

# *Why search or query SNOMED CT content?*

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Common use cases include:

- Terminology authoring
- Reference set authoring – intensional sets
- Mappings
- Terminology binding
- EHR queries
- Validation/QA

# Challenges

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- Over 300,000 concepts
- Lexical search may be insufficient
  - Different meanings could still carry the same description
- Semantic search requires comprehensive knowledge of the concept model
- Various component properties, extendable by RF2
- Average users have high-level or only vague understanding of SNOMED CT

## *A search interface must be*

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- ... powerful enough to cater for all the relevant attributes (including lexical, semantic and metadata searches).
- ...yet simple and user friendly.

# *Snow Owl Meaningful Query (MQ)*

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- Online browser for SNOMED CT and extensions
  - Advanced search
  - Filtered hierarchy
- EHR datastore
- Semantic query engine to extract the semantics captured in EHRs
- Terminology server integration

**Snow Owl MQ**  ⌵

**Dashboard** **SNOMED CT**

**Browse**   ⌵

423,982 results ⌵ [Welcome](#)

▼ **SNOMED CT Concept** (423,981)

- > **Body structure** (30,588)
- > **Clinical finding** (99,873)
- > **Environment or geographic location** (1,711)
- > **Event** (3,670)
- > **Observable entity** (8,279)
- > **Organism** (33,163)
- > **Pharmaceutical / biologic product**
- > **Physical force** (170)
- > **Physical object** (4,626)

### Welcome to Snow Owl® MQ!

The tree on the left displays concepts that match the current filters. You can further filter the items in this tree.

Some tips:

- If you "**Type here** to filter concepts" then the tree will display only matching concepts
- **Add a filter** will restrict the tree based on previously saved filters
- **Click** a concept to view its details and history
- **Double-click** a concept to focus the tree on that concept
- Click the **C reset** button to return the tree to its initial setting

**DEMO**

## *Introduce filters*

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- Concept, Description, Property, Refset and Mapping filters
- Some relevant filters: property-value, module, description term, reference set, mapping

## *Features to check out*

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- Create a simple filter
- Open a few more complex filters
- Browse view
- Filtered browse view

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*QUESTIONS?*



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***THANK YOU!***

# The advanced search interface

**Snow Owl MQ**  o.bali@b2international.com

**Dashboard** **SNOMED CT**

**Browse** Showcase demo New Save

**Search** Match **All** of the following rules:

- Description contains **all these words**
- Property name/value **is**
- Reference set **contains concept**
- Concept status **is active**
- Description status **is active**
- Property status **is active**

Type here to filter 423,982 results Page: 1 / 4240

Preferred term	Module	Score
♥ Hypertensive disorder	SNOMED CT core	6.144
♥ Hyperlipidaemia	SNOMED CT core	4.182
♥ Depressive disorder	SNOMED CT core	3.535
👤 Adult health examination	SNOMED CT core	3.284
♥ Gastrooesophageal reflux disease	SNOMED CT core	3.049

# Lexical search in a specific description type

To return all concepts that have an active SG English preferred term containing the word tetralogy.

SNOMED CT

Showcase demo New Save

Match **All** of the following rules:

- Description contains **all these words** tetralogy
- Description status is **active**
- Description type is **Synonym**
- Description acceptability in language **SG English** is **Preferred**

Type here to filter 35 results Page: 1 / 1

Preferred term	Status	Module	Score
♥ Atrioventricular septal defect associated with tetralogy of Fallot	active	SNOMED CT core	4.259
🔧 Augmentation of outflow tract in total repair of tetralogy of Fallot	active	SNOMED CT core	3.589
🔧 Complete repair of tetralogy of Fallot with closure of previous shunt	active	SNOMED CT core	3.648
🔧 Complete repair of tetralogy of Fallot with transannular patch	active	SNOMED CT core	4.245

# Search by attribute (relationship)

To return all concepts, that have a procedure device type of attribute, or any of its subtypes (eg. direct device), with the value of arthroscope.

SNOMED CT






Showcase demo New Save

Match All of the following rules:

Property name/value Procedure device and descendants

is Arthroscope

Type here to filter 164 results << < Page: 1 / 2 > >>




Preferred term	Status	Module	Score
 Arthroscopic acromioplasty	active	SNOMED CT core	1
 Arthroscopic capsular release of shoulder joint	active	SNOMED CT core	1
 Arthroscopic chondroplasty of knee joint	active	SNOMED CT core	1
 Arthroscopic chondroplasty of shoulder joint	active	SNOMED CT core	1
 Arthroscopic debridement of articular ulcerations of knee	active	SNOMED CT core	1

# Search by attribute (concrete domain)

To return all concepts with the active ingredient of paracetamol, whose strength is between 50 and 500 mg.

