Supplement for article

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Table S1 Summary of repeated-measures ANOVA results for differences between bar types and loading conditions during squat jumps under incremental loads

Variable	Effects	TI 1		TI 2		TI 3		TI 4		TI 5		TI 6	
		p	η_p^2	p	η_p^2	p	η_p^2	p	η_p^2	p	η_p^2	p	η_p^2
Erector spinae	Bar	0.831	0.004	0.891	0.002	0.133	0.233	0.917	0.001	0.071	0.247	**0.033***	0.453
	Load	**<0.001***	0.525	**<0.001***	0.347	0.277	0.131	0.989	0.003	0.342	0.082	0.647	0.038
	Bar*Load	0.904	0.009	0.213	0.116	0.335	0.111	0.779	0.014	0.158	0.133	**0.026***	0.315
Gluteus maximus	Bar	0.536	0.033	0.237	0.137	0.908	0.001	**0.004***	0.506	0.074	0.242	0.336	0.084
	Load	**<0.001***	0.648	**<0.001***	0.563	**<0.001***	0.556	0.915	0.014	**0.040***	0.204	0.297	0.104
	Bar*Load	0.587	0.051	0.180	0.148	0.412	0.090	0.218	0.115	0.600	0.050	0.063	0.196
Semi-membranous	Bar	0.077	0.257	0.082	0.272	0.071	0.266	0.743	0.009	0.320	0.099	0.230	0.140
	Load	0.280	0.109	0.586	0.043	0.288	0.107	0.498	0.063	0.292	0.115	0.446	0.084
	Bar*Load	0.303	0.100	0.658	0.038	0.535	0.052	0.211	0.116	0.442	0.084	0.401	0.092
Biceps femoris	Bar	0.382	0.077	0.500	0.047	0.921	0.001	0.237	0.136	0.820	0.005	0.817	0.005
	Load	0.546	0.054	0.338	0.100	0.874	0.019	0.073	0.204	0.118	0.161	0.640	0.034
	Bar*Load	0.248	0.130	0.600	0.044	0.609	0.049	0.096	0.208	0.244	0.117	0.325	0.091
Gastrocne-mius	Bar	0.664	0.016	0.338	0.092	0.426	0.064	0.246	0.120	0.671	0.019	0.425	0.065
	Load	0.552	0.045	0.500	0.075	0.118	0.175	0.611	0.053	0.673	0.049	**0.030***	0.254
	Bar*Load	0.261	0.106	0.705	0.045	0.860	0.024	0.653	0.047	0.162	0.155	0.300	0.113
Soleus	Bar	0.510	0.040	0.787	0.007	0.958	0.000	0.286	0.094	0.588	0.027	0.630	0.027
	Load	0.232	0.120	**0.020***	0.253	**0.004***	0.414	0.622	0.034	0.091	0.222	**<0.001***	0.553
	Bar*Load	0.514	0.055	0.465	0.074	0.810	0.039	0.308	0.094	0.129	0.155	**0.004***	0.387
Rectus femoris	Bar	**0.002***	0.583	**0.002***	0.625	**0.040***	0.329	**0.002***	0.605	0.126	0.199	0.844	0.005
	Load	0.079	0.204	**0.017***	0.399	0.152	0.170	0.334	0.089	**0.006***	0.311	**0.041***	0.259
	Bar*Load	0.677	0.029	0.526	0.071	0.681	0.025	0.331	0.094	0.932	0.013	0.800	0.036
Vastus lateralis	Bar	0.601	0.032	0.222	0.132	0.415	0.067	**0.042***	0.325	0.739	0.009	0.789	0.006
	Load	**<0.001***	0.728	**<0.001***	0.613	0.045	0.232	0.277	0.109	0.137	0.131	**0.047***	0.196
	Bar*Load	0.701	0.050	0.996	0.002	0.558	0.066	0.617	0.052	0.340	0.081	0.527	0.059
Ground reaction force	Bar	0.618	0.018	0.205	0.112	0.313	0.073	0.949	0.000	**0.003***	0.471	0.156	0.138
	Load	**<0.001***	0.959	**<0.001***	0.962	**<0.001***	0.915	**<0.001***	0.810	**<0.001***	0.867	**<0.001***	0.706
	Bar*Load	0.271	0.087	0.211	0.106	0.103	0.152	0.198	0.112	0.424	0.064	0.646	0.019

Notes. p – statistical significance; * – statistically significant result ($p < 0.05$); η_p^2 – partial eta squared effect size; TI – jump time interval (from 1 to 6, where 1 corresponds to the first 1/5 of the individual jump time before jump initiation, and 6 corresponds to the last 1/5 of the individual jump time).

