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EFFECT OF AN ORAL BOVINE COLOSTRUM SUPPLEMENT ON RUNNING PERFORMANCE

The Study was performed by J.Buckley, M,Abbott, S. Martin, G.Brinkworth & P.Whyte

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These results indicate that oral supplementation with bovine colostrum improves the ability to perform a second bout of maximal exercise following a relatively short period of recovery from a prior bout of maximal exercise.

Bovine colostrum is secreted by cows during the first few days after calving and is a rich source of bioactive components, including growth factors. Oral supplementation with a whey fraction of bovine colostrum has been shown to significantly increase serum insulin-like growth factor 1 (IGF-1) concentrations with no effect on vertical jump performance (Mero et. al., 1997)

The present study employed a double-blind, placebo controlled, parallel, randomised design to determine the effect of supplementation with a low fat, low lactose, concentrated bovine colostrum protein powder (intactä , NorthField Laboratories Pty Ltd) on plasma IGF-1 concentrations and endurance running performance.

After an initial familiarisation period in the two weeks prior to commencement, 39 males, aged 18-35 years, completed an 8 week running program (3 x 45 minutes/week at lactate threshold) whilst consuming 60g/day on intact TM bovine colostrum (n=23, peak VO₂ 53.5 ± 1.1 ml.kg.⁻¹ min.⁻¹) or whey protein (n=16, peak VO₂ 54.2 ± 1.7 ml.kg.⁻¹ .min.⁻¹).

All subjects followed dietary guidelines provided by the researchers and kept food diaries throughout the study period for subsequent dietary analysis. Subjects completed 2 incremental treadmill running tests to exhaustion (10 km/hr, incremented 1% grade every 3 min) separated by 20 minutes of recovery at weeks 0, 4 and 8. There were no differences in plasma IGF-1 concentrations between the groups at week 0 (colostrum 231.1 ± 10.7 ng/ml, placebo 221.0 ± 13.3 ng/ml; P=0.37). Plasma IGF-1 concentrations did not change in either group during the study period (P=0.90).

There were no differences in the distance covered (m) or work done (kJ; vertical distance covered x body mass x 9.81 m/s²) during the first (colostrum 4649 ± 238 m, 155.8 ± 15.7 kJ; placebo 4464 ± 320 m, 140.2 ± 19.6 kJ; P>0.46) or the second (colostrum 4044 ± 357 m, 120.6 ± 21.3 kJ; placebo 3942 ± 388 m, 110.7 ± 21.1 kJ; P>0.91) treadmill runs at week 0. Distance covered and work done during the first treadmill run increased in both groups during the study period (P<0.01), but at similar rates (P>0.69).

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During the second treadmill run both groups exhibited similar increases in the distance covered and work done from weeks 0-4 ($P>0.20$) but, from weeks 4-8 the colostrum group continued to improve whilst the performance of the placebo group plateaued, such that by week 8 the colostrum group ran further (colostrum 4662 ± 251 m, placebo 4237 ± 323 m; $P=0.04$) and did more work than the placebo group (colostrum 150.7 ± 17.1 kJ, placebo 124.2 ± 18.9 kJ; $P=0.03$). The TEM for running time (which equates to distance covered and work done) was 2%.

There were no differences in dietary intakes between the two groups. These results indicate that oral supplementation with bovine colostrum improves the ability to perform a second bout of maximal exercise following a relatively short period of recovery from a prior bout of maximal exercise.

Reference:

Mero, A., Miikkulainen, H., Riski, J., Pakkanen, R., Aalto, J., Takala, T. (1997). Effects of bovine colostrum supplementation on serum IGF-1, IgG, hormone and saliva IgA during training. *J. Appl. Physiol.* 83(4): 1144-1151.



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