Supplementary Materials

Table S1. One-way ANOVA results comparing initial peak punch force across groups. Data are presented as mean ± standard deviation. No statistically significant differences were observed at baseline. AEL: accentuated eccentric loading; CMJ: countermovement jump; CON: control group; N: newton; η^2p: partial eta squared; p: significance value.

Variables	AEL (n= 9)	CMJ (n= 10)	CON (n= 10)	p	F value	η^2_p
Jab Peak force (N)	1050 ±203.4	988 ±139.5	993 ±189.9	0.71	$F_{(2,26)}$ 0.33	0.02
Straight Peak force (N)	1685 ±393.3	1628 ±303.8	1650 ±347.2	0.93	$F_{(2,26)}$ 0.06	0.004
Right Cross Peak force (N)	2005 ±362.4	1876 ±272.0	1901 ±327.5	0.65	$F_{(2,26)}$ 0.42	0.03
Left Cross Peak force (N)	1836 ±312.6	1868 ±312.5	1740 ±324.9	0.64	$F_{(2,26)}$ 0.43	0.03

Table S2. One-way ANOVA results comparing initial countermovement jump (CMJ) performance across groups. Data are presented as mean ± standard deviation. AEL: accentuated eccentric loading; CMJ: countermovement jump; CON: control group; cm: centimeters; Ns: Newton-seconds; W: watts; kg: kilograms; η^2p: partial eta squared; p: significance value.

Variables	AEL (n= 9)	CMJ (n= 10)	CON (n= 10)	p	F value	η^2_p
Height (cm)	33±4.1	34±4.8	32±2.8	0.53	$F_{(2,27)}$ 0.64	0.04
Propulsive impulse (Ns)	190.5± 34.6	191.1± 15.6	173.9± 18.2	0.21	$F_{(2,27)}$ 1.61	0.10

Peak power (W)	3557±759	3673±422	3130±349	0.07	$F_{(2,27)}$ 2.80	0.17
Relative peak power (W/kg)	46.7±6.6	48.5±9.2	42.9±6.0	0.24	$F_{(2,27)}$ 1.47	0.09

Table S3. One-way ANOVA results comparing initial relative punch force (N/kg) across groups. Data are presented as mean ± standard deviation. No statistically significant baseline differences were found. AEL: accentuated eccentric loading; CMJ: countermovement jump; CON: control group; N: newton; kg: kilograms; η^2p: partial eta squared; p: significance value.

Variables	**AEL (n= 9)**	**CMJ (n= 10)**	**CON (n= 10)**	**p**	**F value**	**η^2_p**
Jab Relative Peak force (N/kg)	14.0± 3.2	13.0±2.8	13.7±3.5	0.80	$F_{(2,26)}$ 0.21	0.01
Straight Relative Peak force (N/kg)	22.2± 4.9	21.5±5.1	22.8±6.5	0.86	$F_{(2,26)}$ 0.14	0.01
Right Cross Relative Peak force (N/kg)	26.6± 5.3	24.8± 5.2	26.1± 5.2	0.73	$F_{(2,57)}$ 0.30	0.17
Left Cross Relative Peak force (N/kg)	24.4± 5.0	24.6±5.2	23.8±4.6	0.92	$F_{(2,26)}$ 0.07	0.02

Table S4. Training intervention effects on peak punch force pre- and post-intervention in the AEL, CMJ, and CON groups. Data are presented as mean ± standard deviation. Effect sizes were calculated using Cohen's d and interpreted as trivial (< 0.20), small (0.20–0.59), moderate (0.60–1.19), or large (≥ 1.20). AEL: accentuated eccentric loading; CMJ: countermovement jump; CON: control group; N: newton.

Groups	**AEL (n= 9)**		**CMJ (n= 10)**		**CON (n = 10)**		**AEL**	**CMJ**	**CON**
Variables	Pre	Post	Pre	Post	Pre	Post	Cohen's d Pre vs Post	Cohen's d Pre vs Post	Cohen's d Pre vs Post
Jab Peak force (N)	1050±203	1158±189	989±140	1024±96	994±190	982±194	0.54 Small	0.30 Small	-0.06 Trivial
Straight Peak force (N)	1685±393	1861±429	1628±303	1682±307	1650±347	1671±382	0.43 Small	0.18 Trivial	0.06 Trivial
Right cross Peak force (N)	2005±362	2150±417	1876±272	1922±268	1901±327	1883±321	0.38 Small	0.18 Trivial	-0.06 Trivial
Left cross Peak force (N)	1836±312	1977±393	1868±312	1918±304	1740±324	1723±356	0.40 Small	0.16 Trivial	-0.05 Trivial