**ABSTRACT** 

Poor nutritional status in children can lead to underweight, and obesity as

well as have a negative impact on health. The nutritional status of a child can be

measured using the Body Mass Index (BMI). BMI can be calculated using a

formula that involves height and weight data. Height can be estimated based on

long bones. The study aims to calculate height based on foot length in children

aged 7-12 with case studies of age, gender, and tribal origin.

Tests were conducted on a total of 226 samples from boys and girls. A

statistical regression test is performed to obtain a regression equation. Tested

linear regression and polynomial regression of order 2. Correlation tests between

foot length and height in the age group of 7-12 years were conducted to see the

magnitude of the correlation. Test results showed a high correlation in the 7-12-

year-old range of 0.92 for boys and 0.89 for girls It was found that the age range

cand gender had significant results in the correlation of foot length to height.

Polynomial regression equation of order 2 can be used to determine height growth

in children. In BMI testing using Z scores, normal nutritional status was achieved

at an average accuracy percentage of 63%.

**Keyword:** *BMI*, *correlation*, *foot length*, *height*, *weight*, *regression* 

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