

Embase

Indexing Explained

An explanatory guide to the indexing policy for Embase
2009

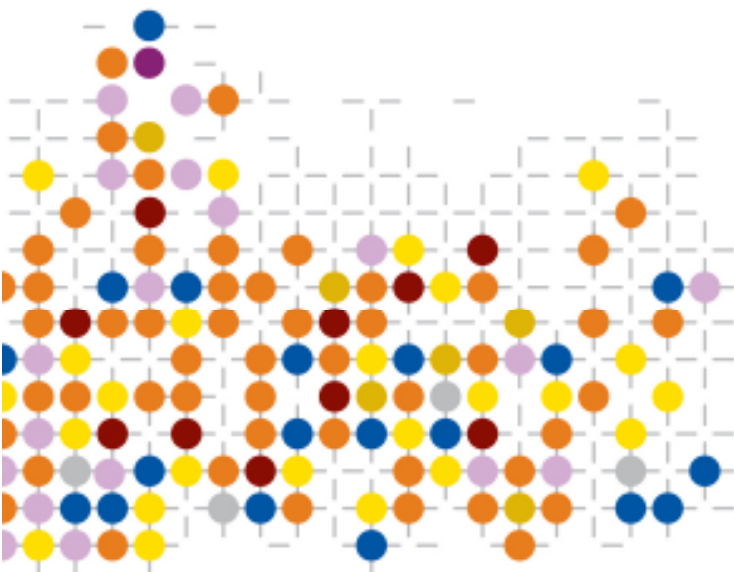


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1. Introduction

This document provides you with some background information on Embase, especially on the indexing policy for Embase titles. It is not meant to be a practical search guide focused on a particular interface, but it will help you in formulating your search queries and knowing which results you can expect when performing your search. In other words, not *How to search?* but *What to search?*

2. Scope

Embase is the most comprehensive and authoritative online source of biomedical answers.

With Embase:

- You are guided to *the* most comprehensive and relevant results from the drug and drug related literature
- Areas related to your research are intuitively laid out, enabling new discovery, informed decision making and the tracking of drugs through the literature
- You can find specific drug information without having to read full text

Embase holds over 20 million indexed records from more than 7,000 journals from over 80 countries. The Embase journals include all of Medline as well as 1,800 biomedical journals not currently covered by Medline. This indexing guide will focus on the indexing policy for Embase titles only.

Topics covered in Embase are:

- Drug research, pharmacology, pharmacy, pharmacoeconomics, pharmaceuticals and toxicology
- Human medicine (clinical and experimental)
- Basic biological research
- Health policy and management
- Public, occupational and environmental health
- Substance dependence and abuse
- Psychiatry
- Forensic science
- Biomedical engineering and instrumentation

Almost 80% of the records in Embase contain author-written abstracts.

In Embase, the following item types are defined:

Article	Original research or opinion
Conference paper	Report of data presented at a conference or symposium, including summaries of conferences. These do not include conference abstracts
Editorial	Item summarizing one or more articles in the same issue or providing editorial news of a more general or informative nature
Erratum	Item reporting an error, correction or retraction of a previously published paper
Letter	Letter to or correspondence with the editor
Note	Item defined in the journal as a note, also including discussions and commentary
Review	Significant review of original research, usually with an extensive bibliography
Short survey	Short or mini-review of original research; usually shorter and with a less extensive bibliography than a review

For the purpose of this document, we shall use the term 'article' to indicate all the above item types.

3. Indexing for Embase

3.1. Purpose of indexing

The purpose of indexing for Embase is to enable highly consistent and comprehensive retrieval of biomedical information contained in the database. Without indexing, searching for information would be limited to free text searching in title and abstract only. The added value of an index is therefore:

- Information from the entire article is covered by index terms
- Indexing is done by using controlled terms resulting in a consistent coverage of concepts that are expressed in many different ways in the literature
- Indexing is done according to well-defined guidelines resulting in a highly consistent product

Search applications

Navelbine and *vinorelbine* are two drug names used in the literature for one and the same compound. A free text search would require searching for both drug names in order to get all records. By using the Embase index, searching for just one drug name (*navelbine*) suffices to retrieve all records in which this drug is discussed.

