



# The Importance of Anatomical Knowledge for the Practice of Forensic Anthropology

## Ferreira-Pileggi BC\*

Faculdade de Odontologia de Piracicaba, Universidade Estadual de Campinas (UNICAMP),  
Brasil

Faculdades Integradas Einstein de Limeira (FIEL/ASLEC), Brasil

**\*Corresponding author:** Beatriz Carmona Ferreira Pileggi, Faculdade de Odontologia de Piracicaba, Universidade Estadual de Campinas (UNICAMP), Brasil; Email: biacarmonaf@gmail.com

**Keywords:** Anthropology; Human Anatomy; Forensic; Biological Profile

## Editorial

In the Forensic Anthropology practice, one of the objectives is to determine the biological profile of unidentified individuals, that is, to estimate height, age, sex, and ancestry from human remains [1,2]. To make this possible, the forensic anthropologist evaluates various anatomical accidents and morphological particularities of intact or fragmented individuals, which provides evidence that allows the determination of the biological profile and even their identification [1,3].

For sex estimation, the anatomical knowledge of the bones of the pelvis and the cranium is needed. Some of the anatomical features of the hip bones that can be evaluated to estimate sex are the ventral arch, the subpubic angle, the ischio-pubic branch, the shape of the lesser pelvis and the obturator foramen. As for the skull, the bone features commonly used to help determine sex are the glabella, the superciliary arch, the supraorbital margins, the mastoid processes, and the nuchal crest. When estimating height, long bones are used to carry out measurements, with the femur being the most frequently used bone. While for estimating ancestry, the skull is used, with a series of anatomical features being evaluated, such as the shape of the orbit, the pyriform aperture, and the nasal spine, and the radiohumeral and tibiofemoral indices can also be used. To estimate age, a series of tools can be used, as many body segments as possible should be used. Among the options, the evaluation of the dental pulp, the closure time of the epiphyses of the

long bones and the synostosis of the cranial sutures can be used.

Thus, it is evident the close relationship between Human Anatomy and Forensic Anthropology, and understanding human anatomy is fundamental to the practice of forensic anthropology [1-3]. Only with an appropriate Anatomical knowledge it is possible to recognize and analyze each small part of a bone, preventing human identification from being mistaken or inconclusive.

The Forensic Anthropology practice is continually developing and growing [1,2,4]. Advances in technology applied to this area have resulted in the creation and application of new tools and techniques, which improve and facilitate the routine of forensic anthropologists [1,4]. Technologies are being increasingly used, such as analyzes carried out in tomography scans and 3D models [5-7], three-dimensional geometric morphometric analysis [8], and artificial intelligence [9]. However, none of these technologies can be used in the best possible way if there is no prior anatomical knowledge. The new techniques and facilities that emerge with the evolution of this area of knowledge do not replace the mastery of human anatomy, as it is constantly required, including to work with these new analyzes and tools that are being applied.

It can be said that the study and understanding of Human Anatomy is of total relevance to the practice of forensic science. The dialogue between Forensic Anthropology and Human Anatomy allows for better conditions in forensic investigations and greater security in defining the biological profile and identifying unknown individuals.

## Editorial

Volume 9 Issue 2

Received Date: April 10, 2024

Published Date: May 15, 2024

DOI: 10.23880/ijfsc-16000383

## References

1. Rissech C (2021) The importance of human anatomy in forensic anthropology. *European Journal of Anatomy* 25(S2): 1-18.
2. Garg R, Gupta S, Mehra S, Parekh U (2024) Contribution of Anatomy in Forensic Age Evaluation: A Systematic Review. *Cureus* 16(2): e55080.
3. Jervas E (2017) Anatomy in forensics: applications and need for collaboration. *Forensic Research & Criminology International Journal* 5(1): 215-219.
4. Ubelaker DH, Cordero QR, Linton NF (2020) Recent research in Forensic Anthropology. *European Journal of anatomy* 24(3): 221-227.
5. Watanabe LNO, Rossi AC, Smith AL, Ferreira-Pileggi BC, Daruge Júnior E, et al. (2024) Three-dimensional characterization of zygomatic arch morphology and its relation to the articular eminence in a Brazilian population. *Eur J Anat* 28 (1): 63-75.
6. Garoufi N, Bertatos A, Chovalopoulou ME, Villa C (2020) Forensic sex estimation using the vertebrae: an evaluation on two European populations. *Int J Legal Med* 134(6): 2307-2318.
7. Ribeiro TMC, Freire AR, Araujo R, Costa ST, Ferreira BC, et al. (2021) Study of the Mandibular Canal as an Indicator for Sexual Dimorphism. *Journal of Morphological Sciences* 38: 282-286.
8. Baca K, Bridge B, Snow M (2022) Threedimensional geometric morphometric sex determination of the whole and modeled fragmentary human pubic bone. *PLoS ONE* 17(4): e0265754.
9. Simon S, Fischer B, Rinner A, Hummer A, Frank BJH, et al. (2023) Body height estimation from automated length measurements on standing long leg radiographs using artificial intelligence. *Scientific Reports* 13(1): 8504.