

HELP ON TA98 LISTS

This document presents a complete description of the TA98 Lists. A TA98 list is a selected subset of the original publication of Terminologia Anatomica 1998. This document explains how to access any list of this type, how to navigate between lists from a general to a specific scope and vice-versa, what is their content and how to access the related external sources of information.

This help file is the chapter 5 of the general Help book of the TA website.

Contents

5.1	Introduction	1
5.2	Overview	2
5.3	Definition of the TA98 Lists	3
5.4	Translations of TA98	4
5.5	Presentation	4
5.6	Help on content	5
5.7	Item description	6
5.8	Navigation	7
5.9	TA98 Trace Page	9
5.10	TA98 Trace Notes section	10
5.11	TA98 Statistics page	11
5.12	Log of updates	14
5.13	Credentials	14

5.1 Introduction

There is a number of external references in the present document. They will be active in the presence of an active internet connection: the referred files will open in the actual default web browser. The external references are always linking to the most recent version of a file. Therefore, an external reference may be desynchronized from a particular TA98 List, because they are prepared at different dates. The user must be aware of this circumstance.

The screenshot displays the structure of a TA98 List for the term **dura mater**. The interface is divided into several sections, each highlighted with a blue box and labeled on the right:

- Header:** Contains the title "dura mater" and a lightbulb icon.
- Navigation:** Includes a "LIST NAVIGATION" section with links for Home page, Level 2, Current level, Subsidiary language with Latin, and Non Latin primary language.
- TA98 list:** A table with three columns: TID, Short official term, and Short English equivalent. It lists 12 items related to the dura mater, including various parts like falx cerebri, tentorium cerebelli, and incisura tentorii.
- Signature:** A section containing metadata such as Type of list, List Unit Identifier, Subtotals, Proper units, Number of units, and Signature.
- Footer:** Contains the date "Date: 27.02.2022" and the copyright information "FEDERATIVE INTERNATIONAL PROGRAMME FOR ANATOMICAL TERMINOLOGY Creative Commons Attribution-ShareAlike 4.0 International (CC BY-SA 4.0)".

Below the main interface, there are two red boxes labeled "External references" and "Anatomical terms in Latin and a modern language".

Figure 5.1: Structure of a **TA98 List** into three sections, on **LA: dura mater**. On this view, all sections are presented open, but depending on the context, any section may be presented closed and can be open on user action.

5.2 Overview

A typical TA98 List is presented in figure 5.1. It is made of 3 sections plus the header and the footer highlighted in blue boxes. The TA98 list itself is divided into two blocks highlighted in red boxes: external references and the list content, made of terms in Latin and in a modern language.

The global architecture of a list is rather straightforward: any TA98 List is made of five parts:

- a header with the title of the list, that is always the name of the first entity,
- a navigation section for interlist navigation and language selection,
- the indented partonomic list itself in two blocs, presented in two languages,
- a signature section attesting of the own personality of the list,
- a footer with the date of publication.

The list itself is made of four columns, grouped into two blocs of columns (from left to right):

- two columns of pointers to external or internal references,
- two columns of terms in Latin and in a modern vernacular.

The two columns of terms are a left column using the main language of this page and a right column using the subsidiary language of this page. The presentation text of the page is the interface language. All languages are selected at the convenience of the user. They are remembered on top of the page in the header introductive text.

5.3 Definition of the TA98 Lists

Let remember the general definition: *a Partonomic List is a list in the domain of anatomy, which top entity is a relevant body part and together with other partonomic lists is making a significant total partition of the domain.* This is the affirmation that it is a list based on the partonomic hierarchy, that is the preferred hierarchy of anatomists for the representation of their domain. The *partof* relation partly reproduces the idea of the atlas of anatomy: a collection of concepts illustrated by their parts.

But this ideal point of view is only partially true for TA98 lists, because this terminology was an approximation regarding the hierarchy of terms. Indeed, the TA98 hierarchy does not always express the *part_of* relation: in a few situation, we can observe *isa* relations, possibly others. This does not preterit the significant value of TA98 at the time of its publication, but the TNA revision (and other revisions of TA98) must be more formal to this respect, in order to be compliant in the world of modern terminologies, as advocated for example by the OBO Foundry.

