Abstract] OR MRI Scan[Title/Abstract] OR Scan, MRI[Title/Abstract] OR Scans, MRI[Title/Abstract] OR Tomography, Proton Spin[Title/Abstract] OR Proton Spin Tomography[Title/Abstract] OR fMRI[Title/Abstract] OR MRI, Functional[Title/Abstract] OR Functional MRI[Title/Abstract] OR Functional MRIs[Title/Abstract] OR MRIs, Functional[Title/Abstract] OR Functional Magnetic Resonance Imaging[Title/Abstract] OR Magnetic Resonance Imaging, Functional[Title/Abstract] OR Spin Echo Imaging[Title/Abstract] OR Echo Imaging, Spin[Title/Abstract] OR Echo Imagings, Spin[Title/Abstract] OR Imaging, Spin Echo[Title/Abstract] OR Imagings, Spin Echo[Title/Abstract] OR Spin Echo Imagings[Title/Abstract]	526,744
#18	#16 OR #17	739,393
#19	"Tomography, X-Ray Computed"[Mesh]	494,469
#20	computed tomography[Title/Abstract] OR CT[Title/Abstract] OR Tomography, X-Ray Computed[Title/Abstract] OR X-Ray Computed Tomography[Title/Abstract] OR Tomography, X-Ray Computerized[Title/Abstract] OR Tomography, X Ray Computerized[Title/Abstract] OR Computed X Ray Tomography[Title/Abstract] OR X-Ray Computer Assisted Tomography[Title/Abstract] OR X Ray Computer Assisted Tomography[Title/Abstract] OR Tomography, X-Ray Computer Assisted[Title/Abstract] OR Tomography, X Ray Computer Assisted[Title/Abstract] OR Computerized Tomography, X Ray[Title/Abstract] OR Computerized Tomography, X-Ray[Title/Abstract] OR X-Ray Computerized Tomography[Title/Abstract] OR CT X Ray[Title/Abstract] OR CT X Rays[Title/Abstract] OR X Ray, CT[Title/Abstract] OR X Rays, CT[Title/Abstract] OR Tomodensitometry[Title/Abstract] OR Tomography, X Ray Computed[Title/Abstract] OR X Ray Tomography, Computed[Title/Abstract] OR X-Ray Tomography, Computed[Title/Abstract] OR Computed X-Ray Tomography[Title/Abstract] OR Tomographies, Computed X-Ray[Title/Abstract] OR Tomography, Computed X-Ray[Title/Abstract] OR Tomography, Xray Computed[Title/Abstract] OR Computed Tomography, Xray[Title/Abstract] OR Xray Computed Tomography[Title/Abstract] OR CAT Scan, X Ray[Title/Abstract] OR CAT Scan, X-Ray[Title/Abstract] OR CAT Scans, X-Ray[Title/Abstract] OR Scan, X-Ray CAT[Title/Abstract] OR Scans, X-Ray CAT[Title/Abstract] OR X-Ray CAT Scan[Title/Abstract] OR X-Ray CAT Scans[Title/Abstract] OR Tomography, Transmission Computed[Title/Abstract] OR Computed Tomography, Transmission[Title/Abstract] OR Transmission Computed Tomography[Title/Abstract] OR CT Scan, X-Ray[Title/Abstract] OR CT Scan, X Ray[Title/Abstract] OR CT Scans, X-Ray[Title/Abstract] OR Scan, X-Ray CT[Title/Abstract] OR Scans, X-Ray CT[Title/Abstract] OR X-Ray CT Scan[Title/Abstract] OR X-Ray CT Scans[Title/Abstract] OR Computed Tomography, X-Ray[Title/Abstract] OR Computed Tomography, X Ray[Title/Abstract] OR X Ray Computerized Tomography[Title/Abstract] OR Cine-CT[Title/Abstract] OR Cine CT[Title/Abstract] OR Electron Beam Computed Tomography[Title/Abstract] OR Electron Beam Tomography[Title/Abstract] OR Beam Tomography, Electron[Title/Abstract] OR Tomography, Electron Beam[Title/Abstract] OR Tomography, X-Ray Computerized Axial[Title/Abstract] OR Tomography, X Ray Computerized Axial[Title/Abstract] OR X-Ray Computerized Axial Tomography[Title/Abstract] OR X Ray Computerized Axial Tomography[Title/Abstract]	624,990
#21	#19 OR #20	832,985
#22	#12 OR #15 OR #18 OR #21	2,480,020
#23	#8 AND #11 AND #22	5,455
#24	#8 AND #11 AND #22 AND ((clinicaltrial[Filter] OR randomizedcontrolledtrial[Filter]) AND (humans[Filter]))	675

DXA, dual-energy X-ray absorptiometry; BIA, bioelectrical impedance analysis; US, ultrasound; MRI, magnetic resonance imaging; CT, computed tomography.

Table S2 Search strategy of Embase (12 October 2023)

