

The Anatomical Therapeutic Chemical (ATC) Classification is an internationally accepted classification system for medicines that is maintained by the World Health Organisation (WHO). The WHO assigns ATC codes to all active substances contained in medicines based on the therapeutic indication for the medicine.

- First level ATC (Anatomical Therapeutic Chemical) code
- The first level of the code indicates the anatomical main group and consists of one letter. There are 14 main groups:

Code	Contents
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, excluding 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

← اول اسئ بدنا نعرف الـ (WHO) ايش عمله؟

← اهم اسئ بكم تعرفوا انه فيه عندنا
(classification system) للـ (Drugs).

← هذال (classification) اسمة (ATC classification)

← ATC = Anatomical Therapeutic
chemical

← هذال classification تم عمله من قبل الـ (WHO)

← هذال (ATC classification) كان يعطي عبارته عن

some things its codes = ATC code

← يعني اي (Active substances) كان لها code .

← ف الـ (WHO) عمله (ATC code) ← لك الـ (Active substances)
'الموجوده بي الـ (medicine) بالاعتماد على الـ
(Therapeutic indication for that's medicine).

← ايش هو الـ (code)؟

← الـ (ATC) لحي يعملوا الـ (code) استخدموا (5 level of ATC)

← اول (Level) قسموا الـ (drugs) حسب الـ (system) :-

← يعني فيه (14 main groups)

← عنا مثلاً :-

code → A → for Alimentary tract and metabolism

يعني اذا الـ (contant) كان من ضمن الـ

(code A) (Alimentary tract and metabolism) اعطوه

← واذا كان (Blood) اعطوه (code B)

etc

✱ يعني الـ (first level) يعني اول Letter بتشوف هذال (code)

واهاي اختصارية اذا كان مثلاً :-
A → Alimentary and metabolism
B → Blood
etc ...

■ Second level

- The second level of the code indicates the therapeutic main group and consists of two digits.
- Example: C03 Diuretics

03 → Diuretics

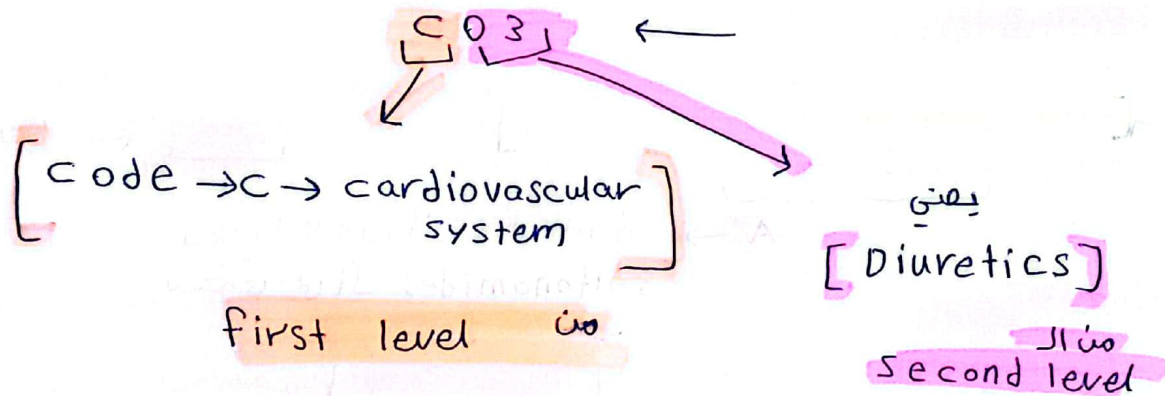
■ Third level

- The third level of the code indicates the therapeutic/pharmacological subgroup and consists of one letter.
- Example: C03C High-ceiling diuretics

C → High-ceiling diuretics

 Second level ← يحتوي على (two digits)
 ← قسم بالاعتماد على الـ
 (therapeutic main group)

← يعني اذا كانت هوه (Diuretics) اعطوه ← (03)
 ← ف اي شخص يشوف (C03)
 يعرف انه هيه (Diuretics) ~~استخدم~~ يستخدم لـ الـ
 (cardiovascular system)