Examples of erroneous *part_of* relations are given now. *LA:ganglion sympathicum isa LA:ganglion autonomicum*: in no way it can be considered as a *part_of*. The parts of TA98 named *nomina generalia* present numerous *isa* relations. They have been suppressed in the TNA and are naturally replaced by the taxonomy. The relation *contained_in* must never be confused with the *part_of* relation: *LA:radiatio corporis callosi part_of LA:corpus callosum* is evidently wrong. *LA:radiatio corporis callosi* is missplaced and has been relocalized in the section on white matter. Indeed, the *corpus callosum* is an immaterial space, not a material entity, despite its misleading name!

The TA98 lists can be organized in such a way that allows navigation between lists and sub-lists, the most often when pursuing the goal of moving from a global list about an entire system to a detailed list representing a specific part of it. This is implemented through the definition of levels in the TA98 lists, from A1 to A4, the highest values corresponding the more global lists. A list at any level provides automatically links to all other levels when they exist.

In addition, all lists are available in different combinations of the languages of the terminology. Navigation between languages is consequently possible at any moment. The different languages are resulting from translations possibly realized by national anatomical societies, and are made available here.

Language	Description	Copyrights
Latin	This is the reference language of TA98.	IFAA.
English	English equivalents from original publication.	IFAA.
French	A private translation.	To IFAA.
Spanish	Translation by Wikipedia.	Wikiprojects
Russian	The Kolesnikov translation	Version 2006 by L. L. Kolesnikova

Table 5.1: Origin of the TA98 translations. The Wikiprojects is named: Wikiproyecto:Anatomía Humana

5.4 Translations of TA98

The different TA98 translations are summarized in table 5.1. This presentation is limited to the translations which are in use on the website of the \mathbf{T}_{logy} . There are certainly other valuable translations available on a free basis elsewhere. Dependent on manpower resources, the adjunct of other languages to the website is an open statement.

The authentic source version of Terminologia Anatomica, published in 1998, is a book by Thieme [FCAT, 1998].

[FCAT, 1998]

The original book of Terminologia Anatomica is the unique authentic reference of this terminology. Any later revision are not officially recognized by IFAA. This book presents the Latin terms and their English equivalents.

The French translation is a private translation, not validated by a national anatomical federation, manually translated from the Latin official terms. This version being permanently used on the website of the \mathbf{T}_{logy} , is has progressively acquired a relevant quality. It is available in the public domain on the same conditions than the terminology itself.

The Spanish translation is a Wikiproject available on [Wikipedia](#). See this reference for its usage and copyrights conditions.

The Russian translation is the so-call Kolesnikov translation, done by L. L. Kolesnikova for the Russian Federation of Anatomy, which kindly made it available to the website authors for a free usage. See the Russian Federation for its usage and copyrights conditions.

5.5 Presentation

The TA98 lists concern the domain of anatomy at large as presented in the 1998 publication. It covers the subdomain of gross anatomy. The 16 chapters of the original files are available.

A specific subpart is TNA or Terminologia NeuroAnatomica. The neuroanatomy is presented in 4 parts, issued from the original publication in 2017. The specific counterparts in TA98 are now documented:

- Chapter 14, first part: the EN: *Central Nervous System* (CNS),

- Chapter 14, second part: the EN: *Peripheral Nervous System* (PNS),
- Chapter 15: the EN: *Sense Organs*,
- Chapter 12 (partial): the Cerebral Vessels.

All 16 chapters of the source TA98 are available in Latin and English. The French, Spanish and Russian versions are progressively completed.

The chapters (level A1) are divided into subchapters (level A2), sections (level A3) and subsections (level A4). See the example 5.2.

Each list or sublist is available in Latin plus one of the 3 modern languages. They are English, French and Spanish. Russian is presently only partially presented. Latin can be either primary or subsidiary language. When Latin is the primary language, English is the interface language. When a modern language is selected as primary language, it is also selected as interface language. The language selection is permanent as soon as it is set up, but it can be changed at any moment.

5.6 Help on content

All TA98 Lists present the same structure: a partonomic list under the top entity given in title, extracted from the Terminologia Anatomica database, figuring the original publication of TA. The sum of all TA98 list covers the entire domain of the terminology.

