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1Abstract

2**Purpose.** To investigate if providing athletes with a choice regarding the number of
3repetitions to complete in a potentiation protocol would enhance jumping performance
4compared to protocols in which the number of repetitions is predetermined. **Methods.** Fifteen
5male basketball players completed four testing sessions separated by 72 hours. On the first
6session, individual optimum power loads (OPL) in the barbell jump squat were determined.
7On the following three sessions, athletes completed three sets of three potentiation protocols
8using OPL jump squats in a partly-randomized order: i) traditional condition included six
9repetitions per set; ii) self-selected condition included a choice regarding the number of
10repetition to complete per set; iii) imposed condition included the same number of repetitions
11per set as the self-selected condition but imposed on the athletes beforehand. Jumping
12performance was determined as jump squat (JS) test height and measured using a force
13platform before, 30s, 4 min, and 8 min after completing the protocols. **Results.** The self-
14selected condition led to superior jumping performance compared to the two other conditions
15across all post measures ($p < 0.05$; range: 0.3-1.3 cm). Compared to the traditional condition,
16the imposed condition led to superior jumping performance across all post measures (range:
170.2-0.45 cm) although not statistically significant at post 4 min and 8 min. **Conclusions.**
18Choice provision concerning how many repetitions to complete in a potentiation protocol is a
19useful performance enhancing strategy. Improved potentiation-fatigue ratio and motivational
20factors are sought to explain these effects.

21

22Keywords

23Autonomy; ballistic exercises; choice provision; explosiveness; jumping

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26 Introduction

27 Postactivation performance enhancement (PAPE) refers to a short-term improvement in
28 athletic tasks such as jumping, sprinting and throwing, induced by a previous conditioning
29 activity.¹ The onset and magnitude of PAPE effects are influenced by a number of variables
30 and their interactions.² Primarily, the type,^{3,4} volume and intensity of the conditioning
31 activity;^{5,6} the rest interval between the conditioning activity and the subsequent athletic
32 task;⁷ and the individual characteristics of the performer, including gender, strength levels,
33 and training background.^{5,8,9} The interactions between these variables result in two concurrent
34 responses arising from PAPE protocols: muscular fatigue and potentiation.² At the
35 completion of the conditioning activity, muscular fatigue outweighs potentiation effects,
36 resulting in impaired performance. However, since fatigue dissipates at a faster rate than
37 potentiation, the potentiation effects can be realized at some point during the recovery
38 interval, which enhances performance.¹ The balance between fatigue and potentiation is of
39 paramount importance for successful PAPE protocols implementation, and thus a topic of
40 intensive investigations.

41 A growing number of studies investigated protocols designed to optimize PAPE effects by
42 manipulating PAPE related variables. However, the vast majority of them are commonly
43 designed using predetermined and non-personalized loads and volumes.^{1,5} Accordingly, it can
44 be assumed that such general routines could induce too much fatigue for some, and under
45 potentiate others. Although mean effects can be observed and acted upon, a more
46 individualized approach could optimize the relationship between fatigue and potentiation. In
47 support of this rationale, two recent studies observed that PAPE effects can be enhanced by
48 using optimal power load (OPL) in the conditioning activity exercise, tailored per participant
49 based on individual mechanical profiles.^{4,10} Whereas the OPL approach is unfolding as a

50successful strategy to individualize the load variable of PAPE protocols, a method that
51individualizes the volume component needs to be developed.

52One viable strategy to individualize the volume in the conditioning activity of PAPE
53protocols is by allowing participants to choose when to terminate a set based on their
54understanding of the task and its requirements. Allowing people to act autonomously by
55making choices is an evidence based powerful coaching strategy.¹¹⁻¹⁷ Studies from exercise
56psychology and motor learning have shown that by providing choices regarding exercise
57related variables, participants improve motor learning,¹² report greater enjoyment and
58motivation,¹³ and exhibit greater adherence levels to an exercise program.¹⁴ Recently, the
59effects of choice provision have been also studied in relation to physical performance
60outcomes that require maximal force production.^{15,18} For example, Halperin et al.,¹⁶ reported
61that providing competitive kickboxers with choices regarding the order of the delivered
62punches, led to immediate increases in punching impact forces and velocity. Whereas the
63underpinning mechanisms accounting for these effects are not fully agreed upon,
64neuroscience¹⁷ and psychological research¹⁹ points to motivational reasons being the main
65pathway explaining the performance enhancing effects. In view of the accumulating
66evidence, investigating if choice provision strategy can be implemented in PAPE protocols is
67a worthwhile endeavour.

