

# **TABLETS**

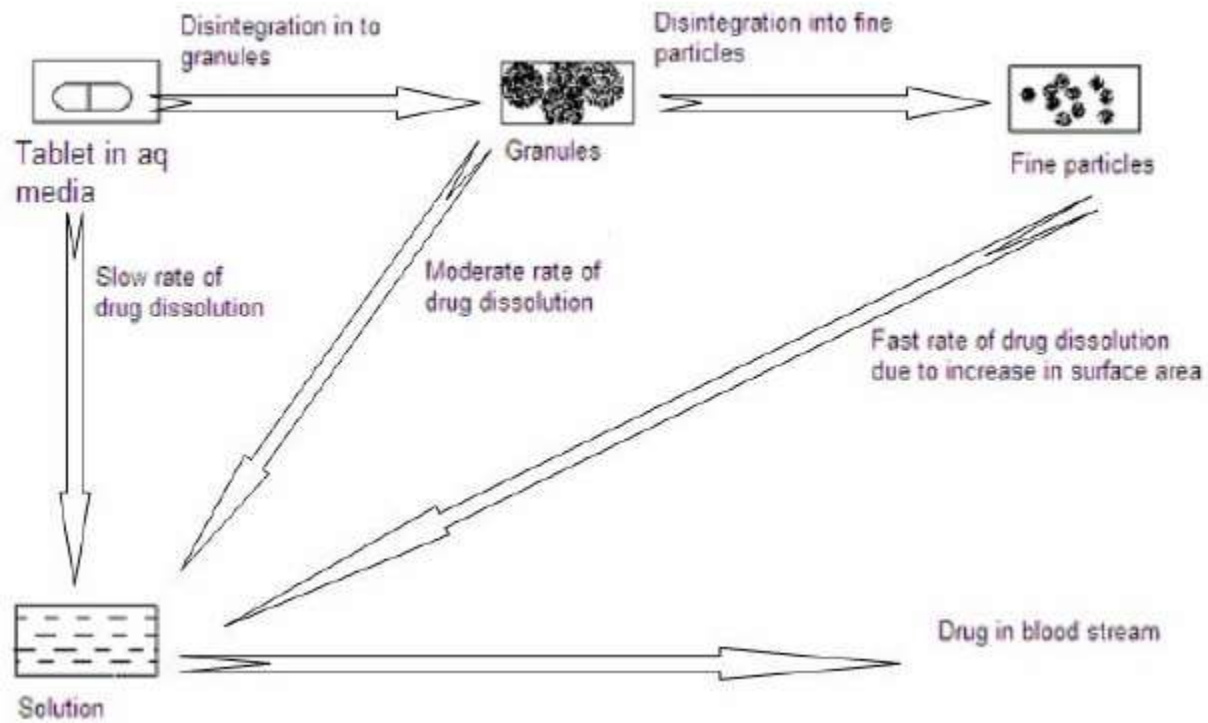
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# Oral Solid Dosage Forms

## Tablets

Is solid pharmaceutical dosage forms containing drug substances with or without suitable diluents and prepared either by compression or molding methods





## **advantages** afforded to the manufacturer

- 1- simplicity
- 2- economy of preparation
- 3- stability
- 4- convenience in packaging, shipping and dispensing

## **advantages** to the patient

- 1- accuracy of dosage
- 2- compactness
- 3- portability
- 4 blandness of taste
- 5- ease of administration.

- Tablets may differ greatly in size and weight depending on the amount of drug substance present and the intended method of administration.
- They are divided into two general classes, whether they are made by compression or molding.

- Compressed Tablets (CT)
- Are formed by compression and contain no special coating.
- They are made from powdered, crystalline or granular materials, alone or in combination with binders, disintegrants, controlled-release polymers, lubricants, diluents and, in many cases, colorants

- Sugar-Coated Tablets (SCT) - These are compressed tablets containing a sugar coating. Such coatings may be colored and are beneficial in covering up drug substances possessing objectionable tastes or odors, and in protecting materials sensitive to oxidation.
- Film-Coated Tablets (FCT) - These are compressed tablets which are covered with a thin layer or film of a water-soluble material. A number of polymeric substances with film-forming properties may be used. Film coating imparts the same general characteristics as sugar coating with the added advantage of a greatly reduced time period required for the coating operation.

- Enteric-Coated Tablets (ECT) - These are compressed tablets coated with substances that resist solution in gastric fluid but disintegrate in the intestine. It can be used for tablets containing drug substances which are inactivated or destroyed in the stomach, for those which irritate the mucosa or as a means of delayed release of the medication.



