

What are the differences between Emtree and MeSH?

This document addresses the following questions

- What are the differences between Emtree and MeSH?
- How important are these differences to (potential) customers?
- Why would customers choose Emtree instead of MeSH?

What do Emtree and MeSH have in common?

- Both are comprehensive biomedical / life science terminologies
- Similar facet structure (Emtree was modeled on MeSH in 1988)
- Both thesauri have broader/narrower terms and synonyms
- Both have major annual updates with hundreds of new terms
- Both are linked to CAS registry numbers and Enzyme Commission (EC) numbers

What are Emtree's plus points and why are they important?

Emtree	Mesh	Emtree value (for the user)
"Natural language terminology" (e.g. <i>myeloid leukemia</i>)	Has many "inverted terms" (e.g. <i>leukemia, myeloid</i>)	Intuitive and recognizable terms for ease of use
Has more than 230,000 synonyms (incl. over 144,000 drug synonyms)	Has far fewer synonyms (exact number unknown)	High probability that term used by user is in Emtree
Includes all MeSH terms (many as synonyms)		Emtree can easily be used by MeSH users
Relies upon "meaning" invested in terms by authors using them	Has many scope notes to describe how terms are used	No dependence on or need to look up scope notes
Larger (over 56,000 preferred terms)	Smaller (ca. 24,000 preferred terms)	Best chance of finding both drug and non-drug terminology

Emtree	Mesh	Emtree value (for the user)
Extensive drugs facet (over 27,000 preferred terms)	More limited drugs facet (ca. 8,000 preferred terms)	Drugs terminology is more up to date
New drug terms are updated earlier in Emtree ¹	Drug terms are only updated when they become established	Best results for new drugs
Polyhierarchical structure with duplicated trees	Polyhierarchical structure with differences between trees	Unambiguous and context-free explosion searches
All drug and chemical information is included in Emtree	Detailed drug information is in a separate ("supplementary") file	All the drug information you need is in Emtree

What plus points might users find in MeSH?

- MeSH has extensive history notes, which can be used to track earlier literature predating the introduction of particular terms.
- MeSH has extensive scope notes. However, these include not only term definitions, but also restrictions in term usage, which users need to be aware of.
- MeSH is updated ad-hoc during the year (e.g. SARS in 2003).
- MeSH has extensive terminology in nursing, veterinary medicine and dentistry. In contrast, Emtree has a record of updating terminology in response to user needs in areas such as pharmacoconomics (1996), pharmaceutical vehicles and additives (1997), biotechnology (2001), alternatives to animal experimentation (2002) – as well as nursing (2006).

Why choose Emtree instead of MeSH?

- Emtree drugs terminology is:
 - Far more extensive and supported by extensive synonyms (including many trade names).
 - Updated regularly and comprehensively: 865 preferred terms were added in 2009.
 - Organized in a comprehensive tree structure, with extensive polyhierarchy (drug terms structured from many points of view, including structure, activity, therapeutic use). (For the above reasons) best for identifying, finding out about and searching new drugs.
- Emtree terminology in general:
 - Already includes all of MeSH (i.e. all MeSH terms are linked into Emtree).
 - Can be extended further in response to user needs, subject to agreement with overall policy.
- Elsevier provides support to ensure that Emtree is optimally embedded in user applications.

¹ In a typical case: as soon as referenced only 5 times in the literature. For examples in practice: *attached Table*

Drug Information Study

As an illustration of the differences between Emtree and MeSH when searching for (new) drugs, several drug searches have been performed in Embase (indexed with Emtree), and Medline (indexed with MeSH). A short synopsis of these two databases is given below the table. Result: Typically, up to 4 times more information is retrieved from Embase (see table).

Product Name ²	Search Term		Citations	
	Emtree Preferred term	MeSH preferred term or substance name ³	Embase	Medline
Lipitor	Atorvastatin	Atorvastatin ³	7,668	1,654
Advair	Fluticasone propionate plus Salmeterol	Fluticasone propionate plus Salmeterol ³	839	39
Plavix	Clopidogrel	Clopidogrel ³	9,552	1,613
Nexium	Esomeprazole	Omeprazole ⁴	1,493	1,558
Norvasc	Amlodipine besylate	Amlodipine ⁴	439	621
Enbrel	Etanercept	TNFR-Fc fusion protein ⁴	5,197	1,375
Zyprexa	Olanzapine	Olanzapine ³	7,775	1,498
Remicade	Infliximab	Infliximab ³	8,223	2,461
Diovan	Valsartan	Valsartan ³	2,725	508
Risperdal	Risperidone	Risperidone	7,991	1,488

Online study conducted on 18 August 2008, both on EMBASE.com and on Medline via PubMed.

² Drugs were the top 10 leading products based on global pharmaceutical sales (*source: Wood Mackenzie Top 100 Ethical Drugs by Sales* (<http://www.p-d-r.com/ranking/ranking.html>)).

Search period: Literature publication years 2004-2008. Search method: A term to term comparison in which each database was searched for Emtree as well as for MeSH preferred terms (descriptors)/Substance names

³ For preferred terms that were not yet incorporated in the MeSH thesaurus, the Substance name, available from the MeSH Supplementary Concept Data, was used instead.

⁴ Where the MeSH term differs from the Emtree term, the generic name was checked at official online sites for the drug; Emtree was found to be correct according to these sites. For example, different results are found in Embase for Omeprazole (5,425 hits) than for Esomeprazole (1,493 hits).

Database Synopses

Embase

- Biomedical database produced by Elsevier
- Comprehensive coverage of biomedicine with focus on drugs & pharmacology
- Indexed with Emtree (with over 56,000 Preferred Terms incl. over 27,000 drugs and chemicals)
- Currently over 20 million records from 1966 - present; covers over 7,000 journals
- Overlap with Medline ca. 60% (at journal level)
- Unique records especially in drugs titles + European literature

Medline:

- Biomedical database produced by NLM (U.S. National Library of Medicine)
- Focus on all of biomedicine incl. nursing, dentistry and veterinary science
- Indexed with MeSH (= Medical Subject Headings with over 24,000 total MeSH Terms)
- 15 million records from 1966-present (excl. Old Medline); currently covers over 5,200 journals
- Overlap with Embase ca. 60% (at journal level)
- Unique records especially in US titles + nursing literature etc.

More information

Please refer to www.embase.com

Last updated: February 2010

