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## A study of foot defects, foot deformities and diseases among long, middle distance shod and barefoot runners: A cross sectional comparative study

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Running is most popular form of exercise that people engage in to stay active and healthy. However owing to a high incidence of injuries there arise a need to increase safety of running so as to derive the health benefits of running that overweighs the risk of injury. Foot problems are the most common injuries that are reported by long distance and marathon runners. There is controversy over the use of barefoot running to decrease the overall risk of injury secondary to individual differences in lower extremity alignment, gait patterns, and running biomechanics. Although few studies in the past explored foot conditions among non-athletes, none compared foot defects, deformities and diseases among barefoot and shod long distance runners. This study was to compare the occurrence of foot defects, deformities and diseases between middle, long distance shod runners and barefoot runners. It is a cross-sectional, comparative experimental study with double phase design. Convenient of sampling method was adopted and three groups were stratified into barefoot, shod runners and unshod counterpart from Dakshina, Karnataka, India. The mean age of barefoot runner group was  $19.11 \pm 3.4$ , shod runners  $21.51 \pm 8.2$  and control  $20.67 \pm 2.04$  who were screened in this study. Duration was from 2009 to 2014. Total sample of 255 was aimed at 5% drop out by conforming to the sample size of 240 by pilot study. Validated tools were used to screen these disorders approved by dermatologist and orthopedic surgeon. SPSS v 16.0 is used for data analyses. Homogeneity was tested across groups. The mean BMI of barefoot runner group was  $18.7 \pm 2.5$ , shod runners  $19.5 \pm 3.2$  and controls  $20.98 \pm 2.5$ . Descriptive data of the occurrence of foot defects, deformities and diseases were drawn and ANOVA one way analysis revealed significant difference in foot defects, deformities and diseases among the three groups with  $p < 0.01$ . Shoe components were correlated. There was significant difference in foot defects, deformities and diseases among the three groups with  $p < 0.01$ . Control group was found with negligible foot disorders against the other two groups.

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## Comparison between pre-exercise meals intake effect with different glycemic load on exercise performance in female athletes

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Athletes usually search for strategies to optimize their performance. Manipulation of carbohydrate (CHO) resources glycemic load in order to optimizing athletic performance provides new research areas in nutritional sport. Purpose of this study is to examine the effects of two isocaloric meals with different glycemic load (GL) on exercise performance and serum free fatty acids. Thirty six non-professional athletic women with ages between 19 and 24 were assigned in a double blinded randomized clinical trial with two period cross-over designs. Participants in each group received a high or low GL meal as a breakfast, and 7-day wash out period was determined. Serum free fatty acid (FFA) measurements were performed before and after each phase of intervention. Three hours after ingestion of a meal, participants ran to exhaustion, in a 20 meters shuttle run pacer. Time to exhaustion (TTE) was recorded as a measure of exercise performance. In an attempt to ensure that subjects run to exhaustion, rating of perceived exertion (RPE) was measured, using a Borg scale. The ingestion of a low GL or high GL pre-exercise meal did not lead to different TEE and RPE at 3 hours before exercise in female athletic students. Mean changes of serum FFA were higher in low GL than high GL meal. Consumption of a low GL meal compared with a high GL meal at 3-hr before a shuttle run pacer, was not associated with significant changes in TEE and RPE levels but low GL meal led to more increase serum FFA than high GL.

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