



## Terminologia Anatomica'nın Topografik Olarak Yapılandırılması ve Doğru ve Tutarlı Kullanım Üzerindeki Potansiyel Etkileri

Topographically Structured Terminologia Anatomica and Its Potential Effects on Accurate and Consistent Usage

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**Abstract:** Terminologia Anatomica, the successor to Nomina Anatomica, has been the standard in anatomical terminology for more than a hundred years. This study aimed to present an example of the second edition of Terminologia Anatomica structured with a topographic approach and highlighted the importance of presenting Latin anatomical terminology within both regional and systematic anatomy hierarchies. Two researchers first determined which chapters the arm region is in, using the open-access online form of the second edition of Terminologia Anatomica as a guide. Then, they selected the clear terms related to the arm region from these chapters and listed them under the arm title. By comparing the listed terms with each other, it was discussed which terms should be included under the arm heading. There were 7 following chapters related to the arm in Terminologia Anatomica: Anatomia generalis (General anatomy), Ossa (Bones), Juncturae (Joints), Musculi (Muscles), Systema cardiovasculare (Cardiovascular system), Systema lymphoideum (Lymphoid system), and Systema nervosum (Nervous system). Furthermore, a total of 121 terms belonging to these sections were determined. Considering the current importance of the topographic approach both in human anatomy and in the clinic, we think that a topographically based Terminologia Anatomica suitable for the flow of these sciences can contribute to guiding the correct use of terminology and improving its accuracy.

**Keywords:** Terminologia anatomica, Topographic approach, Nomina anatomica, Arm

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**Öz:** Nomina Anatomica'nın ardılı olan Terminologia Anatomica, yüz yıldan fazla bir süredir anatomik terminolojide standart olmuştur. Bu çalışma, topografik bir yaklaşımla yapılandırılmış Terminologia Anatomica'nın ikinci baskısının bir örneğini sunmayı amaçlamış ve hem bölgesel hem de sistematik anatomi hiyerarşileri içinde Latince anatomik terminolojiyi sunmanın önemini vurgulamıştır. İki araştırmacı, ilk olarak, Terminologia Anatomica'nın ikinci baskısının açık erişimli çevrimiçi formunu bir rehber olarak kullanarak, kol bölgesinin hangi bölümlerde olduğunu belirledi. Daha sonra, bu bölümlerden kol bölgesiyle ilgili net terimleri seçti ve bunları kol başlığı altında listelediler. Listelenen terimler birbirleriyle karşılaştırılarak, kol başlığı altında hangi terimlerin yer alması gerektiği tartışıldı. Terminologia Anatomica'da kol ile ilgili 7 bölüm vardı: Anatomia generalis (Genel anatomi), Ossa (Kemikler), Juncturae (Eklem), Musculi (Kaslar), Systema cardiovasculare (Kardiyovasküler sistem), Systema lymphoideum (Lenfoid sistem) ve Systema nervosum (Sinir sistemi). Ayrıca, bu bölümlere ait toplam 121 terim belirlendi. Hem insan anatomisinde hem de klinikte topografik yaklaşımın günümüzdeki önemi göz önüne alındığında, bu bilimlerin akışına uygun topografik tabanlı bir Terminologia Anatomica'nın, doğru terminolojinin rehber olmasına ve daha doğru kullanılmasına katkıda bulunabileceğini düşünüyoruz.

**Anahtar Kelimeler:** Terminologia anatomica, Topografik yaklaşım, Nomina anatomica, Kol

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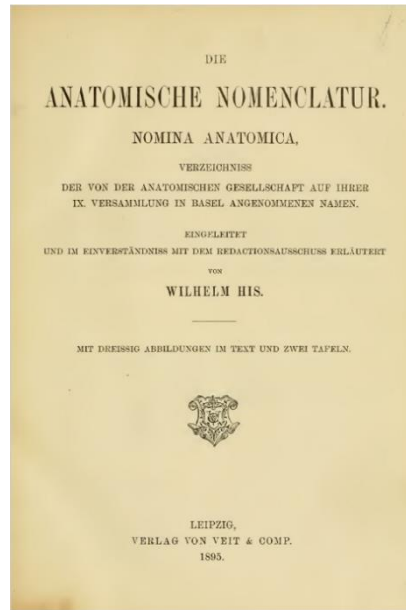
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## Introduction

As human anatomy, a fundamental science, can be considered a principle in all areas of medicine, its terminology communicates with other medical disciplines. The naming of body structures often dates back to ancient times, more than 2,500 years ago, around the 5th century BC (1, 2). At that time, Aristotle and Hippocrates named many Greek anatomical terms, and many more terms were introduced in the following centuries, a majority of which were derived from Latin (3).

