

[Submit an article](#)[Journal homepage](#)

29

Views

0

CrossRef  
citations to date

0

Altmetric

Research Article

# Assessing the accuracy of the anatomical method for stature estimation in White South African males

N. R. Loubser , M. A. Bidmos &amp; D. Brits

Received 22 Jun 2022, Accepted 09 Oct 2022, Published online: 30 Oct 2022

[Download citation](#) <https://doi.org/10.1080/00450618.2022.2136242>[Check for updates](#)[Full Article](#)[Figures & data](#)[References](#)[Citations](#)[Metrics](#)[Reprints & Permissions](#)[Get access](#)

## ABSTRACT

The anatomical method is considered the most accurate stature estimation method, however, research has concluded that the soft-tissue correction factors associated with this method may be sex- and population-specific. Therefore, this study aimed to evaluate the applicability of these soft-tissue correction factors for the estimation of stature in White South African males. Magnetic resonance imaging scans of 30 White South African male volunteers, between 21 and 59 years of age, were used to collect skeletal measurements of bones that contribute to total skeletal height. The soft-tissue correction factors within the literature were subsequently applied to estimate the living stature of each individual. Paired t-tests were used to compare the accuracies of these estimates of living stature to the measured heights of the participants. Living stature was significantly underestimated using the soft-tissue correction factors of Fully (1956; 6.14 cm), Raxter and colleagues (2006; 4.80 cm), and Brits and colleagues (2017; 0.96 cm), and significantly overestimated by Bidmos and Manger (2012; 9.65 cm). Cloete's (2017) equation overestimated stature by 0.65 cm, however, this was not significant. These results suggest population-specific soft-tissue correction factors associated with stature estimation and, therefore, the newly derived stature estimation equations should be used to estimate stature of White South African males.

**KEYWORDS:** [Forensic anthropology](#) [stature estimation](#) [anatomical method](#) [magnetic resonance imaging](#) [South Africa](#) [population data](#)

[Previous article](#)[View latest articles](#)[Next article](#)

### Log in via your institution

[Access through your institution](#)

### Log in to Taylor & Francis Online

[Log in](#)

### Restore content access

[Restore content access for purchases made as guest](#)

### Purchase options\*

[Save for later](#)

#### PDF download + Online access

- 48 hours access to article PDF & online version
- Article PDF can be downloaded
- Article PDF can be printed

**USD 55.00**[Add to cart](#)

#### Issue Purchase

- 30 days online access to complete issue
- Article PDFs can be downloaded
- Article PDFs can be printed

**USD 199.00**[Add to cart](#)

#### Purchase access via tokens

- Choose from packages of 10, 20, and 30 tokens
- Can use on articles across multiple libraries & subject collections
- Article PDFs can be downloaded & printed

**From USD 450.00**  
per package[Learn more](#)

\* Local tax will be added as applicable

## Acknowledgments

The authors give our utmost gratitude to the volunteers who participated in this study, and to the staff of the Department of Radiology, Dr T.J. Nel Inc., Wits-Donald Gordon Medical Centre; Dr M. Haagensen, Ms E. Bussy, Ms C. Gibbs, and Ms L. Benade. Thank you to Dr A. Spies for her assistance in assessing the inter-observer repeatability of this study. This work is based on research that was financially supported by the National Research Foundation (NRF) – through Thuthuka grants (80655/118149), as well as a Master's scholarship. Any opinions, findings, conclusions, and recommendations that were expressed throughout this study are solely those of the author(s), and therefore, the NRF does not accept liability thereof.

## Disclosure statement

No potential conflict of interest was reported by the author(s).

## Additional information

### Funding

This work was supported by the National Research Foundation [80655, 118149, MSc Master's scholarship].

## Browse journals by subject

[Back to top](#)[Area Studies](#)[Arts](#)[Behavioral Sciences](#)[Bioscience](#)[Built Environment](#)[Communication Studies](#)[Computer Science](#)[Earth Sciences](#)[Economics, Finance, Business & Industry](#)[Education](#)[Engineering & Technology](#)[Environment & Agriculture](#)[Environment and Sustainability](#)[Food Science & Technology](#)[Geography](#)[Global Development](#)[Health and Social Care](#)[Humanities](#)[Information Science](#)[Language & Literature](#)[Law](#)[Mathematics & Statistics](#)[Medicine, Dentistry, Nursing & Allied Health](#)[Museum and Heritage Studies](#)[Physical Sciences](#)[Politics & International Relations](#)[Social Sciences](#)[Sports and Leisure](#)[Tourism, Hospitality and Events](#)[Urban Studies](#)

### Information for

[Authors](#)[R&D professionals](#)[Editors](#)[Librarians](#)[Societies](#)

### Open access

[Overview](#)[Open journals](#)[Open Select](#)[Dove Medical Press](#)[F1000Research](#)

### Opportunities

[Reprints and e-prints](#)[Advertising solutions](#)[Accelerated publication](#)[Corporate access solutions](#)

### Help and information

[Help and contact](#)[Newsroom](#)[All journals](#)[Books](#)

### Keep up to date

Register to receive personalised research and resources by email

[Sign me up](#)