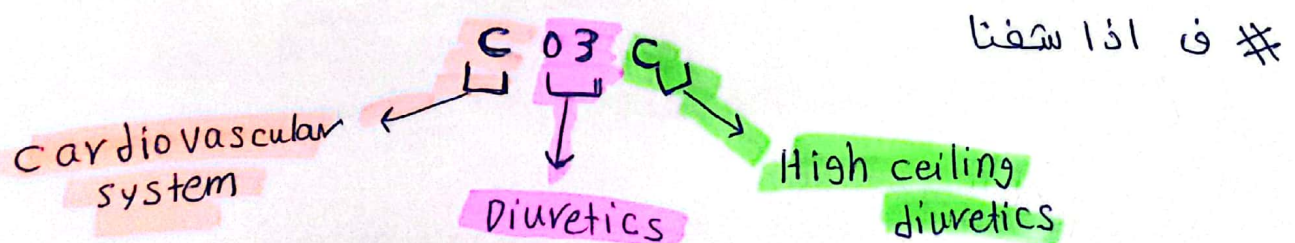


Just one letter ← Letter : زادوا عليه Third level #

Therapeutic/Pharmacological ← هو عبارة عن subgroup

← يعني الـ (Diuretics) فيه عندنا (subgroup)
 ← (High ceiling diuretics) الي هم الـ (diuretics) الي يشتغلوا افضل
 من الـ (other Diuretics).

← الـ (High ceiling diuretics) اعطوها ← (letter C).



■ Fourth level

- يحتوي على ← The fourth level of the code indicates the chemical/therapeutic/pharmacological subgroup and consists of one letter.
- قسم بالاعتماد على → Example: C03CA Sulfonamides

A → يعني انه هذا ال diuretics
يحتوي على ال sulfonamides

■ Fifth level

- يحتوي على ← The fifth level of the code indicates the chemical substance and consists of two digits.
- قسم بالاعتماد على → Example: C03CA01 Furosemide

01 → يعني ايش هو ال Diuretics الذي يحتوي على
ال sulfonamide الي هو ال Furosemide

EXAMPLE OF ATC CODE FOR METFORMIN

A	Alimentary tract and metabolism (1st level, anatomical main group)
A10	Drugs used in diabetes (2nd level, therapeutic subgroup)
A10B	Blood glucose lowering drugs, excl. insulins (3rd level, pharmacological subgroup)
A10BA	Biguanides (4th level, chemical subgroup)
A10BA02	metformin (5th level, chemical substance)

هذا ايجاره
عن ال code
تاع ال metformin

NO THING PERFECT, THERE ARE CHALLENGES

- Medicinal products are classified according to the main therapeutic use of the main active ingredient. The ATC system is, however, not strictly a therapeutic classification ①

❖ For example, calcium channel blockers are classified in the pharmacological group C08 Calcium channel blockers, which avoids specifying whether the main indication is coronary heart disease or hypertension.

← يعني هذا الـ ~~ATC~~ (ATC classification system)

هو منيح، لكن فيه (Some negative things)

← يعني هو (not perfect)

← لعدة اسباب

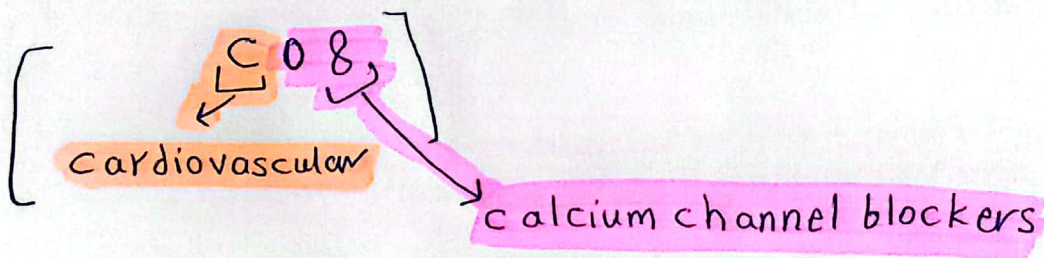
① not strictly a therapeutic classification system

مثلاً
calcium channel blockers = C08

لكن احنا ما حددنا ايش الـ

(main indication)

تبعتها الـ (Cardiovascular).