Over the centuries, many terms have been accumulated to name various parts and structures of the human body. A list was prepared with the aim of creating an official standard anatomical vocabulary worldwide. This list, which became known as the Basiliensia Nomina Anatomica (BNA) (Figure 1), was declared by the Anatomische Gesellschaft (Society of German-speaking anatomists) in 1895 in Basel, Switzerland (4, 5, 6).

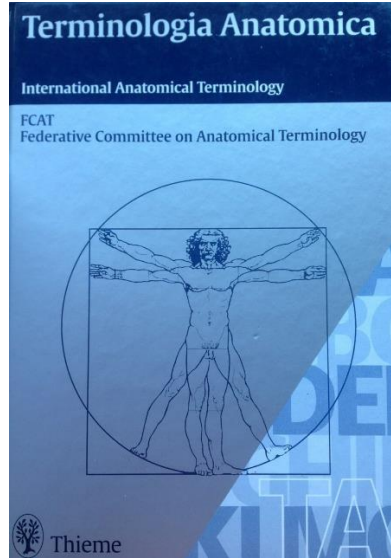


**Figure 1.** Front matter of the Basiliensia Nomina Anatomica (1895).

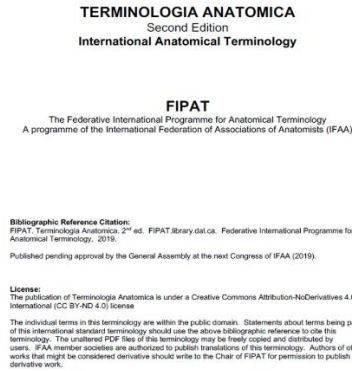
In 1933, the BNA was updated and named the Birmingham Revision. Only two years later, in 1935, the Jenaer or Jenenser Nomina Anatomica (JNA) was published (7). By 1955, the Parisiensia Nomina Anatomica emerged, later to be called Nomina Anatomica (NA). This was also the first edition of NA. In 1961, the second edition of NA was published, followed by the third edition in 1966. By 1977, the fourth edition of NA was released alongside Nomina Embryologica (NE) and Nomina Histologica (NH), marking a significant milestone in anatomical terminology. In 1983, the fifth edition of NA was combined with the second editions of NH and NE into a single volume. Finally, in 1989, the sixth and final edition of NA was published, bringing an era in the evolution of anatomical terminology to a close (7, 8). In the same year, the Federative Committee on Anatomical Terminology (FCAT) was established by the International Federation of Associations of Anatomists (IFAA). After years of meticulous work and dedicated efforts, the committee announced in 1997 the completion of Terminologia Anatomica (TA) (Figure 2). A year later, the work was published, opening the doors to a new era in anatomical terminology (8). Enhanced with the integration of new and related terms from clinical practice, the second and most comprehensive edition of Terminologia Anatomica (TA2) was published in 2019, marking a significant milestone in anatomical terminology (Figure 3) (9).

The various editions of NA could be described as a hybrid between regional and systematic anatomy approaches, with terms generally appearing only in one of the two hierarchies, with the majority (>90%) being listed by systems (10). Similarly, the first of the sixteen chapters of TA (both editions) contains Partes corporis humani and Regiones corporis humani, which are arranged topographically. Moreover, the 7th

(Cavitas thoracis) and 10th (Cavitas abdominopelvica) sections can be considered more aligned with a regional anatomy perspective rather than a systematic anatomy approach.



**Figure 2.** Front matter of the first edition of the Terminologia Anatomica (1998).



**Figure 3.** Front matter of the second edition of the Terminologia Anatomica (2019).

This study aimed to present a unique example of TA2 structured with a topographic approach specific to the arm region, highlighted the necessity of reorganizing TA2 based on regional anatomy, and emphasized the importance of presenting Latin anatomical terminology within both regional and systematic anatomy hierarchies.

