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Title:

Morphometric analysis of the humerus in an adult South African cadaveric sample

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Highlights

- Morphological variation of the humerus is evaluated in a South African sample
- Variation between ancestry groups is sufficient to distinguish even complex groups
- Sex estimation accuracy improves once considered in conjunction with ancestry

ABSTRACT

Recent studies using geometric morphometrics have shown that estimations of demographic parameters can be made using skeletal elements previously not thought useful for such purposes.

This study used geometric morphometrics to assess humeral morphological variation in an adult South African sample, and evaluated the accuracy of sex and ancestry estimations based on this variation.

Humeri of 1046 adult South African individuals (464 females, 582 males) were digitized. Data sets were rotated and scaled to a common centroid using Generalized Procrustes Analysis. Mean centroid sizes between groups were compared using parametric tests, while morphological variation was evaluated using multivariate analyses. Discriminant Function Analysis coupled with leave-one-

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