Indian Journal of Basic and Applied Medical Research; December 2015: Vol.-5, Issue- 1, P. 30-47

**Original article**

**Estimation of human height from the length of tibia**

**Dr. Manotosh Banerjee1, Dr. Chiranjit Samanta2, Dr. Satyajit Sangram3, Dr. Moumita Hota4**, **Dr. Pinki Kundu5** , **Dr. Maitreyi Mondal6 , Dr. Reshma Ghosh 7, Prof. (Dr.) Sudeshna Majumdar8**

**1**Junior Resident, Department of Anatomy,Nilratan Sircar Medical College, Kolkata – 700014, West Bengal, India

**2**Junior Resident, Department of Anatomy,Nilratan Sircar Medical College, Kolkata – 700014, West Bengal, India

**3**Junior Resident, Department of Anatomy,Nilratan Sircar Medical College, Kolkata – 700014, West Bengal, India

**4**Junior Resident, Department of Anatomy,Nilratan Sircar Medical College, Kolkata – 700014, West Bengal, India

**5**Junior Resident, Department of Anatomy,Nilratan Sircar Medical College, Kolkata – 700014, West Bengal, India.

**6**Associate Professor**,** Department of Anatomy, North Bengal Medical College, Sushrutanagar, Darjeeling – 734012.West Bengal, India

**7**Junior Resident, Department of Anatomy,Nilratan Sircar Medical College, Kolkata – 700014, West Bengal, India.

8Professor and Heas of the Department of Anatomy, North Bengal Medical College, Sushrutanagar, Darjeeling – 734012.West Bengal, India.

**Corresponding author:** Dr. Sudeshna Majumdar

**Abstract**

**Introduction:** Assessing the height of individuals, from measurements of different parts, has always been an immense interest to the anatomists, anthropologists and forensic medicine experts. **Aim of the study**: To estimate the stature of body from tibial length was the aim of the present study.

**Methods: The** maximum percutaneous tibial length (T) and the corresponding height (S) of 50 adult males and 50 adult female’s subjects of the southern part of West Bengal were measured accurately. The data were analysed by parametric statistics.

**Observations:** There was high correlation between tibial length and height. Regression equations for estimation of stature were calculated thus:

For males: S = 71.361 + 2.575 (T) [S.E. of estimate ± 2.943]
For females: S =65.344 + 2.691 (T) [S.E. of estimate ± 1.974]

The mean age of the sample was 25.95 years. The mean height of male subjects was found to be 164.05 cm. and this was higher than that of females which was 156.38cm.

The mean percutaneous length of tibia (x) was found to be 35.99 cm. for males and 33.83 cm for females.

A relationship between the percutaneous tibial length (x) and height (y) was established by calculating the correlation coefficient (ryx) which nearly approached + 1 both for males and females and it was concluded that height and percutaneous tibial length are highly correlated.

**Discussion:** It was deduced that the Trotter and Gleser's formula and Pan's formula closely correspond with the formulae used in this study for estimation of stature. Regression lines were drawn with 95% confidence limits for direct estimation of stature from the given tibial length and the regression coefficients were significant (p<0.05).

**Conclusion:**, The individuals with greater percutaneous tibial length have, as expected, a higher height.