### Materials and Methods

This study was conducted at Istanbul University, Istanbul Faculty of Medicine between August 10-September 15, 2020. The TA2 has been downloaded from its open-access of online address (11).

Two researchers (AÖ, OC), who have scientific studies in the field of anatomy and have at least 10 years of experience in the field, chose clear terms related to the region regarding to arm without causing any confusion. While choosing the terms, special attention was paid to the inclusion of words such as "arm", "humerus", and "brachium". Systems unrelated to the arm region were skipped (for example, Systema digestorium (Digestive system), Systema respiratorium (Respiratory system), etc.). Related terms are listed in the order of systems in TA2 (e.g. bone/bones first, then joints, etc.) Each main title is indicated in bold and subtitles in italic (Table 1).

**Table 1.** The sections related to arm and their terms.

<b>ANATOMIA GENERALIS</b>	<b>GENERAL ANATOMY</b>
<i>MEMBRUM SUPERIUS</i>	<i>UPPER LIMB</i>
Brachium	Arm
<i>REGIONES MEMBRI SUPERIORIS</i>	<i>REGIONS OF UPPER LIMB</i>
Regio brachialis	Brachial region
Regio anterior brachii	Anterior region of arm
Sulcus bicipitalis lateralis	Lateral bicipital groove
Sulcus bicipitalis medialis	Medial bicipital groove
Regio posterior brachii	Posterior region of arm
<b>OSSA</b>	<b>BONES</b>
<i>HUMERUS</i>	<i>HUMERUS</i>
Caput humeri	Head of humerus
Collum anatomicum humeri	Anatomical neck of humerus
Collum chirurgicum humeri	Surgical neck of humerus
Tuberculum majus	Greater tubercle
Tuberculum minus	Lesser tubercle
Sulcus intertubercularis	Intertubercular sulcus
Crista tuberculi majoris	Crest of greater tubercle
Crista tuberculi minoris	Crest of lesser tubercle
Corpus humeri	Body of humerus
Facies anteromedialis humeri	Anteromedial surface of humerus
Margo anterior humeri	Anterior border of humerus
Facies anterolateralis humeri	Anterolateral surface of humerus
Tuberositas deltoidea	Deltoid tuberosity
Margo lateralis humeri	Lateral border of humerus
Crista supracondylaris lateralis	Lateral supracondylar ridge
Facies posterior humeri	Posterior surface of humerus
Sulcus nervi radialis	Radial groove
Margo medialis humeri	Medial border of humerus
Crista supracondylaris medialis	Medial supracondylar ridge
(Processus supracondylaris)	(Supracondylar process)
Condylus humeri	Condyle of humerus
Capitulum humeri	Capitulum of humerus
Trochlea humeri	Trochlea of humerus
Fossa olecrani	Olecranon fossa
Fossa coronoidea	Coronoid fossa
Fossa radialis	Radial fossa
Epicondylus medialis humeri	Medial epicondyle of humerus
Sulcus nervi ulnaris	Groove for ulnar nerve
Epicondylus lateralis humeri	Lateral epicondyle of humerus
<b>JUNCTURAE</b>	<b>JOINTS</b>
<i>ARTICULATIO GLENOHUMERALIS</i>	<i>GLENOHUMERAL JOINT</i>
Labrum glenoideum	Glenoid labrum
Ligamenta glenohumeralia	Glenohumeral ligaments
Ligamentum glenohumerale superius	Superior glenohumeral ligament
Ligamentum glenohumerale medium	Middle glenohumeral ligament
Ligamentum glenohumerale inferius	Inferior glenohumeral ligament
Ligamentum coracohumerale	Coracohumeral ligament
Ligamentum transversum humeri	Transverse humeral ligament
<b>MUSCULI</b>	<b>MUSCLES</b>
<i>MUSCULI SCAPULOHUMERALES</i>	<i>SCAPULOHUMERAL MUSCLES</i>
Musculus deltoideus	Deltoid muscle
Pars claviculae musculus deltoidei	Clavicular part of deltoid muscle
Pars acromialis musculus deltoidei	Acromial part of deltoid muscle
Pars spinalis scapularis musculus deltoidei	Scapular spinal part of deltoid muscle
Musculi cuffiae musculotendineae	Rotator cuff muscles
Musculus supraspinatus	Supraspinatus muscle
Musculus infraspinatus	Infraspinatus muscle
Musculus teres minor	Teres minor muscle
Musculus subscapularis	Subscapularis muscle