Table S2 Presentation of statistically significant differences between pairs of conditions identified with Bonferroni post-hoc testing

Muscle	TI	Comparisons between loading conditions (%BM) and equipment (barbell vs. hex-bar)	p-value
Erector spinae	1	**Load**: 100 < 140, 100 < 160, 120 < 140, 120 < 160	**p < 0.008**
Erector spinae	2	**Load**: 100 < 140, 100 < 160	**p < 0.007**
Erector spinae	6	***Equipment* × *Load interaction***, barbell: 120 < 160	**p = 0.026**
Gluteus	1	**Load**: 100 < 140, 100 < 160, 120 < 140, 120 < 160, 140 < 160	**p < 0.005**
Gluteus	2	**Load**: 100 < 160, 120 < 140, 120 < 160	**p < 0.020**
Gluteus	3	**Load**: 100 < 140, 100 < 160	**p < 0.001**
Gluteus	5	Post-hoc revealed no pairwise differences, regardless of the statistically significant main effect of Load 100 vs. 160	p = 0.258
Gastrocnemius	6	**Load**: 100 vs. 140	**p = 0.050**
Soleus	2	Post-hoc revealed no pairwise differences, regardless of the statistically significant main effect of Load 120 vs. 160	p = 0.075
Soleus	3	**Load**: 100 < 140	**p = 0.035**
Soleus	6	***Equipment* × *Load interaction***, barbell: 100 > 120, 100 > 140, 100 > 160, hex-bar: 100 > 140	**p < 0.007** **p = 0.035**
Rectus femoris	2	**Load**: 120 < 160, 140 < 160	**p < 0.043**
Rectus femoris	5	Post-hoc revealed no pairwise differences, regardless of the statistically significant main effect of Load 120 > 140, 120 > 160	p > 0.080
Rectus femoris	6	Post-hoc revealed no pairwise differences, regardless of the statistically significant main effect of Load	p > 0.070
Vastus lateralis	1	**Load**: 100 < 120, 100 < 140, 100 < 160, 120 < 160, 140 < 160	**p < 0.049**
Vastus lateralis	2	**Load**: 100 < 140, 100 < 160, 120 < 140, 120 < 160	**p < 0.013**
Vastus lateralis	6	Post-hoc revealed no pairwise differences, regardless of the statistically significant main effect of Load 100 > 120	p = 0.078

Notes. TI – time interval; %BM – loading condition as a percentage of the participant's body mass; >< – identifies higher or lower muscle activation between the listed pairs of conditions.

Table S3 Average m. semimembranosus activation across time intervals in free squat, barbell squat, and hex-bar squat jumps under incremental loads

Equipment	%BM	Unit	TI 1	TI 2	TI 3	TI 4	TI 5	TI 6 (r)
Free	**100**	mV*100	14.27±45.08	11.46±27.47	13.29±23.89	15.2±23.56	15.77±30.68	18.21±35.53
	100	%	70.9±63.9	56.9±39.0	66.0±33.9	75.6±33.4	78.4±43.5	90.5±50.4
Barbell	**100**	%	34.7±36.2	39.6±34.0	56.5±33.2	64.6±34.9	46.2±31.1	47.9±27.9
	120	%	35.3±39.0	43.9±41.7	72.8±54.0	56.4±35.7	57.6±37.0	49.1±32.9
	140	%	24.7±23.0	33.1±25.2	49.9±33.1	65.7±39.7	56.3±31.5	51.0±24.4
	160	%	21.9±19.0	37.5±31.7	50.0±32.4	57.9±36.5	54.7±36.9	44.2±28.6
Hex-bar	**100**	%	23.7±28.1	37.9±40.8	49.0±41.8	56.9±39.1	49.1±39.6	38.3±21.9
	120	%	14.7±17.8	27.1±28.0	50.0±42.3	62.0±44.9	53.1±42.2	42.9±24.7
	140	%	11.2±11.3	21.8±21.0	46.5±39.6	64.3±46.9	52.3±40.2	48.5±31.3
	160	%	16.9±17.8	13.9±12.3	29.1±22.9	69.2±62.4	47.5±37.2	30.9±20.5

