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DETERMINANTS OF RUNNING PERFORMANCE IN TOP LEVEL KENYAN ATHLETES

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One of the greatest events in athletics in recent years has been the large increase in the number of top level athletes originating from Kenya and the dramatic improvement of their performance in long distance running. The fact that most of these athletes are issued from a specific ethnic group, little in size, called Kalenjin, has induced many investigators to hypothesize that they may have special features explaining their success in running (Billat et al, 2003; Larsen, 2003; Scott et al, 2005). If this were so, it would translate in a significantly higher running speed on the marathon as a consequence of a more favourable interaction of maximal aerobic power (or speed), its fractional utilisation and the energy cost of running. The ensemble of these items was never studied in top level Kalenjin long distance runners, and its investigation was the aim of the project. Moreover, a kinematic analysis of running was investigated on some of the same runners.

The study was finally completed on 23 top level Kalenjin marathon runners who were 28 ± 4 years old, 1.74 ± 0.08 m tall and 58.5 ± 4.8 kg heavy. Of these, 11 could perform also the kinematic determinations. A control group of 14 European marathon runners (33 ± 4 years old, 1.75 ± 0.05 m tall and 62.2 ± 4.1 kg heavy) was also investigated. Of these, six could complete the biomechanic analysis.

In conclusion we were unable to find significant differences between top level Kalenjin and European marathon runners as far as the energetics and the biomechanics of human running is concerned. Physiologically speaking, the two groups were equivalent. However, small, non significant differences observed may translate into a small advantage for the former over the latter in actual competitions.