No.	Query	Results
#1	sarcopenia/exp	21,033
#2	sarcopenia:ab,ti OR sarcopenias:ab,ti	22,291
#3	#1 OR #2	26,198
#4	'skeletal muscle mass':ab,ti OR smm:ab,ti OR 'skeletal muscle':ab,ti OR 'muscle mass':ab,ti OR muscle:ab,ti OR mass:ab,ti OR 'lean soft-tissue mass':ab,ti OR 'lean soft tissue':ab,ti OR lst:ab,ti OR 'lean body mass':ab,ti OR 'lean mass':ab,ti OR lm:ab,ti	2,352,320
#5	'body composition'/exp	129,536
#6	body composition':ab,ti OR 'body compositions':ab,ti OR 'composition, body':ab,ti OR 'compositions,body':ab,ti	63,981
#7	#5 OR #6	138,108
#8	#3 OR #4 OR #7	2,424,986
#9	absorptiometry, photon'/exp	4,432
#10	dxa:ab,ti OR 'absorptiometry, photon':ab,ti OR 'photon absorptiometry':ab,ti OR 'densitometry, x-ray':ab,ti OR 'densitometry, x ray':ab,ti OR 'x-ray densitometry':ab,ti OR 'photodensitometry,x-ray':ab,ti OR 'photodensitometry, x ray':ab,ti OR 'x-ray photodensitometry':ab,ti OR 'x ray photodensitometry':ab,ti OR 'densitometry,xray':ab,ti OR 'xray densitometry':ab,ti OR 'single-photon absorptiometry':ab,ti OR 'absorptiometry, single-photon':ab,ti OR 'single photon absorptiometry':ab,ti OR 'dual-energy x-ray absorptiometry scan':ab,ti OR 'dual energy x ray absorptiometry scan':ab,ti OR 'dxa scan':ab,ti OR 'dxa scans':ab,ti OR 'scan,dxa':ab,ti OR 'scans, dxa':ab,ti OR 'dxa scan':ab,ti OR 'dxa scans':ab,ti OR 'scan,dexa':ab,ti OR 'scans, dexa':ab,ti OR 'dual-photon absorptiometry':ab,ti OR 'absorptiometry, dual-photon':ab,ti OR 'dual photon absorptiometry':ab,ti OR 'radiographic absorptiometry, dual-energy':ab,ti OR 'radiographic absorptiometry, dual energy':ab,ti OR 'absorptiometry, dual-energy radiographic':ab,ti OR 'absorptiometry, dualenergy radiographic':ab,ti OR 'dual-energy radiographic absorptiometry':ab,ti OR 'absorptiometry, x-ray':ab,ti OR 'absorptiometry,x ray':ab,ti OR 'x-ray absorptiometry':ab,ti OR 'x ray absorptiometry':ab,ti OR 'dual-energy x-ray absorptiometry':ab,ti OR 'dual energy x ray absorptiometry':ab,ti OR 'x-ray absorptiometry,dual-energy':ab,ti OR 'x ray absorptiometry, dualenergy':ab,ti OR 'dpx absorptiometry':ab,ti OR 'absorptiometries, dpx':ab,ti OR 'absorptiometry,dpx':ab,ti OR 'absorptiometry, dual x-ray':ab,ti OR 'absorptiometry, dual x ray':ab,ti OR 'x-ray absorptiometry, dual':ab,ti OR 'absorptiometry,dual-energy x-ray':ab,ti OR 'absorptiometry, dual energy x ray':ab,ti OR 'dual x-ray absorptiometry':ab,ti OR 'dual x ray absorptiometry':ab,ti	4,990
#11	#9 OR #10	56,608
#12	bioimpedance analysis':ab,ti OR bia:ab,ti OR 'bioimpedance electrical analysis':ab,ti OR 'bioelectrical impedance analysis':ab,ti OR 'bio-electrical impedance analysis':ab,ti	12,973
#13	'ultrasonography'/exp	1,052,218
#14	ultrasound:ab,ti OR us:ab,ti OR ultrasonography:ab,ti OR 'diagnostic ultrasound':ab,ti OR 'diagnostic ultrasounds':ab,ti OR 'ultrasound,diagnostic':ab,ti OR 'ultrasounds,diagnostic':ab,ti OR 'ultrasound imaging':ab,ti OR 'imaging, ultrasound':ab,ti OR 'imaging,ultrasound':ab,ti OR echotomography:ab,ti OR 'ultrasonic imaging':ab,ti OR 'imaging,ultrasonic':ab,ti OR 'sonography, medical':ab,ti OR 'medical sonography':ab,ti OR 'ultrasonographic imaging':ab,ti OR 'imaging, ultrasonographic':ab,ti OR 'imaging,ultrasonograph ic':ab,ti OR 'ultrasonographic imagings':ab,ti OR echography:ab,ti OR 'diagnosis, ultrasonic':ab,ti OR 'diagnoses,ultrasonic':ab,ti OR 'ultrasonic diagnoses':ab,ti OR 'ultrasonic diagnosis':ab,ti OR 'echotomography, computer':ab,ti OR 'computer echotomography':ab,ti OR 'tomography,ultrasonic':ab,ti OR 'ultrasonic tomography':ab,ti	1,320,685
#15	#13 OR #14	2,024,162
#16	'magnetic resonance imaging'/exp	1,246,169
#17	mri:ab,ti OR 'magnetic resonance imaging':ab,ti OR 'imaging, magnetic resonance':ab,ti OR 'nmr imaging':ab,ti OR 'imaging, nmr':ab,ti OR 'tomography, nmr':ab,ti OR 'tomography, mr':ab,ti OR 'mr tomography':ab,ti OR 'nmr tomography':ab,ti OR 'steady-state free precession mri':ab,ti OR 'steady state free precession mri':ab,ti OR zeugmatography:ab,ti OR 'imaging, chemical shift':ab,ti OR 'chemical shift imagings':ab,ti OR 'imaging, chemical shift':ab,ti OR 'shift imaging, chemical':ab,ti OR 'shift imagings, chemical':ab,ti OR 'chemical shift imaging':ab,ti OR 'magnetic resonance image':ab,ti OR 'image, magnetic resonance':ab,ti OR 'magnetic resonance images':ab,ti OR 'resonance image, magnetic':ab,ti OR 'magnetization transfer contrast imaging':ab,ti OR 'mri scans':ab,ti OR 'mri scan':ab,ti OR 'scan, mri':ab,ti OR 'scans, mri':ab,ti OR 'tomography, proton spin':ab,ti OR 'proton spin tomography':ab,ti OR fmri:ab,ti OR 'mri,functional':ab,ti OR 'functional mri':ab,ti OR 'functional mris':ab,ti OR 'mris,functional':ab,ti OR 'functional magnetic resonance imaging':ab,ti OR 'magnetic resonance imaging, functional':ab,ti OR 'spin echo imaging':ab,ti OR 'echo imaging, spin':ab,ti OR 'echo imagings, spin':ab,ti OR 'imaging,spin echo':ab,ti OR 'imaging, spin echo':ab,ti OR 'spin echo imagings':ab,ti	764,141
#18	#16 OR #17	1,314,447
#19	tomography, x-ray computed'/exp	105,902
#20	tomography, x-ray computed'/exp 'tomography, x-ray computed':ab,ti OR 'x-ray computed tomography':ab,ti OR 'tomography, x-ray computerized':ab,ti OR 'tomography, x ray computerized':ab,ti OR 'computed x ray tomography':ab,ti OR 'x-ray computer assisted tomography':ab,ti OR 'x ray computer assisted tomography':ab,ti OR 'tomography, x-ray computer assisted':ab,ti OR 'tomography, x ray computer assisted':ab,ti OR 'computerized tomography, x ray':ab,ti OR 'computerized tomography,x-ray':ab,ti OR 'x-ray computerized tomography':ab,ti OR 'ct x ray':ab,ti OR 'ct x rays':ab,ti OR 'x ray, ct':ab,ti OR 'x rays,ct':ab,ti OR tomodensitometry:ab,ti OR 'tomography, x ray computed':ab,ti OR 'x ray tomography, computed':ab,ti OR 'x-ray tomography,computed':ab,ti OR 'computed x-ray tomography':ab,ti OR 'tomographies,computed x-ray':ab,ti OR 'tomography, computed x-ray':ab,ti OR 'tomography, xray computed':ab,ti OR 'computed tomography, xray':ab,ti OR 'xray computed tomography':ab,ti OR 'cat scan, x ray':ab,ti OR 'cat scan, x-ray':ab,ti OR 'cat scans, x-ray':ab,ti OR 'scan, x-ray cat':ab,ti OR 'scans, x-ray cat':ab,ti OR 'x-ray cat scan':ab,ti OR 'x-ray cat scans':ab,ti OR 'tomography, transmission computed':ab,ti OR 'computed tomography, transmission':ab,ti OR 'transmission computed tomography':ab,ti OR 'ct scan, x-ray':ab,ti OR 'ct scan, x ray':ab,ti OR 'ct scans, x-ray':ab,ti OR 'scan, x-ray ct':ab,ti OR 'scans, x-ray ct':ab,ti OR 'x-ray ct scan':ab,ti OR 'x-ray ct scans':ab,ti OR 'computed tomography, x-ray':ab,ti OR 'computed tomography, x ray':ab,ti OR 'x ray computerized tomography':ab,ti OR 'cine ct':ab,ti OR 'electron beam computed tomography':ab,ti OR 'electron beam tomography':ab,ti OR 'beam tomography,electron':ab,ti OR 'tomography, electron beam':ab,ti OR 'tomography, x-ray computerized axial':ab,ti OR 'tomography, x ray computerized axial':ab,ti OR 'x-ray computerized axial tomography':ab,ti OR 'x ray computerized axial tomography':ab,ti	958,001
#21	#19 OR #20	993,976
#22	#12 OR #15 OR #18 OR #21	3,815,079
#23	#8 AND #11 AND #22	7,439
#24	#23 AND ('case control study'/de OR 'clinical article'/de OR 'clinical trial'/de OR 'cohort analysis'/de OR 'comparative study'/de OR 'compartment model'/de OR 'control group'/de OR 'controlled clinical trial'/de OR 'controlled study'/de OR 'correlational study'/de OR 'cross sectional study'/de OR 'diagnostic test accuracy study'/de OR 'double blind procedure'/de OR 'human'/de OR 'human cell'/de OR 'human experiment'/de OR 'human tissue'/de OR 'in vitro study'/de OR 'in vivo study'/de OR 'intermethod comparison'/de OR 'intervention study'/de OR 'linear regression analysis'/de OR 'longitudinal study'/de OR 'major clinical study'/de OR 'methodology'/de OR 'model'/de OR 'multicenter study'/de OR 'normal human'/de OR 'observational study'/de OR 'pilot study'/de OR 'prospective study'/de OR 'quality control'/de OR 'quantitative study'/de OR 'questionnaire'/de OR 'randomized controlled trial'/de OR 'randomized controlled trial topic'/de OR 'retrospective study'/de OR 'sample size'/de OR 'statistical model'/de OR 'validation process'/de OR 'validation study'/de)	7,225
#25	#24 AND ('Article'/it OR 'Article in Press'/it OR 'Preprint'/it OR 'Short Survey'/it)	4,554