68The aims of this study are threefold. First, we aim to investigate if providing athletes with a
69choice on how many repetitions to complete in the conditioning activity would improve
70subsequent athletic performance compared to a traditional PAPE inducing condition, in
71which the volume is fixed. Second, assuming that the choice condition should enhance
72performance, we aim to examine its underlying cause. That is, will performance improve due
73to the self-selected volume leading to enhanced fatigue-potentiation relationship, or the fact that
74participants will be allowed to choose and act autonomously, will increase motivation and

75drive to complete the task in a superior manner? To an extent, it is possible to answer this
76question by including a third condition in which the exact same volume used in the choice
77condition will be subsequently and unknowingly imposed on the participants. Hence, in a
78third condition, participants will be repeating the exact same condition as the self-selected
79one, but with the volume being imposed by a researcher. For this, trained athletes will
80complete three PAPE protocols using jump squats with OPL as the conditioning activity:
81traditional, self-selected, and imposed conditions, with the outcome being squat jump
82performance.

83

84**Methods**

85Subjects

86A convenience sample of fifteen male professional basketball players (age 24.3 [SD: 4.2]
87years; height 188.1 [5.2] cm; body mass 87.7 [7.3] kg) volunteered to participate in the study.
88The players had at least five years (range: 5-9) of high-level practice and five years (range: 5-
899) of resistance training experience. All subjects had also at least two years (range: 2-5) of
90resistance training experience involving OPL methodologies. Written informed consent was
91obtained after the subjects received an oral explanation of the purpose, benefits, and potential
92risks of the study. All procedures were conducted in accordance with the Helsinki
93Declaration and approved by the Institution's Ethics Committee.

94

95Design

96A randomized cross-over design was used to compare the effects of three PAPE protocols
97implementing jump squats loaded with OPL as the conditioning activity but executed using
98different configurations: i) traditional, in which the sets and repetitions completed are aligned
99with the contemporary PAP literature,^{3-6,8-10} ii) self-selected, in which subjects were allowed

100to choose the number of repetitions completed in each set, and iii) imposed, in which the
101number of repetitions completed matched those of the self-selected condition, but imposed on
102subjects prior to the beginning of the session, rather than self-selected during each set. The
103effects of the three protocols were compared on subsequent vertical jump performance
104assessed by the squat jump test. One week prior the study commencement, subjects
105completed two familiarization sessions during which they were provided with an explanation
106of the study procedures, and performed the PAPE protocol using the traditional configuration.
107Then, three experimental sessions were completed, each including: a standardised warm up,
108baseline squat jump assessment, one of the three conditions, and squat jump reassessment
109after 30 s, 4, and 8 min of passive recovery (see Figure 1 for overview). The order in which
110the protocols were completed was counter-balanced and partially determined by block
111randomisation (www.random.org) so that the imposed protocol always followed the self-
112selected condition. All subjects performed the three experimental trials within two weeks and
113with 72-96 hours apart from each other. The protocols were executed according to standard
114procedures previously reported.¹⁰

115

116

*****Figure 1 about here*****

117

118Optimum power load assessment

119One week prior to the familiarization sessions, the OPL in the jump squat exercise were
120assessed for each athlete. First, the subjects performed an 8 min general warm up consisting
121of running drills and dynamic mobilization exercises. Then, jump squat warm up sets with
122progressively heavier loads were performed. The same instructions recently described by
123Dello Iacono et al.,¹⁰ were used for the jump squat execution. The OPL were assessed
124following the protocol described by Loturco et al.,²⁰ on a Smith machine (Technogym

