Cataloging with MeSH

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Agenda

- Introduction to MeSH and the MeSH Browser (~50 minutes)
- Principles of Cataloging with MeSH (~30 minutes)
- Q&A (~10 minutes)



Why Use MeSH?



Function of Keywords



Advantages:

provide access to the words used in bibliographic records

Disadvantages:

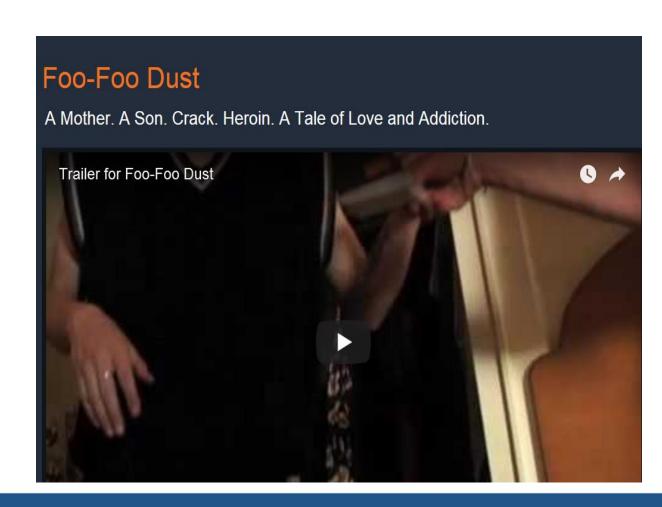
- cannot compensate for complexities of language and expression
- cannot compensate for context

Keyword searching is enhanced by assignment of controlled vocabulary!

Example 1: Keyword Searching Challenges

Title: Foo-foo dust





Example 2: Keyword Searching Challenges





Example 3: Keyword Searching Challenges



What do we call these? (Respond in chat.)

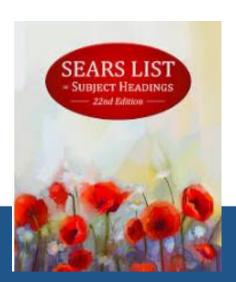
Controlled Vocabulary

Benefits

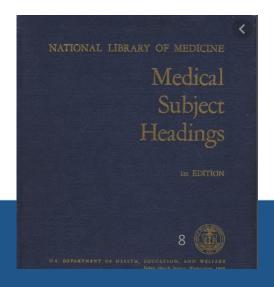
- Identifies a preferred way of expressing a concept
- Provides cross-references that lead to the preferred term
- Identifies a term's relationship to broader, narrower, and related term

Examples of Controlled Vocabularies









MeSH: Medical Subject Headings



Find MeSH using the MeSH Browser:

https://meshb.nlm.nih.gov/search

3 Types of MeSH Records:

- Descriptors (main headings)
- Qualifiers (subheadings)
- Supplementary Concept Records (not used by Cataloging)

3 Types of MeSH Descriptors:

1. Topical

- Indicate the subject/topic
- Examples: Body Weight, Kidney, Self-Medication

2. Publication Characteristics (Publication Types)

- Indicate the genre or format
- Examples: Atlases, Handbooks, Statistics

3. Geographicals

- Indicate the geographic locations, including historical locations
- Examples: Atlantic Islands, North America, England, Prussia

MeSH Tree Structure

- A. Anatomy
- B. Organisms
- C. Diseases
- D. Chemicals and Drugs
- E. Analytical, Diagnostic and Therapeutic Techniques and Equipment
- F. Psychiatry and Psychology
- G. Phenomena and Processes
- H. Disciplines and Occupations
- I. Anthropology, Education, Sociology and Social Phenomena
- J. Technology, Industry, Agriculture
- K. Humanities
- L. Information Science
- M. Named Groups
- N. Health Care
- V. Publication Characteristics
- Z. Geographicals



MeSH Tree Example

Anatomy
Body Regions
Torso
Back
Lumbosacral Region
Sacrococcygeal Region



MeSH Tree Example (2)

```
Body Regions
       Head
           Ear
Anatomy
   Sense Organs
       Ear
              Ear, External +
              Ear, Middle +
              Ear, Inner +
```



Anatomy

MeSH Tree Structure (2)

Topical A-N

- A. Anatomy
- B. Organisms
- C. Diseases
- D. Chemicals and Drugs
- E. Analytical, Diagnostic and Therapeutic Techniques and Equipment
- F. Psychiatry and Psychology
- G. Phenomena and Processes
- H. Disciplines and Occupations
- I. Anthropology, Education, Sociology and Social Phenomena
- J. Technology, Industry, Agriculture
- K. Humanities
- L. Information Science
- M. Named Groups
- N. Health Care



- V. Publication Characteristics
- Z. Geographicals

MeSH Qualifiers (aka Subheadings)

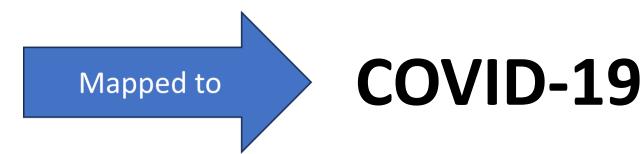
- therapeutic use
 - administration & dosage
 - adverse effects
 - poisoning