DXA, dual-energy X-ray absorptiometry; BIA, bioelectrical impedance analysis; US, ultrasound; MRI, magnetic resonance imaging; CT, computed tomography.

Table S3 Search strategy of Cochrane (12 October 2023)

No.	Query	Results
#1	MeSH descriptor: [Sarcopenia] explode all trees	849
#2	(Sarcopenia or Sarcopenias):ti,ab,kw (Word variations have been searched)	2,249
#3	#1 OR #2	2,249
#4	(Skeletal Muscle Mass or SMM or Skeletal Muscle or Muscle Mass or Muscle or Mass or Lean Soft-tissue Mass or Lean Soft Tissue or LST or Lean Body Mass or Lean Mass or LM):ti,ab,kw (Word variations have been searched)	195,650
#5	MeSH descriptor: [Body Composition] explode all trees	7,141
#6	(Body Composition or Body Compositions or Composition, Body or Compositions, Body):ti,ab,kw (Word variations have been searched)	23,306
#7	#5 OR #6	24,037
#8	#3 OR #4 OR #7	204,567
#9	MeSH descriptor: [Absorptiometry, Photon] explode all trees	2,168
#10	(dual-energy X-ray absorptiometry or DXA or Absorptiometry, Photon or Photon Absorptiometry or Densitometry, X-Ray or Densitometry, X Ray or X-Ray Densitometry or Photodensitometry, X-Ray or Photodensitometry, X Ray or X-Ray Photodensitometry or X Ray Photodensitometry or Densitometry, Xray or Xray Densitometry or Single-Photon Absorptiometry or Absorptiometry, Single-Photon or Single Photon Absorptiometry or Dual-Energy X-Ray Absorptiometry Scan or Dual Energy X Ray Absorptiometry Scan or DXA Scan or DXA Scans or Scan, DXA or Scans, DXA or DEXA Scan or DEXA Scans or Scan, DEXA or Scans, DEXA or Dual-Photon Absorptiometry or Absorptiometry, Dual-Photon or Dual Photon Absorptiometry or Radiographic Absorptiometry, Dual-Energy or Radiographic Absorptiometry, Dual Energy or Absorptiometry, Dual-Energy Radiographic or Absorptiometry, Dual Energy Radiographic or Dual-Energy Radiographic Absorptiometry or Dual Energy Radiographic Absorptiometry or Absorptiometry, X-Ray or Absorptiometry, X Ray or X-Ray Absorptiometry or X Ray Absorptiometry or Dual-Energy X-Ray Absorptiometry or Dual Energy X Ray Absorptiometry or X-Ray Absorptiometry, Dual Energy or DPX Absorptiometry or Absorptiometries, DPX or Absorptiometry, DPX or Absorptiometry, Dual X-Ray or Absorptiometry, Dual X Ray or X-Ray Absorptiometry, Dual or Absorptiometry, Dual-Energy X-Ray or Absorptiometry, Dual Energy X Ray or Dual X-Ray Absorptiometry or Dual X Ray Absorptiometry):ti,ab,kw (Word variations have been searched)	9,178
#11	#9 OR #10	9,178
#12	(Bioimpedance analysis or BIA or Bioimpedance electrical analysis or Bioelectrical impedance analysis or bio-electrical impedance analysis):ti,ab,kw (Word variations have been searched)	2,707
#13	MeSH descriptor: [Ultrasonography] explode all trees	17,636
#14	(Ultrasound or US or Ultrasonography or Diagnostic Ultrasound or Diagnostic Ultrasounds or Ultrasound, Diagnostic or Ultrasounds, Diagnostic or Ultrasound Imaging or Imaging, Ultrasound or Imagings, Ultrasound or Echotomography or Ultrasonic Imaging or Imaging, Ultrasonic or Sonography, Medical or Medical Sonography or Ultrasonographic Imaging or Imaging, Ultrasonographic or Imagings, Ultrasonographic or Ultrasonographic Imagings or Echography or Diagnosis, Ultrasonic or Diagnoses, Ultrasonic or Ultrasonic Diagnoses or Ultrasonic Diagnosis or Echotomography, Computer or Computer Echotomography or Tomography, Ultrasonic or Ultrasonic Tomography):ti,ab,kw (Word variations have been searched)	93,397
#15	#13 OR #14	93,397
#16	MeSH descriptor: [Magnetic Resonance Imaging] explode all trees	10,968
#17	(magnetic resonance imaging or MRI or Magnetic Resonance Imaging or Imaging, Magnetic Resonance or NMR Imaging or Imaging, NMR or Tomography, NMR or Tomography, MR or MR Tomography or NMR Tomography or Steady-State Free Precession MRI or Steady State Free Precession MRI or Zeugmatography or Imaging, Chemical Shift or Chemical Shift Imagings or Imagings, Chemical Shift or Shift Imaging, Chemical or Shift Imagings, Chemical or Chemical Shift Imaging or Magnetic Resonance Image or Image, Magnetic Resonance or Magnetic Resonance Images or Resonance Image, Magnetic or Magnetization Transfer Contrast Imaging or MRI Scans or MRI Scan or Scan, MRI or Scans, MRI or Tomography, Proton Spin or Proton Spin Tomography or fMRI or MRI, Functional or Functional MRI or Functional MRIs or MRIs, Functional or Functional Magnetic Resonance Imaging or Magnetic Resonance Imaging, Functional or Spin Echo Imaging or Echo Imaging, Spin or Echo Imagings, Spin or Imaging, Spin Echo or Imagings, Spin Echo or Spin Echo Imagings):ti,ab,kw (Word variations have been searched)	45,575
#18	#16 OR #17	45,781
#19	MeSH descriptor: [Tomography, X-Ray Computed] explode all trees	7,312
#20	(computed tomography or CT or Tomography, X-Ray Computed or X-Ray Computed Tomography or Tomography, X-Ray Computerized or Tomography, X Ray Computerized or Computed X Ray Tomography or X-Ray Computer Assisted Tomography or X Ray Computer Assisted Tomography or Tomography, X-Ray Computer Assisted or Tomography, X Ray Computer Assisted or Computerized Tomography, X Ray or Computerized Tomography, X-Ray or X-Ray Computerized Tomography or CT X Ray or CT X Rays or X Ray, CT or X Rays, CT or Tomodensitometry or Tomography, X Ray Computed or X Ray Tomography, Computed or X-Ray Tomography, Computed or Computed X-Ray Tomography or Tomographies, Computed X-Ray or Tomography, Computed X-Ray or Tomography, Xray Computed or Computed Tomography, Xray or Xray Computed Tomography or CAT Scan, X Ray or CAT Scan, X-Ray or CAT Scans, X-Ray or Scan, X-Ray CAT or Scans, X-Ray CAT or X-Ray CAT Scan or X-Ray CAT Scans or Tomography, Transmission Computed or Computed Tomography, Transmission or Transmission Computed Tomography or CT Scan, X-Ray or CT Scan, X Ray or CT Scans, X-Ray or Scan, X-Ray CT or Scans, X-Ray CT or X-Ray CT Scan or X-Ray CT Scans or Computed Tomography, X-Ray or Computed Tomography, X Ray or X Ray Computerized Tomography or Cine-CT or Cine CT or Electron Beam Computed Tomography or Electron Beam Tomography or Beam Tomography, Electron or Tomography, Electron Beam or Tomography, X-Ray Computerized Axial or Tomography, X Ray Computerized Axial or X-Ray Computerized Axial Tomography or X Ray Computerized Axial Tomography):ti,ab,kw (Word variations have been searched)	97,738
#21	#19 OR #20	97,768
#22	#12 OR #15 OR #18 OR #21	224,854
#23	#8 AND #11 AND #22	1,827
#24	#8 AND #11 AND #22 AND English (language)	1,816