As documented elsewhere, a list is a granular object of the terminology, It has a number of properties like its head unit, its size, its hierarchical structure, etc. When adding a single entity to a given list, one create a new different list. In the source database, the properties of a list are controlled by the attachment of a signature of the list, that depends on these properties. The signature guaranties the integrity of the list. When a signature is changed, it means that the content of the list has been updated.

The partonomic hierarchy is formally complex. The *part_of* relation is intuitively easy to understand, but in reality it is subject to several interpretations in different context. When we restrict ourselves to the domain of anatomy, we define the *part_of* relation as a true *matter_of* relation, meaning that *A part_of B* if *all the matter of A is also matter of B*. Then we extend this definition to immaterial entities, that are common in anatomy, like volumes, surfaces, lines and points. We also have extended the *part_of* relation to include the frequently used *branch_of* relation. In reality we have a somewhat restrictive *part_of* relation valid in anatomy. This relation applies to physical entities exclusively. The *part_of* relation is transitive. See elsewhere in the documentation of the terminology for additional information.

The TA98 terminology was not totally correct about the *part_of* relation. Some relations are *isa* relations in the parts named *nomina generalia*, which are indeed an expression of the taxonomy of the domain. Other are simply wrong: LA: *fissura longitudinalis cerebri* is not a *part_of* LA: *hemispherium cerebri*. Such discrepancies does not influence too much the reading of the terminology, but they are not precise and possibly ambiguous. The present version attempts to correct these weaknesses.

In the TA98 list, the partonomic hierarchy is made visible by the indentation of the entities in the presentation. A single indentation means a *part_of* relation. When an entity in the list has 3 children, the first one appears immediately below with a single indentation, followed by all the entities of its descendant hierarchy with additional indentations. Then appears the second child with the same indentation as the first child, followed by its descendant hierarchy. Then finally the third child and its descendant hierarchy. This universal presentation is applied everywhere in the list.

The two left columns of the TA98 list are hyperlinks, referencing the entity and the unit of this line in two contexts, where they are relevant. Some positions may be empty, meaning that the entity has not been found there. The two external references are:

5105	14.1.01.201
5106	14.1.01.202
5107	14.1.01.203

2 references

- the Terminologia Anatomica, version 1998 (TA98), which is the reference terminology of human anatomy, published by IFAA in 1998 and available as a website since 2013,
- the Unit Page in the present version of the terminology on the website.

5.7 Item description

All items of a TA98 list are reviewed thereafter. The order of presentation is top to bottom, left to right.

Header introduction text This text helps to distinguish this list from other lists or pages. It shows the level of the list. In addition, it remembers the actual main, subsidiary and interface languages as used for the page.

Title of the TA98 List This is the preferred term of the top entity of the list in the main language. This text comes together with a bubble containing the translation of the title in the subsidiary language.

Help bulb This icon call the present help file.

Title of the navigation section

Home page This is an hyperlink driving to the home page for the TA98 lists. From there any TA98 list or related pages can be reached.

Different levels Up to four lines presenting links to different TA98 lists containing the present list. The levels are presented from the more general (A1) to the more specific (A4).

Language switches Two lines with all links to the different combinations of languages, shifting directly to the new combination for the same content, as long it is not changed again by the user.

Title of section TA98 partonomy list

Legends of the columns There are 4 columns in a TA98 list. The first 2 columns are hyperlinks to respectively TA98 and the website of the revised terminology. The last 2 columns are the terms denoting an entity in Latin and the selected modern language of the list.

TA98 link Each entity in the list has an old 11-digit TA98 identifier, which has been later abandoned. This identifier is acting as an hyperlink to the representative website of TA98 (<https://ifaa.unifr.ch/Public/EntryPage/HomePublicNew.html>), created in 2013. This website will open on the selected entity. The hyperlinks remains active when the list is locally stored or exchanged between users.

The correspondence between TNA, TAH and TA98 is guaranteed to be exact, because all these terminologies use common identifiers, as first published on the TA98 website since 2013.

Unit Page link Each entity in the list is a constitutive part of a unit, which identifier is displayed, acting as link to its Unit Page. This identifier is a blind 5-digit integer value and is guaranteed invariable and not reusable for the entire life of the terminology.

Temporary: the availability of the Unit Pages may be restricted until a complete validation is performed. The same is true of the hyperlinks on the Unit Page itself. The number of Unit pages (value 2022) is approximately 15500, making with 8 combinations of languages a total of 124000 pages.