← طبيب اي (calcium channel blockers) ؟

← الي بنسخدمها لـ الـ (Coronary heart disease) ؟

← ولا الي بنسخدمها لـ الـ (Hypertension) ؟

✗ ← يعني هو ما بيعطينا الـ (main indication) لـ (disease) الي يستخدم فيه الـ (Drugs)

Many medicines are used and approved for two or more indications, while normally only one ATC code will be assigned.

Besides, ATC codes are often assigned according to the mechanism of action rather than therapy.

An ATC group may therefore include medicines with many different indications, and drugs with similar therapeutic use may be classified in different groups.

②

← اذا كان ال (medicine) له مثله " ~~مثله~~
 (calcium channel blockers)

الـ اكثر من (one indication) .

← لكن بي ال (ATC) الـ (it just has one)
 ATC code

← ~~ما الـ~~ (two ATC code for each indication) .

← ترجع لنفس المشكلة لانه هو ما حدد لنا ال (system) بناءً
 على ال (therapeutic indication) تبعت ال drugs .

← هو (just) اعطاني بناءً على المكون الاساسي فيه .

* (ATC group) ← احتمال نفس القرون تحتوي على (medicine)
 (with different indications)

او تحتوي على (drugs) الـ نفس الـ (therapeutic use)

لكن صار لها (classification) بي (different group)

NO THING PERFECT, THERE ARE CHALLENGES

- A medicinal substance can be given more than one ATC code if it is available in two or more strengths or routes of administration with clearly different therapeutic uses

الاستخدامات
indication

- Finasteride is available in two different strengths.
- A low strength tablet for the treatment of male pattern baldness is classified under D11AX – Other dermatologicals.
- A high strength tablet used in the treatment of benign prostatic hypertrophy (BPH) is classified under G04C - Drugs used in BPH.

- ← انه الـ (Medicinal substance) ما يكون له بس (one ATC code)
- ← ممكن يكون له (one or more ATC code)
- ← في حالة الـ اكثر من (Strengths) او الـ اكثر من (Routes of Administration)

← مثال

Finasteride : موجود على (two different strengths)

→ فيه عندنا

Low strength tablet ① ← يستخدم في علاج الصلع ← هو ضمن

تصنيف الـ

Dermatologicals

(D11AX)

benign prostatic hypertrophy (BPH)

High strength tablet ②

← يستخدم في علاج الـ

← هو ضمن تصنيف الـ (G04C)

نفس الدواء ممكن تلاقي بـ قسمين مختلفين

EXAMPLE

Prednisolone in single ingredient products is given several ATC codes due to different therapeutic use and different formulations.

← الكثير (ATC code)

هنا هذا الدسج مصب

الدسهل انه استوف

ايش ال main indication

تجسة ، مش انه اروح ادور

بكل system ايش هو ال

(code) تبع ال (prednisolone)

- A07EA01 Intestinal antiinflammatory agents (enemas and foams)
- C05AA04 Antihemorrhoidals for topical use (suppositories)
- D07AA03 Dermatological preparations (creams, ointments and lotions)
- H02AB06 Corticosteroids for systemic use (tablets, injections)
- R01AD02 Nasal decongestants (nasal sprays/drops)
- S01BA04 Ophthalmologicals (eye drops)
- S02BA03 Otologicals (ear drops)

■ **Obsolete drugs or drugs withdrawn from the market** are kept in the ATC system, since exclusion of substances from the ATC system may create difficulties for the users of the system when considering historical data.

من المساوى ايضا
صحة ال ATC
انه حتى الدواء
الي ثبت عدم
صلاحية او الذي
سحب من الاسواق
بصلا هو جود ال (ATC system). لكن فيه سبب لبقى هاي الادوية ال (ATC system) انه ال (users of the system) اذا بد هم يرجعوا لا

Historical data of any substances.

