

**Relationship between blood lactate and pain levels during and after maximum resistance exercises #59**

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The aim of the present study was to examine the relation between lactate concentration and pain during maximum resistance exercises. 14 healthy and non-trained women  $39.8 \pm 3.9$  years,  $60.6 \pm 6.6$  kg and  $163.6 \pm 6.6$  cm were submitted to one maximum repetition test (1-RM) in leg press  $45^\circ$  (LP) and bench press (BP). Fatigue tests (FT) were performed in the same activity apparatus with 48 hours of interval before and after the 26 training sessions. The FT consisted of 3 exercise maximum bouts with 1 minute of interval and 50% of 1-RM. The measurements analyzed were lactate (LAC), lactate/kg of muscle mass (MM), and pain scale at rest, immediately after the 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> bouts and 5 minutes after the whole exercise. LAC, LAC/kg MM and pain increased during the FT as compared with rest. It was observed a significant increase in the LAC and LAC/kg MM values at rest and after bouts 1 and 2 in LP and BP before and after training. The pain level was not different in the 5 moments of the FT pre and post-training. Furthermore, there was a weak correlation between lactate and pain in LP and BP pre and post-training. In conclusion, the employed FT was capable to increase the lactate response. However, there was not any change in the pain levels, suggesting that the lactate is not a main factor that promotes increased pain during the tests.

**Key words:** lactate; resistance exercise; fatigue test; pain.