**Table 1.** The sections related to arm and their terms (continued).

<b>ANATOMIA GENERALIS</b>	<b>GENERAL ANATOMY</b>
Cuffia musculotendinea	Musculotendinous cuff
Musculus teres major	Teres major muscle
*Musculus latissimus dorsi	Latissimus dorsi muscle
*Musculus pectoralis major	Pectoralis major muscle
<i>COMPARTIMENTUM ANTERIUS BRACHII</i>	<i>ANTERIOR COMPARTMENT OF ARM</i>
Musculus biceps brachii	Biceps brachii muscle
Caput longum musculi bicipitis brachii	Long head of biceps brachii
Caput breve musculi bicipitis brachii	Short head of biceps brachii
Aponeurosis bicipitalis	Bicipital aponeurosis
Musculus coracobrachialis	Coracobrachialis muscle
Musculus brachialis	Brachialis muscle
<i>COMPARTIMENTUM POSTERIUS BRACHII</i>	<i>POSTERIOR COMPARTMENT OF ARM</i>
Musculus triceps brachii	Triceps brachii muscle
Caput longum musculi tricipitis brachii	Long head of triceps brachii
Caput laterale musculi tricipitis brachii	Lateral head of triceps brachii
Caput mediale musculi tricipitis brachii	Medial head of triceps brachii
Musculus articularis cubiti	Articularis cubiti muscle
<i>FASCIAE MEMBRI SUPERIORIS</i>	<i>FASCIA OF UPPER LIMB</i>
Fascia brachii	Brachial fascia
Septum intermusculare mediale brachii	Medial intermuscular septum of arm
Septum intermusculare laterale brachii	Lateral intermuscular septum of arm
<i>BURSAE MEMBRI SUPERIORIS</i>	<i>BURSAE OF UPPER LIMB</i>
Bursa subdeltoidea	Subdeltoid bursa
(Bursa musculi coracobrachialis)	(Coracobrachial bursa)
Bursa subtendinea musculi infraspinati	Subtendinous bursa of infraspinatus muscle
Bursa subtendinea musculi subscapularis	Subtendinous bursa of subscapularis muscle
Bursa subtendinea musculi teretis Majoris	Subtendinous bursa of teres major muscle
Bursa subtendinea musculi latissimi dorsi	Subtendinous bursa of latissimus dorsi muscle
Bursa subtendinea musculi tricipitis Brachii	Subtendinous bursa of triceps brachii muscle
Bursa bicipitoradialis	Bicipitoradial bursa
<i>VAGINAE TENDINUM MEMBRI SUPERIORIS</i>	<i>TENDON SHEATHS OF UPPER LIMB</i>
Vagina tendinis intertubercularis	Intertubercular tendon sheath
<b>SYSTEMA CARDIOVASCULARE</b>	<b>CARDIOVASCULAR SYSTEM</b>
<i>ARTERIA BRACHIALIS</i>	<i>BRACHIAL ARTERY</i>
(Arteria brachialis superficialis)	(Superficial brachial artery)
Arteria profunda brachii	Deep brachial artery
Arteriae nutriciae humeri	Nutrient arteries of humerus
Ramus deltoideus arteriae profundae brachii	Deltoid branch of deep brachial artery
Arteria collateralis media	Middle collateral artery
Arteria collateralis radialis	Radial collateral artery
Arteria collateralis ulnaris superior	Superior ulnar collateral artery
Arteria collateralis ulnaris inferior	Inferior ulnar collateral artery
**Arteria circumflexa anterior humeri	Anterior circumflex humeral artery
**Arteria circumflexa posterior humeri	Posterior circumflex humeral artery
<i>VENA AXILLARIS</i>	<i>AXILLARY VEIN</i>
Vena cephalica	Cephalic vein
(Vena cephalica accessoria)	(Accessory cephalic vein)
**Vena circumflexa posterior humeri	Posterior circumflex humeral vein
**Vena circumflexa anterior humeri	Anterior circumflex humeral vein
Vena basilica	Basilic vein
Venae brachiales	Brachial veins
<b>SYSTEMA LYMPHOIDEUM</b>	<b>LYMPHOID SYSTEM</b>
Nodi axillares laterales (humerales)	Lateral axillary nodes
Nodi brachiales	Brachial nodes
Nodi supratrochleares	Supratrochlear nodes