DXA, dual-energy X-ray absorptiometry; BIA, bioelectrical impedance analysis; US, ultrasound; MRI, magnetic resonance imaging; CT, computed tomography.

Table S4 Search strategy of Web of Science (12 October 2023)

No.	Query	Results
#1	TS=(Sarcopenia)	23,244
#2	AB=(Sarcopenia or Sarcopenias)	12,355
#3	#1 OR #2	23,244
#4	AB=(Skeletal Muscle Mass or SMM or Skeletal Muscle or Muscle Mass or Muscle or Mass or Lean Soft-tissue Mass or Lean Soft Tissue or LST or Lean Body Mass or Lean Mass or LM)	2,697,668
#5	TS=(Body Composition)	151,204
#6	AB=(Body Composition or Body Compositions or Composition, Body or Compositions, Body)	97,186
#7	#5 OR #6	151,204
#8	#3 OR #4 OR #7	2,801,909
#9	TS=(Absorptiometry, Photon)	2,321
#10	AB=(dual-energy X-ray absorptiometry or DXA or Absorptiometry, Photon or Photon Absorptiometry or Densitometry, X-Ray or Densitometry, X Ray or X-Ray Densitometry or Photodensitometry, X-Ray or Photodensitometry, X Ray or X-Ray Photodensitometry or X Ray Photodensitometry or Densitometry, Xray or Xray Densitometry or Single-Photon Absorptiometry or Absorptiometry, Single-Photon or Single Photon Absorptiometry or Dual-Energy X-Ray Absorptiometry Scan or Dual Energy X Ray Absorptiometry Scan or DXA Scan or DXA Scans or Scan, DXA or Scans, DXA or DEXA Scan or DEXA Scans or Scan, DEXA or Scans, DEXA or Dual-Photon Absorptiometry or Absorptiometry, Dual-Photon or Dual Photon Absorptiometry or Radiographic Absorptiometry, Dual-Energy or Radiographic Absorptiometry, Dual Energy or Absorptiometry, Dual-Energy Radiographic or Absorptiometry, Dual Energy Radiographic or Dual-Energy Radiographic Absorptiometry or Dual Energy Radiographic Absorptiometry or Absorptiometry, X-Ray or Absorptiometry, X Ray or X-Ray Absorptiometry or X Ray Absorptiometry or Dual-Energy X-Ray Absorptiometry or Dual Energy X Ray Absorptiometry or X-Ray Absorptiometry, Dual-Energy or X Ray Absorptiometry, Dual Energy or DPX Absorptiometry or Absorptiometries, DPX or Absorptiometry, DPX or Absorptiometry, Dual X-Ray or Absorptiometry, Dual X Ray or X-Ray Absorptiometry, Dual or Absorptiometry, Dual-Energy X-Ray or Absorptiometry, Dual Energy X Ray or Dual X-Ray Absorptiometry or Dual X Ray Absorptiometry)	29,866
#11	#9 OR #10	30720
#12	AB=(Bioimpedance analysis or BIA or Bioimpedance electrical analysis or Bioelectrical impedance analysis or bio-electrical impedance analysis)	9605
#13	TS=(Ultrasonography)	127717
#14	AB=(Ultrasound or US or Ultrasonography or Diagnostic Ultrasound or Diagnostic Ultrasounds or Ultrasound, Diagnostic or Ultrasounds, Diagnostic or Ultrasound Imaging or Imaging, Ultrasound or Imagings, Ultrasound or Echotomography or Ultrasonic Imaging or Imaging, Ultrasonic or Sonography, Medical or Medical Sonography or Ultrasonographic Imaging or Imaging, Ultrasonographic or Imagings, Ultrasonographic or Ultrasonographic Imagings or Echography or Diagnosis, Ultrasonic or Diagnoses, Ultrasonic or Ultrasonic Diagnoses or Ultrasonic Diagnosis or Echotomography, Computer or Computer Echotomography or Tomography, Ultrasonic or Ultrasonic Tomography)	1370347
#15	#13 OR #14	1399906
#16	TS=(Magnetic Resonance Imaging)	390353
#17	AB=(magnetic resonance imaging or MRI or Magnetic Resonance Imaging or Imaging, Magnetic Resonance or NMR Imaging or Imaging, NMR or Tomography, NMR or Tomography, MR or MR Tomography or NMR Tomography or Steady-State Free Precession MRI or Steady State Free Precession MRI or Zeugmatography or Imaging, Chemical Shift or Chemical Shift Imagings or Imagings, Chemical Shift or Shift Imaging, Chemical or Shift Imagings, Chemical or Chemical Shift Imaging or Magnetic Resonance Image or Image, Magnetic Resonance or Magnetic Resonance Images or Resonance Image, Magnetic or Magnetization Transfer Contrast Imaging or MRI Scans or MRI Scan or Scan, MRI or Scans, MRI or Tomography, Proton Spin or Proton Spin Tomography or fMRI or MRI, Functional or Functional MRI or Functional MRIs or MRIs, Functional or Functional Magnetic Resonance Imaging or Magnetic Resonance Imaging, Functional or Spin Echo Imaging or Echo Imaging, Spin or Echo Imagings, Spin or Imaging, Spin Echo or Imagings, Spin Echo or Spin Echo Imagings)	490651
#18	#16 OR #17	550,667
#19	TS=(Tomography, X-Ray Computed)	42,575
#20	AB=(computed tomography or CT or Tomography, X-Ray Computed or X-Ray Computed Tomography or Tomography, X-Ray Computerized or Tomography, X Ray Computerized or Computed X Ray Tomography or X-Ray Computer Assisted Tomography or X Ray Computer Assisted Tomography or Tomography, X-Ray Computer Assisted or Tomography, X Ray Computer Assisted or Computerized Tomography, X Ray or Computerized Tomography, X-Ray or X-Ray Computerized Tomography or CT X Ray or CT X Rays or X Ray, CT or X Rays, CT or Tomodensitometry or Tomography, X Ray Computed or X Ray Tomography, Computed or X-Ray Tomography, Computed or Computed X-Ray Tomography or Tomographies, Computed X-Ray or Tomography, Computed X-Ray or Tomography, Xray Computed or Computed Tomography, Xray or Xray Computed Tomography or CAT Scan, X Ray or CAT Scan, X-Ray or CAT Scans, X-Ray or Scan, X-Ray CAT or Scans, X-Ray CAT or X-Ray CAT Scan or X-Ray CAT Scans or Tomography, Transmission Computed or Computed Tomography, Transmission or Transmission Computed Tomography or CT Scan, X-Ray or CT Scan, X Ray or CT Scans, X-Ray or Scan, X-Ray CT or Scans, X-Ray CT or X-Ray CT Scan or X-Ray CT Scans or Computed Tomography, X-Ray or Computed Tomography, X Ray or X Ray Computerized Tomography or Cine-CT or Cine CT or Electron Beam Computed Tomography or Electron Beam Tomography or Beam Tomography, Electron or Tomography, Electron Beam or Tomography, X-Ray Computerized Axial or Tomography, X Ray Computerized Axial or X-Ray Computerized Axial Tomography or X Ray Computerized Axial Tomography)	523,153
#21	#19 OR #20	529,083
#22	#12 OR #15 OR #18 OR #21	2,330,274
#23	#8 AND #11 AND #22	4,270
#24	#8 AND #11 AND #22 and Review Papers (excluded – document type)	4,018
#25	#8 AND #11 AND #22 and Review Papers (excluded – document type) and paper or Published online or Editorial Material or Data paper or brief report or second edition (document type)	3,976
#26	#8 AND #11 AND #22 and Review Papers (excluded – document type) and paper or Published online or Editorial Material or Data paper or brief report or second edition (document type) and English (language)	3,922