← اسهل من استخدام (ATC system)

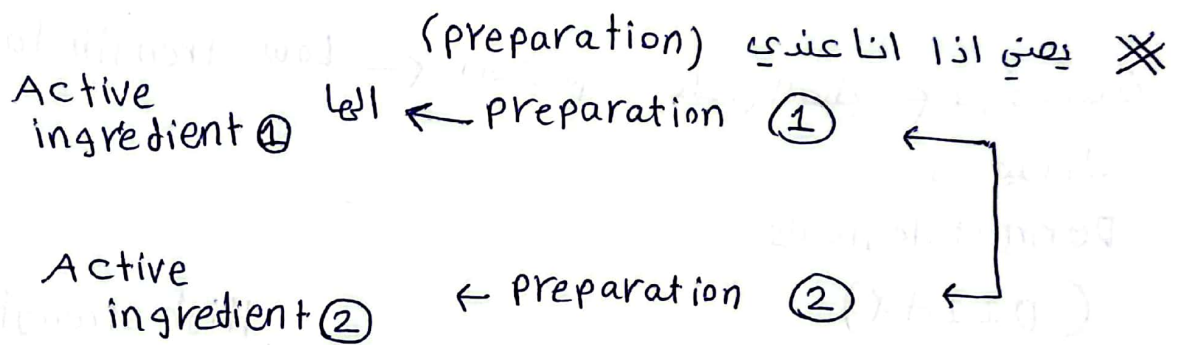
← يعني هذا الدواء موجود على (ATC system) لكن موجود في ال (market).

- The classification of combination products is a challenge in any classification system.

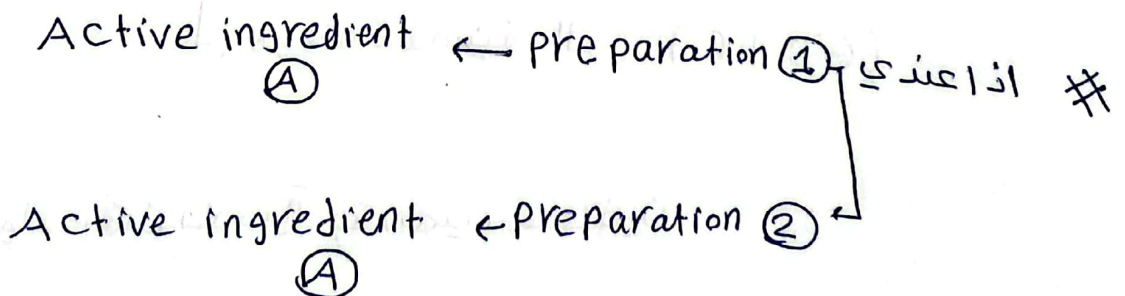
- For ATC, combined products are classified according to two main principles: Combined preparations containing two or more active components not belonging to the same therapeutic 4th level group are classified using 50-series codes. Combined preparations with the same main active ingredient are usually given the same ATC code.

- ← برضه اذا كان عندي (product) فيه (combination)
- ← يعني دواء معين مصنع من (two active ingredient)
- ← هذا يعتبر (challenge) باني (classification system)
- ← كينا انه الـ (ATC level) ← (5 level)
- ← الـ (combine preparation) بوصلوا لهند الـ (4th level) وابستنجوا عند الـ (4th level) انه كل واحد الـ (therapeutic group) مختلف عن الآخر.

- ← هلا هذول ايش عملوا بر الـ (ATC) ؟
- ← بر الـ (5th level) فصلوهم
- ← صار كل (preparation) اوكل (Active ingredient) الـ (code) مختلف عن الـ (code) ~~للـ (Active ingredient)~~ الثاني.



- ← كل (preparation) الـ (code) مختلف عن الآخر باستخدام الـ (5th level of ATC code)



- ← انه هذول الـ (two preparation) ~~يحتو على نفس الـ (Active ingredient)~~

← الدتئين الهم نفس الـ (ATC code)

- ← انه '1 preparation الـ (ATC code) والـ 2 preparation الـ نفس الـ (ATC code)

حتى إذا بدأنا صرف الجرعة التي نستخدم لي Drug معين
in Adults

What is ATC/DDD ?

