# 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**:

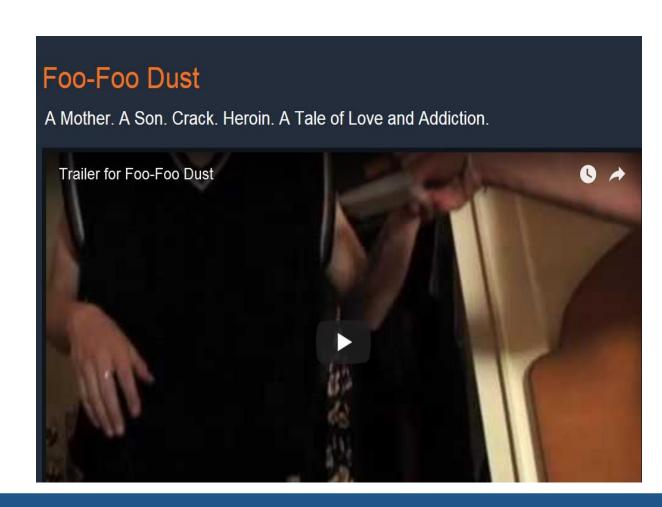
- cannot compensate for complexities of language and expression
- cannot compensate for context

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**

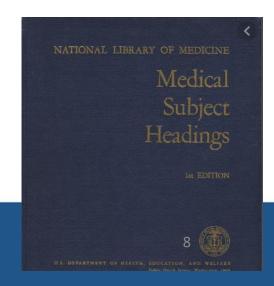
- Identifies a preferred way of expressing a concept
- Provides cross-references that lead to the preferred term
- Identifies a term's relationship to broader, narrower, and related term

#### **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)

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



#### MeSH Tree Structure

#### 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)

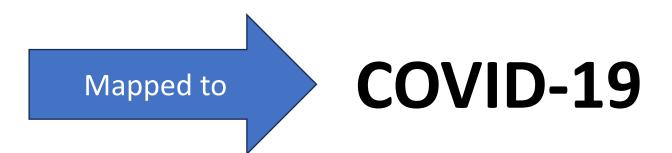
- therapeutic use
  - administration & dosage
  - adverse effects
  - poisoning

## Supplementary Concept Records (SCRs)

COVID 19 stress syndrome

COVID 19 rebound

COVID 19 breakthrough infections

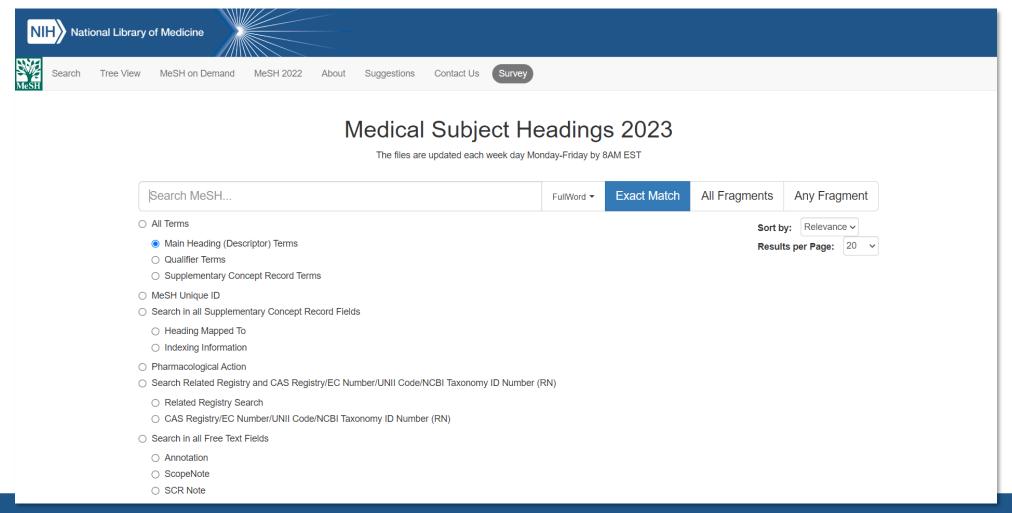


## MeSH Record Types: Your Turn!

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	
2. Describe a topical concept	
3. Describe a particular aspect of a	7,7
concept	The state of the s
concept	