SNOMED CT






Showcase demo

  New Save 

Match  of the following rules:

Property name/value	Q Defining strength 1 numerator value	-	+
	from <input type="text" value="50"/> to <input type="text" value="500"/> <input type="text" value="mg"/>		
Property name/value	Q Active ingredient	-	+
	is <input type="text" value="Paracetamol"/>		

Type here to filter  1,554 results << < Page:  / 16 > >>

Preferred term	Status	Module	Sc
 ACET 120 [Paracetamol] 120 mg Suppository	active	SNOMED CT Singapore Drug Dictionary Extension	1
 ACET 120 [Paracetamol] 120 mg Suppository (12 suppositories)	active	SNOMED CT Singapore Drug Dictionary Extension	1
 ACET 120 [Paracetamol] 120 mg Suppository (3 x 4 suppositories per strip)	active	SNOMED CT Singapore Drug Dictionary Extension	1
 ACET 120 [Paracetamol] 120 mg Suppository (3 x 4 suppositories)	active	SNOMED CT Singapore Drug Dictionary Extension	1
 ACET 120 [Paracetamol] 120 mg Suppository (4 suppositories per strip)	active	SNOMED CT Singapore Drug Dictionary Extension	1

# Complex query

The below query combines hierarchical, attribute, lexical and metadata searches, using logical and, logical or operators and exclusion.

SNOMED CT

Showcase demo-complex query New Save

Match **All** of the following rules:

- Concept ancestor **is** **Clinical finding**
- Any
  - Property name/value **Occurrence** **is** **Childhood**
  - Property name/value **Occurrence** **is** **Infancy**
- Description contains **none of these words** **chronic**
- Description status **is** **active**
- Concept effective time **is from** **2012-07-31** **to**

Type here to filter 23 results << < Page: 1 / 1 > >>

Preferred term	Module	Score
♥ Sleep disturbance in infancy	SNOMED CT core	1.733
♥ Zonular nonsenile cataract	SNOMED CT core	1.733
♥ Vagal autonomic bradycardia of prematurity	SNOMED CT core	1.733
♥ Behavioural insomnia of childhood, combined type	SNOMED CT core	1.733

# Search in reference set

To return members of a reference set.






SNOMED CT

Showcase demo New Save

Match  of the following rules:

- +

614 results << < Page: 1 / 7 > >>

Preferred term	Status	Module	Score
 Aerosol Foam	active	SNOMED CT core	1
 Bar Soap	active	SNOMED CT Singapore Extension	1
 Bead	active	SNOMED CT Singapore Extension	1
 Bolus Injection Liquid	active	SNOMED CT Singapore Extension	1
 Bolus Injection Solution	active	SNOMED CT Singapore Extension	1

# Search by mapping

To search concepts by their maps. The below example returns all concepts, that are mapped to the specified ATC code.

SNOMED CT

Showcase demo



New

Save



Match  of the following rules:

Has mapping



anywhere  in



to

N02BE01



Type here to filter

1,223 results



Page:

1

/ 13



Preferred term	Status	Module	S
ACET 120 [Paracetamol] 120 mg Suppository	active	SNOMED CT Singapore Drug Dictionary Extension	1
ACET 120 [Paracetamol] 120 mg Suppository (12 suppositories)	active	SNOMED CT Singapore Drug Dictionary Extension	1
ACET 120 [Paracetamol] 120 mg Suppository (3 x 4 suppositories per strip)	active	SNOMED CT Singapore Drug Dictionary Extension	1
ACET 120 [Paracetamol] 120 mg Suppository (3 x 4 suppositories)	active	SNOMED CT Singapore Drug Dictionary Extension	1
ACET 120 [Paracetamol] 120 mg Suppository (4 suppositories per strip)	active	SNOMED CT Singapore Drug Dictionary Extension	1



# Browse hierarchy

SNOMED CT

Type here to filter concepts

Add filter



423,982 results

Overview

History

- > Body structure (30,588)
- > **Clinical finding (99,873)**
- > Environment or geographical location (1,711)
- > Event (3,670)
- > Observable entity (8,279)
- > Organism (33,163)
- > Pharmaceutical / biologic product (137,272)
- > Physical force (170)
- > Physical object (4,626)
- > Procedure (53,639)
- > Qualifier value (9,740)
- > Record artifact (223)
- > Situation with explicit context (3,567)
- > SNOMED CT Model Component (1,695)
- > Social context (4,804)
- > Special concept (648)
- > Specimen (1,439)