3.2. Indexing process

Indexing for Embase is a manual process based on the full text of an article. It is done by specially trained indexers who all have a biomedical background. The indexer reads an article and identifies the relevant concepts in the article. These concepts are translated

into Emtree¹ index terms (*descriptors*). Normally, the Embase index is available within 10 working days after publication of an article.

3.3. Quality control

An important aspect of indexing for Embase is quality control. The quality is constantly monitored in the following way:

- Validation during indexing: the indexer is automatically warned if a term is indexed in the wrong field or if a term cannot be found in Emtree
- Validation before import into the Elsevier in-house database: all terms are checked again against Emtree and an error message is generated if any incorrect terms are found
- Sample checks on special topics: a sample of Embase records is taken and analyzed for the indexing of a special topic, for instance adverse drug reactions. Systematic index errors are thus spotted and feedback is given to the indexers. These sample checks are performed regularly for all topics covered in Embase.

4. The Embase index

4.1. Embase descriptor types

The following types of descriptors can be identified in the Embase index:

- medical descriptors
- drug descriptors
- drug trade names
- drug manufacturers
- device trade names
- device manufacturers
- clinical trial numbers
- molecular sequence numbers
- CAS registry numbers

Section 4.3 of this document will discuss each type of descriptor.

4.2. Major/minor descriptors

After reading the article the indexer's task is to ensure that every relevant concept in the article is identified and covered by a descriptor. Descriptors can be given more weight by assigning them as *major* terms when they are the particular focus of the article or as *minor* when the concept is merely mentioned. Obviously concepts that occur in the title or the abstract are a good indicator of the main focus of an article. Title or abstract

¹ For more information about Emtree and how to use this thesaurus, please read: Emtree – The Life Science Thesaurus, Elsevier Pharma Development Group, January 2009, version 8.0.

concepts will therefore often be assigned the corresponding descriptor as a major index term.

Search applications:

- If you only want the most relevant records on a particular subject, then limit your search to a major descriptor only.
- If you want to further narrow down your search by limiting it to a certain context, combine your search with one or more minor descriptors via a boolean AND.
- If you want to make sure you retrieve all records in which a particular subject is discussed, search for both major and minor descriptor.

4.3. Descriptors

The descriptors for Embase are chosen from Emtree (see Section 3.2).

4.3.1. Medical descriptors

Medical descriptors are, simply put, all descriptors that are not drug terms. So not only diseases, anatomical concepts, biochemical techniques, physiological functions etc. are medical descriptors, but also for instance health care concepts, geographical areas and organisms are called medical descriptors. All subjects that are relevant to the article are covered by (medical) descriptors. These will most often include those subjects mentioned in title and/or abstract, but also topics discussed elsewhere in the article.

4.3.2. Check tags

A special group of medical descriptors is formed by the *check tags* (also called *key descriptors*). They are used to describe things like the item type, study type and study population. Check tags have so-called scope notes. A scope note is a definition of the way the indexer should assign the index term.

Because check tags are essential tools for accurate retrieval, care is taken that they are very consistently indexed. Also, check tags differ from 'normal' medical descriptors in that, whereas for most normal descriptors the term "suggests itself" after reading the article, for check tags the order is reversed. The indexer focuses on a check tag and determines whether the article falls within the scope of this check tag. If the answer is "yes", then the check tag is indexed. This results in a highly consistent use. Appendix 1 contains a list of all check tags used in Embase, with their scope notes.

Search applications:

Check tags form an excellent tool to refine your searches. For instance, if you are looking for information about randomized controlled trials on a specific drug, you search for this drug (e.g. as major descriptor) and limit your search results by combining them with a search on the check tag *randomized controlled trial*.

4.3.3. Drug descriptors

Drug descriptors, as already implied by the name, are index terms used for drugs and chemicals. These include therapeutic drugs, but also e.g. laboratory chemicals, endogenous compounds, environmental chemicals, etc. All drugs are listed in Emtree facet D.

Real drugs. The indexing policy for drug descriptors is somewhat stricter than for medical descriptors. A distinction is made between 'real' drugs and other drug terms. Real drugs are compounds, factors or preparations that are in clinical use, or have a potential clinical use, as therapeutic, palliative, prophylactic or diagnostic agent. Real drugs are indexed in depth. This means that *all* real drugs mentioned in the article are indexed (either as a major or minor descriptor), even if they are only of minor relevance to the article.