125Equipment, Italy). The OPL were determined as the jump squat with the highest mean
126propulsive power values measured during the successive trials, and then used to design the
127PAPE protocols. The mean propulsive power measures were collected using a linear encoder
128(Chronojump, Barcelona, Spain) sampling at 1000 Hz and fixed to the bar of the Smith
129machine, and computed using the commercial software provided by the manufacturer in
130conjunction with the device. Finally, body mass normalized mean propulsive power outputs
131(Relative power = W/kg) were used for data analysis purpose. The normalized mean
132propulsive power scores measured during the OPL assessment were 9.6 (1.3) W/kg.

133

134Vertical jump assessment

135Vertical jump capability was assessed by a squat jump test following a standard protocol. The
136SJs vertical ground reaction forces (GRF) outputs were collected by stationary force plate
137(Kistler Biomechanics, Winterthur, Switzerland). Sampling frequency was set at 500 Hz and
138the signal was electronically processed and amplified by a Kistler amplifier (model No
1399681A). The GRF data were used to define some key instants of the SJ such as: (i) start –
140defined as the instant in which the GRF went above a threshold value of 5% relatively to the
141subjects' body mass, (ii) takeoff - defined as the instant in which the GRF went below the
142threshold value of 0 N. The vertical jump performance (cm) was determined by the vertical
143velocity of the center of mass at takeoff calculated by double integrating the vertical GRF
144through the impulse-momentum method.²¹ Both the peak vertical GRF outputs (GRF_{peak}) and
145the relative vertical impulse, determined from the force-time curves as the ratio between the
146total impulse produced during the SJ and the impulse due to body mass alone were collected.
147Subjects completed a baseline assessment consisting of three SJs (the best result used for the
148analysis) with approximately 45 seconds rest in-between while only a single SJ trial was

149repeated per each post-PAPE time point. A single researcher administered all the tests thus
150minimizing potential effects due to the provided instructions.

151

152Postactivation performance enhancement protocols

153All three PAPE protocols consisted of three sets of jump squats loaded with OPL. In the
154traditional protocol subjects completed six repetitions across the three sets. In the self-
155selected protocol, subjects completed as many repetitions as they felt fit to minimize fatigue
156and maximize subsequent performance in each set. The number of completed repetitions was
157determined during each ongoing set. In the imposed protocol, subjects completed the same
158number of repetitions as in the self-selected condition, but this time absent of choice. That is,
159subjects were told how many repetitions they would need to complete by the researcher, and
160unknowingly to them, the numbers were identical to those they completed in the self-selected
161condition. The rest period between sets in all protocols was 2 minutes. Subjects were asked to
162assume the same position as the one described for the OPL assessment procedures and
163instructed to focus on moving the bar as fast and as forcefully as possible by promoting an
164external focus of attention to elicit the greatest mechanical outputs.²²

165

166Statistical Analysis

167All data are presented as means \pm standard deviation (SD) and confidence interval (95% CI).
168Normality of the absolute data was investigated using the Shapiro-Wilk test, and skewness
169and kurtosis values smaller than 2 served as indication of normality.²³ The intra-day
170reliability of the three baseline SJs in day 2, day 3 and day 4 was examined using the
171Coefficient of Variation (both absolute and percent). A CV < 5% is considered a cut-off value
172for high reliability.²⁴ The inter-day reliability of the highest baseline SJs in day 2, day 3 and
173day 4 was assessed by calculating the Intra-class Correlation Coefficient (ICC_{3,1}). Values less

174than 0.5, between 0.5 and 0.75, between 0.75 and 0.9, and greater than 0.9 were interpreted as
175indicative of poor, moderate, good, and excellent reliability, respectively.