DXA, dual-energy X-ray absorptiometry; BIA, bioelectrical impedance analysis; US, ultrasound; MRI, magnetic resonance imaging; CT, computed tomography.

Table S5 Characteristics of the studies for assessing the diagnostic accuracy between DXA and BIA

Number	Study	Diagnostic parameter of DXA	Diagnostic parameter of BIA
1	Shaea A. Alkahtani 2017	ALMI	ALMI
2	Purwita W. Laksmi 2019	ASMI	ASMI
3	Kwon Chan Jeon 2020	ASMI	ASMI
4	Maria Aquimara Zambone 2020	ALMI	ALMI
5	Wen-Hui Fang, MD 2020	ASMI	ASMI
6	Hyeojin Kim 2022	ASMI	ASMI
7	Jantine van den Helder 2022	ALMI	ALMI

DXA, dual-energy X-ray absorptiometry; BIA, bioelectrical impedance analysis; ALMI, appendicular lean mass/height²; ASMI, appendicular skeletal muscle mass/height².

Table S6 Characteristics of the studies for assessing the correlation between DXA and BIA

Number	Study	Diagnostic parameter of DXA	Diagnostic parameter of BIA
1	Ling-Chun Lee 2014	ALST	ALST
2	Miji Kim 2015	ALST	ALST
3	Solomon C. Y. Yu 2016	ASM	ASM
4	S. Vermeiren 2019	ALM	ALM
5	M. Lane Moore 2020	ALST	ALST
6	Thiago G. Barbosa-Silva, MD, PhD 2019	ALM	ALM
7	Hong-Qi Xu 2021	ALM	ALM
8	Maria Aquimara Zambone 2020	ALMI	ALMI
9	Ashley A. Herda 2022	ASM	ASM
10	S. Toselli 2021	ALST	ALST

DXA, dual-energy X-ray absorptiometry; BIA, bioelectrical impedance analysis; ALST, appendicular lean soft tissue; ASM, appendicular skeletal muscle mass; ALM, appendicular lean mass.

Table S7 Characteristics of the studies for assessing the correlation between DXA and US which using MT for the diagnostic parameter

Number	Study	Diagnostic parameter of DXA	Diagnostic parameter of US
1	Takashi Abe 2015	ALM	MT of forearm-ulna
2	Takashi Abe 2015	ALM	MT of forearm-radius
3	Akio Morimoto 2017	ASMI	MT of forearm ulna
4	Thiago G. Barbosa-Silva, MD, PhD 2021	ALM	MT of dominant thigh
5	Thiago G. Barbosa-Silva, MD, PhD 2021	ALM	MT of dominant arm
6	M. Neira Álvarez 2021	ALM	MT of gastrocnemius longitudinal planes
7	M. Neira Álvarez 2021	ALM	MT of gastrocnemius medialis transverse
8	Yen-Lung Chen 2022	ASMI	MT of rectus femoris
9	Satoshi Yuguchi 2022	ASMI	MT of gastrocnemius

DXA, dual-energy X-ray absorptiometry; US, ultrasound; MT, muscle thickness; ALM, appendicular lean mass; ASM, appendicular skeletal muscle mass; ASMI, appendicular skeletal muscle mass/height².

Table S8 Characteristics of the studies for assessing the correlation between DXA and US which using ALM for the diagnostic parameter.

Number	Study	Diagnostic parameter of DXA	Diagnostic parameter of US
1	TAKASHI ABE 2016	ALM	ALM
8	Takashi Abe, PhD 2018	ALM	ALM
9	Thiago G. Barbosa-Silva, MD, PhD 2021	ALM	ALM

DXA, dual-energy X-ray absorptiometry; US, ultrasound; ALM, appendicular lean mass.