Drug group names. Drug group names (for instance *antineoplastic agent*) mentioned in title and/or abstract are always indexed; drug group names mentioned elsewhere in the article are only indexed if the group as a whole is discussed.

Other drug terms. Drug terms other than real drugs or group names follow the same indexing policy as medical terms: they are indexed whenever relevant to the article.

4.3.4. Subheadings

Subheadings are Emtree terms that are used as concept modifiers. We distinguish *disease subheadings* and *drug subheadings*. Subheadings, like check tags, have scope notes. Subheadings can also be used as medical descriptors, but please note that the scope notes refer to their use as subheading only, not to their use as descriptors. An overview of all disease and drug subheadings, with their scope notes, is given in Appendix 2.

Disease subheadings can only be added to those medical terms that describe a disease (Emtree Facet C2 – C7 and F3), for instance *infection*. They are not added to general medical descriptors like techniques, physiological parameters or organisms. Disease subheadings are used whenever applicable according to their scope notes.

The use of *drug subheadings* is somewhat less straightforward than the use of disease subheadings:

- The subheadings *drug toxicity* and *endogenous compound* can potentially be added to all drug terms. The other subheadings, including the routes of drug administration, can only be added to *real drugs*.
- The subheadings *drug therapy*, *adverse drug reaction* and *endogenous compound* and the routes of drug administration are used whenever applicable. For the other subheadings to be added to a drug term a certain emphasis on the concept covered by the subheading is required.

Some subheadings require extra attention:

- *Drug therapy* is used both as drug and as disease subheading.
- The drug subheading *adverse drug reaction* and the disease subheading *side effect* both refer to adverse effects caused by a particular drug. The indexing of adverse effects will be discussed later in more detail.
- The drug subheading *pharmacoeconomics* is closely related to the disease subheading *disease management*.

- The *drug subheading* clinical trial is used for clinical trials on drugs only. The *check tag* clinical trial is not limited to trials on drugs, but can also be used for medical interventions other than drug therapy.
- Although the specific routes of drug administration are indexed whenever applicable, the subheading *drug administration* is only used when the route of drug administration is a significant aspect.

Search applications

Subheadings are very useful in refining your search. Examples:

- Search for articles discussing adverse effects of a particular drug by searching for this drug with the subheading *adverse drug reaction*.
- If you are looking for factors causing a specific disease, search for this disease with the subheading *etiology*.
- To find reports on clinical trials in which your drug of interest is compared to a competitor drug, search for your drug with the subheadings *clinical trial* and *drug comparison* (combined with a boolean AND).

4.3.5. Adverse drug reactions

Whenever an adverse effect is reported for a drug, this is indexed as follows:

- the drug is indexed with the drug subheading *adverse drug reaction*
- the reported adverse effect is indexed with the disease subheading *side effect*

Example:

cimetidine*adverse drug reaction
constipation*side effect

For the indexing of adverse effects, the following rules apply:

- The adverse effect is always indexed, whether reported as severe or not. Indexing of an adverse effect as a major descriptor does not imply that the effect is reported as severe. It only means that the reported adverse effect is a main topic of the article.
- If a specific adverse effect is explicitly looked for but not found, this adverse effect is still indexed. The reason for this is that indexing the adverse effect indicates that the article contains information about this particular side effect, namely that the side effect was expected to occur but was not found.
 - Example: in an article discussing a drug that is notorious for blood toxicity, it is explicitly stated that this effect was looked for but not found. For this article, *blood toxicity* will be indexed as an adverse effect for this drug.
- The disease subheading *side effect* can only be added to disease terms. If an adverse effect is reported that cannot be covered by a disease term, it is indexed as a non-disease medical term and in addition the disease term *side effect* is indexed to

which the disease subheading *side effect* is added. For instance, if *weight gain* is reported as adverse effect of risperidone, this is indexed as follows:

risperidone*adverse drug reaction
weight gain
side effect*side effect

- If an article only reports adverse effects in general (without mentioning any specific adverse effect), this is reflected by indexing the medical descriptor *unspecified side effect* with the disease subheading *side effect*.
- If an author clearly states that no adverse effects were found, the term *absence of side effects* with the disease subheading *side effect* is indexed.
- The use of the drug subheading *adverse drug reaction* and the disease subheading *side effect* is limited to therapeutic doses in humans only. For adverse effects reported in animals, the drug subheading *drug toxicity* is used and the disease term covering the adverse effect is indexed as a medical descriptor, but *without* the disease subheading *side effect*. See also definitions of the corresponding subheadings in Appendix 3.