176To compare the effects between the PAPE protocols, a two-way repeated measures Analysis
177of Variance (ANOVA) of the absolute scores across all time points, was used (three
178conditions x four time points [baseline, post 30 s, post 4 min and post 8 min]). This analysis
179was conducted for the following variables: jump height, impulse, GRF_{peak} . Additionally, the
180primary outcome, SJ height, was also analyzed by comparing the change scores of the post-
181pre differences between conditions. That is, the post-tests values of each participant were
182subtracted from the baseline values within a given condition (e.g., post 30 s – baseline). Then,
183these differences were compared between conditions using a two-way repeated measures
184ANOVA (three conditions x three time points [post 30 s, post 4 min and post 8 min]). This
185allowed to examine differences between conditions while also accounting for baseline
186differences. The individual athletes' power outputs monitored during each PAPE protocol
187were expressed as percentage of the relative mean propulsive power recorded during the OPL
188assessment to provide an estimate of fatigue elicited by the three protocols. Differences
189between conditions were analyzed using a one-way ANOVA. Significance was at $p < 0.05$.
19095% confidence intervals (CI) are reported alongside the p values to allow for a better
191qualitative interpretation of the data.^{25,26} If significant main effects or interactions were
192identified then post hoc analyses were conducted using the Holm-Bonferroni correction for
193the p values and CI.²⁷ Finally, differences in the repetitions completed between the three
194conditions were analyzed using a one-way non-parametric ANOVA (Kruskal-Wallis *H* test)
195due to the violation of the normality distribution assumption. All statistical analyses were
196conducted using Jamovi (version 1.0.5.0) and Excel sheets.

197

198**Results**

199The duration of the protocols, including the rest intervals and duration of the sets, was 5
200minutes for all the conditions. All data presented normal distribution except for the
201conditioning volumes (number of sets by number of repetitions) of the three experimental
202protocols. The absolute scores of the individual intra-day variation between the three baseline
203SJ heights in day 2, 3 and 4 were ≥ 0.4 cm; the CV% in day 2 and 3 of the intra-day SJ heights were \geq
2040.8%; and the ICC scores between the highest baseline SJ heights in day 2, day 3 and day 4 were
2050.95. These results demonstrate high inter- and intra-day reliability.

206First, a significant main effect for time was observed for absolute jump height ($F_{(6, 84)} = 30.7$,
207 $p < 0.001$). Across all conditions a similar pattern emerged, with jump height reduced by 1 cm
208(95% CI: 0.7, 1.2; $p < 0.001$) at post 30 s compared to baseline, but then improved by 1.7 cm
209(95% CI: 1.4, 1.9; $p < 0.001$) and 1.8 cm (95% CI: 1.6, 2.0; $p < 0.001$) at post 4 min and post
2108 min, respectively, compared to baseline. Second, statistically significant interactions were
211identified between conditions and time for absolute jump height ($F_{(6, 84)} = 30.7$, $p < 0.001$),
212impulse ($F_{(6, 84)} = 31.5$, $p < 0.001$), GRF_{peak} ($F_{(3, 38)} = 12.9$, $p < 0.001$), and for the change
213scores in SJ height ($F_{(3, 45)} = 4.2$, $p = 0.006$), all showing that the self-selected condition led to
214more favorable responses compared to the traditional and imposed conditions, and that the
215imposed condition tended to lead to more favorable responses compared to the traditional (See
216Table 1 for descriptive statistics, corrected p values and 95% CI). The Kruskal-Wallis H test
217revealed significant differences for conditioning volumes between both the self-selected and
218imposed conditions and the traditional one ($\chi^2 = 31.3$, $p < 0.001$). The number of repetitions
219completed during the self-selected and the matched imposed protocols were 13.4 (0.98) and
220resulted in the following set configuration: 3 sets of 4.9 (0.26), 4.5 (0.52), 3.9 (0.48).