Supplementary Concept Records (SCRs)

COVID 19 stress syndrome

COVID 19 rebound

COVID 19 breakthrough infections



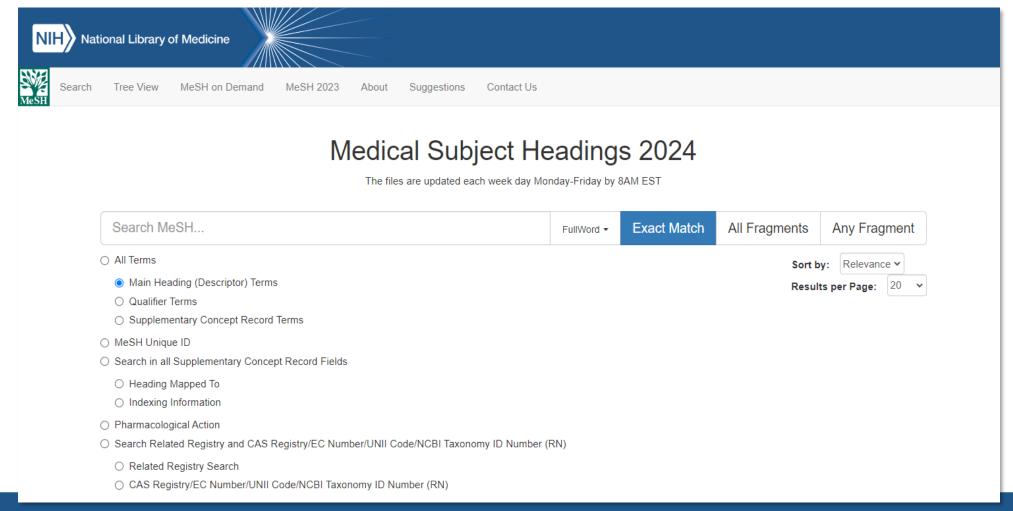
MeSH Record Types: Your Turn!

Q1: Name the type of MeSH term described by each of the below:

| 1. Primarily substance terms, but also include some protocols, virus terms and rare disease terms | Supplementary Concept Record |
|---|------------------------------|
| 2. Describe a topical concept | Descriptor (or Heading) |
| 3. Describe a particular aspect of a concept | Qualifier (or Subheading) |



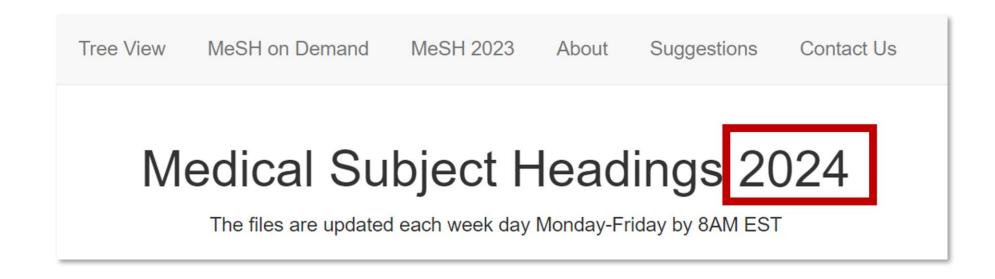
The MeSH Browser



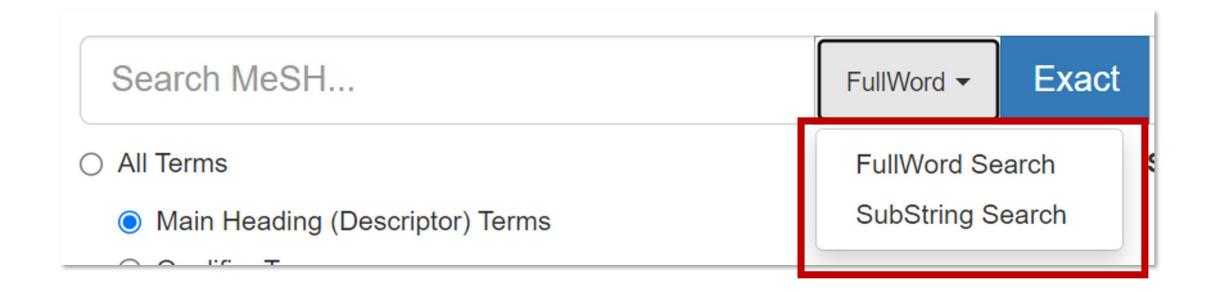
MeSH Browser Navigation



The MeSH Browser: Version



Search Methods



Modify Search Methods



Term Search Options

- All Terms
 - Main Heading (Descriptor) Terms
 - Qualifier Terms
 - Supplementary Concept Record Terms

Metadata Field Search

MeSH Unique ID Search in all Supplementary Concept Record Fields Heading Mapped To Indexing Information Pharmacological Action Search Related Registry and CAS Registry/EC Number/UNII Code/NCBI Taxonomy ID Number (RN) Related Registry Search CAS Registry/EC Number/UNII Code/NCBI Taxonomy ID Number (RN)

Search in all Free Text Fields

- Search in all Free Text Fields
 - Annotation
 - ScopeNote
 - SCR Note

DEMO: MeSH Browser Search Options

https://meshb.nlm.nih.gov/

MeSH Browser Search Options: Your Turn!

