

Fig. S1. Sensitivity of muscle dynamics to tendon compliance. The original simulations (black solid line) were recomputed with tendon compliance of all simulated muscles set ten percent greater (red dashed line) or ten percent less (blue dotted line) for one of the scaled musculoskeletal models.

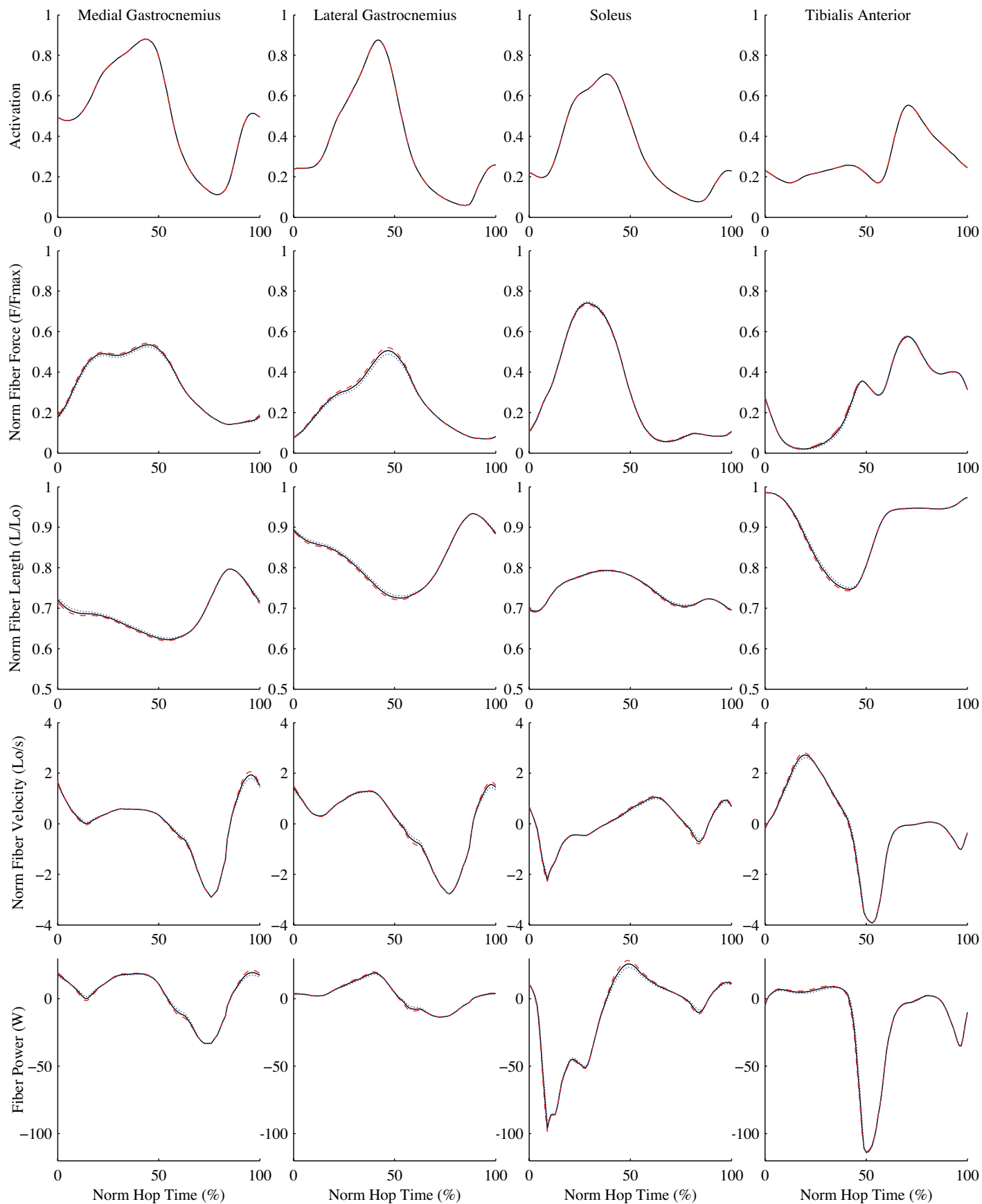


Fig. S2. Sensitivity of muscle dynamics to v_{max} . The original simulations (black solid line) were recomputed with v_{max} of all simulated muscles set ten percent greater (red dashed line) or ten percent less (blue dotted line) for one of the scaled musculoskeletal models.

