



## A35 Sex Estimation Using Relative Pubis Length

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After attending this presentation, attendees will: (1) better understand how to estimate sex using relative pubis length; (2) be informed regarding a method that provides statistical analysis to support previous literature describing the pubis as longer in females than in males; and, (3) realize the importance of utilizing a replicable pubis length measurement.

This presentation will impact the forensic science community by providing a method of sex estimation using the pubis that is not reliant on morphological features. This research adds to the already existing methods of sex estimation and provides a method developed on a modern sample.

Sex estimation is an integral part of the biological profile. Other aspects of the biological profile require the estimation of sex before their evaluation can be considered. Both age at death and stature use sex-specific regression formulas. Estimations of sex are most accurate after the individual has reached adulthood, due to the emergence of secondary sex characteristics.<sup>5</sup> The pubis bone is continually used in sex estimation based upon its identification as the best indicator of sex due to childbirth; however, there are discrepancies on how to measure the pubis.<sup>1</sup>

In this presentation, an index to determine relative pubis length is proposed, using “the nearest border of the acetabulum to the superior point of the pubic symphysis” for measurement of pubis length and the “distance from the most superior point on the iliac crest to the most inferior point on the ischial tuberosity” for measurement of os coxa height.<sup>2,3</sup> Relative pubis length is proposed as a sex estimation method in order to provide metric assistance to the assessment that the pubis is more “stretched” in females.<sup>4</sup> Four hundred eighty-nine individuals of known age at death, sex, and ancestry from the W.M. Bass Collection at the University of Tennessee were measured to determine relative pubis length. Two hundred seventeen females and 272 males make up the 489 individuals measured from the W.M. Bass Collection. Relative pubis length is an index, created by dividing pubis length by os coxae height. This information was then applied in an Analysis of Variance (ANOVA) to determine the statistical significance of relative pubis length and sex estimation. In preliminary results, there is a significant relationship between sex and relative pubis length ( $p=2.2 \times 10^{-16}$ ) and in a two-way ANOVA, the only significant relationship found was between sex and relative pubis length; all other factors were not significant (ancestry and age at death). Additional measurements were taken using the Hamann-Todd Collection to assess the effect of secular trends on relative pubis length. Five hundred nineteen individuals were measured from the Hamann-Todd Collection; this data is currently undergoing evaluation.

### Reference(s):

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## Relative Pubis Length, Sex Estimation, Pelvis

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