Select: "SubString," "All Fragments," "Main Heading (Descriptor) Terms"

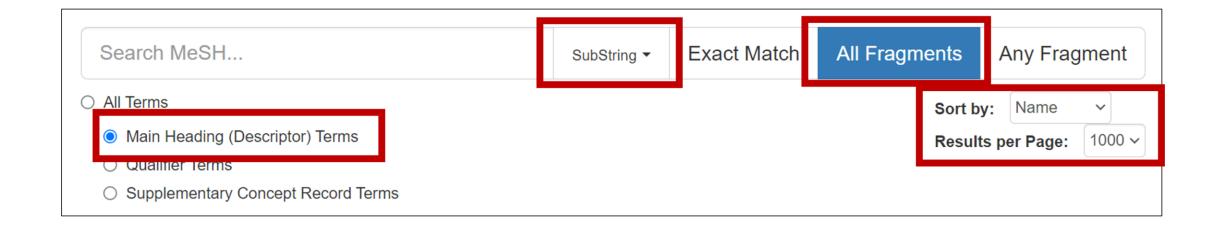
Search: psychol feedback

Q2: What is included in your results? (Use chat.)

A2: Word variations with these strings (Biofeedback, Psychology and Feedback, Psychological).



Recommended Search Settings for Catalogers



Viewing Descriptor Records



Details Qualifiers MeSH Tree Structures Concepts

MeSH Heading Adolescent Health

Tree Number(s) N01.400.075

Unique ID D000067697

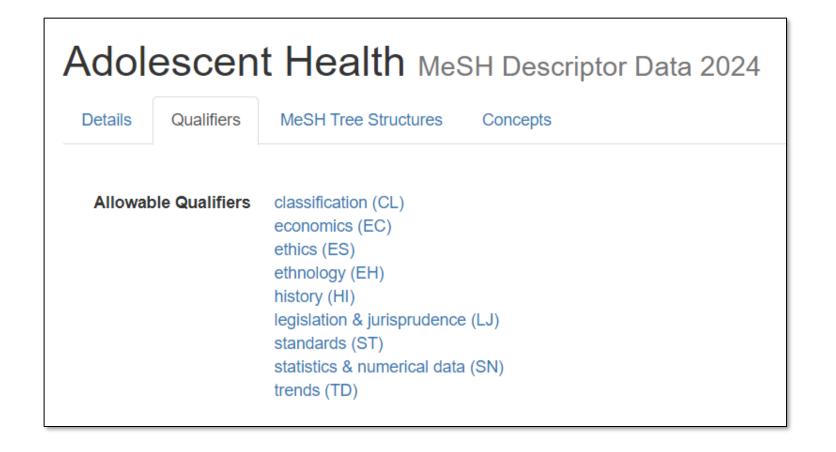
RDF Unique Identifier http://id.nlm.nih.gov/mesh/D000067697

Scope Note The concept covering the physical and mental conditions of ADOLESCENTS.

Details Tab

Adolescent Health MeSH Descriptor Data 2024 Qualifiers MeSH Tree Structures Details Concepts MeSH Heading Adolescent Health Tree Number(s) N01.400.075 Unique ID D000067697 **RDF Unique Identifier** http://id.nlm.nih.gov/mesh/D000067697 Scope Note The concept covering the physical and mental conditions of ADOLESCENTS. Entry Term(s) Adolescent Well Being Adolescent Well-Being Adolescent Wellbeing Teen Health NLM Classification # WS 460 Adolescent Health Services See Also Adolescent Medicine Public MeSH Note 2016 **History Note** 2016 Date Established 2016/01/01 Date of Entry 2015/07/06 **Revision Date** 2021/05/12

Qualifiers Tab



MeSH Tree Structures Tab



Physical Fitness [N01.400.545] •

Physical Fitness [N01.400.545] • Population Health [N01.400.548] •

Concepts Tab



MeSH Descriptor Records: Your Turn!

Use the recommended cataloger search settings:

Main Heading, SubString, All Fragments, Sort by Name, 1000 Results

Search: fostering

Q3: What is the preferred MeSH Descriptor?

A3: Foster Home Care

Q4: What related concepts are listed?

