Effect of recovery interventions on lactate removal and subsequent performance.

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The recovery process in sport plays an essential role in determining subsequent athletic performance. This study investigated the effectiveness of different recovery interventions after maximal exercise. Eighteen trained male cyclists initially undertook an incremental test to determine maximal oxygen consumption. The four recovery interventions tested were: passive, active (50% maximal oxygen uptake), massage, and combined (involving active and massage components). All test sessions were separated by 2 to 3 days. During intervention trials subjects performed two simulated 5 km maximal effort cycling tests (T1 and T2) separated by a 20 min recovery. Performance time for the tests (t1, t2); blood lactate (BLa) during T1, T2, and every 3 min during recovery; and heart rate (HR) during the recovery intervention and T2 were recorded. Combined recovery was found to be better than passive (P<0.01) and either active or massage (P<0.05) in maintenance of performance time during T2. Active recovery was the most effective intervention for removing BLa at minutes 9 and 12, BLa removal during combined recovery was significantly better than passive at minute 3, and significantly better than passive, active, and massage at minute 15. In conclusion, combined recovery was the most efficient intervention for maintaining maximal performance time during T2, and active recovery was the best intervention for removing BLa.

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