4.3.6. Drug trade names and manufacturer names

For all *real* drugs (see above), the trade names as mentioned in the original article are indexed in the corresponding field. In Embase, descriptors indexed as trade names are either 'true' trade names (registered trademarks) or laboratory codes.

For real drugs, the drug manufacturer as mentioned in the article (either in combination with the trade name or alone) is indexed as well. Please note that designations of legal entities (e.g. Co., Comp., GmbH, Inc.) at the end of the manufacturer name are left out.

4.3.7. Medical devices

Medical devices are defined broadly as equipment, reagents or systems intended for use in healthcare and, more specifically, in the diagnosis, prevention, treatment, cure or mitigation of disease in humans, animals or animal models. These include:

- Patient-related equipment such as prostheses, infusion systems and contraceptive devices
- Laboratory-related equipment such as analyzers and centrifuges
- Diagnostic test systems such as kits and culture media
- In vitro reagents when used in healthcare applications
- Computer software used in healthcare

Excluded are contrast media and substances defined for Embase as real drugs. Medical devices are indexed if significant information on the device is given in the article. The apparatus, equipment etc. is indexed as a medical descriptor. If a trade name and/or manufacturer name is given, then this is indexed in the corresponding field.

4.3.8. Clinical trial numbers

Clinical trial numbers are the numbers under which a clinical trial is registered at one of the following three databases: ClinicalTrials.Gov, Current Controlled Trials and the

European Clinical Trials Database (EudraCT). The clinical trial number is indexed whenever mentioned in the article. Typical examples of clinical trial numbers are: NCT00582244 (for ClinicalTrials.Gov), ISRCTN26791028 (for Current Controlled Trials) and 2006-000016-25 (for EudraCT). Clinical trial numbers have been indexed for Embase since 2007.

Search applications

If you want to find articles discussing a clinical trial on a particular drug and finding the details of that trial in one of clinical trial databases, you can search for the drug with the subheading *clinical trial* and limit your search to those articles for which clinical trial numbers have been indexed.

4.3.9. Molecular sequence numbers

Molecular sequence numbers are the accession numbers under which nucleic acid or amino acid sequences can be found in their respective databanks (Genbank, PIR and SWISSPROT). Molecular sequence numbers mentioned in an article are always indexed for Embase. Newly submitted sequences are indexed as major descriptors, whereas referred sequences are indexed as minor descriptors. The repository name, the accession number and the weighting are indexed. How molecular sequence numbers can be searched and how they are displayed in the record depends on the Embase platform used.

Search applications

If you want to find articles in which the amino acid sequence of a protein is discussed, you can perform a search for this protein, for instance as a major descriptor, with addition of the drug subheading *endogenous compound*, and limit your search results to those records containing molecular sequence numbers.

4.3.10. CAS Registry Numbers

The Chemical Abstracts Service (CAS) Registry Numbers are indexed for all drug descriptors, together with the corresponding drug name. As some derivatives (like hydrate, hydrochloride) are listed under the same Emtree preferred term, more than one CAS number may be given for one drug term. For instance, for *amantadine* the CAS number for amantadine itself (768-94-5) as well as that for amantadine hydrochloride (665-66-7) is indexed.

4.4. Candidate terms

Whenever in an article a concept is discussed that cannot be covered by an existing Emtree term (either medical or drug), a new term may be proposed by the indexer. These new terms are called *candidate terms*. Candidate terms are evaluated annually for inclusion in Emtree. In the Embase descriptor field, candidate terms are covered by so-called *umbrella* terms. These are often broader Emtree terms that ensure that the record will not be missed when a search on this broader term is performed. For instance, for an article discussing a new antivirus agent, this new drug will be indexed, together with the broader term *antivirus agent*. Performing an explosion search² on *antivirus agent*

² For more information on explosion searches, see *Emtree – The Life Science Thesaurus*, Elsevier Pharma Development Group, January 2009, version 8.0.

gives you, among others, the record with the new drug. Before a drug candidate term is incorporated into Emtree, no relation with the CAS Registry Number is present. Therefore, articles for which a candidate drug term is indexed will not contain the corresponding CAS registry number of that drug.