Table S9 Characteristics of the studies for assessing the correlation between DXA and MRI

Number	Study	Diagnostic parameter of DXA	Diagnostic parameter of MRI
1	Zhao Chen 2007	ALM	SMM
2	Xinyu Zhao 2013	ALST	SMM
3	Richard V. Clark 2014	ALM	SMM
4	Richard V. Clark 2018	ALM	SMM

DXA, dual-energy X-ray absorptiometry; MRI, magnetic resonance imaging; ALM, appendicular lean mass; ALST, appendicular lean soft tissue; SMM, skeletal muscle mass.

Table S10 Description of studies for assessing the diagnostic accuracy between DXA and BIA

Number	Study	n	TP	FP	FN	TN
1	Shaea A. Alkahtani 2017	232	24	8	9	191
2	Purwita W. Laksmi 2019	120	19	32	5	64
3	Kwon Chan Jeon 2020	199	19	3	11	166
4	Maria Aquimara Zambone 2020	92	24	20	2	46
5	Wen-Hui Fang, MD 2020	438	295	0	48	95
6	Hyeojin Kim 2022	195	21	2	8	164
7	Jantine van den Helder 2022	202	15	29	5	153

DXA, dual-energy X-ray absorptiometry; BIA, bioelectrical impedance analysis; TP, true positive; FP, false positive; FN, false negative; TN, true negative.

Table S11 Description of studies for assessing the correlation between DXA and BIA

Number	Study	n	r
1	Ling-Chun Lee 2014	77	0.92
2	Miji Kim 2015	551	0.92
3	Solomon C. Y. Yu 2016	195	0.97
4	S. Vermeiren 2019	174	0.95
5	M. Lane Moore 2020	179	0.94
6	Thiago G.Barbosa-Silva,MD,PhD 2019	181	0.95
7	Hong-qi Xu 2021	301	0.95
8	Maria Aquimara Zambone 2020	92	0.81
9	Ashley A. Herda 2022	73	0.95
10	S. Toselli 2021	184	0.95

DXA, dual-energy X-ray absorptiometry; BIA, bioelectrical impedance analysis; r, Pearson correlation coefficient.

Table S12 Description of studies for assessing the correlation between DXA and US which using MT for the diagnostic parameter.

Number	Study	n	r
1	Takashi Abe 2015	102	0.94
2	Takashi Abe 2015	102	0.75
3	Akio Morimoto 2017	30	0.66
4	Thiago G. Barbosa-Silva, MD, PhD 2021	190	0.49
5	Thiago G. Barbosa-Silva, MD, PhD 2021	190	0.70
6	M. Neira Álvarez 2021	57	0.69
7	M. Neira Álvarez 2021	57	0.55
8	Yen-Lung Chen 2022	91	0.59
9	Satoshi Yuguchi 2022	193	0.51

DXA, dual-energy X-ray absorptiometry; US, ultrasound; r, Pearson correlation coefficient; MT, muscle thickness.

Table S13 Description of studies for assessing the correlation between DXA and US which using ALM for the diagnostic parameter

Number	Study	n	r
1	TAKASHI ABE 2016	158	0.94
2	Takashi Abe, PhD 2018	311	0.91
3	Thiago G. Barbosa-Silva, MD, PhD 2021	190	0.95

DXA, dual-energy X-ray absorptiometry; US, ultrasound; r, Pearson correlation coefficient; ALM, appendicular lean mass.

Table S14 Description of studies for assessing the correlation between DXA and MRI

Number	Study	n	r
1	Zhao Chen 2007	104	0.95
2	Xinyu Zhao 2013	66	0.97
3	Richard V. Clark 2014	35	0.96
4	Richard V. Clark 2018	18	0.98

DXA, dual-energy X-ray absorptiometry; MRI, magnetic resonance imaging; r, Pearson correlation coefficient.



Figure S1 Risk of bias and applicability concerns for the included studies using the QUADAS-2 tool. (A) Risk of bias graph. (B) Risk of bias summary. QUADAS-2, Quality Assessment of Diagnostic Accuracy Studies 2.

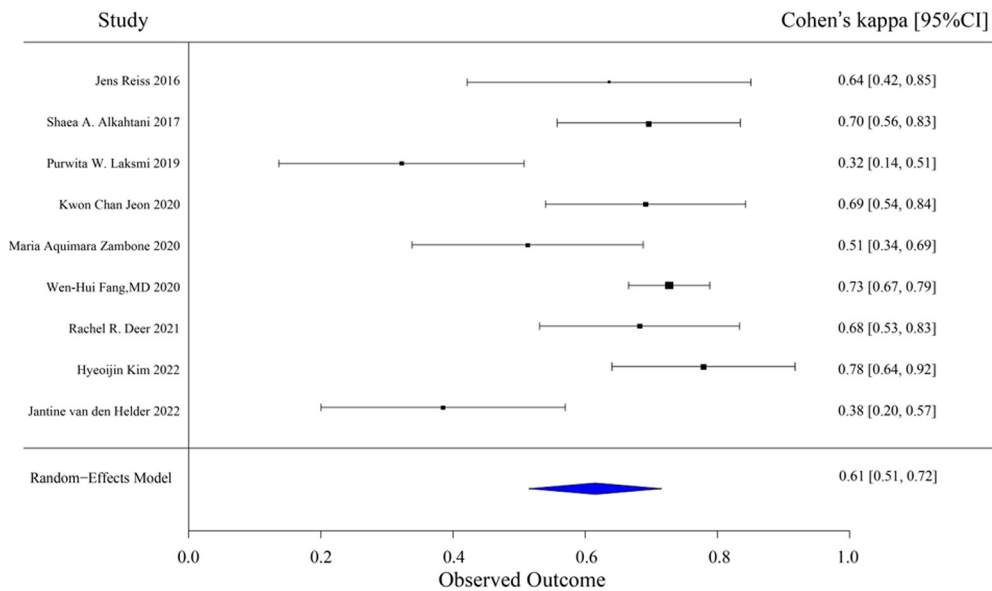


Figure S2 Forest plot of Cohen's kappa estimates of the excluded studies for assessing the diagnostic accuracy between DXA and BIA. CI, confidence interval; DXA, dual-energy X-ray absorptiometry; BIA, bioelectrical impedance analysis.

