Figure S1 Flowchart of participant inclusion. T2DM, type 2 diabetes mellitus; ADA, American Diabetes Association; DPN, diabetic peripheral neuropathy.

Table S1 The SARC-F questionnaire

Component	Question	Scoring
Strength	How much difficulty do you have in lifting and carrying 10 pounds?	None =0
		Some =1
		A lot or unable =2
Assistance in walking	How much difficulty do you have walking across a room?	None =0
		Some =1
		A lot, used aids, or unable =2
Rise from a chair	How much difficulty do you have transferring from a chair or bed?	None =0
		Some =1
		A lot or unable without help =2
Climb stairs	How much difficulty do you have climbing a flight of 10 stairs?	None =0
		Some =1
		A lot or unable =2
Falls	How many times have you fallen in the past year?	None =0
		1–3 falls =1
		4 or more falls =2

Source: Malmstrom TK, Morley JE. J Am Med Dir Assoc 2013. SARC-F, Strength, Assistance with Walking, Rising from a Chair, Climbing Stairs, and Falls.

Table S2 Comparison of the demographic, clinical and muscle assessments, and ultrasonic parameters between patients with DPN, patients without DPN, and healthy controls

Characteristics	With DPN (n=26)	Without DPN (n=34)	Healthy controls (n=35)	P value
Baseline characteristics				
Age (years)	60.35±7.82	55.06±10.81	55.23±9.16	0.063
Height (cm)	162.42±7.9	161.18±7.74	162.51±7.38	0.727
Weight (kg)	61.58±11.45	64.44±14.69	64.65±11.34	0.596
BMI (kg/m^2)	23.23±3.37	24.67±4.7	24.33±2.96	0.326
Thigh circumference (cm)	42.19±3.64	44.84±4.4	45.69±3.21	0.002*
Calf circumference (cm)	33.4±3.10	34.96±3.26	35.71±2.91	0.002*
Clinical and muscle assessments				
CST	30.04±7.93	37.71±10.70	46.37±11.77	<0.001*
TUGT (s)	10.72±2.34	9.50±1.79	8.67±1.39	<0.001*
6MWT (m/s)	1.03±0.18	1.11±0.20	1.19±0.17	0.005*
SPPB	10.73±1.34	11.41±0.99	11.89±0.47	<0.001*
Handgrip strength (kg)	31.33±10.44	29.78±9.27	34.05±9.45	0.226
SARC-F	0.35±0.69	0.24±0.43	0.06±0.24	0.053
Isokinetic muscle testing				
PT	66.58±21.51	86.18±34.63	97.14±30.44	0.001*
PT/BW	1.09±0.34	1.32±0.35	1.49±0.33	<0.001*
TW	515.54±180.89	690.65±283.51	791.76±247.52	<0.001*
Conventional ultrasound				
RF thickness (mm)	9.66±2.63	11.47±3.42	13.09±2.41	<0.001*
AQ thickness (mm)	21.68±5.33	24.81±8.03	27.25±5.25	0.005*
RF-CSA (cm^2)	2.73±1.05	3.28±1.09	4.11±0.95	<0.001*
SWE				
RF (m/s)	1.65±0.28	1.67±0.18	1.83±0.18	0.002*
VI (m/s)	2.58±0.38	2.6±0.32	2.52±0.23	0.629
VM (m/s)	1.30±0.14	1.37±0.15	1.51±0.16	<0.001*
VL (m/s)	1.32±0.18	1.43±0.18	1.53±0.19	<0.001*
AVER (m/s)	1.70±0.20	1.75±0.15	1.84±0.12	0.001*
BB (m/s)	3.56±0.39	3.44±0.36	3.61±0.61	0.332

The results are expressed as the mean ± standard deviation and the corresponding P value. *, P<0.05 indicates a significant difference. DPN, diabetic peripheral neuropathy; BMI, body mass index; CST, 30-s chair stand test; TUGT, the timed up-and-go test; 6MWT, 6-meter walk test; SPPB, short physical performance battery; SARC-F, Strength, Assistance with Walking, Rising from a Chair, Climbing Stairs, and Falls; PT, peak torque; PT/BW, peak torque to body weight ratio; TW, total work; RF, rectus femoris; AQ, anterior quadriceps; RF-CSA, rectus femoris cross-sectional area; SWE, shear wave elastography; VI, vastus intermedius; VM, vastus medialis; VL, vastus lateralis; AVER, average SWV values of the RF, VI, VM, and VL; SWV, shear wave velocity; BB, biceps brachii.