Many new drugs first appear in the literature with their laboratory code and later with their chemical name. Only after a drug has been launched onto the market, a generic name and trade name(s) are added. In Emtree the generic name normally becomes the preferred term then. However, for older articles, only the laboratory code or the chemical name is indexed. The only way to replace these old names by the generic name is by backposting all data. This is, however, a huge operation and is only performed every so many years. In order to find older records mentioning a particular drug, you could extend your search with searching for all synonyms, including the laboratory codes and chemical names, in the descriptor field. Please make sure not to use any mapping functionality!

Example:

generic name: rimonabant (Emtree preferred term since January 2005)

laboratory code: sr 141716

chemical name, e.g.: 5 (4 chlorophenyl) 1 (2,4 dichlorophenyl) 4 methyl n (1 piperidyl) 1h pyrazole 3 carboxamide

In order to retrieve articles indexed before January 2005, search for laboratory code, chemical names and generic name.

4.5. Embase section headings

In addition to adding descriptors to the article, the indexer also assigns each article to an Embase *section heading* or *classification*, such as *Cancer* or *Surgery*. A complete list of Embase section headings can be found in Appendix 3. Each article is assigned to at least one section heading. Normally, an article gets assigned to not more than five or six section headings.

Search applications

If you are looking for information on AIDS in the context of public health/epidemiology, you can narrow down your search on *AIDS* (possibly as major term; see later) by limiting your results to Embase section heading 17 (*Public health, social medicine and epidemiology*)

4.6. Original versus non-original publications

In Embase, original as well as non-original literature is covered. Original literature typically includes the item type *article*, whereas the most important non-original item types are *review* and *short survey*. The indexing policy for original and non-original articles is slightly different.

Original articles. Only original information is indexed. Information taken from other publications (e.g. background information given in the Introduction or results from other studies mentioned in the Discussion) is not indexed.

Non-original articles. Only topics that are substantially discussed are indexed. Drug-related information, however, is always indexed thoroughly. The check tags *human*, *nonhuman*, *clinical trial*, *meta analysis* and *systematic review* are indexed whenever the definition applies. The remaining check tags are only indexed if they are the main topic of the article.

Appendix 1. Check tags

Check tags

Descriptor

Scope Note

Human study types

human	used for clinical articles, studies on humans as experimental subjects, and studies on human tissue, cells or cell components; not used for articles on economics, management, organization etc.; used for both original and non-original articles
normal human	original study on normal humans or normal (non-diseased) human tissue. (See also <i>human experiment</i>)
major clinical study	original article reporting clinical work with more than 50 patients. (Before 1987, defined as 'significant' clinical studies)
clinical article	original article reporting clinical work with 5-50 patients. (Before 1987, defined as 'less significant' clinical studies)
case report	original article reporting clinical work with less than 5 patients
human experiment	original article reporting a non-clinical experiment on humans (e.g. psychological tests and pharmacokinetic studies); the study subjects are not patients or at least not studied as patients. (See also <i>normal human</i>)
human tissue	original study on normal or diseased human tissue. (Before 1983, also used for human experiments)
human cell	original study on normal or diseased human cells

Animal study types

nonhuman	used for articles on nonhuman organisms (animals, bacteria, viruses, plants etc.) or on tissue, cells or cell components from such organisms; used for both original and non-original articles. (Before 1987, used for all articles not indexed with <i>human</i>)
animal experiment	original study using whole animals. (Before 1983, also used for experiments on other nonhuman organisms, including plants)
animal tissue	original study on normal or diseased animal tissue
animal cell	original study on normal or diseased animal cells
animal model	animal model of disease. (Before 1983 this concept was indexed with <i>biological model</i>)