#### The MeSH Browser



## MeSH Browser Navigation

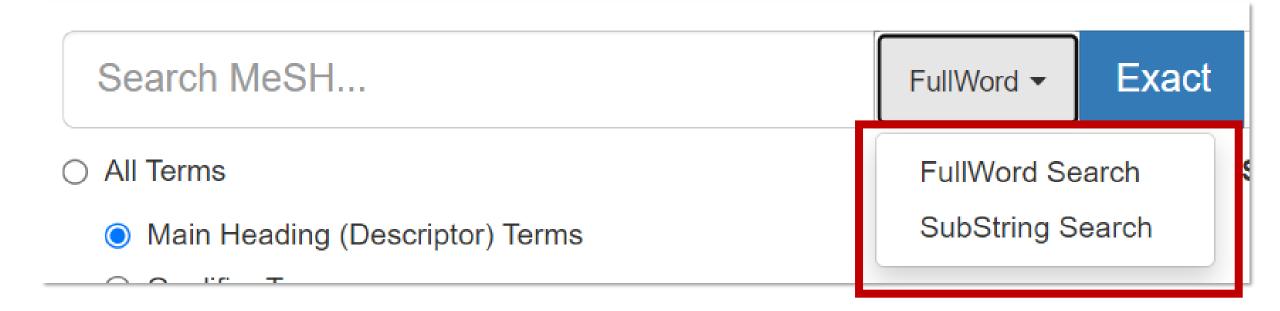


#### The MeSH Browser: Version

Medical Subject Headings 2023

The files are updated each week day Monday-Friday by 8AM EST

#### 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

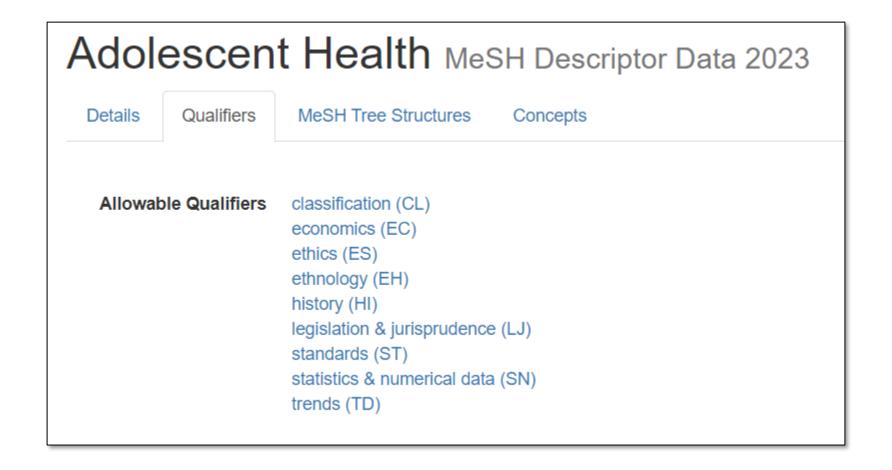


#### **Details Tab**

#### Adolescent Health MeSH Descriptor Data 2023

MeSH Tree Structures Details Qualifiers 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] •

Public Health [N01.400.550]
Reproductive Health [N01.400.625]
Sexual Health [N01.400.663]
Social Determinants of Health [N01.400.675]
Veterans Health [N01.400.850]
Women's Health [N01.400.900] •

## 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 2023

MeSH Tree Structures Qualifiers Details Concepts MeSH Heading Unilateral Breast Neoplasms Tree Number(s) C04.588.180.800 C17.800.090.500.682 Unique ID D000069584 http://id.nlm.nih.gov/mesh/D000069584 RDF Unique Identifier human only coordinate IM with histological type of neoplasm (IM) Annotation Tumors or cancer round specifically in one numan BREAST, but not in both. Scope Note

