

UNIVERSITI TEKNOLOGI MARA

**THE EFFECT OF CAFFEINATED DRINKS ON
MUSCULAR ENDURANCE PERFORMANCE USING
CIRCUIT RESISTANCE TRAINING**

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Dissertation submitted in partial fulfilment of the requirements for the degree
of
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AUTHOR'S DECLARATION

I, Sitti Junaina binti Musa (I/C Number: 870329-49-5336) hereby, declare that this work represent my own work which has been after registration of the degree at Universiti Teknologi MARA (UiTM), and has not been previously included in a thesis, dissertation submitted to this or other institution for degree, diploma or other qualification.

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ABSTRACT

Multiple studies corroborate the ergogenic properties of caffeine for endurance performance, yet limited investigations document the effect of caffeinated drinks on muscular endurance performance using circuit resistance training (CRT). The aim of the study was to determine the effect of caffeinated drinks on muscular endurance performance using circuit resistance training (CRT) in male amateur runners. A total of 36 male amateur runners aged 20-25 years old were recruited and randomly divided into three groups (caffeinated, non-caffeinated and placebo, n=12/groups) using stratified sampling method based on pre-treatment CRT performance results. Caffeinated group received the caffeinated drink that contain 3 mg/kg body weight dose of caffeine. Non-caffeinated and placebo group received non-caffeinated drink and plain water, respectively. The CRT, a measurement of muscular endurance was performed by all subjects following 40 minutes ingestion of drink. Total volume weight lifted (TVWL) and time of completion (TC) of CRT were recorded. Heart rate (HR) and water balance (WB) were measured before and after CRT. Body weight difference between before and after CRT was used to determine sweat rate (SR). The results show the ingestion of caffeine increased TVWL ($p<0.05$), TC ($p<0.05$) and HR ($p<0.05$). However, caffeine did not change SR ($p>0.05$) and WB ($p>0.05$) following ingestion. In summary, this study concludes that the acute ingestion of caffeine (3 mg/ kg) was effective to improve the muscular endurance performance.

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