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**High resistance/low repetition vs. low resistance/high repetition training: effects on performance of trained cyclists.**

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In order to investigate the effects of a resistance training modality on cycling performance, 23 trained club-level cyclists were placed into high resistance/low repetition (H-Res), low resistance/high repetition (H-Rep), or cycling-only groups for a 10-week program. All 3 groups followed the same cycling plan, but the H-Res and H-Rep groups added resistance training. Testing pre and post consisted of a graded incremental lactate profile test on an ergometer, with blood lactate being sampled. VO<sub>2</sub> values were measured to determine economy. Maximum strength testing of 4 strength exercises targeting the lower extremity musculature was conducted with the H-Res and H-Rep groups. There were significant gains in all 4 resistance training exercises ( $p < 0.05$ ) for both H-Res and H-Rep, with the H-Res group having significantly greater gains than the H-Rep group had in the leg press exercise ( $p < 0.05$ ). There were, however, no significant group x training differences ( $p > 0.05$ ) found between the 3 training groups on the cycling test in lactate values or economy. It appears that for this population of cyclists, neither H-Res nor H-Rep resistance training provided any additional performance benefit in a graded incremental cycling test when compared with cycling alone over a training time of this length. It is possible that with this population, various factors such as acute fatigue, strength, and aerobic gains from the cycling training, in addition to well-developed bases of strength and conditioning from previous training, reduced differences between groups in both strength gains and cycling performance.