Latin terms The Latin terms is the collection, semi-column separated, of the main term and up to 3 synonyms of the Latin versions of the terms of this entity.

Modern language terms The modern language terms are similar to Latin for the selected modern language. In English, the terms are in UK English. When the US English is different, a black triangle is displayed.

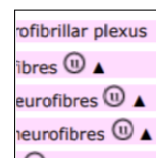
Title of signature section See elsewhere the description of the signature section, that is common to all types of lists.

Number of lines As the last line of the Partonomic list (partonomy list section) is given the total number of lines in the list (not including the line of titles of columns, and not included the present line).

Date of publication Each Partonomic List is built at a specific point in time. The date figures this moment. The reader must check this date when comparing data from different lists or pages, because different dates may be subjects to different versions.

IFAA reference The IFAA signature acts as an hyperlink to the official IFAA website (<http://ifaa.net>).

Copyrights information The two links on this last line of the page are pointing to copyright information available on the Creative Common website (<https://creativecommons.org>).



The UK/US flag

5.8 Navigation

The figure 5.2 presents a complete example of navigation at 4 levels. This example is using the A4 list of *LA: **nervus mandibularis***. In the navigation section, one can see the references to the top level, the levels 2 and 3, and the current A4 level.

♥ LIST NAVIGATION

Home page

Top level

Level 2

Level 3

Current level

Subsidiary language with Latin

Non Latin primary language

TA98 partonomy

systema nervosum periphericum

nervi craniales

nervus trigeminus [V]

nervus mandibularis [Vc; V3]

English

French

Spanish

Russian

English

French

Spanish

Russian

♥ TA98 PARTONOMY LIST

TID	Short official term	Short English equivalent
6430 14.2.01.064	nervus mandibularis [Vc; V3]	mandibular nerve; mandibular division [Vc; V3]
6431 14.2.01.065	ramus meningeus; nervus spinosus	meningeal branch
6432 14.2.01.066	nervus pterygoideus medialis	nerve to medial pterygoid
6433 14.2.01.067	radix sensoria; rami ganglionares nervi mandibularis	sensory root; ganglionic branches of mandibular nerve
6434 14.2.01.068	nervus musculi tensoris veli palatini	nerve to tensor veli palatini
6435 14.2.01.069	nervus musculi tensoris tympani	nerve to tensor tympani
6436 14.2.01.070	nervus massetericus	masseteric nerve

Figure 5.2: Structure of a **TA98 list** into four levels, on *LA:nervus mandibularis*

The four levels for TA98 are numbered A1 to A4. A similar partonomic partition is done for the actual version of the terminology numbered from P1 to P4. In addition, the taxonomic lists are also subdivided into sublists numbered from T1 to T4.

The organization in levels is as natural as possible, but the goal is to split the whole TA at the top level into more than 500 detailed lists at the A4 level, ideally of a similar size. This constrain may make the splitting somewhat arbitrary. Here is a presentation of the four levels:

Top level A1: The top level is a chapter of TA. Of course, such a large list cannot be easily displayed, therefore it is replaced by a short version, where the development of the partonomy is stopped each time a term at the level A2 is encountered.

Level A2: This level corresponds to the subchapters at level A2 of each chapter of the terminology, in particular to all the segments of the neuraxis in the TNA. They are presented in two forms: a short list limited to the terms up to the next level A3 and a extended list with all the terms.

Level A3: This level corresponds to subdivisions at level A3 of a list at level A2. They are presented in two forms: a short list limited to the terms up to the next level A4 and a extended list with all the terms.

Current level or A4: This level is a fake proposal, because no navigation is available on it. This level is necessarily one less than its above level: it may be A3 or A4. At this level, we find only the extended form of the lists.

Navigation from the actual list is always bidirectional: to an upper level or to a lower level. The navigation towards an upper level is performed in the navigation section. The user simply selects either a short list or an extended list between the proposals, or the top level.

The navigation towards a lower level is performed inside the list itself, in the left column, on an entity marked at some level A2, A3 or A4, if any is present.



