A4: Fostering, Kinship Care, Adult Foster Care (narrower)



Useful Annotations in the MeSH Browser

Topical Annotations

- Coordination with other headings
- Use of subheadings
- Context of term
- Similar/related terms to consider
- Similar terms that may cause confusion

Topical Annotation Example: Coordination

Unilateral Breast Neoplasms MeSH Descriptor Data 2024

Details Qualifiers MeSH Tree Structures Concepts

MeSH Heading Unilateral Breast Neoplasms

Tree Number(s) C04.588.180.800

C17.800.090.500.682

Unique ID D000069584

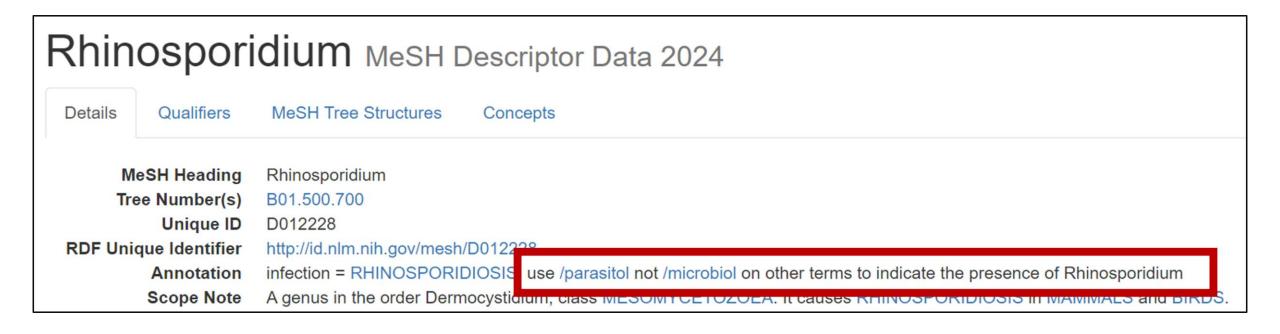
RDF Unique Identifier http://id.nlm_nih.gov/mesh/D000069584

Annotation human only coordinate IM with histological type of neoplasm (IM)

Scope Note Tumors or cancer found specifically in one human BREAST, but not in both.



Topical Annotation Example: Use of Subheadings



Topical Annotation Example: Context

Cell Survival MeSH Descriptor Data 2024 Qualifiers MeSH Tree Structures Details Concepts MeSH Heading Cell Survival Tree Number(s) G04.346 D002470 Unique ID RDF Unique Identifier http://id.nlm.nih.gov/mesh/D002470 NIM; not for micro-organisms Annotation Scope Note The span of viability of a cell characterized by the capacity to perform certain functions such as metabolism, growth, reproduction, some form of responsiveness, and adaptability.

Topical Annotation Example: Similar/related terms

Glycemic Load MeSH Descriptor Data 2024 Qualifiers MeSH Tree Structures Details Concepts MeSH Heading Glycemic Load Tree Number(s) G07.203.650.660.750 J01.576.423.850.730.750.750 N06.850.601.750.750 Unique ID D000067940 http://id.nlm.nih.gov/mesh/D000067940 RDF Unique Identifier GLYCEMIC INDEX is also available Annotation Scope Note A quantitative value of a measured amount of a specific food that is equal to the GLYCEMIC INDEX of that food multiplied by the carbohydrate content of that food.

Topical Annotation Example: Do not confuse with...

Accommodation, Ocular MeSH Descriptor Data 2024 Details Qualifiers MeSH Tree Structures Concepts MeSH Heading Tree Number(s) G14.010 Unique ID D000065 RDF Unique Identifier Annotation Annotation Double With ADAPTATION, OCULAR, adjustment of eye to light

Topical Annotations: Your Turn!

Q5: According to the annotation, what other terms might you add when using the heading Ablation Techniques?

A5: Organ or disease with /surgery

Q6: To describe taking leave to care for parents, which is

correct: Family Leave or Parental Leave?

A6: Family Leave



Cataloger-Specific Annotations

- CATALOGER: Do not use
- CATALOGER: Use NAF entry
- CATALOGER: Coordinate with specific NAF
- CATALOGER: Use for specific material only
- CATALOGER: Used by collaborating partners only
- INDEXER: Do not use

Cataloger-Specific Annotation Example: Do not use

Diet, Food, and Nutrition MeSH Descriptor Data 2024

Details

Qualifiers

MeSH Tree Structures

Concepts

MeSH Heading

Diet, Food, and Nutrition

Tree Number(s)

G07.203

Unique ID

D000066888

RDF Unique Identifier

http://id.nlm.nih.gov/mesh/D000066888

Annotation

used for searching; INDEXER: Do not use; CATALOGER: Do not use

Scope Note

Concepts involved with nutritional physiology, including categories of substances eaten for sustenance, nutritional phenomena and processes, eating patterns and habits, and

measurable nutritional parameters.

