

- Title Glucose level during fasting month among competitive endurance athletes
- Authors Khalil. F. A.,
Azman, M. I,
Mohd Hashim, A. H.,
Morazuki, S. R.,
Zainuddin, Z. A.,
Ibrahim, H.,
Harun , H.,
Mohd Noor. M. A.,
Abdul Ghani, D. Z.
Abu Bakar, Z.
- Abstract In order to maintain performance, training is a must and there is no exceptional during Ramadan fasting. However, studies have showed that Ramadan fasting causes significant changes in calories intake as well as blood glucose concentration and this might affect the athlete's performance, Therefore, the purpose of this study was to investigate the blood glucose levels of fasting and non-fasting competitive endurance athletes before and after endurance test during Ramadan fasting month. Eight subjects (fasting, $n \sim 4$, non-fasting , $n \sim 4$) with an average age of 23.1 ± 3.0 years, height of 167.0 ± 6.6 cm, weight of 56.5 ± 7.4 kg and BMI of 20.2 ± 2.1 participated in the study. All subjects were competitive runners who are involved in annual MALAKOFF University Dualthon Series since year 2008 till now. Subjects were required to complete 2.4km run test at their fastest pace, three times with rest at least two days between each trial. Measurements were pre- and post-run blood glucose (Accu check, Performa, Roche Diagnostics NZ Ltd, New Zealand), heart rate monitoring (Polar Heart Rate, Polar Electro Oy, Finland) and performance time. Gathered data were analysed using independent t-test via Statistical Package for Social Science version 14.0 (SPSS 14.0) in order to compare the result between fasting and non-fasting groups. The pre-run blood glucose of the fasting group ($4.6\text{mmol/L} \pm 0.4$) was lower than the non-fasting group ($6.2\text{mmol/L} \pm 0.6$), which similar to study by Bouhleb et al. (2008) [$4.8\text{mmol/L} \pm 0.4$ (1st week Ramadan) and $4.8\text{mmol/L} \pm 0.4$ (final week Ramadan)] but higher than study by Nomani et al. (1989) [$4.51 \text{mmol/L} \pm 0.67$ (day 15) and $4.24\text{mmol/L} \pm 0.34$ (day 28)]. Results indicated a significant difference of pre-run blood glucose ($t = 3.08$, $p = .022$) between groups but not on the post-run blood glucose. In terms of performance time, the fasting group was 11.63 ± 1.87 minutes, and the non-fasting group was 11.12 ± 0.94 minutes which shown no significant difference with $t = .488$, $p = .643$. These showed that maintaining blood glucose level during fasting is unnecessary for performance continuation but might important for healthy purposes.