221

222

*****Table 1 and Figure 2 about here*****

223

224 Discussion

225 In this study we examined if providing subjects with a choice regarding the number of
226 repetitions completed during a PAPE protocol will enhance vertical jump performance.
227 Subjects completed three PAPE protocols: traditional, in which the number of repetitions in
228 the conditioning activity was fixed; self-determined, in which the number of repetitions in
229 the conditioning activity was self-selected; imposed, in which the number of repetitions
230 matched the self-selected condition, but imposed by a researcher unknowingly to the subjects.
231 Across all three conditions, comparable time-course effects relative to baseline were found,
232 with initial reductions in SJ heights at post 30 s, followed by enhancements at post 4 and post
233 8 min. However, differences between conditions were observed. First, compared to the two
234 other conditions, the self-selected protocol led to superior performance across all post
235 measures. Second, the imposed condition enhanced performance compared to the traditional
236 condition. These findings have practical application and can be largely explained by
237 mechanical and motivational pathways.

238 The time-course effects induced by all PAPE protocols are consistent with the PAPE
239 literature^{2,4,6,9,10} reporting transitional fatigue at the PAPE protocol completion, followed by
240 potentiation after approximately 4 min of rest. The superior jumping performance observed in
241 the self-selected condition, and partly in the imposed condition, can be explained by the
242 individually selected repetitions which led to a more favorable fatigue-potentiation balance
243 (Figure 2). This assumption is supported by two main observations. First, higher relative
244 mean propulsive power values were observed during the self-selected protocol compared to
245 both the traditional and imposed conditions (5.7% and 3.5%, respectively). Second,
246 advantageous mechanical responses were associated to the SJ at the post-tests following the
247 self-determined protocol (Table 1). Specifically, subjects were able to generate greater
248 impulse outputs that, coupled with higher GRF_{peak} , indicate enhanced neuromuscular

249efficacy.²⁸ Hence, in view of the mechanistic perspective, it seems that subjects were able to
250identify the number of repetitions required to elicit a better relationship between fatigue and
251potentiation. This is contrast to the traditional condition designed with a fixed number of
252repetitions, which does not allow for individual consideration of this balance. While a fixed
253number of repetitions in PAPE protocols may lead to enhanced performance at the group
254level, this strategy fails to account for ongoing and unfolding individual abilities that may
255fluctuate between and within individuals on a daily and even momentary basis.

256Whereas the mechanical perspective can assist explaining the differences between the self-
257selected and imposed conditions to the traditional condition, it cannot explain the differences
258between the former two. Since subjects under both conditions completed the same exact
259protocol, the superiority of the self-selected condition is likely the result of motivational
260aspects stemming from subject's ability to choose. According to established psychological
261theories,^{19,29} people strive to act autonomously by exerting control over their behaviours,
262environments, and goals. Granting people with choice options increases perception of
263autonomy and motivation to perform.^{17,19,29,32} Research from a broad range of disciplines
264including educational, workplace, health and human movement domains, show that choice
265provision is effective in improving a wide range of outcomes.²⁹⁻³¹ Whereas in human
266movement sciences choice provision has been mostly studied in the motor learning domain,¹⁹
267recent studies report that choice provision can also enhance acute physical performance.^{15,16,32}
268For example, Halperin et al.,¹⁶ reported that competitive kickboxers punched 3-10% harder
269and 6-11% faster when granted with choice about the order of punches to be delivered,
270compared to a condition in which the punches order was determined by a coach. Confirming
271these effects, Iwatsuki et al.,¹⁵ reported that maximal handgrip strength was better maintained
272when recreationally trained subjects choose the order of the hands in which the contractions
273were completed (dominant vs. nondominant). Such findings suggest that choice provision can

274 positively affect immediate physical performance. The results of the current study are aligned
275 with these findings and support the use of autonomy supportive strategies also to acutely
276 improve athletic performance.

277 This study has a number of limitations worthy of discussion. First, the study design was not
278 fully randomized considering that the imposed condition always followed the self-determined
279 one. Therefore, an order effect inherent to this sequence may have somehow affected the
280 results. Second, we did not conduct a power analysis to determine the sample size. For
281 practical reasons, the sample was limited to a single team of athletes which limits our ability
282 to generalize to other populations. To partly overcome the limitations associated with smaller
283 sample sizes, we implemented a within-subject design and controlled for a large number of
284 confounding variables, such as diet, time of the day, baseline warm up and more. Third, due
285 to logistical constraints, the potentiation effects of the three protocols were investigated only
286 on vertical jump capability which was assessed in a lab-based environment. This fact narrows
287 the ability to generalize the results from this study to more representative situations involving
288 jumps during a basketball game. Future studies are warranted to investigate whether granting
289 athletes with more choices, such as the conditioning activity type, conditioning activity load,
290 protocol configuration and rest interval may lead to comparable or even better PAPE effects.