Notes. Data are presented as means±standard deviations. TI – time interval; (r) – reference interval (peak force interval); %BM – load as percentage of participant's body mass

Table S4 Average m. biceps femoris activation across time intervals in free squat, barbell squat, and hex-bar squat jumps under incremental loads

Equipment	%BM	Unit	TI 1	TI 2	TI 3	TI 4 (r)	TI 5	TI 6
Free	**100**	mV*100	1.11±1.02	2.53±2.65	5.07±3.05	6.89±3.31	5.79±3.41	6.01±4.27
	100	%	14.2±14.5	30.9±32.1	61.2±45.5	74.4±42.2	57.6±35.3	53.2±34.6
Barbell	**100**	%	11.8±9.1	20.3±17.1	51.0±38.3	64.2±26.8	53.4±31.1	37.6±22.6
	120	%	10.0±8.1	23.8±22.4	44.6±32.6	69.5±40.7	60.2±32.2	40.3±20.7
	140	%	11.9±8.8	26.9±24.6	47.3±35.3	68.9±44.4	59.8±35.0	37.7±19.0
	160	%	16.5±13.4	28.2±23.3	40.1±31.0	53.1±37.0	57.0±30.1	36.4±20.8
Hex-bar	**100**	%	14.0±12.2	25.4±19.7	39.7±27.3	56.2±36.3	45.4±28.2	30.7±17.1
	120	%	12.6±9.4	25.2±20.3	48.8±37.8	70.9±49.3	79.1±60.5	36.3±18.9
	140	%	13.4±10.5	19.3±13.9	45.1±28.8	72.6±47.6	60.6±38.0	41.9±24.1
	160	%	16.0±12.3	23.2±17.4	44.6±33.7	69.6±47.8	57.4±37.2	42.3±26.8

Notes. Data are presented as means±standard deviations. TI – time interval; (r) – reference interval (peak force interval); %BM – load as percentage of participant's body mass

Table S5 Average m. gastrocnemius activation across time intervals in free squat, barbell squat, and hex-bar squat jumps under incremental loads

Equipment	%BM	Unit	TI 1	TI 2	TI 3	TI 4	TI 5 (r)	TI 6
Free	**100**	mV*100	0.97±0.55	1.11±0.51	3.6±3.58	11.23±5.76	18.29±7.47	17.72±7.3
	100	%	5.7±2.7	6.9±3.8	23.2±25.2	71.4±53.9	118.0±94.6	109.5±67.0
Barbell	**100**	%	4.5±2.2	6.5±4.0	18.5±15.5	52.9±25.7	92.8±11.9	87.5±12.0
	120	%	5.4±3.0	5.8±3.3	15.3±9.1	59.2±16.3	87.5±21.2	76.9±24.4
	140	%	5.4±3.4	6.7±4.5	20.6±13.7	52.6±18.6	79.3±31.0	65.4±28.5
	160	%	6.1±4.0	8.0±5.4	22.3±13.8	57.2±20.6	87.3±38.2	65.0±28.1
Hex-bar	**100**	%	6.4±4.0	7.8±6.3	16.6±15.7	46.1±27.1	77.7±29.5	75.0±25.3
	120	%	5.5±4.1	6.2±4.1	16.5±11.4	46.6±24.9	77.9±26.9	72.2±24.2
	140	%	5.1±3.5	8.3±6.5	21.0±15.3	46.0±28.4	78.5±31.8	78.5±12.1
	160	%	4.7±3.0	6.3±3.5	22.2±15.6	49.8±31.5	82.6±19.2	75.0±25.6

Notes. Data are presented as means±standard deviations. TI – time interval; (r) – reference interval (peak force interval); %BM – load as percentage of participant's body mass