TA98 TRACE				
TA98 Code	TA98 preferred term and synonyms	Type	UID	TAH official term
a14.1.01.201	arachnoidea mater	Single	5105	arachnoidea 
a14.1.01.202	spatium subarachnoideum; spatium leptomeningeum	Deleted	5106	
a14.1.01.203	liquor cerebrospinalis	Single	5107	liquor cerebrospinalis 
a14.1.01.204	arachnoidea mater cranialis; arachnoidea mater encephali	Single	5108	arachnoidea cranialis 
a14.1.01.205	granulationes arachnoideae	Set	5109	granulatio arachnoidea 
a14.1.01.206	trabeculae arachnoideae	Set	5110	trabecula arachnoidea 
a14.1.01.207	cisternae subarachnoideae	Mset	5111	cisterna subarachnoidea cranialis 
a14.1.01.208	cisterna cerebellomedullaris posterior; cisterna magna	Single	5112	cisterna cerebellomedullaris posterior 
a14.1.01.209	cisterna cerebellomedullaris lateralis	Pair	5113	cisterna cerebellomedullaris lateralis 
a14.1.01.210	cisterna fossae lateralis cerebri	Pair	5114	cisterna fossae lateralis cerebri 
a14.1.01.211	cisterna chiasmatica	Single	5115	cisterna chiasmatica 
a14.1.01.212	cisterna interpeduncularis	Single	5116	cisterna interpeduncularis 
a14.1.01.213	cisterna ambiens	Pair	5117	cisterna ambiens 
a14.1.01.214	cisterna pericallosa	Single	5118	cisterna pericallosa 
a14.1.01.215	cisterna pontocerebellaris	Pair	5119	cisterna cerebellopontina 
a14.1.01.216	cisterna laminae terminalis	Single	5120	cisterna laminae terminalis 
a14.1.01.217	cisterna quadrigeminalis; cisterna venae magnae cerebri	Single	5121	cisterna quadrigeminalis 
a14.1.01.218	arachnoidea mater spinalis	Single	5122	arachnoidea spinalis 
a14.1.01.219	cisterna lumbalis	Single	5123	cisterna lumbalis 
TA98 entities: 18			TAH entities: 33	
TA98 TRACE NOTES				
UID	Libelle of note			
5106	This entity has been deleted and replaced by two new entities spatium subarachnoideum craniale and spatium subarachnoideum spinale .			

Figure 5.3: A typical Trace page, showing the TA98 partonomy in the left column and the TAH corresponding entities in the right column.

The selection TA98 partonomy means to leave the navigation in the lists and to return to the home page for TA98 partonomic lists.

The move from one language selection to another is also proposed in the navigation section. Such a move becomes permanent until a next move is performed.

5.9 TA98 Trace Page

The TA98 Trace Page is a page showing the transition from TA98 entities to their position in the current version of the terminology. Any TA98 entity may be redirected elsewhere in the current terminology TAH. Its name may have been transformed, and it could have been deleted. Showing the new entity in the current terminology allows to display the new position. An example of a

TA98 Trace section is given in Figure 5.3.

The Trace TA98 Page is listed according to the TA98 order. The identifier UID, already assigned to TA98 since the TA98 on-line publication of 2013 ([here](#)), is the actual identifier of the entity in the current terminology. Clicking on this link brings the actual Unit Page with its entire Navigation section, giving access to the partonomic or taxonomic lists, on user request. Clicking the TA98 11-digit code gives also access to the TA98 on-line version, directly to the referenced entity.

The TAH current terminology has introduced a unit type, because no such typing was present in TA98. The types of units to which a TA98 entity may be assigned, are the following:

- Single: the unit in the current terminology to which the TA98 entity is transferred is a single unit.
- Pair: the TA98 entity is transferred to a pair unit made of four entities, which are all listed.
- Set: the entity of TA98 corresponds to composite unit made of two entities.
- Pset: the entity of TA98 corresponds to paired composite unit made of five entities, which are all listed.
- Deleted: the TA98 entity is not transferred to the current terminology, but in fact it is not deleted but stored and in such a position that it can never be reused, as well as its identifier. A deletion is necessary when a TA98 entity is replaced with a unit having a somewhat different definition.
- Taxonomic: the TA98 entity is not transferred, but it is a component of the taxonomy of the current terminology and it is maintained as such, despite no taxonomy has ever been present in TA98.

