REACTIVE STRENGTH TRAINING IN VOLLEYBALL:
EFFECTS OF DIFFERENT DURATIONS OF THE REST
INTERVAL ON HURDLE JUMPING EXERCISE DRILLS.

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Introduction
Jumping higher is a requirement in modern volleyball. Take-off for spike and block movements involve explosive
muscle actions, with contact times ranging from 250 to
350ms. The duration of these contact times are typi-
cal slow type stretch-shortening cycles (SSC) (Schmidtblei-
cher, 92). The improvement of the take-off velocity re-
quires the increase of the force production in SSC condi-
tions, which can be achieved with well and proper designed
reactive strength training. One of the critical parameters in
reactive strength training design and prescription is the du-
ration of the rest interval between the series.

The purpose of this study was to analyze the effects of dif-
ferent durations of the rest interval for, for reactive strength
training with hurdle jumping exercise series

Methods
Twelve moderate-trained male volleyball’ players (age:
25.17±2.41 years old; height: 188.0±0.05 cm; body mass:
80.75±5.66 Kg) participated in this study. All of them had
experience in training sessions of continuous jumping drills.
Performance’ variables (contact time) and physiological im-
pacts (blood lactate) were evaluated while performing a
three jumping protocols consisted on 5 series with 20 hur-
dle jumps. The three jumping protocols were similar in
structure and volume, but different in effort intensity, and
were performed in different moments. During the hurdle
jump series, the contact time of each individual jump was
continuously monitored. The effort intensity where manip-
ulated by the duration of the rest intervals, established in 2,
4 and 6 minutes.

Before and after each protocol, the subjects were tested for
squat jump (SJ), Counter Movement Jump (CMJ) and Drop
Jump – 40cm (DJ-40).

Anova for repeated measurements was used to determine
if there were significant differences in the performance
quality during each protocol and paired-samples t-tests to
determine if there were significant differences performance
and physiological variables before and after jumping proto-
cols.

Results
When a rest interval of 6 min was used, the total contact
time for the hurdle jump series showed a significant reduc-
tion (p<0.001) of 6% from the first to the fourth series. With
the other rest intervals (2 and 4 minutes) there were no
changes on the contact time. SJ, CMJ and DJ-40 perfor-
ance, before and after the hurdle jumping series, showed
a significant reduction (2 minutes p<0.001; 4 minutes p<
0.05) when the rest interval was 2 and 4 minutes. With
a rest interval of 6 minutes only minor and non significant
reductions were observed after the hurdle jumping series.
Taking together, these results may suggest that a rest in-
terval higher than 4 minutes should be used for this type of
reactive strength training. This rest interval duration seams
to be relevant to keep the neuromuscular system without
great decreases in force production characteristics.

References
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