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Body Circumference Parameters Predict Body Mass Index in Children Aged 2-5 Years

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ABSTRACT Body circumference parameters have become simple screening measurements that can be used as an indicator of body fat distribution to detect pediatric obesity. The purpose of this study was to determine the relationships that exist between body circumference parameters of head, neck, arm, forearm, waist, hip, mid-thigh, front-thigh and body mass index (BMI). A total of forty randomly selected children with the mean age of 2.97 years participated in this study. Stature, body mass, and body circumferences were measured according to the protocol of the International Society for the Advancement of Kinanthropmetry (ISAK). All the participants' parents completed informed consent forms before their children could be allowed to participate in the study. There was a significant correlation between the hip and neck circumferences and BMI. Regression analyses revealed that BMI was best predicted by the combined effect of neck and hip circumferences. Combined effects of hip and neck circumferences were significant predictors of BMI in children.