# Topical Annotation Example: Use of Subheadings

# Rhinosporidium MeSH Descriptor Data 2023 Details Qualifiers MeSH Tree Structures Concepts MeSH Heading Rhinosporidium Tree Number(s) B01.500.700 Unique ID D012228 RDF Unique Identifier http://id.nlm.nih.gov/mesh/D012228

A genus in the order Dermocysticium, class MESSIVI CETOZOEA. it causes

infection = RHINOSPORIDIOSIS use /parasitol not /microbiol on other terms to indicate the presence of Rhinosporidium

Annotation

Scope Note

BIRDS.

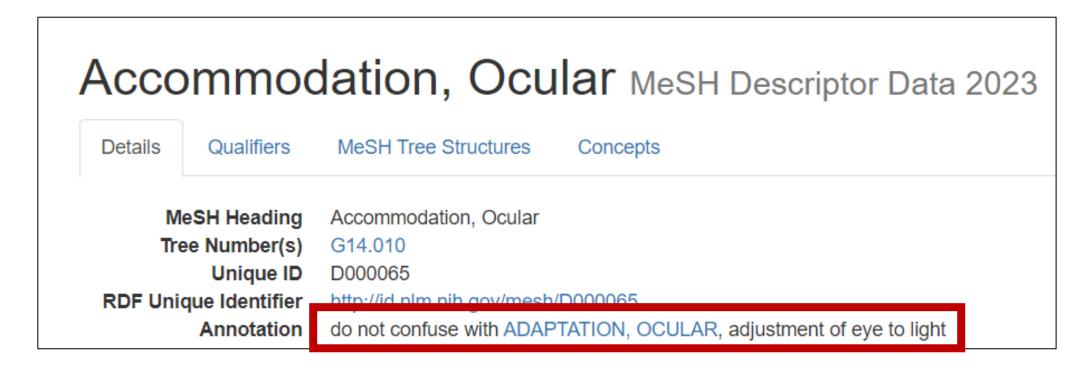
#### Topical Annotation Example: Context



### Topical Annotation Example: Similar/related terms

#### Glycemic Load MeSH Descriptor Data 2023 Details Qualifiers MeSH Tree Structures 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 RDF Unique Identifier http://id.nlm.nih.gov/mesh/D000067940 Annotation GLYCEMIC INDEX is also available 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...