Table S3 The results of multiple comparisons between patients with DPN, patients without DPN, and healthy controls

Parameter	Subgroups	95% CI of mean difference	Standard error	P value
Thigh circumference (cm)	Without DPN/with DPN	2.65 (0.24, 5.06)	0.987	0.026*
	Without DPN/healthy controls	−0.85 (−3.07, 1.37)	0.912	>0.99
	With DPN/healthy controls	−3.50 (−5.89, −1.11)	0.981	0.002*
Calf circumference (cm)	Without DPN/with DPN	1.55 (−0.41, 3.51)	0.805	0.171
	Without DPN/healthy controls	−0.75 (−2.56, 1.06)	0.744	0.946
	With DPN/healthy controls	−2.30 (−4.25, −0.35)	0.800	0.015
Clinical and muscle assessments				
CST	Without DPN with DPN	7.67 (1.03, 14.31)	2.724	0.018*
	Without DPN/healthy controls	−8.67 (−14.81, −2.53)	2.518	0.003*
	With DPN/healthy controls	−16.33 (−22.93, −9.73)	2.707	<0.001*
TUGT (s)	Without DPN/with DPN	−1.21 (−2.37, −0.05)	0.477	0.038*
	Without DPN/healthy controls	0.83 (−0.25, 1.91)	0.441	0.186
	With DPN/healthy controls	2.04 (0.88, 3.20)	0.474	<0.001*
6MWT (m/s)	Without DPN/with DPN	0.08 (−0.04, 0.20)	0.048	0.285
	Without DPN/healthy controls	−0.08 (−0.19, 0.03)	0.044	0.249
	With DPN/healthy controls	−0.16 (−0.28, −0.04)	0.048	0.004*
SPPB	Without DPN/with DPN	0.68 (0.07, 1.29)	0.250	0.023*
	Without DPN/healthy controls	−0.47 (−1.03, 0.09)	0.231	0.130
	With DPN/healthy controls	−1.15 (−1.76, −0.54)	0.249	<0.001*
Isokinetic muscle testing				
PT	Without DPN/with DPN	19.60 (0.56, 38.64)	7.808	0.041*
	Without DPN/healthy controls	−10.97 (−28.57, 6.63)	7.217	0.396
	With DPN/healthy controls	−30.57 (−49.49, −11.65)	7.760	<0.001*
PT/BW	Without DPN/with DPN	0.23 (0.01, 0.45)	0.089	0.036*
	Without DPN/healthy controls	−0.17 (−0.37, 0.03)	0.082	0.114
	With DPN/healthy controls	−0.40 (−0.61, −0.19)	0.088	<0.001*
TW	Without DPN/with DPN	175.11 (19.02, 331.20)	64.010	0.022*
	Without DPN/healthy controls	−101.11 (−245.38, 43.16)	59.163	0.272
	With DPN/healthy controls	−276.22 (−431.34, −121.10)	63.612	<0.001*
Conventional ultrasound				
RF thickness (mm)	Without DPN/with DPN	1.81 (−0.01, 3.63)	0.748	0.052
	Without DPN/healthy controls	−1.61 (−3.30, 0.08)	0.691	0.065
	With DPN/healthy controls	−3.43 (−5.24, −1.62)	0.743	<0.001*
AQ thickness (mm)	Without DPN/with DPN	3.13 (−0.94, 7.20)	1.668	0.191
	Without DPN/healthy controls	−2.44 (−6.20, 1.32)	1.542	0.352
	With DPN/healthy controls	−5.57 (−9.61, −1.53)	1.658	0.003*
RF-CSA (cm²)	Without DPN/with DPN	0.55 (−0.10, 1.20)	0.268	0.131
	Without DPN/healthy controls	−0.83 (−1.43, −0.23)	0.248	0.003*
	With DPN/healthy controls	−1.38 (−2.03, −0.73)	0.266	<0.001*
SWE				
RF	Without DPN/with DPN	0.02 (−0.11, 0.15)	0.055	>0.99
	Without DPN/healthy controls	−0.16 (−0.28, −0.04)	0.051	0.008*
	With DPN/healthy controls	−0.18 (−0.31, −0.05)	0.055	0.005*
VM	Without DPN/with DPN	0.08 (−0.02, 0.18)	0.040	0.195
	Without DPN/healthy controls	−0.14 (−0.23, −0.05)	0.037	0.001*
	With DPN/healthy controls	−0.21 (−0.31, −0.11)	0.040	<0.001*
VL	Without DPN/with DPN	0.11 (−0.01, 0.23)	0.048	0.061
	Without DPN/healthy controls	−0.10 (−0.21, 0.01)	0.045	0.086
	With DPN/healthy controls	−0.21 (−0.33, −0.09)	0.048	<0.001*
AVER	Without DPN/with DPN	0.05 (−0.05, 0.15)	0.040	0.749
	Without DPN/healthy controls	−0.10 (−0.19, −0.01)	0.037	0.031*
	With DPN/healthy controls	−0.14 (−0.24, −0.04)	0.040	0.002*