All the entities of the current terminology are displayed on the contrary of the TA98 presentation. Typically a paired unit has four associated entities: the TA98 *LA:cavum trigeminale* with UID = 5100 is a pair entity, giving in the new terminology *LA:cavum trigeminale*, *LA:cavum trigeminale (par)*, *LA:cavum trigeminale sinistrum* and *LA:cavum trigeminale dextrum*. Each individual entity can be reached through the link to the Unit Page.

The TA98 deleted entities are not deleted in reality, but they have no equivalent in the new terminology. The note section below is intended to document all deletions.


The plural entities of TA98 are redirected to a set or pset unit in the new terminology, which generic name is necessarily at singular. From this name the set name is recomputed giving the initial plural as seen in TA98.

The TA98 Trace Page is displayed using its main language. The subsidiary language is used in bubbles attached to all entity names.

5.10 TA98 Trace Notes section

The TA98 Trace page has an additional section displaying notes for commenting some transfers of TA98 entities to an unexpected target unit of the current

Statistics Page, version 98, Latin



anatomia generalis

TA partial code	Hierarchy title	Items	Refs
01	Anatomia generalis	261	0
01.0	Nomina generalia	47	0
01.0.00	Nomina generalia	47	0
01.1	Partes corporis humani	53	0
01.1.00	Partes corporis humani	53	0
01.2	Plana, lineae et regiones	161	0
01.2.00	Plana et lineae	23	0
01.2.01	Regiones capitales	21	0
01.2.02	Regiones cervicales	12	0
01.2.03	Regiones thoracicae anteriores et laterales	10	0
01.2.04	Regiones abdominales	7	0
01.2.05	Regiones dorsales	10	0
01.2.06	Regio perinealis	3	0
01.2.07	Regiones membri superioris	33	0
01.2.08	Regiones membri inferioris	42	0

Entries: 15 Subchapters: 3 Sections: 11 Date: 03.05.2022

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Figure 5.4: A typical Statistics page for the TA98 terminology, showing here the chapter 1 of TA98 on general anatomy.

terminology. In particular, all deleted entities of TA98 are usually accompanied by a specific note.

In the section displaying the trace list, any TA98 code may be displayed with a down arrow on its right, indicating that a note is present in the note section. The note can be recovered by the unit identifier.

5.11 TA98 Statistics page

The TA98 Statistics page displays a simple list of statistical values about a chapter of TA98 or a summary of the whole TA98 terminology. This page is made of a header, a four columns body and a footer, as it can be seen in figure 5.4.

The different rubrics of this page are described thereafter:

- **TA partial code**
These are the leftmost characters of the 11-digit TA98 code, that are counted on this line of the table.
- **Hierarchy title**
The title of this line, issued from the TA98 hierarchy.
- **Items**
The number of anatomical entities found for this line. The possible titles without code in the original edition of TA98 are not counted there.
- **Refs**
The number of references found for this line. A reference is an entity located elsewhere in the TA98 hierarchy but just referenced here. It is counted in the number of items.

- Entries
The number of lines of this table.
- Subchapters
The number of subchapters in this chapter (number of 4-digit codes).
- Sections
The number of sections in this chapter (number of 7-digit codes).
- Date
The date of creation of this page or the date of the last update.

These pages have been created in 2013 and have been left unchanged since that moment, except a few errors having been corrected. They are the basic count of the 7444 items of TA98.

Bibliography

[FCAT, 1998] FCAT (1998). Terminologia anatomica. *Thieme Stuttgart - New York*.

5.12 Log of updates

23 Aug 2023 References added for the TA98 translations

10 Jan 2023 Light revision and update of the text.

11 Mar 2022 Introduction of the TA98 trace page.

1 Mar 2022 Creation of the file.

5.13 Credentials

This document is part of the help system accompanying the website on Terminologia Anatomica. It expresses the vision of the authors of the terminology about its content and its form of presentation. Despite it is as exact as possible, close to the reality of the database of the terminology and the surrounding software, approximations, errors and ambiguities are possible and should be considered as independent of their willingness and intents.

Identified comments about the content of the website and its presentation are welcome. An appropriate answer will be given when pertinent.

Authentic URL of this file: <https://ifaa.unifr.ch/Public/TNAEntryPage/help/HelpTA98List.pdf>