

INTRODUCTION TO DOSAGE FORMS

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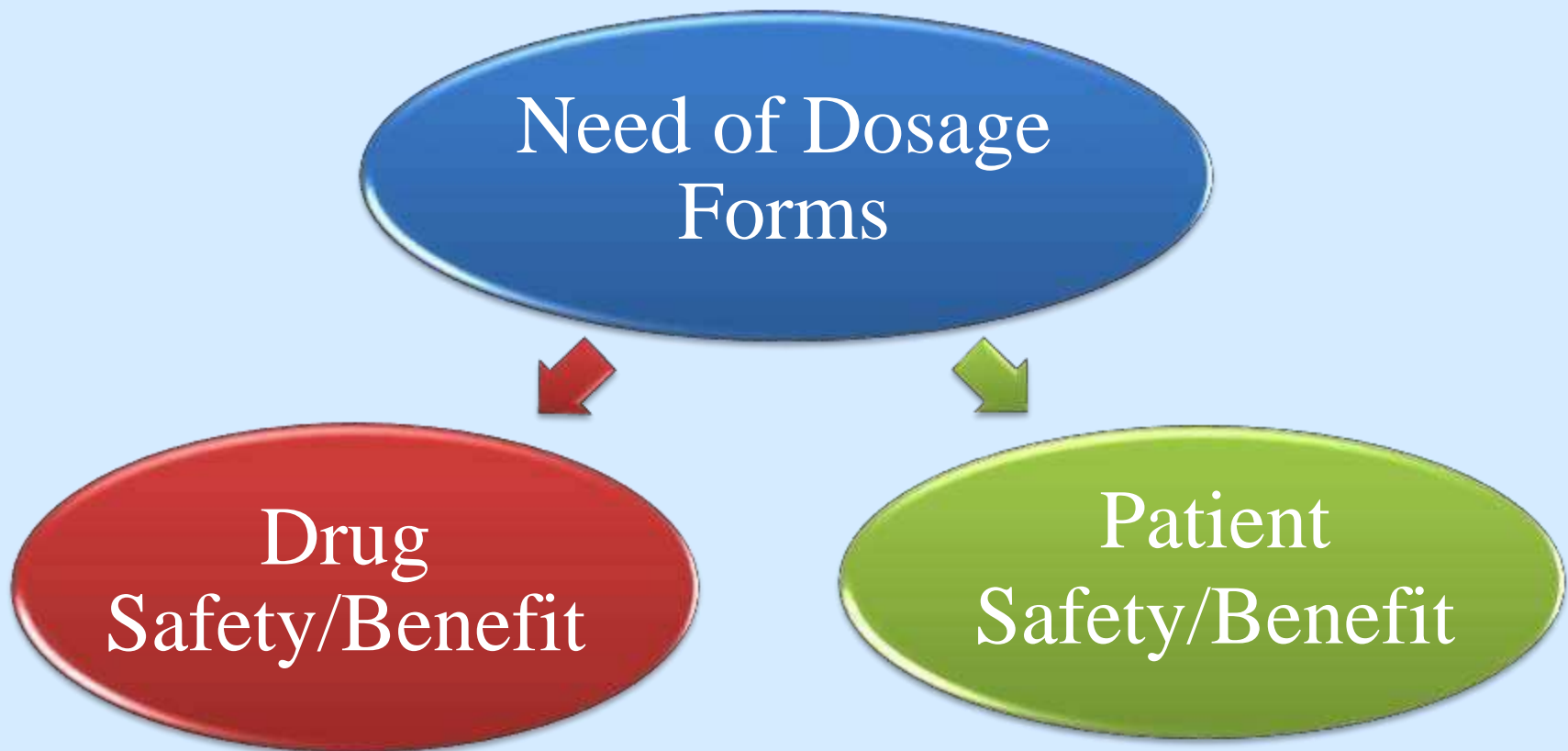
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DOSAGE FORM OF DRUGS

Dosage forms are the means by which drug molecules/APIs are delivered to sites of action within the body to produce optimum desired effects and minimum adverse effect.



Introduction

➤ **Dosage form (Medicines) = API + Excipients**

The means (or the form) by which drug molecules are delivered to sites of action within the body.

➤ **Drug (Active pharmaceutical ingredients)**

Chemical compound intended for use in diagnosis, treatment, prevention, of disease.

OR

The Active Pharmaceutical Ingredient (API) is the part of any drug that produces its effects.

➤ **Excipients**

- Do not increase or affect the therapeutic action of the active ingredient.
- Inactive ingredients may also be referred to as inert ingredients or excipients, and generally have no pharmacological effect.
- Examples of inactive ingredients include binding materials, dyes, preservatives, and flavoring agents, sweetening agents, coloring agents etc.

Direct clinical use of the active drug substances is rare: Why??