The results are expressed as the mean ± standard deviation, 95% CI of the mean difference, standard error, and corresponding P value. The two-by-two comparison method used here was the Bonferroni method. *, P<0.05 indicates a significant difference. DPN, diabetic peripheral neuropathy; CI, confidence interval; CST, 30-s chair stand test; TUGT, timed up-and-ho test; 6MWT, 6-meter walk test; SPPB, short physical performance battery; SARC-F, Strength, Assistance with Walking, Rising from a Chair, Climbing Stairs, and Falls; PT, peak torque; PT/BW, peak torque to body weight ratio; TW, total work; RF, rectus femoris; AQ, anterior quadriceps; RF-CSA, rectus femoris cross-sectional area; SWE, shear wave elastography; RF, rectus femoris; VI, vastus intermedius; VM, vastus medialis; VL, vastus lateralis; AVER, average SWV values of the RF, VI, VM, and VL; SWV, shear wave velocity; BB, biceps brachii.

Table S4 Interoperator reproducibility of the repeated ultrasound measurements

Parameter	ICC	95% CI	F value	P value
Conventional ultrasound				
R-RF thickness (mm)	0.986	0.979–0.991	71.608	<0.001*
R-AQ thickness (mm)	0.918	0.876–0.946	12.196	<0.001*
R-RF-CSA (cm^2)	0.975	0.962–0.983	39.268	<0.001*
L-RF thickness (mm)	0.990	0.984–0.994	106.201	<0.001*
L-AQ thickness (mm)	0.993	0.989–0.995	139.713	<0.001*
L-RF-CSA (cm^2)	0.988	0.981–0.992	84.041	<0.001*
SWE				
R-RF	0.976	0.965–0.984	42.087	<0.001*
R-VI	0.945	0.916–0.964	17.900	<0.001*
R-VM	0.946	0.917–0.964	19.120	<0.001*
R-VL	0.923	0.883–0.949	13.215	<0.001*
L-RF	0.965	0.947–0.977	28.318	<0.001*
L-VI	0.827	0.735–0.886	5.718	<0.001*
L-VM	0.953	0.930–0.969	21.821	<0.001*
L-VL	0.968	0.952–0.979	30.912	<0.001*
R-BB	0.964	0.946–0.976	27.462	<0.001*
L-BB	0.934	0.901–0.957	15.109	<0.001*

*, P<0.05 indicates a significant difference. ICC, interclass correlation coefficient; CI, confidence interval; R, right limb; RF, rectus femoris; AQ, anterior quadriceps; RF-CSA, rectus femoris cross-sectional area; L, left limb; SWE, shear wave elastography; RF, rectus femoris; VI, vastus intermedius; VM, vastus medialis; VL, vastus lateralis; BB, biceps brachii.