



ANATOMICAL THERAPEUTIC CHEMICAL CLASSIFICATION SYSTEM AND THE DEFINED DAILY DOSE METHODOLOGY (ATC/DDD)

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ATC CLASSIFICATION SYSTEM

ATC = Anatomical Therapeutic Chemical

DDD = Defined Daily Dose

Download from:

https://www.whocc.no/filearchive/publications/2017_guidelines_web.pdf

“International language for drug utilisation research”

ATC SYSTEM MAIN GROUPS

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The main groups of the ATC classification system are listed below. A survey of each main group is given in the beginning of each of the following chapters.

- A Alimentary tract and metabolism
- B Blood and blood forming organs
- C Cardiovascular system
- D Dermatologicals
- G Genito urinary system and sex hormones
- H Systemic hormonal preparations, excl. sex hormones and insulins
- J Antiinfectives for systemic use
- L Antineoplastic and immunomodulating agents
- M Musculo-skeletal system
- N Nervous system
- P Antiparasitic products, insecticides and repellents
- R Respiratory system
- S Sensory organs
- V Various



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News

ATC/DDD Index

Updates included in the
ATC/DDD Index

ATC/DDD methodology

ATC

DDD

ATC/DDD alterations,
cumulative lists

ATC/DDD Index and
Guidelines

Use of ATC/DDD

Courses

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ATC/DDD Index 2017

A searchable version of the complete ATC index with DDDs is available below. The search options enable you to find ATC codes and DDDs for substance name and/or ATC levels. In your search result you may choose to show or hide the text from the Guidelines for ATC classification and DDD assignment linked to the ATC level. The text in the Guidelines will give information related to the background for the ATC and DDD assignment.

Search query

or

ATC code

- All ATC levels are searchable.
- A search will result in showing the exact substance/level and all ATC levels above (up to 1st ATC level).

Name

- "Name" is defined as the name of the substance (normally the INN name) or the name of the ATC level. Note that trademarks are not searchable.
- A minimum of three letters must be entered in the name box. Select a query that contain part of or a query that start with the letter entered.
- For ATC combination levels, please note that all active ingredients would normally not be searchable.

Structure of the ATC code

- J General anti-infectives for systemic use
(1st level, anatomical main group)
- J01 Antibacterials for systemic use
(2nd level, therapeutic subgroup)
- J01C Beta-lactam antibacterials, penicillins
(3rd level, pharmacological subgroup)
- J01CA Beta-lactamase sensitive penicillins with extended spectrum
(4th level, chemical subgroup)
- J01CA04 Amoxicillin
(5th level, chemical substance)

General principles

- Medicines are classified according to their main therapeutic use
- Only one ATC code for each administration form
- Several ATC codes if clearly different therapeutic uses reflected in different:
 - Routes of administration (e.g. topical or systemic)
 - Strengths

Examples of ATC codes

- Pregabalin (e.g. Lyrica[®]): Antiepileptic → Agent for neuropathic pain → N03AX16
- Lamivudine (e.g. 3TC[®]): HIV → Antiviral → J05AF05
- Sumatriptan (e.g. Imigran[®]): Antimigraine → 5HT₁ agonist → N02CC01

Different indications – one ATC code

Example duloxetine:

- Major Depressive Disorder (Cymbalta[®]: 30 mg, 60mg)
- Stress Urinary Incontinence (20 mg, 40mg)
- Diabetic neuropathic pain (Cymbalta[®])

Overlapping dosages used for the various indications

ATC code as *antidepressant* (N06AX21)

Several ATC codes – one indication

Bone diseases/osteoporosis ATC group

- Vitamin D and analogues: A11CC
- Calcium supplement: A12A
- Oestrogens/SERM: G03C/G03F/G03X
- Parathyroid hormones: H05AA
- Calcitonin: H05BA
- Bisphosphonates: M05BA/M05BB

Several ATC codes – different administration forms

Prednisolone

- A07EA01 (Enemas and rectal foams)
- C05AA04 (Rectal suppositories)
- D07AA03 (Creams, ointments and lotions)
- H02AB06 (Tablets, injections)
- R01AD02 (Nasal sprays/drops)
- S01BA04 (Eye drops)
- S02BA03 (Ear drops)

ATC codes: Combination products

- Combination products with two or more active ingredients in the same 4th level are normally classified using the 5th level codes 20 or 30
- Example:
 - N01BB02 *lidocaine*
 - N01BB04 *prilocaine*
 - N01BB20 *combinations of lidocaine and prilocaine*

Defined Daily Dose (DDD) & Prescribed Daily Dose (PDD)