**Table 1.** The sections related to arm and their terms (continued).

<b>ANATOMIA GENERALIS</b>	<b>GENERAL ANATOMY</b>
<b>SYSTEMA NERVOSUM</b>	<b>NERVOUS SYSTEM</b>
<i>PLEXUS BRACHIALIS</i>	<i>BRACHIAL PLEXUS</i>
Nervus musculocutaneus	Musculocutaneous nerve
Rami musculares nervi musculocutanei	Muscular branches of musculocutaneous nerve
Nervus cutaneus lateralis antebrachii	Lateral antebrachial cutaneous nerve
Nervus radialis	Radial nerve
Nervus cutaneus posterior brachii	Posterior brachial cutaneous nerve
Nervus cutaneus lateralis inferior brachii	Inferior lateral brachial cutaneous nerve
Nervus cutaneus posterior antebrachii	Posterior antebrachial cutaneous nerve
Rami musculares nervi radialis	Muscular branches of radial nerve
Nervus cutaneus lateralis superior brachii	Superior lateral brachial cutaneous nerve
Nervus cutaneus medialis brachii	Medial brachial cutaneous nerve
Nervus cutaneus medialis antebrachii	Medial antebrachial cutaneous nerve

Each main title is indicated in bold and subtitles in italic.

Subtitles in italic were accepted as a term according to Terminologia Anatomica.

\* Since the tendons of these two muscles are located on the humerus, they were included in the arm region.

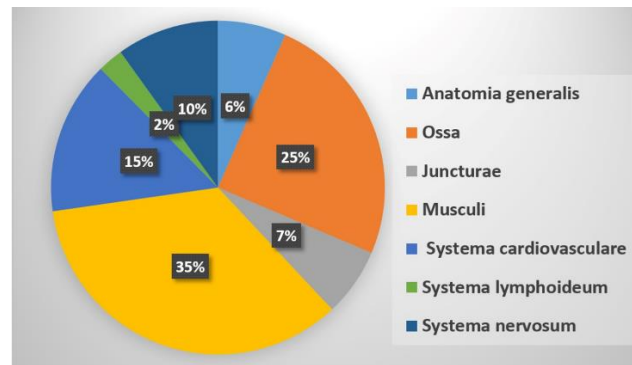
\*\* These vessels were included in the arm region as they surround the surgical neck of humerus.

### Statistical Analysis

For the evaluation and analysis of data, IBM Statistical Package for the Social Sciences (SPSS) Statistics 21.0 was used. Descriptive statistics of categorical variables were revealed with frequency and percentage.

### Results

The sections related to "arm", "humerus" and "brachium" are found respectively as; Anatomia generalis (General anatomy), Ossa (Bones), Juncturae (Joints), Musculi (Muscles) Systema cardiovasculare (Cardiovascular system), Systema lymphoideum (Lymphoid system) and Systema nervosum (Nervous system). It was seen that there were 121 terms in total under these 7 chapters (Table 1). Bursae, which are related to the terms in the muscle section and the name, were included in the relevant section. Figure 4 shows the percentage distribution of sections.



**Figure 4.** Percentage distribution of sections. The number of terms under the 'Musculi' title is the highest, and the number of terms under the 'Systema lymphoideum' title is the lowest.

### Discussion

The fact that FIPAT is open to any suggestions, discussions, or comments, different recommendations, and discussions should be ignited between anatomists and clinicians (also among themselves) to ensure that TA is the standard in communication not only between anatomists themselves but also between anatomists and clinicians (12).

