

# **TERMINOLOGIA ANATOMICA**

Second Edition

## **International Anatomical Terminology**

### **FIPAT**

The Federative International Programme for Anatomical Terminology  
A programme of the International Federation of Associations of Anatomists (IFAA)

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# Preface

This second edition of *Terminologia Anatomica* [TA] was developed from the first edition [1]. Reprints of the first edition were issued by mistake in 2011 as the “second edition”. TA has been expanded substantially in extent and comprehensiveness, with the inclusion of new terms that incorporate new, relevant terms in clinical use. The format is changed relative to that of the 1998 publication (see User Guide below). Like the first edition, TA2 is divided into sixteen chapters. These chapters have been grouped into five parts for convenience. The four-part identification code of the first edition, which was inconsistently used, has been replaced by a standard system of unique identification numbers.

The official FIPAT terms are in Latin. Although the English equivalent terms are provided, only the Latin terms should be used as the basis for creating lists of equivalent terms in other languages. The Latin terms have been reviewed by members of the FIPAT Latin Subcommittee. Members of the FIPAT Informatics Subcommittee created regular anatomical (RA) term rules for word form and order that simplify the Latin terms, put them into consistent forms and made them potentially machine-interpretable [2]. The Latin Subcommittee approved the RA term rules as recommendations, but not as requirements. The Gross and Clinical Anatomy Working Group reviewed changes suggested by RA term rules on a case-by-case basis, and often adopted them for the official Latin term.

Attention has also been given to the arrangement of entities in this terminology. The relationship between an entity and its “parent” in the hierarchy continues to be unspecified. Most links are “part\_of”, but some “is\_a” links remain. The majority of the links for arteries, veins and nerves are “branch\_of” or “tributary\_of”. Effort has been made to arrange entities in a logical and consistent manner, with minimal duplicate entries, e.g., all bones, skeletal cartilages, joints and noncardiac striated muscles are in Part 2.

The numbers of terms related to the teeth, brain and spinal cord were greatly increased in the first edition of TA relative to *Nomina Anatomica*. Many of these terms are beyond the needs of most biomedical scientists and medical practitioners, so new specialist anatomical terminologies are being developed for neuroscientists and clinical neuroscientists, and for orobiologists, dentists and oral surgeons – *Terminologia Neuroanatomica* (TNA) and *Terminologia Oroanatomica* (TOA). TNA was provisionally published in 2017 and is expected to be ratified as an official IFAA terminology at the 2019 General Assembly [3]. These developments parallel the earlier creation of a separate terminology for microscopic anatomy (*Nomina Histologica* [4], now *Terminologia Histologica* [5]).

The Gross and Clinical Anatomy Working Group (GCAWG) endeavored to preserve the solid foundation laid by *Terminologia Anatomica* (1998) while also rectifying errors, introducing terms for those that had been missing, and updating terms where the advance of science has resulted in alterations in terminology. Such is the case, notably, in the terminology of the fasciae, the heart, and the prostate and associated structures. The modifications and reconciliation of terms in this second edition is based upon sound scientific evidence and logic, and an approach that emphasized continuity and evolution rather than radical change and revolution. This final product represents a substantial advance in anatomical terminology that should be helpful to anatomists and clinicians alike.

## References

1. FCAT. 1998. *Terminologia Anatomica*. Stuttgart: Thieme.
2. Neumann PE, Baud R, Sprumont P. 2017. Human anatomy nomenclature rules for the computer age. *Clin Anat* 30:300-302.
3. FIPAT. 2017. *Terminologia Neuroanatomica*. FIPAT.library.dal.ca. Federative International Programme for Anatomical Terminology.
4. IANC. 1977. *Nomina Histologica*. In *Nomina Anatomica*, 4<sup>th</sup> Ed. Amsterdam: Excerpta Medica, pp. H1-H34.
5. FICAT. 2008. *Terminologia Histologica*. Philadelphia: Lippincott Williams & Wilkins.

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## **Academic**

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The working group would especially like to express its gratitude to Paul Neumann for his tremendous efforts in assisting the finalization and deployment of this second edition of Terminologia Anatomica online at Dalhousie University. His depth and breadth of knowledge of anatomy as well as Latin and Greek are reflected in the quality of this edition.

While the individuals acknowledged here gave expert advice, the final Terminology is the responsibility of FIPAT.

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# User Guide

In accordance with the decision at the Istanbul meeting of FIPAT (2015), and as with the other FIPAT terminologies, a new, 6-column format has been adopted. The six columns comprise the official Latin term, Latin synonym(s) where relevant, English (UK and US) terms and English synonym(s) where relevant. The final column includes related terms, eponyms, directional notes, and references to endnotes. The endnotes are placed in a separate section at the end of each Part.

Terms for members of right-left pairs are generally in the singular, with a generic term representing each member except where the members are not treated as mirror images. Plural terms are generally used for groups of related entities whether or not they are listed in the terminology. Parentheses are used to enclose terms for structures which are inconstant. Where a structure is sexually dimorphic, the female homolog is identified by ♀ and the male homolog by ♂. Sex-specific entities are also marked by these symbols.

Indenting and styles of heading are used to indicate the relations of terms to one another (see below).

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Term