EFFECT OF DIFFERENT WARMING-UP PROTOCOLS ON TIME TO EXHAUSTION AT MAXIMAL AEROBIC SPEED

C Rodriguez de la Cruz, C Brennenraedts, T Bury. Laboratoire de physiologie humaine et de l’effort physique, Liège, Belgium

10.1136/bjsports-2011-090606.8

Middle distance races are characterised by a start at high intensity without progression. Some studies focused on the warming-up (WU) effects on physiological parameters during race from 95% to 120% of the work rate at VO₂ max. The aim was to determine the efficiency of different WU protocols on time to exhaustion at maximal aerobic speed (M.A.S.). We recruited 11 middle distance runners (mean age 30±4 years, height 177±7 cm, VO₂ max 59.7±6.4 mlO₂.min⁻¹.kg⁻¹, M.A.S. 17.7±1.16 km/h). Subjects performed a triangular aerobic test to determine M.A.S. and three randomised rectangular tests at M.A.S. after three different WU protocols at 7 days of interval. The three WU protocols consist in no warming-up; 20 min WU at 55% of VO₂ max (low WU); 15 min WU AT 55% and 5 min at ((speed at LT 1 + speed at O.B.L.A.) / 2) (intense WU). After the WU, subjects observed 5 min rest before the rectangular test. Blood lactate concentration was measured four times (before WU, after WU, before and after rectangular test); whereas heart rate, VO₂ and ventilation were monitored continually. The mean heart rate during the rectangular test was higher (p<0.05) from the 1st–7th min after low and intense WU than without WU. The VO₂ max kinetic was the same in the three tests. Average blood lactate concentration was similar at the end of the race in the three protocols (6.9±0.8 mmol.L⁻¹ without WU, 6.8±0.8 mmol.L⁻¹ low WU and 6.6±0.7 mmol.L⁻¹ intense WU). Time to exhaustion at M.A.S. was higher (p<0.05) after intense WU. Results suggest that the intense WU has a positive effect on time to exhaustion at M.A.S. and therefore on aerobic performance. This is probably the result of a faster cardiovascular adaptation.
Effect of different warming-up protocols on time to exhaustion at maximal aerobic speed

C Rodriguez de la Cruz, C Brennenraedts and T Bury

doi: 10.1136/bjsports-2011-090606.8

Updated information and services can be found at:
http://bjsm.bmj.com/content/45/15/A3.1

These include:
Email alerting service
Receive free email alerts when new articles cite this article. Sign up in the box at the top right corner of the online article.

Notes

To request permissions go to:
http://group.bmj.com/group/rights-licensing/permissions

To order reprints go to:
http://journals.bmj.com/cgi/reprintform

To subscribe to BMJ go to:
http://group.bmj.com/subscribe/