**البحث السادس**

# Stature estimation using some hand variables by x- ray aid in Egyptians.

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**The Egyptian Journal of Forensic Sciences and Applied Toxicology, 2023, 23(3): 27–37.**

## Abstract

**Objectives:** Stature estimation from different hand variables is vital in identifying the deceased in forensic practice. This study aims to find out if there is a correlation between a person's height and their handbreadth, length, and other measurements taken with an X-ray.

**Methods:** A cross-sectional descriptive cohort study was conducted on 200 volunteers (100 males and 100 females) attending Fayoum University Hospital's radiology department from June 2021 to May 2022. The stature, hand length, and handbreadth of the left hand were measured. Finger bone length, metacarpophalangeal length, and distal phalanx length of the index, middle, ring, and little fingers were measured using X-ray films. The recorded data were analyzed by SPSS version 28.

**Results:** All the measured variables of the left hand were significantly higher in males than in females. Stature was positively correlated with all measured hand variables in both sexes. Handlength, ring finger, and distal phalanx length of the ring finger showed the highest determination coefficient (R2) and lowest standard error of estimate (SEE) by the linear regression model in males. However, in females, the handlength, index finger, and distal phalanx length of the index finger showed better values than other hand measurements by the linear regression model.

**Conclusions:** Multiple regression equations are better than single linear regression equations for predicting stature. This finding suggests that the accuracy of stature estimation would be greater among males than females.

**Keywords:** Egyptian; Finger bone length; Hand length; Hand breadth; Stature.