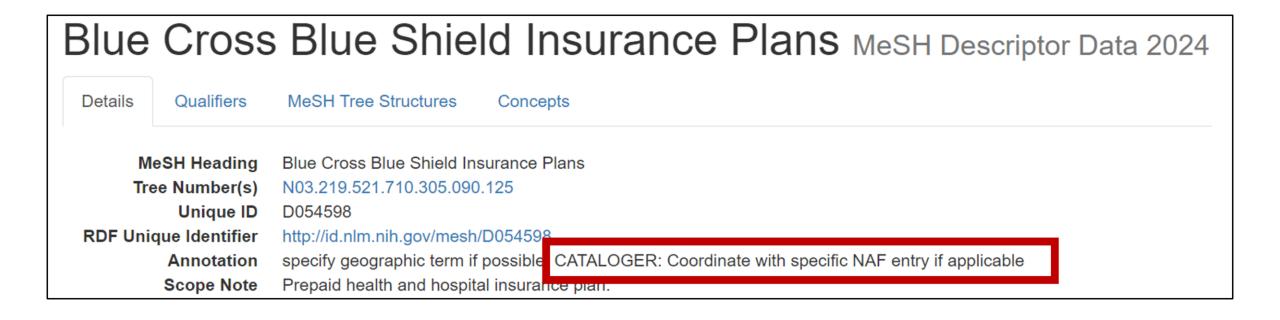


Cataloger-Specific Annotation Example: Use NAF entry

Medicare Access and CHIP Reauthorization Act of 2015 MeSH Descriptor Data 2024

Qualifiers MeSH Tree Structures Details Concepts MeSH Heading Medicare Access and CHIP Reauthorization Act of 2015 N03.219.521.346.506.564.663.250 Tree Number(s) N03.219.521.576.343.840.254 N03.706.615.696.500 Unique ID D000072641 **RDF Unique Identifier** http://id.nlm.nih.gov/mesh/D000072641 CATALOGER: Use NAF entry Annotation Scope Note An Act that amends Title XVIII of the Social Security Act to repeal the Medicare sustainable growth rate, that strengthens Medicare access by improving physician payments, and that reauthorizes the Children's Health Insurance Program (CHIP).

Cataloger-Specific Annotation Example: Coordinate with specific NAF



Cataloger-Specific Annotation Example: Use for historical material only

Annual Report MeSH Descriptor Data 2024 Details Qualifiers MeSH Tree Structures Concepts MeSH Heading Annual Report Tree Number(s) V02.130 Unique ID D019487 **RDF** Unique Identifier http://id.nlm.nih.gov/mesh/D019487 Annotation This heading is used as a Publication Type. Annual reports as a subject are indexed under the main heading ANNUAL REPORTS AS TOPIC. INDEXER: Do not use; CATALOGER: Use for serial publications only Annual statements concerning the administrative and operational functions of an Scope Note institution or organization.

Cataloger-Specific Annotation Example: Used by collaborating partners only

Unpublished Work MeSH Descriptor Data 2024 Qualifiers MeSH Tree Structures Details Concepts MeSH Heading Unpublished Work Tree Number(s) V02.950 Unique ID D022902 RDF Unique Identifier http://id.nlm.nih.gov/mesh/D022902 This heading is used as a Publication Type CATALOGER: Used by collaborating partners only Annotation Scope Note Work that has not been formally published.

Cataloger-Specific Annotation Example: INDEXER: Do not use



Cataloger-Specific Annotations: Your Turn!

Q7: Which of the following headings can you use for cataloging?

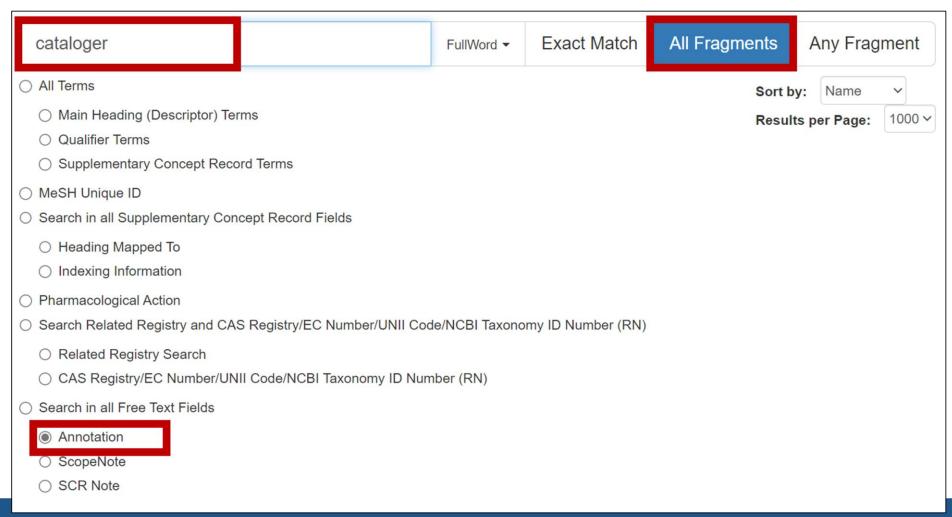
- a. Age Groups
- b. Animation

Q8: What heading do you use for Alcoholics Anonymous?