Sex and age

male	used for original articles that mention male humans or animals as study subjects or as the source of studied tissue, cells or cell components; used for non-original articles only if the concept is a main topic of the article
female	used for original articles that mention female humans or animals as study subjects or as the source of studied tissue,

embryo	cells or cell components; used for non-original articles only if the concept is a main topic of the article age indicator for humans or animals; in humans, the first trimester after conception; in original articles age of study subjects or source of studied tissue etc.; used for non-original articles only if the concept is a main topic of the article
fetus	age indicator for humans or animals; in humans, the second and third trimesters after conception; in original articles age of study subjects or source of studied tissue etc.; used for non-original articles only if the concept is a main topic of the article
newborn	age indicator for humans or animals; in humans, from birth up to one month old; in original articles age of study subjects or source of studied tissue etc.; used for non-original articles only if the concept is a main topic of the article
infant	age indicator for humans only (1-12 months old); in original articles age of study subjects or source of studied tissue etc.; used for non-original articles only if the concept is a main topic of the article. (Before 1993, also used for animals)
child	age indicator for humans only (1-12 years old, or when the age is unspecified); in original articles age of study subjects or source of studied tissue etc.; used for non-original articles only if the concept is a main topic of the article
preschool child	age indicator for humans only (1-6 years old); in original articles age of study subjects or source of studied tissue etc.; used for non-original articles only if the concept is a main topic of the article
school child	age indicator for humans only (7-12 years old); in original articles age of study subjects or source of studied tissue etc.; used for non-original articles only if the concept is a main topic of the article
adolescent	age indicator for humans or animals; in humans, 13-17 years old; in original articles age of study subjects or source of studied tissue etc.; used for non-original articles only if the concept is a main topic of the article
adult	age indicator for humans only (18-64 years old); in original articles age of study subjects or source of studied tissue etc.; used for non-original articles only if the concept is a main topic of the article. (Before 1988, also used for animals)
aged	age indicator for humans or animals; in humans, 65 years or older; in original articles age of study subjects or source of studied tissue etc.; used for non-original articles only if the concept is a main topic of the article

Controls

controlled study	original study with a control group (NB: not restricted to clinical trials)
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Clinical trials

clinical trial	prospective study on humans, in which one or more medical intervention is evaluated; not limited to drug trials nor to
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	therapy; used for both original and non-original articles, including meta analyses. (Check tag since 1994)
controlled clinical trial	clinical trial using a control group (e.g. placebo, sham or no treatment, standard intervention) for comparison with the experimental intervention. (Check tag since 2007)
phase 1 clinical trial	used for an original article that itself defines the reported study as a phase 1 clinical trial (limited to drug trials); used for non-original articles only if the concept is a main topic of the article. (Check tag since 1994)
phase 2 clinical trial	used for an original article that itself defines the reported study as a phase 2 clinical trial (limited to drug trials); used for non-original articles only if the concept is a main topic of the article. (Check tag since 1994)
phase 3 clinical trial	used for an original article that itself defines the reported study as a phase 3 clinical trial (limited to drug trials); used for non-original articles only if the concept is a main topic of the article. (Check tag since 1994)
phase 4 clinical trial	used for an original article that itself defines the reported study as a phase 4 clinical trial (limited to drug trials); used for non-original articles only if the concept is a main topic of the article. (Check tag since 1994)
meta analysis study	evaluating a medical intervention by critical analysis of data from previously reported clinical trials; not limited to drug trials; used for both original and non-original articles. (Check tag since 1994)
randomized controlled trial	clinical trial using a control group (e.g. placebo, sham treatment, standard intervention) for comparison with the experimental intervention, with random allocation of subjects to experimental and control groups. (Check tag since 1994)
double blind procedure	used for an original article that reports a clinical trial and itself defines the trial method as a double blind procedure; used for non-original articles only if the concept is a main topic of the article. (Check tag since 1994)
single blind procedure	used for an original article that reports a clinical trial and itself defines the trial method as a single blind procedure; used for non-original articles only if the concept is a main topic of the article. (Check tag since 1994)
crossover procedure	used for an original article that reports a clinical trial and itself defines the trial method as a crossover procedure; used for non-original articles only if the concept is a main topic of the article. (Check tag since 1994)
multicenter study	used for an original article that reports a clinical trial performed at two or more medical centers; used for non-original articles only if the concept is a main topic of the article. (Check tag since 1994)