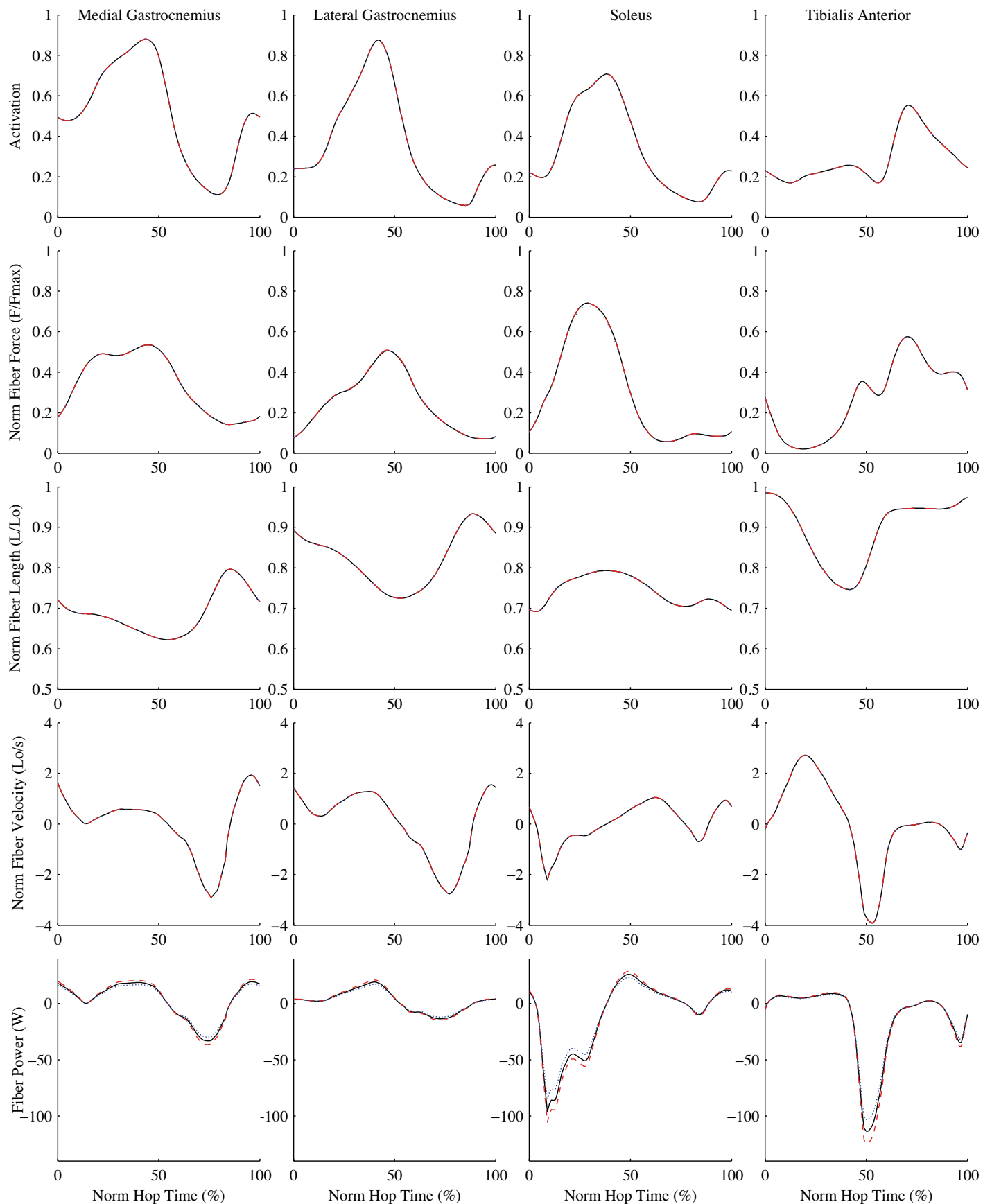


Fig. S3. Sensitivity of muscle dynamics to maximum isometric force (F_{max}). The original simulations (black solid line) were recomputed with F_{max} of all simulated muscles set ten percent greater (red dashed line) or ten percent less (blue dotted line) for one of the scaled musculoskeletal models.

Table S1. Sensitivity of metabolic energy consumption to muscle parameter values. Data are rate of metabolic energy consumption ($\text{J}\cdot\text{kg}^{-1}\cdot\text{hop}^{-1}$) for simulations using one scaled model where tendon stiffness, muscle maximum isometric force (F_{max}) and maximum shortening velocity (v_{max}) for all muscles were varied by $\pm 10\%$ from those shown in Table 1

	Tendon Stiffness			F_{max}			v_{max}		
	- 10%	-	+10%	- 10%	-	+10%	- 10%	-	+10%
MG	0.176	0.164	0.155	0.150	0.164	0.178	0.166	0.164	0.162
LG	0.078	0.078	0.076	0.071	0.078	0.083	0.078	0.078	0.078
SO	0.170	0.172	0.203	0.148	0.172	0.196	0.171	0.172	0.172
TA	0.017	0.011	0.031	0.010	0.011	0.023	0.011	0.011	0.010
TOTAL	0.441	0.425	0.465	0.379	0.425	0.48	0.426	0.425	0.422