Since human anatomy is a fundamental science that is quite important in all fields of medicine, its standard terminology is needed to ensure clear and precise communication for the following subjects: health education, the practice of medicine, and scientific research and publications (1, 13, 14). The Latin anatomical nomenclature has been the norm for 130 years when it comes to the identification of any part or section in

the human body and is also recognized and acknowledged by the authorities (12). TA, the last version of the Latin anatomical nomenclature, aims to fulfill some basic functions, such as 1) accuracy in language use, 2) preservation of the well-being of the patient, 3) elimination of redundancy, and 4) remaining up-to-date among its users (5, 13, 14).

Revisions up until now in the Latin anatomical nomenclature have been made mostly based on systemic anatomy structure; therefore, we would like to propose and discuss a novel approach, which is a topographically structured TA2 that could be an alternative to the existing TA2 for the following reasons:

- 1) Cadaver dissections, which are indispensable for Human Anatomy education, are often done with a topographical practice/approach.
- 2) Activities such as presentations and seminars used in Specialization and postgraduate education in the field of Human Anatomy are frequently topographical approaches.
- 3) Common usage of the topographic approach in scientific research and publications in the field of anatomy.
- 4) Topographic structuring of many of the contemporary, well-known, and widely used anatomy atlases.
- 5) Clinicians, especially surgeons, with a topographic approach in education, practice, scientific research, and publications.

Topographic anatomy, which is a sub-field of Anatomy, is highly complex, directly related to the clinic, and serves as a bridge for the transition from basic medicine to clinical practice and research (2, 15). It divides the human body into several regions and usually examines each region from the outside to the inside (2, 16, 17). This method is commonly used in anatomical dissections (16). In dissection, the relevant region is usually removed layer by layer from the superficial to the deep (skin-subcutaneous tissue, muscles, etc.). What is tried to reveal here is the structures in each layer and to observe the relationship of these structures with each other and with neighboring structures (2). For example, topographic dissection of the arm region in assistant training. However, there is no up-to-date and official TA where the assistant can find the topographic anatomy terms of the region to be dissected together and have clear and easy access to the correct terminology. A topographically based TA2 can be prepared and used directly in anatomy dissections, and the correct use of TA2 may be encouraged with a topographic TA2.

The topography of a particular region can often be requested in scientific activities such as seminars and presentations, which are an important part of resident and postgraduate education in the field of Anatomy. For example, fossa axillaris, fossa infratemporalis, etc. The current TA2 may not respond fully to training in such topographic approaches, and therefore, inadequacies may arise in its use. A possible Topographical TA2 to be prepared can directly serve to use the terminology clearly and correctly in such training. Similarly, scientific studies and publications in the field of anatomy can be encountered frequently with a topographic approach. It tries to give the location, condition, qualitative and quantitative characteristics of the targeted structure in a particular region compared to other structures. For example, topographic anatomy of the laryngeal nerve, topographic anatomy of the masseteric nerve, etc. It can be predicted that scientific research in the field of anatomy, which directly references topographic TA2, may be adapted to anatomical terminology.

When the existing contemporary well-known anatomical textbooks are examined, it is seen that many of them are topographically structured. For example, Gray's Anatomy (18), the most used anatomy textbook in medical education, is written in a topographical style. Similarly, Regional Anatomy Illustrated (19), Gross Anatomy in the Practice of Medicine (20), Last's Anatomy (21), Clinical Anatomy (22) and Clinically Oriented Anatomy (16) also appear topographically.

Some of the frequently used Anatomy atlases; Gray's Anatomy Atlas (23), Sobotta Atlas of Human Anatomy (24), Atlas of Human Anatomy (25), Color Atlas of Anatomy, A Photographic Study of the Human Body (26), and also some of the common dissection books such as Grant's Dissector (27), and Gray's Dissection Guide for Human Anatomy (28) are seen to be topographically structured. However, there is no TA that is structured in the same topographical style that these books can directly refer to. The

topographically based contemporary Anatomy books mentioned above are quantitatively not very compatible with standard TA (29). TA guidelines should be taken into account when writing a topographic Anatomy textbook (1, 29). However, if there is no TA that matches the style of the book that is being written, in a topographic structure, looking at the anatomical terms embedded in different systems one by one and checking the compliance of the terms with the TA may not only waste time but also discourage the author from using the correct terminology, or at least It can reduce the motivation of the author. If you are an academic in a clinical branch (especially surgery), this problem may be more obvious.