A8: NAF entry



Searching for Cataloger Annotations



Locating Main Concepts

Recall the Recommended Search Settings for Catalogers



DEMO: Locating Main Concepts

https://meshb.nlm.nih.gov/

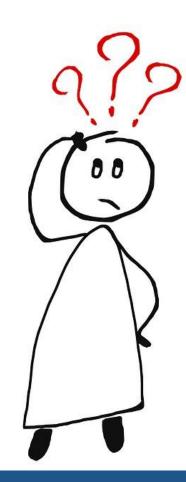
Locating Main Concepts: Your Turn!

Q9: What heading would you use for a work about measuring Cardiac Impedance?

A9: Cardiography, Impedance



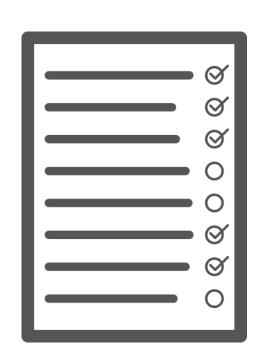
Questions?



Principles of Cataloging

Subject Analysis Principles

- Specificity
- "Rule of three"
- Specialty headings
- Special considerations for Supplementary Concepts
- Format of Subject Headings in Bibliographic Records

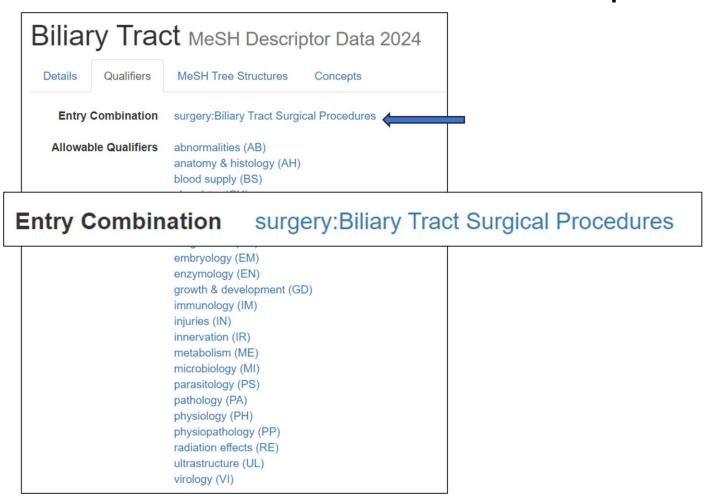


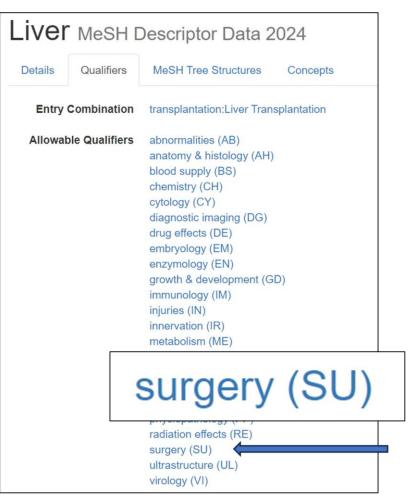
Order of Preference for Specificity

Specific aspects of a topic are conveyed by (in order of preference when available)

- 1. Pre-coordinated descriptors
- 2. Descriptor/qualifier (Main heading/subheading) combinations
- 3. Multiple descriptors

Pre-Coordinated Descriptors vs. Qualifiers

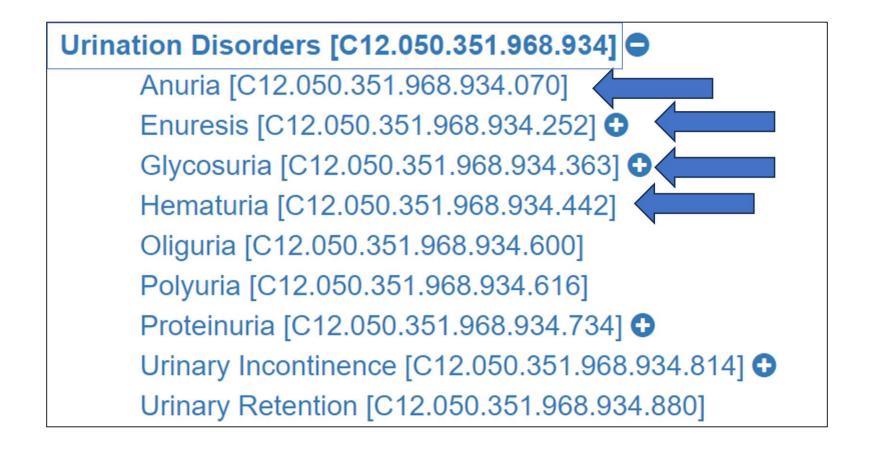




Pre-coordinated Descriptors vs. Multiple Descriptors

- Research in occupational therapy:
 - Occupational Therapy
 - Research
- Research in nursing:
 - Nursing Research

Exception to Specificity: "Rule of Three"