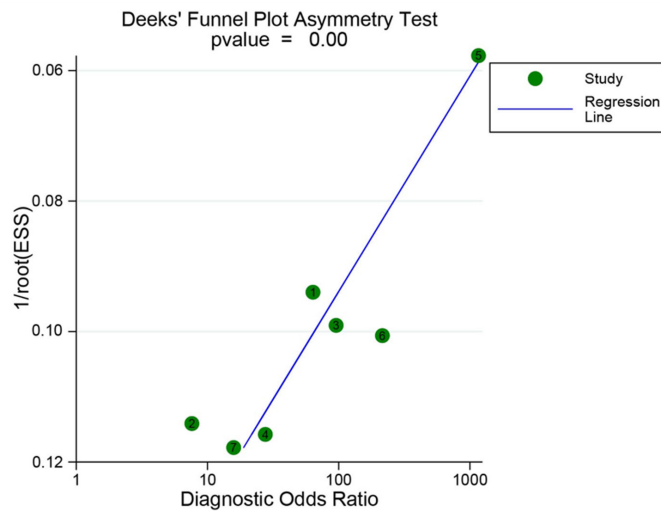


Figure S3 Deeks' funnel plot of the studies for assessing the diagnostic accuracy between DXA and BIA. DXA, dual-energy X-ray absorptiometry; BIA, bioelectrical impedance analysis.

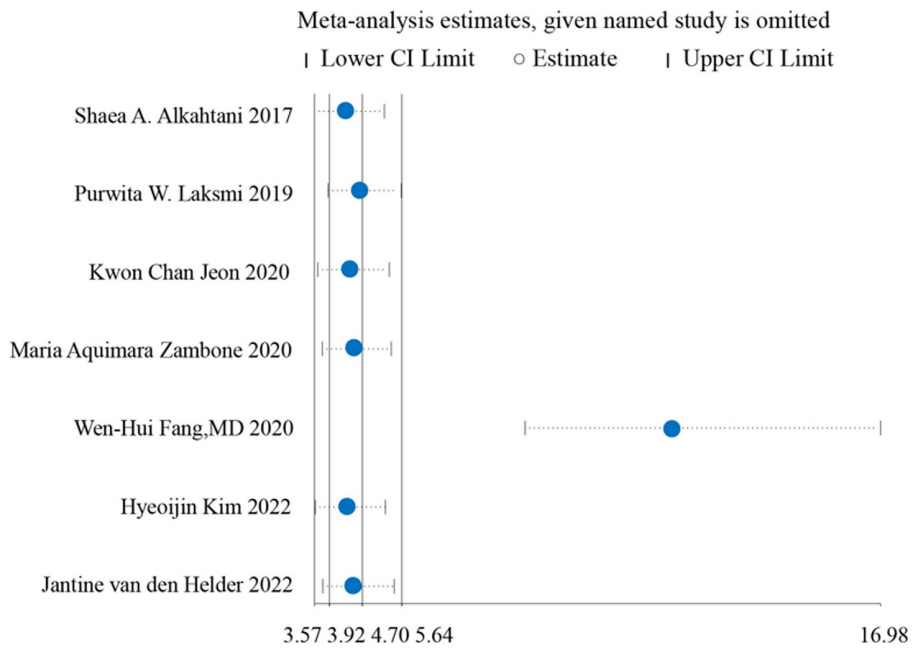


Figure S4 Sensitivity analysis of the excluded studies for assessing the diagnostic accuracy between DXA and BIA. CI, confidence interval; DXA, dual-energy X-ray absorptiometry; BIA, bioelectrical impedance analysis.

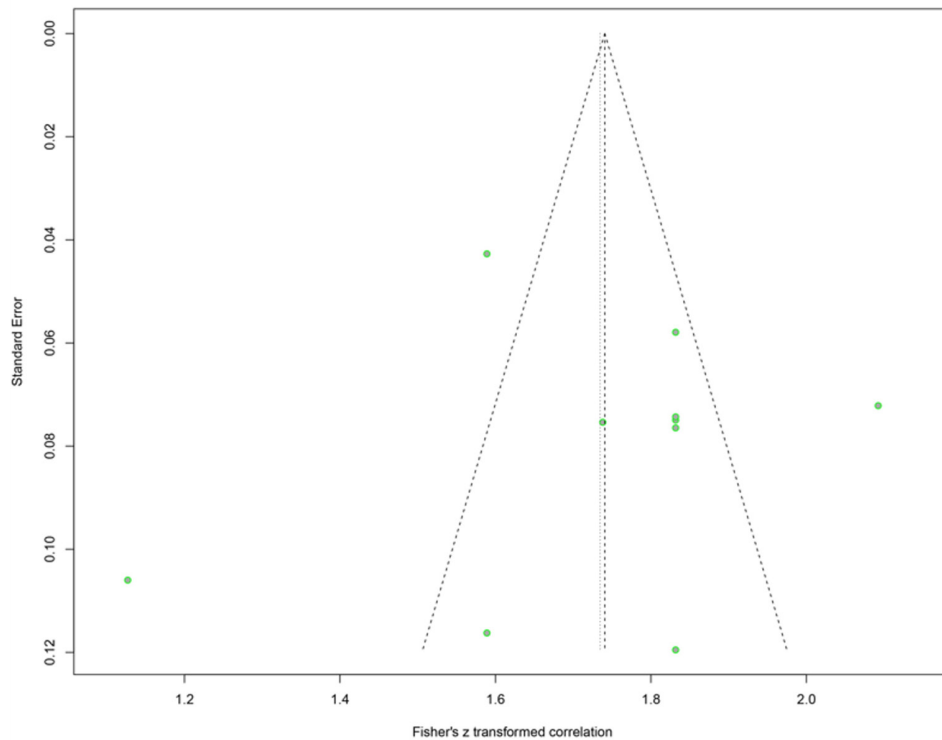


Figure S5 Publication bias of the studies for assessing the correlation between DXA and BIA. DXA, dual-energy X-ray absorptiometry; BIA, bioelectrical impedance analysis.

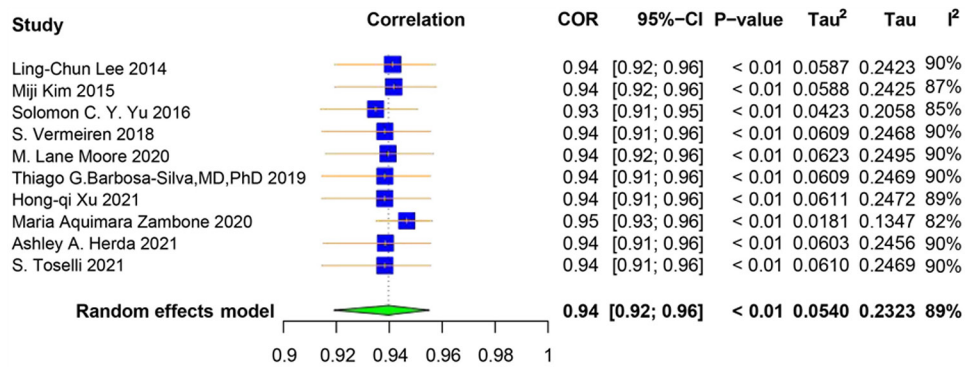


Figure S6 Sensitivity analysis of the excluded studies for assessing the correlation between DXA and BIA. CI, confidence interval; DXA, dual-energy X-ray absorptiometry; BIA, bioelectrical impedance analysis; COR, correlation coefficient.