## Clinical finding

### DESCRIPTIONS

Fully Specified Name

Clinical finding (finding)

Synonym

Clinical finding

### PROPERTIES

Is a

SNOMED CT Concept

### SNOMED CT PROPERTIES

Concept ID

404684003

Module

SNOMED CT core

Effective time

2004-01-31

Status

Active

Definition status

Primitive

Subclass definitions

Mutually disjoint

# Quick filter hierarchy

SNOMED CT

tetralogy  Add filter

28 results [Overview](#) [History](#)

SNOMED CT Concept (28)
 

- Tetralogy of Fallot (5)**
  - Tetralogy of Fallot with absent pulmonary valve
  - Tetralogy of Fallot with pulmonary stenosis
  - Tetralogy of Fallot with pulmonary atresia
  - Ventricular septal defect in Fallot's tetralogy
  - Dextraposition of aorta in Fallot's tetralogy
  - Revision of correction of tetralogy of Fallot
  - Repair of tetralogy of Fallot (9)
  - History of repair of tetralogy of Fallot
    - Atrioventricular septal defect associated with tetralogy of Fallot
    - Infundibulectomy of ventricle in total repair of tetralogy of Fallot
    - Repair of atrial heart septum in total repair of tetralogy of Fallot
    - Valvulotomy of pulmonary valve in total repair of tetralogy of Fallot
    - Repair of atrioventricular septal defect associated with Fallot's tetralogy

**♥ Tetralogy of Fallot**

**DESCRIPTIONS**

Fully Specified Name	Tetralogy of Fallot (disorder)
Synonym	Tetralogy of Fallot
Synonym	Fallot's tetralogy
Synonym	Subpulmonic stenosis, ventricular septal defect, overriding aorta, AND right ventricular hypertrophy
Synonym	TOF - Tetralogy of Fallot

**PROPERTIES**

Is a	Congenital abnormality of ventricles and ventricular septum
Is a	Overriding aorta
Is a	Pulmonic valve stenosis
Is a	Right ventricular hypertrophy
Is a	Ventricular septal defect
Occurrence	Congenital
Associated morphology	Congenital anomaly
Finding site	Cardiac ventricular structure

# Apply a pre-authored filter

SNOMED CT

Only fully defined concepts  New Save

Match **All** of the following rules:

Concept definition status is Defined

Type here to filter 189,909 results << < Page: 1 / 1900 > >>

Preferred term

- 1,1,1-Trichloroethane measurement
- 1,1-Dichloro-2,2-bis(p-chlorophenyl)ethane measurement
- 1,2-Dichlorobenzene measurement
- 1,2-Dimethylbenzene measurement

Type here to filter concepts Add filter Only fully defined concepts

189,909 results Overview History

- SNOMED CT Concept (189,909)
  - Abacavir (95)
  - Abacavir + Lamivudine (63)
  - Abacavir + lamivudine
  - Abacavir + Lamivudine + Zidovudine (43)
  - Able to walk (15)**
    - Abnormal ability to understand
    - Abnormal host defence
    - Abnormal host response
    - Abnormal metabolic requirement
    - Abnormal sexual function (3)
    - Absence of sensation (5)
    - Absent acmaesthesia
    - Acamprosate (12)
    - Acarbose (31)
    - Accidental anti-common cold drug poisoning

**♥ Able to walk**

**DESCRIPTIONS**

Fully Specified Name: Able to walk (finding)  
Synonym: Able to walk

**PROPERTIES**

Is a: Finding of walking  
Has interpretation: Able  
Interprets: Ability to walk

**SNOMED CT PROPERTIES**

Concept ID: 282144007  
Module: SNOMED CT core  
Effective time: 2008-07-31  
Status: Active  
Definition status: Defined  
Subclass definitions: Mutually disjoint

# Manage filters

Snow Owl MQ  obali@b2international.com

Dashboard Browse Search **Filters** Drug Products Reports

Filters Categories

Items per page: 25 New... Download... Page: 1 / 1

Name	Owner	State	Category	Actions
<a href="#">Only fully defined concepts</a>	obali@b2international.com	<input type="checkbox"/> Shared		<a href="#">Delete</a>
<a href="#">Showcase demo</a>	obali@b2international.com	<input type="checkbox"/> Shared		<a href="#">Delete</a>

# Dashboard