❖ the DDD is the assumed average maintenance dose per day for a drug used for its main indication in adults.

← مسكلتها (DDD) انه ما يعتمد ابدأ على (other background information) انه ما يعتمد على العوامل التي ممكن انها تأثر على الجرعة المستخدمة من قبل الـ (Adults)

❖ https://www.whocc.no/atc_ddd_index / سوى كان وزنه او الدوية الثانية الي هو بيا حذها etc...

What is ATC/DDD ?

❖ To express the DDD (Defined Daily Dose), several abbreviations are used for units and routes of administration.

Units:

- g = gram
- mg = milligram
- mcg = microgram
- U = unit
- TU = thousand units
- MU = million units
- mmol = millimole
- ml = milliliter (e.g. eyedrops)

← يصير عن (DDD) بال classification

تاع الـ ATC باستخدام طريقتين اما (units)

(Route of Administration)

Route of administration (Adm.R):

- Implant = Implant
- Inhal = Inhalation
- Instill = Instillation
- N = nasal
- O = oral
- P = parenteral
- R = rectal
- SL = sublingual/buccal/oromucosal
- TD = transdermal
- V = vaginal

* الـ (ATC classification system) فيها بعض الـ (challenges)

① انه ما بقسمها حسب الـ (therapeutic indication) بقسمها حسب الـ (system) هل هيه (CV) او هل هيه (Respiratory) etc. لكن ما بقطيبي بر الـ (CV) مثلاً ايش هو الـ (Therapeutic indication)

② اذا كان عندنا دواء مهين الـ اكثر من (strengths)

(for each therapeutic indication)

بده يقسم (for each system)

(in different ATC code)

③ ممكن يكون الـ اكثر من (ATC code) اذا كان الـ اكثر من (formulation) (for each indication)

④ (classification of combination product)

⑤ (DDD) الـ عبر عنها بر (unit s) (Route of Administration)

مشكلتها انها ما بتعتمد في حساب الـ (dose) لـ (Adults) على

(back ground information) بيعة الشخص.

← عثمان هيك اجبت الـ (WHO) استغلوا مع اكثر من (10) (international centers)

← ~~المشكلة~~ وكوا انهم لم يستعمل (another classification) اسمة (ICD)

The World Health Organization (WHO) in association with 10 other International Centers came out with International Statistical Classification of Diseases and Related Health Problems (ICD). Diseases health problems procedures

← الـ (ICD) بيصطيفي (code) عبارة عن

Their main purpose was to provide a code set that will assist in analyzing mortality rates across the world. The ICD provides a set of codes for diseases, health problems, and procedures to identify medical records and to facilitate national or international level survey about health conditions, mortality rates, and so on.

← هاي الـ (code) بتساعدني انه بعمل analyzing + estimation to mortality rates across the world.

ICD provides a set of codes that medical practitioners can attach with the medical records of their patients. up to date

← ICD
← برضه الها

WHO publishes the online version of ICD standard describing all its codes and their structural descriptions. ← يحتوي على

← انه اذا فتنا على موقع الـ (ICD) راح نشوف انه الموقع يحتوي على (blocks)

A block describes diseases of a group of similar categories based on their characteristics. Multiple blocks constitute a chapter. For example, Chapter 11 describes diseases of the digestive system. This chapter consists of 10 blocks. One of the blocks is related to the diseases of appendix. Blocks further include specializations of diseases.

← انه الـ (multiple blocks) هي عبارة عن (chapter)
← الـ (chapter) يحتوي على (blocks) وكل (blocks) بشرطنا (Disease) من ضمن هذا الـ (chapter)

صلاة

ال (chapter 11) يحتوي على سفلة وحدة

بكي عن ال (Digestive system)

ال (Digestive system) فيها كثير (diseases)

فكل (block) من ضمن ال (digestive system)

اي من ضمن (Chapter 11) بكي عنا وحدة من

هاي ال (Diseases)

هديك الزعيم