291

292 **Practical Applications**

293 Coaches should consider granting athletes with individual choices about the training volumes
294 to be used for PAPE protocols aimed at enhancing vertical jump performance. Choice
295 provision seems to exploit the PAPE effects by increasing the motivational drive, by reducing
296 fatigue and by enhancing the mechanical responses underpinning jumping performance. In
297 view of the performance augmentations observed in this study coupled with the broad

298supporting research, choice provision coaching strategies should likely be used more often
299and more explicitly by strength and conditioning coaches.

300

301**Conclusion**

302We found that allowing athletes to choose how many repetitions to complete during a PAPE
303protocol led to greater potentiation effects compared to two other conditons. The first was a
304traditional PAPE condition, in which the volume was fixed, and the second was a matched
305repetition condition, in which subjects completed the same number of repetitions as they did
306in choice condition, but with the repetitions number imposed by the researcher. This superior
307performance under the choice condition is likely due to enhanced motivation stemming from
308subjects' ability to choose, and by optimizing the fatigue-potentiating relationship within sets.
309These results point to the importance of individualized prescription approaches in PAPE
310protocols, with choice provision being one strategy to achieve this goal.

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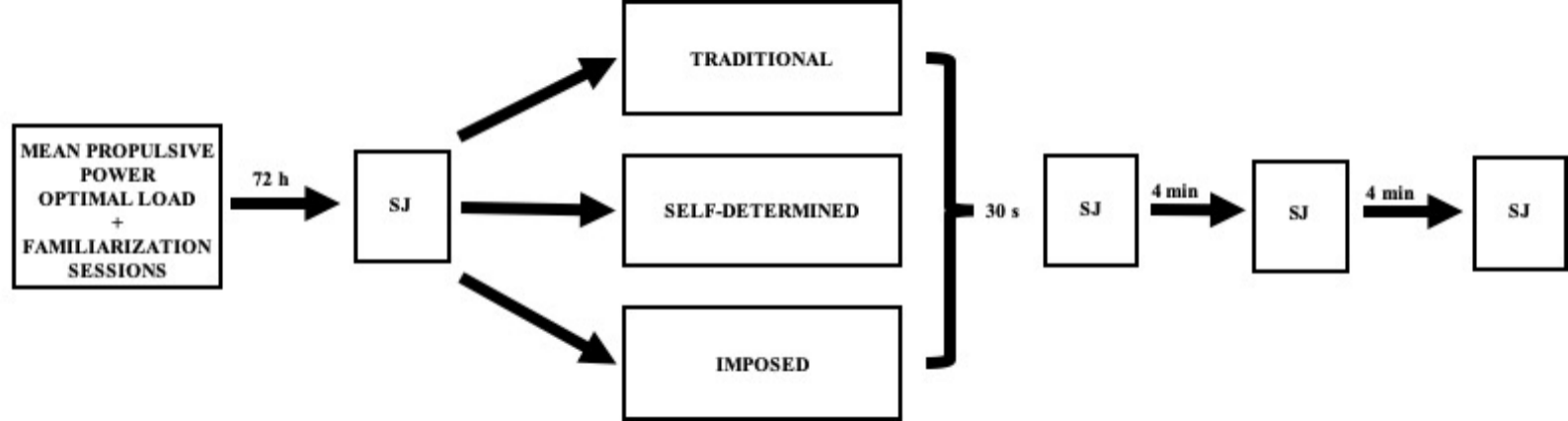
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410**Figure Captions**

411**Figure 1.** Schematic representation of the study design. SJ: squat jump

412**Figure 2.** Illustrates the change scores in the three PAPE conditions relative to baseline
413performance represented by the dashed horizontal line. Dots, squares and triangles denote
414individual scores.