#### 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?

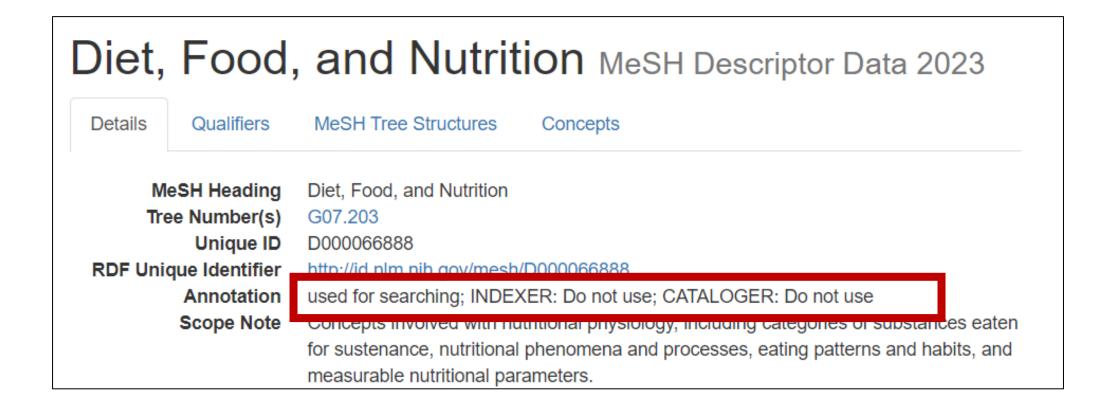
A6: Family Leave



#### Cataloger-Specific Annotations

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

### Cataloger-Specific Annotation Example: Do not use



### Cataloger-Specific Annotation Example: Use NAF entry



## Cataloger-Specific Annotation Example: Coordinate with specific NAF

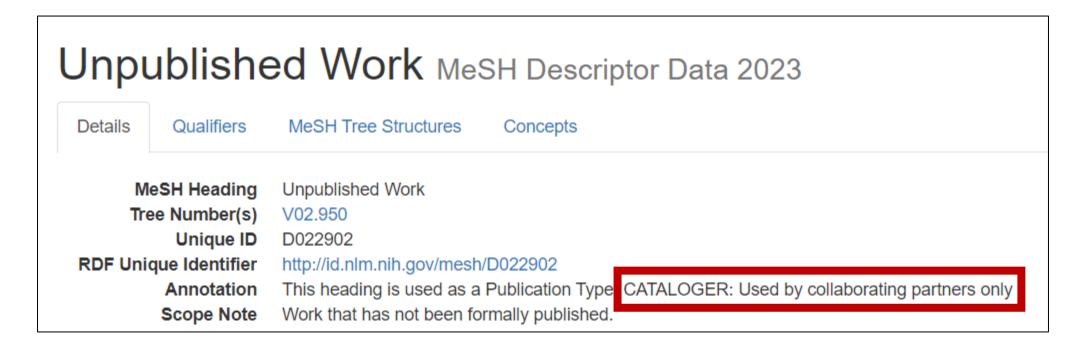
#### Blue Cross Blue Shield Insurance Plans MeSH Descriptor Data 2023

Details Qualifiers MeSH Tree Structures Concepts Blue Cross Blue Shield Insurance Plans MeSH Heading Tree Number(s) N03.219.521.710.305.090.125 Unique ID D054598 RDF Unique Identifier http://id.nlm.nih.gov/mesh/D054598 specify geographic term if possible: CATALOGER: Coordinate with specific NAF entry if applicable Annotation Scope Note Prepaid health and hospital insurance plan.

# Cataloger-Specific Annotation Example: Use for historical material only



# Cataloger-Specific Annotation Example: Used by collaborating partners only



### Cataloger-Specific Annotation Example: INDEXER: Do not use



#### Cataloger-Specific Annotations: Your Turn!

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

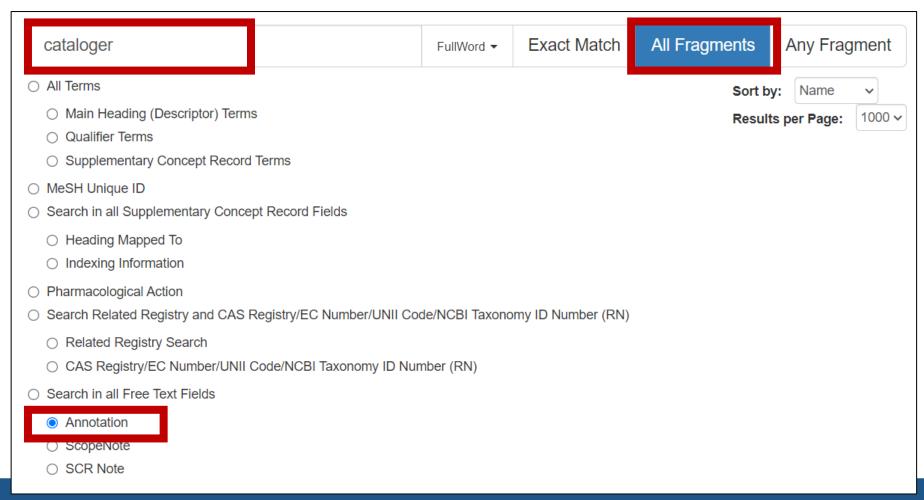
- a. Age Groups
- b. Animation

Q8: What heading do you use for Alcoholics Anonymous?

