Blood lactate kinetics during four sets of bench press with 75% of 1RM #33

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The purpose of the study was to analyze blood lactate kinetics during bench press exercise. 7 resistance-trained men (aged 21.66 ± 0.57 years, body mass 84.33 ± 9.50Kg, height 178.33 ± 0.05 cm, BMI 26.46 ± 2.11 kg/m^2) volunteered for the study. The first session consisted of a 1-RM bench press test. After 48 hours, subjects returned and performed a warm up (20 repetitions with 40% 1-RM) and 4 sets of 8 repetitions with an intensity corresponding to 75% of 1-RM, separated by a 2-minute rest interval. Blood samples were collected at rest (R), after the warm up (W), at the end of each rest interval (INT) and immediately after each set (SET) for further lactate concentration analysis using a lactate analyzer (YSI, SPORT 1500®). The blood lactate concentrations (mM) during the test are presented in table 1.

Table 1. Blood lactate concentrations after warm up and four sets in bench press exercise.

Lactate	R	W	INT1	SET1	INT2	SET2	INT3	SET3	INT4	SET4	INT5
Mean	1.02	1.71	3.67*	4.60	5.71*	4.67	6.29*	5.99	7.69*	6.59	8.11*
SD	0.1	0.63	0.39	0.78	0.32	1.24	0.30	1.94	0.69	1.96	0.94

Values are presented as mean ± standard deviation of the mean (SD), (p<0.05), *Statistically different as compared with previous concentration. Rest (R), after the warm up (W), at the end of each rest interval (INT) and immediately after each set (SET).

Results indicate a trend to glucose metabolism, as shown by blood lactate concentration. The higher values at the end of each rest interval indicate that lactate was removed to blood. Blood lactate concentrations were smaller after each set, when compared to the previous interval. These results could be caused by a reduction in

glucose metabolism during the sets or even by lactate removal by other tissues, as this is possibly the blood lactate kinetics during such a protocol.

Key words: blood lactate; kinetics; bench press.