It is a well-known fact that time is a commodity that most academics don't have a lot of. A clinician running from one patient to another, from one operation to another, does not have time to deal with terminology, but they can use the formal style of anatomical terminology if needed (30). Topographic Anatomy is very important for clinicians (especially surgeons) (15, 31).

The importance of topographic anatomy, especially in surgical fields, is that clinical practices are generally carried out topographically, their training is with topographic approaches and their use of topographic anatomy in scientific research and publications. However, the topographic approach has become an important part of professional life, and there is no topographic TA2 that clinicians can directly access without spending valuable time in academic activities such as scientific research, publications and books.

Clinicians and clinical anatomists have shortcomings in the usage of TA, and this problem is discussed in many articles (1, 30). For example, the North American Clinical Anatomists (AACAs) do not use TA's preferred terms (1). Even more interesting is that many of these anatomists, experienced associate professors, and professors have written or contributed to an anatomy textbook (1). Using the official terminology of TA may not only be about fast access to it but also about reaching it in the desired form. Therefore, clinicians and anatomists should be allowed to have a topographically structured TA2 parallel to the topographic anatomy, which is an important part of their lives.

The arm region is mainly an important anatomical region for radiologists, cardiovascular, plastic and orthopedic surgeons (12). Since this region is the target of many surgical and interventional procedures, the anatomy of the region should be well-known in order to be safe and successful (32, 33). Our aim was to prepare an example of the topographical configuration of TA2. The arm region was preferred due to its relative ease of topographic dissection and the simpler and clearer structures it contains. Although there are 16 sections in the current TA2, only 7 of these sections are related to the arm region. A total of 121 terms from 7 sections in the current TA2, which were agreed by the aforementioned two researchers regarding the topographic anatomy of the arm region, were brought together. Latin and English equivalents of the terms were used as a guide. To avoid any confusion, the systemic order in the current TA2 was not altered. This method can be followed in order to preserve the relationship of the possible topographic TA2 to be prepared in the future with the existing systemic TA2.

It was noted here some of the problems we encountered during these processes and hope that these items, which we wrote in a topographically based TA2, would be useful in the future.

First, it is unclear to which region or regions some terms belong. For example, while pectoralis major and latissimus dorsi muscles originate from the torso, their attachments are in the humerus (18). Second, topographic anatomy is seen as Cinderella, as it occupies a little in TA among the subfields of Anatomy. Although some topographic terms have been added to TA (34, 35), some topographic terms are missing in the arm region (5, 12), and these are, unfortunately, still in the last edition (9). For example, "ligamentum coracoglenoidale", "trigonum humerotricipitale" or "foramen humerotricipitale" (5, 12). Third, there are some undefined terms related to superficial anatomy. For example, linea interepicondylaris (12). To solve these problems;

FIPAT should:

- Clearly determine in which topographic region or regions the terms be placed in,
- Eliminate the topographic term deficiency,
- Add the superficial anatomy terms closely related to the topographic approach to TA2.



### Limitations of this study

The terms in a limited area, such as the arm region, were combined, so 7 of the 16 sections in the current TA2 were related to the arm region. The research group could be wider and their views could be taken. In addition to the Latin and English equivalents of the terms, Latin synonymous, American English and English synonymous, and other parts could be given as in the original.

### Conclusion and Suggestions

As a result, this article emphasizes that in order to increase the use of the official terms of TA2, not only the inconsistencies and mistakes in the existing TA2 but also different suggestions and perspectives on the structure of TA2 (in a systemic manner) should be discussed. Considering the current importance of the topographic approach both in human anatomy and in the clinic, we think that a topographically based TA2 suitable for the flow of these sciences can contribute to the correct terminology being a guide and to be used more accurately.

**Ethical Statement:** This study does not report a study (experimental, observational, clinical, or drug studies) involving human or animal participants, their data, or biological materials. Therefore, ethical approval is not required for the study. In the preparation process of this study, scientific and ethical principles, research principles in the Declaration of Helsinki were adhered to, and all the studies used were mentioned in the bibliography.

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