A8: NAF entry

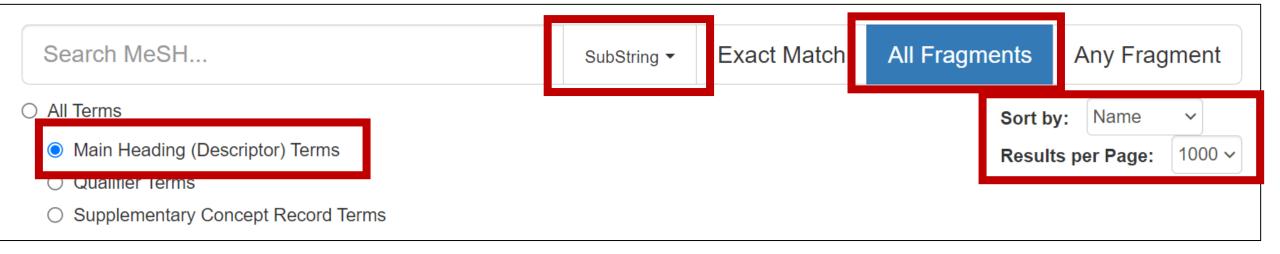


#### Searching for Cataloger Annotations



### Locating Main Concepts

# Recall the Recommended Search Settings for Catalogers



#### DEMO: Locating Main Concepts

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

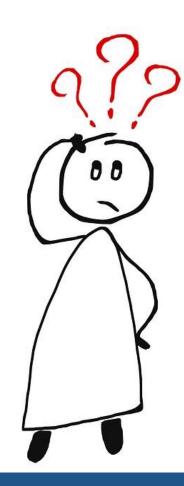
#### Locating Main Concepts: Your Turn!

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

A9: Cardiography, Impedance



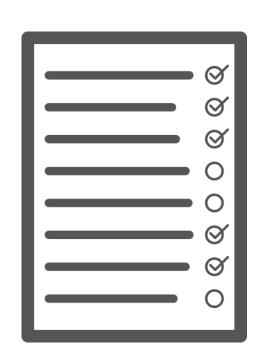
#### Questions?



### Principles of Cataloging

#### Subject Analysis Principles

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



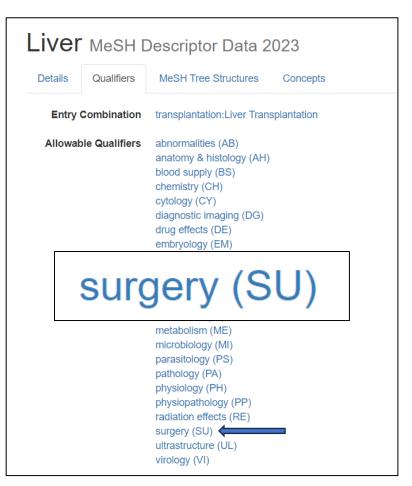
#### Order of Preference for Specificity

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

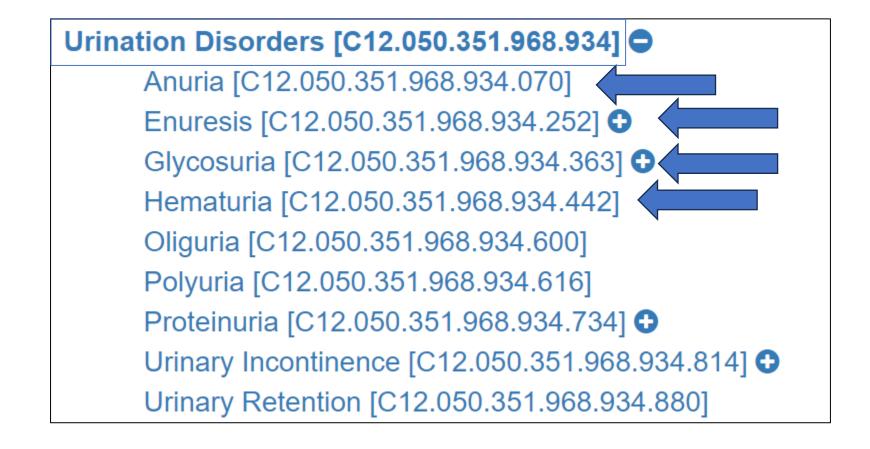




#### Pre-coordinated Descriptors vs. Multiple Descriptors

- 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 descriptors(s) would you use to describe a work about <u>levels of D-aspartic acid</u>, <u>1-carboxyglutamic acid</u>, <u>polyglutamic acid</u>, and <u>isoaspartic acid</u>?