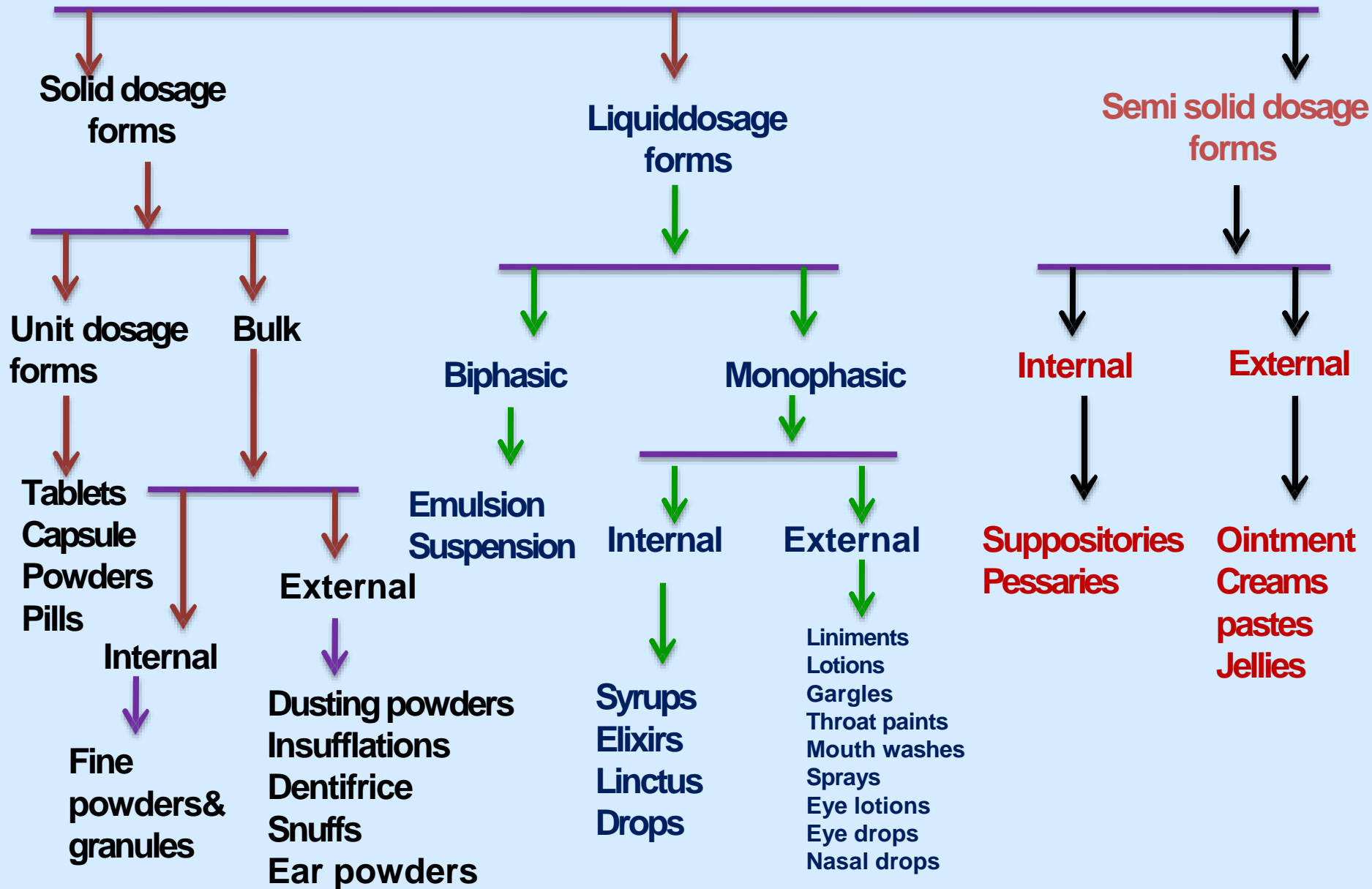
- API handling and Accurate dosing can be difficult or impossible (e.g., potent drugs: low mg and μg doses).
- API administration can be impractical/unfeasible because of size, shape, smell/odour, taste and low activity.
- Some API are chemically unstable in light, moisture, O₂
- API can be degraded at the site of administration (e.g., low pH in stomach).
- API may cause local irritations or injury when they are present at high concentrations at the site of administration.
- Administration of active substance would mean to have no chance for modification (improvement) of its PK profile.

NEED OF DOSAGE FORMS

- Provide safe and convenient delivery of accurate dosage.
Example – Tablets, capsules, syrups
- Protection of a drug substances from atmospheric oxygen or moisture. **Example – Coated capsules, sealed ampules**
- Protection of a drug substances from gastric acid after oral administration. **Example – Enteric coated tablets**
- Conceal bitter taste, or odor of a drug substances.
Example – Capsules, coated tablets, flavored syrups
- Provide liquid preparation of drug that insoluble or unstable in the desired vehicle. **Example – Suspension**
- Provide liquid dosage forms of substances soluble in desired vehicle. **Example – Solution.**

- Provide optional drug action from topical administration sites. **Example – Ointment, cream, ear and nasal preparations.**
- Provide for insertion of a drug into one of the body's orifices. **Example – Rectal and vaginal suppositories.**
- Provide extended drug action through controlled release mechanisms. **Example – Controlled release tablets, capsules, suspensions.**
- Provide for the placement of drugs within body tissues. **Example – Implants.**
- Provide for the optimal drug action through inhalation therapy. **Example – Inhalants.**

Classification



THANK YOU