Defined Daily Dose (DDD)

- DDD = Assumed average maintenance dose per day for a drug used for its main indication in adults
- Drug exposure – expressed in DDDs
 - DDDs/1000 inhabitants/day (most common)
 - DDDs per 100 bed-days
 - DDDs per inhabitants per year
- E.g. 10 DDDs/1000 inhabitants/day = indicates that 1% of the population receive a certain treatment continuously (i.e. daily) – only true if the DDD is equal to the actual dose used
- Used as a surrogate for point prevalence (therapeutic intensity)

DDD (cont)

- Technical unit of measurement - represents an “average” daily dose for the main indication
- Useful for measuring and comparing volume of drug use
- Should not be interpreted as the recommended or prescribed dose, but as international compromise based on review of available documentation
- DDD may even be a dose that is seldom prescribed, because it is an average of two or more commonly used doses

Paediatric DDDs

- DDDs are assigned based on use in adults
- For paediatric medications, dose recommendations are based on age and body weight
- Most pediatric medications are used off-label and documentation regarding dose regimens not available
- WHO has concluded that it is not possible to assign pediatric DDDs
- Prevalence of drug use in children to be based on PDD or indications in paediatric populations
- Use general DDD

DDD assignment & changes

- WHO uses approved dose recommendations for the main indication
- Submitted documentation from the applicant, textbooks and data from clinical trials
- Important to be aware of ATC/DDD alterations (e.g. C10SAA – Statins: changed twice, latest in 2009)
- Alterations of ATC and DDDs may occur in order to reflect changes in drug therapy
- Important to describe the version of the ATC/DDD system used in research



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ATC classification of combinations of opioids and other analgesics

Published Friday January 22 2016

The ATC classification of opioids in combination with other analgesics was on the agenda for the International Working Group for Drug Statistics Methodology meeting in October 2015. A proposal to classify all combination of opioids and other analgesics in a new ATC 4th level *N02AJ Opioids in combination with non-opioid analgesics* was decided. All combinations of opioids and other analgesics will be classified in *N02A Opioids*, independent of the amount of opioid.

Since the alterations will have implications for many users of the ATC/DDD methodology, **the deadline for objections and comments to the temporary alterations in N02A Opioids is extended from 1 February to 15 February 2016.**

You will find an overview of the temporary classification below.

Please note that the proposal was published on our website in December 2015 and is available [here](#).

The existing DDDs of the combination products moved to N02AJ, expressed in unit dose (UD), will be kept.

The following new ATC 4th level and 5th levels will be assigned for opioids in combination with non-opioid analgesics:

Archive

- 22.01.16 [ATC classification of combinations of opioids and other analgesics](#)
- 18.12.15 [ATC/DDD course 9-10 June 2016 in Oslo](#)
- 09.12.15 [New ATC/DDD included in the index of 2016](#)
- 09.12.15 [List of DDDs for three years revision](#)
- 08.12.15 [Updates of the list of DDDs for combined products](#)
- 02.12.15 [New ATC/DDDs and alterations from the October 2015 meeting](#)
- 28.10.15 [ATC/DDD course in Oslo 9-10 June 2016](#)
- 05.05.15 [Updates of the list of DDDs for combined products](#)
- 30.04.15 [New ATC/DDDs and alterations from the March 2015 meeting](#)
- 16.12.14 [List of DDDs for three years revision](#)

Prescribed Daily Dose (PDD)

- PDD = Average daily amount of a drug that is actually prescribed
- Can be determined from prescription studies, medical- or pharmacy records and patient interviews
- Important to relate the PDD to the diagnosis on which dosage is based
- If substantial discrepancy between the PDD and DDD - important to take into account when evaluating and interpreting drug consumption figures
- Consumed daily dose: Specially designed studies including patient interviews are required to measure actual drug intake at the patient level

ATC/DDD in drug utilisation research

- Study patterns of use and changes over time
- Evaluate the impact of e.g. information efforts and regulatory changes
- Study drug exposure in relation to adverse drug reactions
- Indicate over-use, under-use and misuse/abuse of drugs
- Define need for further drug utilisation studies

Pharmacovigilance

- Trends in frequency of ADR reports examined against drug exposure
- Ratio: ADR/DDDs (or DDD/1000 inhabitants/day)

CONCLUSION

- ATC/DDD system is the “gold standard” for international drug utilisation research
- ATC/DDD is a tool for exchanging and comparing data on medicine use at local, national and international levels
- Use ATC/DDD website for updates: www.whocc.no
- Also: ATC Vet and ATC Herbal
- Annual courses in Oslo, Norway