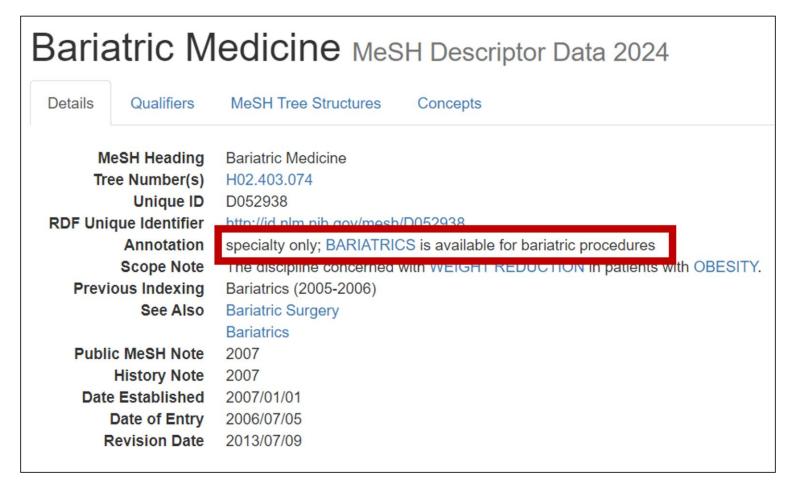
Rule of Three: Your Turn!

Q10: What descriptor(s) would you use to describe a work about Anger Management Therapy, Aversive Therapy, Relaxation Therapy, and Sleep Phase Chronotherapy?

- a) Psychotherapy
- b) Behavior Therapy
- c) Behavioral Disciplines and Activities



Specialty Headings



MeSH Trees for Specialties

Health Occupations [H02]

Acupuncture [H02.004]

Allied Health Occupations [H02.010] €

Biomedical Engineering [H02.070]

Chiropractic [H02.110]

Dentistry [H02.163] •

Environmental Health [H02.229] •

Evidence-Based Practice [H02.249] •

Health Services Administration [H02.269]

Hospital Administration [H02.309]

Medical Illustration [H02.385]

Medicine [H02.403] **⊕**

Mortuary Practice [H02.438]

Nursing [H02.478] •

Nursing, Practical [H02.495]

Nutritional Sciences [H02.533] •



Specialty vs. Diseases

| Specialty | Corresponding Disease Term |
|--------------|----------------------------|
| Dermatology | Skin Diseases |
| Rheumatology | Rheumatic Diseases |
| Hematology | Hematologic Diseases |

Specialty Headings: Your Turn!

Q11: What descriptors(s) would you use to describe a work titled *The Status of Diagnosis in Endocrinology*?

A11: Endocrine System Diseases / diagnosis



Specialty vs. Phenomena or Processes

| Specialty | Corresponding Phenomena Term |
|--------------|------------------------------|
| Biochemistry | Biochemical Phenomena |
| Genetics | Genetic Phenomena |
| Physiology | Physiological Phenomena |
| Chemistry | Chemical Phenomena |

Subheadings Indicating Specialty

Future of biochemistry
BIOCHEMISTRY / *trends
FORECASTING

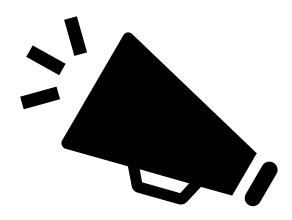
Algorithms for characterization of stochastic biochemical rare events

- *BIOCHEMICAL PHENOMENA
- *ALGORITHMS
 STOCHASTIC PROCESSES

Exceptions to Specialty Rule

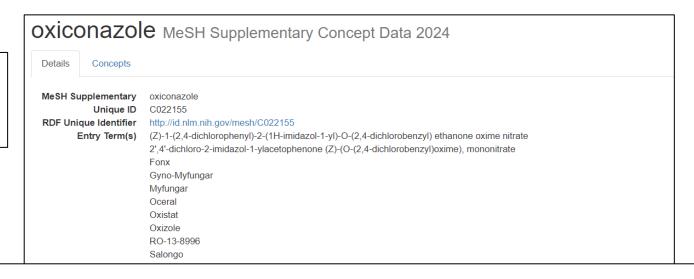
Pediatrics

Geriatrics



Supplementary Concept Records (SCRs) Mapping

oxiconazole



Heading Mapped to



```
64211-46-7
RQ8UL4C17S

CAS Type 1 Name
Heading Mapped to
Frequency
Note
Source
Date of Entry
RQ8UL4C17S

Ethanone, 1-(2,4-dichlorophenyl)-2-(1H-imidazol-1-yl)-, O-((2,4-dichlorophenyl)methyl)oxime, (Z)-, mononitrate

*Imidazoles
RN given refers to parent cpd(Z)-isomer; structure given in first source
Arzneim Forsch 29(10):1510;1979

1980/01/01
Revision Date
2017/07/26
```

Supplementary Concepts: Your Turn!

Q12: What descriptors(s) would you use to describe a work about watermelon stomach disease?

