

Supplementary material. Table S1. Model variables selection.

Model	QIC	Anova test comparison			^a p value
Intercept	171.901	Contraction ratio-Average velocity relaxation vs Contraction ratio-Average velocity			<0.001
Contraction velocity contraction-Average velocity relaxation	127.802	Contraction contraction-Average velocity relaxation vs Contraction ratio-Average velocity relaxation			0.139
Contraction ratio-Average velocity contraction	150.033	Contraction contraction-Average velocity relaxation vs Average velocity contraction-Average velocity relaxation			0.002
Contraction ratio-Average velocity relaxation	128.445	Contraction contraction-Average velocity relaxation vs Average velocity relaxation			0.006
Average velocity contraction-Average velocity relaxation	136.666	Contraction contraction-Average velocity relaxation vs Average velocity contraction			<0.001
Average velocity relaxation	135.949	Contraction contraction-Average velocity relaxation vs Ratio			<0.001
Average velocity contraction	154.413	Contraction contraction-Average velocity relaxation vs Intercept			<0.001
Contraction ratio	173.040				

Data expressed with mean±standard deviation; QIC: Quasi-likelihood under Independence Model Criterion.

^asignificant if p<0.05.

Supplementary material. Table S2. Values for each correlation structure.

Correlation structure	QIC	Δ Sandwich-naive
Independence	127.802	1.245
Exchangeable	119.614	0.903

Supplementary material. Table S3. Baseline outcomes vs. thickness measurements correlations.

Comparison	Correlation coefficient (95%CI)	^a p value
Rectus femoris mean thickness at rest vs. Distal third perimeter	0.219 (-0.033, 0.444)	0.088
Rectus femoris mean thickness at rest vs. Distance between spines	-0.171 (-0.404, 0.082)	0.183
Rectus femoris mean thickness at rest vs. Dominant lower limb length	0.23 (-0.021, 0.453)	0.072
Rectus femoris mean thickness at rest vs. Lower limb dominance	0.186 (-0.256, 0.564)	0.401
Rectus femoris mean thickness at rest vs. Middle third perimeter	0.193 (-0.059, 0.423)	0.132
Rectus femoris mean thickness at rest vs. Proximal third perimeter	0.064 (-0.189, 0.308)	0.624
Rectus femoris mean thickness at rest vs. Quadriceps tendon length	-0.082 (-0.325, 0.171)	0.526
Rectus femoris mean thickness at rest vs. Rectus femoris length	0.371 (0.134, 0.568)	0.003
Rectus femoris mean thickness contraction vs. Distal third perimeter	0.153 (-0.101, 0.388)	0.236
Rectus femoris mean thickness contraction vs. Distance between spines	-0.067 (-0.311, 0.186)	0.607
Rectus femoris mean thickness contraction vs. Dominant lower limb length	0.246 (-0.004, 0.467)	0.054
Rectus femoris mean thickness contraction vs. Lower limb dominance	0.145 (-0.28, 0.522)	0.503
Rectus femoris mean thickness contraction vs. Middle third perimeter	0.12 (-0.133, 0.359)	0.351
Rectus femoris mean thickness contraction vs. Proximal third perimeter	-0.026 (-0.274, 0.225)	0.842
Rectus femoris mean thickness contraction vs. Quadriceps tendon length	0.011 (-0.239, 0.26)	0.933

Rectus femoris mean thickness contraction vs. Rectus femoris length	0.23 (-0.021, 0.454)	0.072
Vastus intermedius mean contraction thickness vs. Distal third perimeter	0.496 (0.281, 0.664)	<0.001
Vastus intermedius mean contraction thickness vs. Distance between spines	0.022 (-0.229, 0.27)	0.867
Vastus intermedius mean contraction thickness vs. Dominant lower limb length	0.428 (0.199, 0.612)	0.001
Vastus intermedius mean contraction thickness vs. Lower limb dominance	-0.013 (-0.389, 0.367)	0.95
Vastus intermedius mean contraction thickness vs. Middle third perimeter	0.454 (0.23, 0.632)	<0.001
Vastus intermedius mean contraction thickness vs. Proximal third perimeter	0.244 (-0.006, 0.465)	0.056
Vastus intermedius mean contraction thickness vs. Quadriceps tendon length	-0.035 (-0.283, 0.216)	0.785
Vastus intermedius mean contraction thickness vs. Rectus femoris length	0.374 (0.137, 0.57)	0.003
Vastus intermedius mean thickness at rest vs. Distal third perimeter	0.412 (0.18, 0.6)	0.001
Vastus intermedius mean thickness at rest vs. Distance between spines	0.013 (-0.237, 0.262)	0.92
Vastus intermedius mean thickness at rest vs. Dominant lower limb length	0.302 (0.056, 0.513)	0.017
Vastus intermedius mean thickness at rest vs. Lower limb dominance	0.076 (-0.312, 0.443)	0.707
Vastus intermedius mean thickness at rest vs. Middle third perimeter	0.461 (0.239, 0.638)	<0.001
Vastus intermedius mean thickness at rest vs. Proximal third perimeter	0.304 (0.059, 0.515)	0.016
Vastus intermedius mean thickness at rest vs. Quadriceps tendon length	-0.092 (-0.334, 0.162)	0.478
Vastus intermedius mean thickness at rest vs. Rectus femoris length	0.345 (0.104, 0.548)	0.006

^asignificant if $p < 0.05$.