Sterile		Bacteriostatic sodium chloride injection
Viscosity-increasing agent	Used to render preparations more resistant to flow. Used in suspensions to deter sedimentation, in ophthalmic solutions to enhance contact time (e.g., methylcellulose), to thicken topical creams, etc.	Alginic acid Bentonite Carbomer Carboxymethylcellulose Sodium Methylcellulose Povidone Sodium alginate Tragacanth

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Appearance and palatability

- Most drug substances in use today are unpalatable and unattractive in their natural state.

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Appearance and palatability

- There is some psychologic basis to drug therapy
- An appropriate drug has its most beneficial effect when it is accepted and taken properly by the patient.
- The proper combination of flavor, fragrance, and color in a pharmaceutical product contributes to its acceptance.

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Flavoring pharmaceuticals

- Applies primarily to liquids for oral use.
- Medication in liquid form comes into immediate and direct contact with the (10,000) taste buds.
  - For a chemical substance to stimulate taste sensory cells, it must be soluble in the saliva

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Flavoring pharmaceuticals

- Drugs in capsules and coated tablets can not stimulate the taste buds.
- Tablets containing drugs that are not distasteful may not require flavoring agents.
- Preparations which contain drugs insoluble in water do not need a flavor.
- Chewable tablets usually sweetened and flavored to improve acceptance.

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What is flavor?

- A complex blend of:
- Taste
- Smell,

With lesser influences of:

- Texture
- Temperature,
- And even sight.

All these should be considered for palatability

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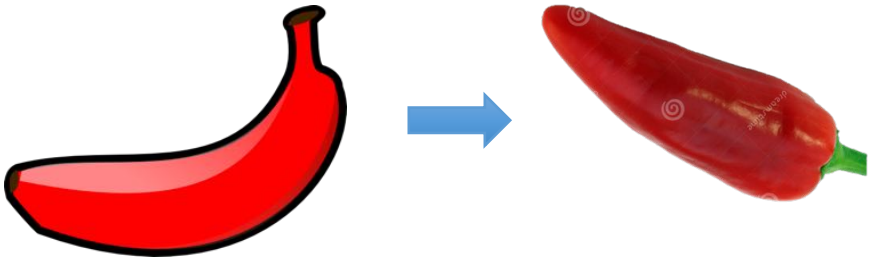
Examples

- Inappropriate combination: to color a liquid pharmaceutical red and give it a banana taste and a mint odor.



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Examples

- During common cold: the sense of smell is impaired, and this leads to impaired taste sensation as well.

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Taste Characteristics

- There are no rules for an accurate predicting of the taste sensation of a drug based on its chemical constitution.
- In general, low molecular weight salts are salty, and high molecular weight salts are bitter.
- With organic compounds, an increase in the number of (-OH) seems to increase the sweetness of the compound.
  - Sucrose (8-OH) is sweeter than Glycerin (3-OH)

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Taste Characteristics

- In general, the organic esters, alcohols, and aldehydes are pleasant to the taste, they also contribute to the odor (why) and thus the flavor of preparations in which they are used.
- Many N-containing compounds(e.g., quinine), are **extremely bitter**, but certain other N-containing compounds (e.g., aspartame) are **extremely sweet**.
- Simple structural change in an organic can alter its taste:
  - D-Glucose is **sweet**, but L-glucose has a slightly **salty taste**;
  - Saccharin is **very sweet**, but *N*-methyl-saccharin is **tasteless**

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Flavoring agent selection

Depends on:

1- **Taste of the drug**

Flavor	Drug taste
Cocoa-flavored vehicles	Bitter drugs
Fruit or citrus flavors	Sour or acid-tasting drugs
Cinnamon, orange, raspberry	Salty drugs

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Flavoring agent selection

2- **Age.**

- For children:
  - sweet candy-like preparations with fruity flavors.

- For adults:
  - less sweet preparations with a tart rather than a fruit flavor

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