A12: Gastric Antral Vascular Ectasia



Format of Subject Headings in Bibliographic Records

MARC Coding of Subject Access Entries

From the MeSH vocabulary

```
650 X2 $a Main subject $x topical subheading
```

- 651 2 \$a Geographic \$x topical subheading
- 655 2 \$a Publication type/Form

Example 1: MARC Coding

A work on acupuncture for chronic low back pain

650 12 \$a Low Back Pain \$x therapy

650 22 \$a Acupuncture Therapy

650 22 \$a Chronic Disease \$x therapy

Example 2: MARC Coding

A directory of services for the aging in New York State

```
650 12 $a Health Services for the Aged
```

```
651 2 $a New York
```

655 2 \$a Directory

MARC Coding of Subject Access Entries (2)

From the NAF

```
$4 Personal names
$4 Personal names
$4 Corporate names
$4 Conference names
$4 Conference names
$4 Uniform Titles
```



Submitting MeSH Suggestions





MeSH Home | Learn About MeSH | MeSH Browser | Download MeSH Data | MeSH on Demand | Suggestions

User Suggestions for Medical Subject Headings Your Feedback is Welcome!

The NLM Customer Support Center provides a variety of help topics on NLM products. You can also select the Write to the help desk button to submit a request for a change or addition to MeSH vocabulary. Please review the guidelines below to ensure that your request is processed correctly.

MeSH vocabulary suggestions are reviewed for literary warrant and other criteria of usefulness, for reproducibility in use, and for understandability. Our mission is to produce a clear and concise vocabulary that is useful for indexing and retrieval of biomedical literature. Each entry term expression in MeSH is unique and carefully chosen to avoid expressions that are multimeaning. Although MeSH works closely with a variety of NLM departments that provide indexing, citation data, and publications we are not directly involved in these processes and cannot provide answers for questions related to these areas.

To help us expedite your request please follow the guidelines below:

- I. Please click: Write to the help desk to open a new window or tab with an online request form.
- II. Locate the Subject box and enter the one of the following as the subject of your request:
 - 1. To suggest a new MeSH term or descriptor (heading): "New MeSH term"
 - 2. For changes to MeSH vocabulary: "MeSH term change"
 - For corrections to a MeSH concept or meaning: "MeSH correction"
 - 4. For corrections or changes to the MeSH tree hierarchy: "MeSH tree change"
 - None of the above? Please feel free to provide your own Subject.
- III. Describe the change or addition to MeSH and any relevant additional information (e.g., reason for your suggested change; citations to support) in the **Description** box.
- IV. Note that providing your Email will allow us to let you know what we did.

Write to the Help Desk

| st Name * | Last Name * |
|-------------------------------|--|
| ail Address * | |
| | |
| | |
| scription: (Please include th | he NLM Product or Service you are writing about.) • |
| | he NLM Product or Service you are writing about.) * B |
| | |
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When to Request a New MeSH Term



Submit a request for a new MeSH to express:

- A frequently recurring concept
- A more general or specific concept than is covered by the available MeSH vocabulary

When to Request a New MeSH Term (continued)



Submit a request for a new MeSH to express:

- A concept which currently requires two or more headings
- A concept which has been or is likely to be handled inconsistently by different catalogers

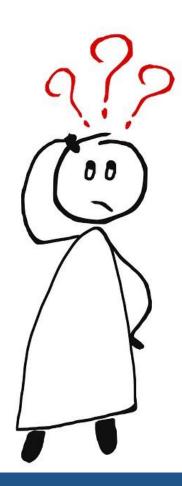
When to Submit Changes to MeSH



Changes may be requested for any element of the MeSH record. For example:

- Main descriptor to represent more current or common usage
- Addition of cross references or Entry Terms (ET)
- Add or delete qualifiers as needed

Questions? (2)



More About MeSH

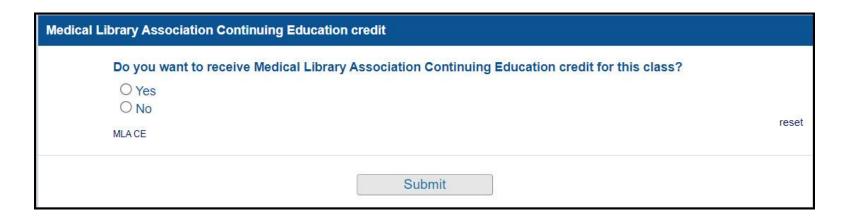
- See <u>MeSH Home</u>
- For news, see the NLM Technical Bulletin



More about Cataloging

See the Metadata Management Program homepage.

How to Claim Your MLA CE Credit



Thank you for completing this evaluation survey. Your feedback will support efforts to improve future Network of the National Library of Medicine (NNLM) training sessions.

If your training session ("WorksATM") offered Continuing Education credit from the Medical Library Association and you

would like to claim it, please follow these instructions. See Step 4 for enrol

The code for this class will appear here.

- 1. Go to www.medlib-ed.org
- 2. Login (if you do not have a current MLANET login, you will be create one: Stop 1, 100 months)
- 3. Click My Learning on the blue bar near the top of the page
- 4. Enter the enrollment code click Redeem, then Claim
- 5. If you have questions or run into problems with MEDLIB-ED, please email MEDLIB-ED@mail.mlahq.org

