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Twenty Meter Shuttle Run Test in Healthy School Going Children Aged 8-12 Years

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Introduction: Childhood is considered to be a crucial period of life, since dramatic physiological and psychological changes take place from 8-12 year of age. In recent decades, children have become less physically active due to advances in technological field leading towards more sedentary lifestyle. This has led to be the cause for reduction in the cardio-vascular fitness amongst these children. Cardio-respiratory fitness is an integral measure of most of the body functions involved in the performance of daily physical activities. There is an unavailability of cardio-respiratory fitness related data for children in the Indian scenario. Therefore, the study has been undertaken to assess the cardio-respiratory fitness using 20-meter shuttle run test (maximal exercise test) in children.

Objective: To determine the normative value of 20-meter shuttle run test in healthy children aged 8-12 years.

Design/Method: A cross sectional study was undertaken to investigate the cardio-respiratory fitness in healthy school going children of the age group 8-12 years. The children were selected from the local government schools (south block, central Bangalore) using convenience sampling after seeking informed consent from their parents. The 20-meter shuttle run test was administered on the school grounds where the child ran between the shuttles chasing the beep sound and the miss in two consecutive beats would lead to termination of the test. Data was analyzed using the descriptive analysis for the outcomes.

Results: Hundred children (71 boys and 29 girls) with a mean age of 9.57(1.23) participated in the study. The baseline anthropometric measurements of the children were a body mass index of 17.0(3.76) and waist-hip ratio of 0.89(0.05). The average cardio-respiratory fitness of the sample is 12.59(4.69) for the number of laps attained.

Conclusion: The study provides a sample reference range for 20-meter shuttle run test for school going children aged 8-12 years from Bangalore, India. From this study we can infer that the anthropometric and the cardio-respiratory fitness parameters of our sample of children were found to be 2-3 laps lesser than those observed among children from the countries like Canadian provinces(Ontario, British Columbia, Alberta, Quebec, Nova Scotia) . The study highlights the need for establishing the reference range for cardiorespiratory fitness levels for children from Indian population.