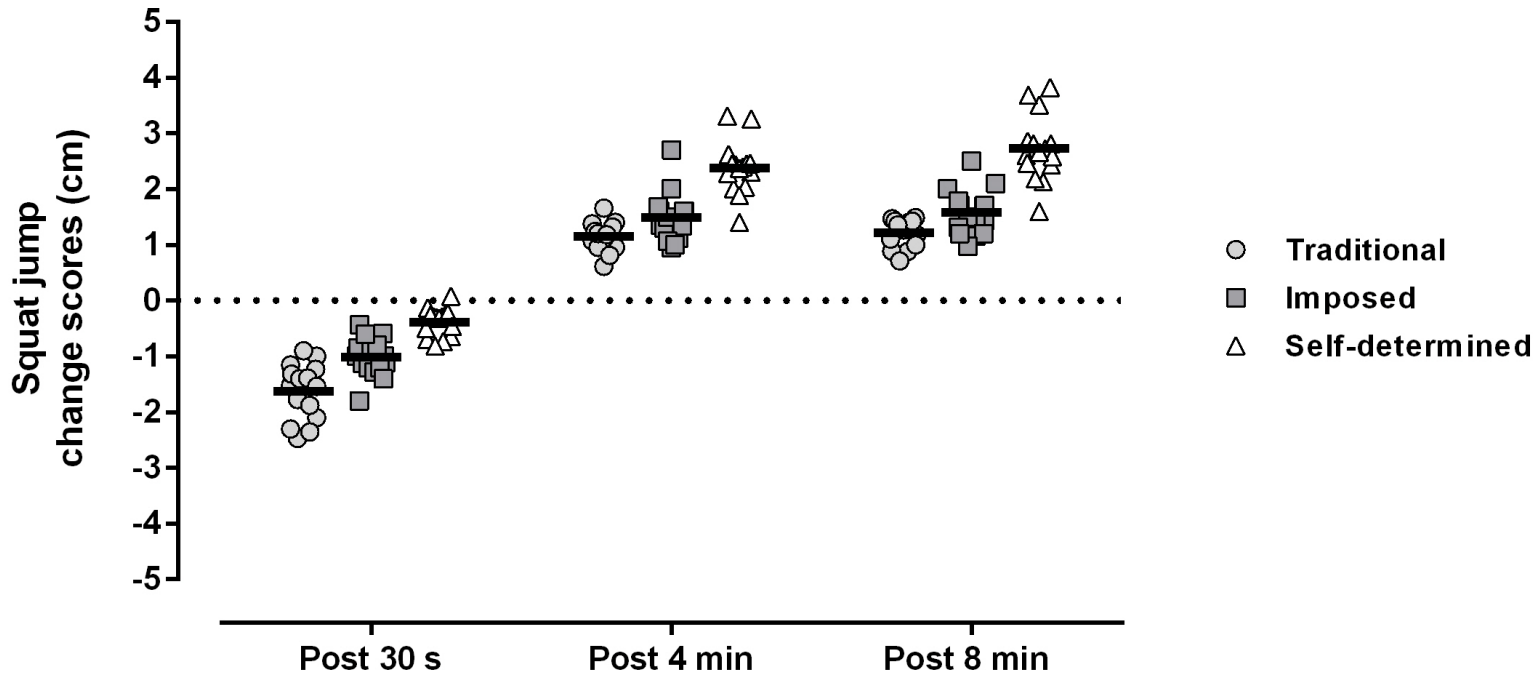


Table 1. Descriptive (mean \pm SD) and inferential (95% CI and p values) statistics of all variables, across all time points, for all conditions.