- a. D-aspartic acid
- b. Amino Acids, Acidic
- c. D-aspartic acid, 1-Carboxyglutamic Acid, Polyglutamic Acid, and Isoaspartic Acid (all four descriptors)



#### Specialty Headings



#### MeSH Trees for Specialties

Disciplines and Occupations [H] 
Natural Science Disciplines [H01] 
Health Occupations [H02]

#### **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

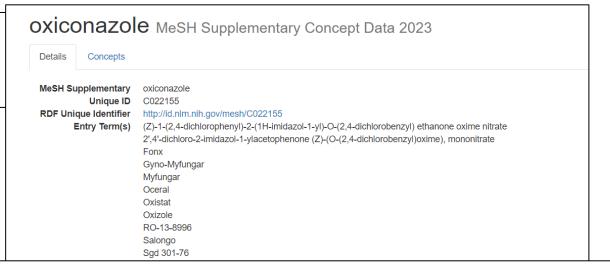
- \*BIOCHEMICAL PHENOMENA
- \*ALGORITHMS
  STOCHASTIC PROCESSES

#### Exceptions to Specialty Rule

- Pediatrics
- Geriatrics

#### Supplementary Concept Records (SCRs)

#### oxiconazole



#### **Heading Mapped to**



```
RQ8UL4C17S

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

RQ8UL4C17S

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

*Imidazoles
64
RN given refers to parent cpd(Z)-isomer; structure given in first source
Arzneim Forsch 29(10):1510;1979
1980/01/01
2017/07/26
```

## Supplementary Concepts: Your Turn!

Q14: What descriptors(s) would you use to describe a work about watermelon stomach disease?

A14: 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

#### From the NAF

```
$4 Personal names
$4 Corporate names
$4 Conference 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 the N	M Product or Service you are writing about.) •
	M Product or Service you are writing about.) • $I  \textbf{S} \mid I_{\mathbf{x}} \mid \vdots  \vdots  \mid \   X  \   \hat{\textbf{G}}  \   \hat{\textbf{G}}  \   \hat{\textbf{G}}  \   \hat{\textbf{G}}  \   \boldsymbol{\phi} \mid \   \boldsymbol{\phi}  \   \boldsymbol{\phi}  \   \boldsymbol{\phi}  \   \boldsymbol{\phi}$



## 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



## 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

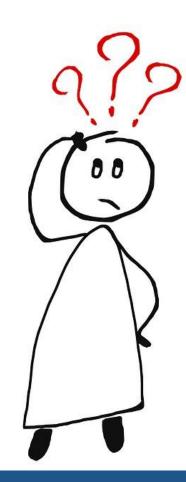
## When to Submit Changes to MeSH



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?



## More About MeSH

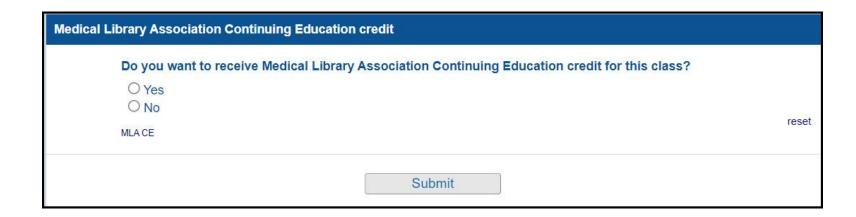
- See <u>MeSH Home</u>
- For news, see the NLM Technical Bulletin



## More about Cataloging

See the Cataloging and Metadata Management Section <a href="https://www.neepage">homepage</a>.

## 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: Step 10 create one:
- 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