Systematic reviews

systematic review

study that systematically summarizes all relevant evidence pertaining to a defined health question; not limited to clinical trials; used for both original and non-original articles, including meta analyses. (Check tag since 2005)

Appendix 2. Subheadings

Disease subheadings

<i>Subheading</i>	<i>Code Scope Note</i>
complication	CO used for disorders or symptoms which arise as complications of pre-existing diseases or of medical procedures, with the exception of drug-induced complications, for which the subheading <i>side effect</i> is used (NB: not used for the pre-existing disease)
congenital disorder	CN used when attention is drawn to the congenital nature of a disease or malformation, including hereditary disorders present at birth
diagnosis	DI used for the diagnosis of disease or the application of diagnostic tests
disease management	DM used to identify diseases for which information is provided on the evaluation of health care, covering cost aspects, treatment outcome or quality of life studies (not restricted to drug therapy). (See related drug subheading <i>pharmacoeconomics</i>). (Since 1997)
drug resistance	DR used to identify any disease for which resistance to drug treatment is a significant aspect; differentiate from <i>drug tolerance</i> , which is separately indexed. (Disease subheading since 1996)
drug therapy	DT used to identify diseases and conditions treated with drugs (curative, palliative, symptomatic or prophylactic treatment); for prophylactic drug therapy, together with the subheading <i>prevention</i> . (Prophylactic drug therapy included since 1993)
epidemiology	EP used for the epidemiology of a disease, including its morbidity and mortality
etiology	ET used for both etiology (the factors causing the disease) and pathogenesis (the pathological mechanisms occurring in the development of the disease)
prevention	PC used for disease prevention and control; includes prophylactic treatment with drugs or vaccines to prevent the disease, in which case the disease subheading <i>drug therapy</i> is also used
radiotherapy	RT used for the treatment of disease using radiotherapy
rehabilitation	RH used for procedures designed to rehabilitate patients recovering from a specific disease; excludes physiotherapy, for which the subheading <i>therapy</i> is used
side effect	SI used for conditions which arise as undesired effects of drugs used at therapeutic dose ranges in humans, including drug-induced disease
surgery	SU used for the application of surgical techniques in the treatment of disease

therapy TH used for the treatment of disease with any kind of therapy except drug therapy, radiotherapy and surgery (for which more specific disease subheadings are used); includes, for example, treatment with immunological cells not indexed with drug terms

Drug subheadings

<i>Subheading</i>	<i>Code Scope Note</i>
adverse drug reaction	AE used for undesired side effects of drugs used at therapeutic dose ranges in humans
clinical trial	CT used for clinical trials of drugs; covers phase 1-4 studies in humans. (See related subheading <i>drug development</i>)
drug administration	AD used when the route of drug administration is emphasized. (Specific routes, mentioned with or without emphasis, are indexed using more specific drug subheadings, introduced in 2000; before 2000, specific drug routes were indexed as normal (unlinked) terms)
drug analysis	AN used for the identification, determination or structural analysis of drugs or potential drugs
drug combination	CB used with drugs that are given in combination, when this is a significant aspect of the article. (Before 1988 this concept was indexed with the normal (unlinked) term <i>drug mixture</i>)
drug comparison	CM used when two or more drugs are compared
drug concentration	CR used when information is given on the drug concentration in body fluids or tissues
drug development	DV used for the stages of drug development from screening, isolation and synthesis up to testing in animals, but excluding trials in humans. (See related subheading <i>clinical trial</i>)
drug dose	DO used when drug dosage, including the relation between dosage and effects over time, is a significant factor
drug interaction	IT used for interactions between drugs, or between a drug and food, alcohol or other chemicals in humans or animals
drug therapy	DT used to identify drugs in the treatment of diseases and conditions (curative, palliative, symptomatic or prophylactic treatment). (Prophylactic drug therapy, e.g. using vaccines, included since 1993)
drug toxicity	TO used for toxicity of drugs or other chemicals in animals (incl. LD50 tests), in animal or human cells/tissues, and in other toxicity studies; used for humans only at non-therapeutic dose ranges, or when lasting damage is caused at therapeutic dose ranges
endogenous compound	EC used for substances endogenous to the organisms, tissues, cells or body fluids being studied. (Drug subheading since 1991)