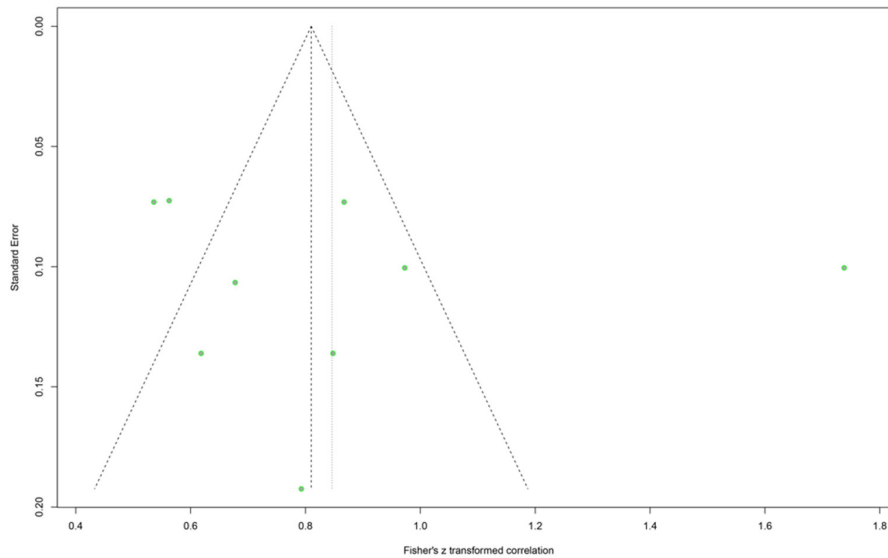


Figure S7 Publication bias of the studies for assessing the correlation between DXA and US. DXA, dual-energy X-ray absorptiometry; US, ultrasound.

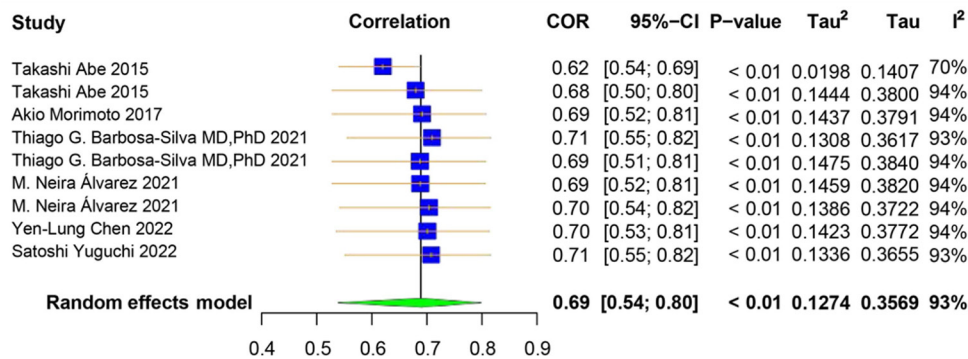


Figure S8 Sensitivity analyses of the excluded studies for assessing the correlation between DXA and US which using MT for the diagnostic parameter. COR, correlation coefficient; CI, confidence interval; DXA, dual-energy X-ray absorptiometry; US, ultrasound; MT, muscle thickness.

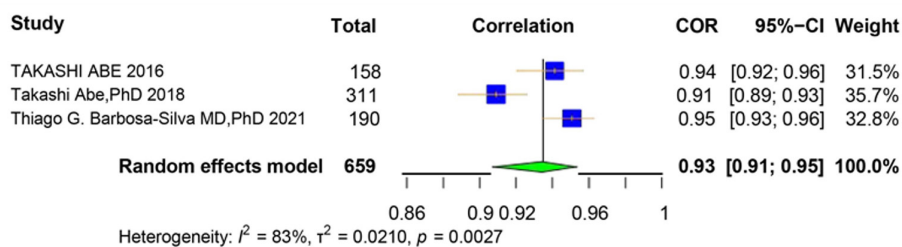


Figure S9 Forest plot of correlation between DXA and US which using ALM for the diagnostic parameter. COR, correlation coefficient; CI, confidence interval; DXA, dual-energy X-ray absorptiometry; US, ultrasound; ALM, appendicular lean mass.

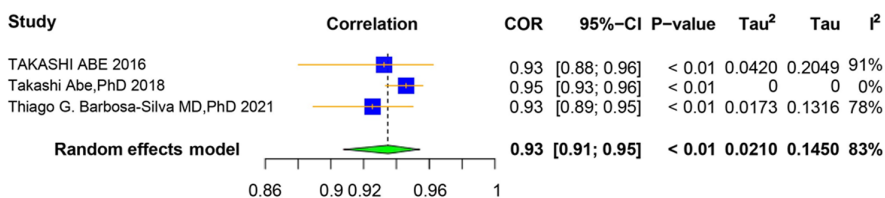


Figure S10 Sensitivity analyses of the excluded studies for assessing the correlation between DXA and US which using ALM for the diagnostic parameter. COR, correlation coefficient; CI, confidence interval; DXA, dual-energy X-ray absorptiometry; US, ultrasound; ALM, appendicular lean mass.

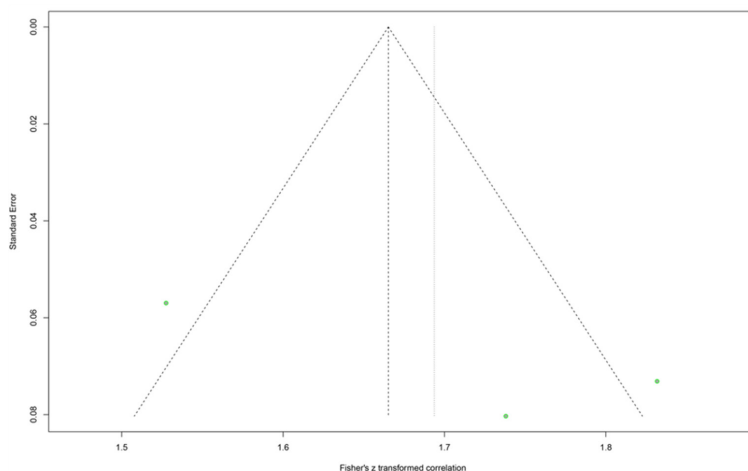


Figure S11 Publication bias of the studies for assessing the correlation between DXA and MRI. DXA, dual-energy X-ray absorptiometry; MRI, magnetic resonance imaging.

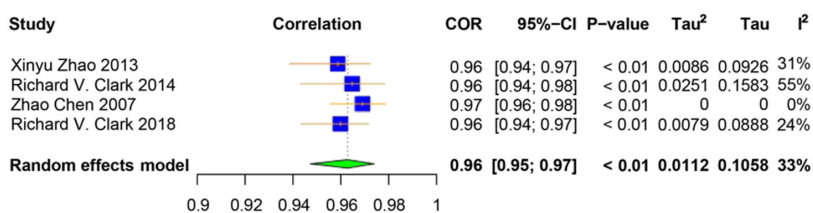


Figure S12 Sensitivity analysis of the excluded studies for assessing the correlation between DXA and MRI. COR, correlation coefficient; CI, confidence interval; DXA, dual-energy X-ray absorptiometry; MRI, magnetic resonance imaging.