	Time points			
	Baseline	Post-30 s	Post-4 min	Post-8 min
SJ absolute values (cm)				
Traditional	45 \pm 7.8	43.4 \pm 7.6	46.1 \pm 7.8	46.2 \pm 7.9
Self-determined	44.7 \pm 8.1	44.3 \pm 8	47.1 \pm 8.5	47.5 \pm 8.5
Imposed	44.8 \pm 7.4	43.8 \pm 7.5	46.3 \pm 7.6	46.4 \pm 7.7
SJ change scores values (post-tests minus pre-test values)				
Traditional		-1.62 \pm 0.5	1.15 \pm 0.26	1.21 \pm 0.24
Self-determined		-0.39 \pm 0.25	2.38 \pm 0.48	2.73 \pm 0.59
Imposed		-1.01 \pm 0.35	1.49 \pm 0.44	1.58 \pm 0.41
SJ mean difference				
Traditional vs Self-determined		-0.97 (-1.83, -0.1) p = 0.021	-0.96 (-1.84, -0.09) p = 0.024	-1.25 (-2.2, -0.31) p = 0.008
Traditional vs Imposed		-0.45 (-0.82, -0.08) p = 0.008	-0.19 (-0.42, 0.04) p = 0.103	-0.21 (-0.51, 0.09) p = 0.228
Self-determined vs Imposed		0.51 (-0.2, 1.22) p = 0.188	0.78 (-0.21, 1.76) p = 0.16	1.04 (0.05, 2.02) p = 0.035
SJ change scores (cm) between conditions				
Traditional vs Self-determined		-1.24 (-0.81, -1.66) p = 0.006	-1.21 (-1.15, -1.27) p = 0.007	-1.51 (-1.02, -1.99) p = 0.008
Traditional vs Imposed		-0.62 (-0.27, -0.97) p = 0.027	-0.33 (-0.15, -0.51) p = 0.002	-0.37 (-0.14, -0.6) p = 0.002
Self-determined vs Imposed		0.62 (0.28, 0.96) p = 0.004	0.88 (0.57, 1.19) p = 0.004	1.14 (0.72, 1.56) p = 0.005
GRF_{peak} absolute values (N)				
Traditional	1585 \pm 195	1523 \pm 190	1630 \pm 192	1636 \pm 194
Self-determined	1590 \pm 194	1568 \pm 191	1687 \pm 194	1699 \pm 193
Imposed	1586 \pm 203	1549 \pm 198	1641 \pm 209	1648 \pm 208
GRF_{peak} mean difference				
Traditional vs Self-determined		-45.2 (-67.6, -22.9) p = 0.008	-57.6 (-88.4, -26.8) p = 0.007	-62.9 (-100, -25.6) p = 0.006
Traditional vs Imposed		-25.4 (-52.1, 1.4) p = 0.068	-11 (-33.6, 14.6) p = 0.602	-11.6 (-36.7, 13.6) p = 0.342
Self-determined vs Imposed		19.9 (-7, 46.7) p = 0.192	46.6 (4.5, 87.7) p = 0.025	51.3 (3.8, 98.9) p = 0.03
Impulse absolute values (N\cdots⁻¹)				
Traditional	2.58 \pm 0.27	2.48 \pm 0.27	2.64 \pm 0.27	2.65 \pm 0.27
Self-determined	2.59 \pm 0.29	2.56 \pm 0.28	2.72 \pm 0.3	2.75 \pm 0.3
Imposed	2.54 \pm 0.21	2.48 \pm 0.21	2.63 \pm 0.21	2.63 \pm 0.21
Impulse mean difference				
Traditional vs Self-determined		-0.08 (-0.14, -0.02) p = 0.063	-0.08 (-0.15, -0.02) p = 0.006	-0.1 (-0.04, -0.16) p = 0.008

Traditional vs Imposed

0
(-0.04, 0.03) | p = 0.889

0.01
(-0.04, 0.06) | p = 0.998

0.01
(-0.04, 0.07) | p = 0.999

Self-determined vs Imposed

0.08
(0.11, 0.14) | p = 0.016

0.1
(0.21, 0.17) | p = 0.01

0.11
(0.03, 0.23) | p = 0.007

SJ: squat jump; GRF_{peak}: peak ground reaction forces; CI: confidence intervals