pharmaceutics	PR used for the formulation of drugs or drug mixtures, including the physical and chemical properties of drugs relevant to drug pharmacy
pharmacoeconomics	PE used for the economic evaluation of drug therapy, including cost analysis, treatment outcome and quality of life studies. (See related disease subheading <i>disease management</i>). (Drug subheading since 1997)
pharmacokinetics	PK used for kinetics of drug absorption, distribution, biotransformation or elimination in humans and animals
pharmacology	PD used for the actions and mechanisms of drugs, including drug binding to receptors and studies of drug sensitivity or resistance

Routes of drug administration

<i>Subheading</i>	<i>Code</i>	<i>Subheading</i>	<i>Code</i>
buccal drug administration	BD	intraspinal drug administration	SP
epidural drug administration	EI	intrathecal drug administration	TL
inhalational drug administration	IH	intratracheal drug administration	TR
intraarterial drug administration	IA	intratumoral drug administration	TU
intraarticular drug administration	AR	intratympanic drug administration	TY
intrabronchial drug administration	BR	intraurethral drug administration	UR
intraabursal drug administration	BU	intrauterine drug administration	UT
intracameral drug administration	CL	intravaginal drug administration	VA
intracardiac drug administration	IC	intravenous drug administration	IV
intracavernous drug administration	CA	intravesical drug administration	VE
intracerebral drug administration	CE	intravitreal drug administration	VI
intracerebroventricular drug administration	CV	oral drug administration	PO
intracisternal drug administration	CI	parenteral drug administration	PA
intradermal drug administration	DL	periocular drug administration	OC
intraduodenal drug administration	DU	rectal drug administration	RC
intragastric drug administration	IG	regional perfusion	RP
intralesional drug administration	IL	retrobulbar drug administration	RB
intralymphatic drug administration	LY	subconjunctival drug administration	CJ
intramuscular drug administration	IM	subcutaneous drug administration	SC
intranasal drug administration	NA	sublabial drug administration	SB
intraocular drug administration	IO	sublingual drug administration	LI
intraosseous drug administration	OS	topical drug administration	TP
intraperitoneal drug administration	IP	transdermal drug administration	TD
intrapleural drug administration	PL		

Appendix 3. Embase section headings

1		Anatomy, anthropology, embryology and histology
2		Physiology
3		Endocrinology
4	*	Microbiology: bacteriology, mycology, parasitology and virology
5		General pathology and pathological anatomy
6		Internal medicine
7		Pediatrics and pediatric surgery
8		Neurology and neurosurgery
9	*	Surgery
10		Obstetrics and gynecology
11		Otorhinolaryngology
12		Ophthalmology
13		Dermatology and venereology
14		Radiology
15		Chest diseases, thoracic surgery and tuberculosis
16		Cancer
17		Public health, social medicine and epidemiology
18		Cardiovascular diseases and cardiovascular surgery
19		Rehabilitation and physical medicine
20		Gerontology and geriatrics
21		Developmental biology and teratology
22		Human genetics
23		Nuclear medicine
24		Anesthesiology
25		Hematology
26		Immunology, serology and transplantation
27		Biophysics, bioengineering and medical instrumentation
28		Urology and nephrology
29		Clinical and experimental biochemistry
30		Clinical and experimental pharmacology
31		Arthritis and rheumatism
32		Psychiatry
33		Orthopedic surgery
34	*	Plastic surgery
35		Occupational health and industrial medicine
36		Health policy, economics and management
37		Drug literature
38		Adverse reaction titles
39	**	Pharmacy
40		Drug dependence, alcohol abuse and alcoholism
46		Environmental health and pollution control
47	*	Virology
48		Gastroenterology
49		Forensic science abstracts
50		Epilepsy abstracts
51	***	Leprosy and other mycobacterial diseases
52	****	Toxicology

- * 1974-1991. Sections 47 and 34 were incorporated into sections 4 and 9 respectively in 1992.
- ** Introduced in 1997.
- *** 1979-1988. Incorporated into section 4 (Microbiology: bacteriology, mycology, parasitology and virology) in 1989.
- **** introduced in 1983.