- **Multiple Compressed Tablets (MCT)** - These are compressed tablets made by more than one compression cycle.
- Layered Tablets - Such tablets are prepared by compressing additional tablet granulation on a previously compressed granulation. The operation may be repeated to produce multilayered tablets of two or three layers. Special tablet presses are required to make layered tablets

- Press-Coated Tablets - dry-coated, are prepared by feeding previously compressed tablets into a special tableting machine and compressing another granulation layer around the preformed tablets.
- They have all the advantages of compressed tablets, i.e, monogramming, speed of disintegration, etc, while retaining the attributes of sugar-coated tablets in masking the taste of the drug substance in the core tablets...

- Press-coated tablets also can be used to separate incompatible drug substances
- In addition, they can provide a means to give an enteric coating to the core tablets. Both types of multiple-compressed tablets have been used widely in the design of prolonged-action dosage forms.

- Controlled-Release Tablets - Compressed tablets can be formulated to release the drug slowly over a prolonged period of time. Hence, referred to as Prolonged-Release or Sustained-Release dosage forms as well. These tablets (capsule versions) categorized into three types:

- (1) those which respond to some physiological condition to release the drug, such as enteric coatings;
- (2) those that release the drug in a relatively steady, controlled manner and
- (3) those that combine combinations of mechanisms to release “pulses” of drug, such as repeat-action tablets

## Tablets for Solution:

- \* Compressed tablets to be used for preparing solutions or imparting given characteristics to solutions must be labeled to indicate that they are not to be swallowed.

Examples of these tablet: Potassium Permanganate

Tablets for Solution

## Effervescent Tablets:

- In addition to the drug substance, these contain sodium bicarbonate and an organic acid such as tartaric or citric.
- In the presence of water, these additives react liberating carbon dioxide which acts as a disintegrator and produces effervescence.
- Except for small quantities of lubricants present, effervescent tablets are soluble.

# Soluble tablet

Tablets are solids of uniform shape and dimensions, usually circular, with either flat or convex faces, the distance between faces being less than the diameter. Water soluble tablets are intended for application after dissolution in water and contain an active ingredient should be totally soluble in water at used concentrations. All the excipients used to formulate these tablets are required to be completely soluble in water including the glidants, binders, etc. So, manufacturing of this kind of tablets are challenge for the formulator. Companies manufacturing these tablets have patented them.



- Hypodermic Tablets (HT) - Hypodermic tablets are soft, readily soluble tablets and originally were used for the preparation of solutions to be injected. Since stable parenteral solutions are now available for most drug substances, there is no justification for the use of hypodermic tablets for injection.

- **Compressed Suppositories** or Inserts Occasionally, vaginal suppositories, such as Metronidazole tablets, are prepared by compression. Tablets for this use usually contain lactose as the diluent. In this case, as well as for any tablet intended for administration other than by swallowing, the label must indicate the manner in which it is to be used.

- **Buccal and Sublingual Tablets:**
- These are small, flat, oval tablets.
- Tablets intended for buccal administration by inserting into the buccal pouch may dissolve or slowly; therefore, they are formulated and compressed with sufficient pressure to give a hard tablet.

- Some newer approaches use tablets that melt at body temperatures. The matrix of the tablet is solidified while the drug is in solution. After melting, the drug is automatically in solution and available for absorption, thus eliminating dissolution as a rate-limiting step in the absorption of poorly soluble compounds.

## **Sublingual tablets:**

- \* As those containing nitroglycerin, isoproterenol hydrochloride, are placed under the tongue.
- Sublingual tablets dissolve rapidly and the drug substances are absorbed readily by this form of administration.

- **Molded Tablets [Tablet Triturates (TT)]**

- Tablet triturates usually are made from moist material using a triturate mold which gives them the shape of cut sections of a cylinder. Such tablets must be completely and rapidly soluble.

The problem arising from compression of these tablets is the failure to find a lubricant that is completely water soluble

- Their use in this manner should be discouraged since the resulting solutions are not sterile. Large quantities of these tablets continue to be made, but for oral administration. No hypodermic tablets ever have been recognized by the official compendia

# Chewable tablet

The patients who have difficulty in swallowing tablets whole or for children who have not yet learnt to swallow a tablet, chewable tablet serves as an attractive alternative. The added advantage of this medication is that it can be taken at any time or when water is not available. Mannitol is normally used as a base due to low hygroscopy and more importantly, it gives pleasant, cooling sensation. Antacid tablets are invariably prepared as chewable to obtain quick ingestion relief as well as the antacid dose is too large to swallow and the activity is related to particle size. Another example is multivitamin tablet which a patient can take as a daily dose.

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**THANK YOU**