


# Antiperspirants and Deodorants

***Antiperspirants:*** they are astringents aimed to reduce the amount of both eccrine and apocrine sweat secretions.

\* They are considered to have a coagulating effect on skin protein  block the opening of the sweat ducts on the surface.

## *Functions of the sweat glands:*

*1. Help in regulation of body temp.*

*2. They more active as a result of emotional stress.*

*3. In hot weather, the sweat gland is active and as the water evaporates, it take heat from blood capillaries and exert cooling sensation.*

*4. In cold weather, the skin contract and the sweat gland is inactive.*

## ***Conclusion:***

- *Artificial contraction of the skin caused by astringent reduce the activity of the sweat glands*
- *Astringent will check the flow of perspiration.*

## *Deodorants:*

*\* not designed to check the flow of perspiration*

*• They are based on bactericide or antiseptic which are either destroy the bacteria or prevents their activity.*

*• Bacteria is responsible for the odor.*

*• most antiperspirants acts as deodorants, but not vice versa.*

*• The effective antiperspirants is designed to control the flow of sweat and prevents development of odor.*

***Antiperspirants should not:***

- 1. irritant to the skin***
- 2. Cause deterioration of cloth***

***Main components of the antiperspirants:***

- 1. An absorbent powder to the affected area of the body.***
- 2. An antiseptic ( act as deodorants)***

## *Origin of body odor:*

- ⊠ *it's a result of bacteria.*
- ⊠ *there are 2 types:*
  - \* *sour or weaker odor.*
  - \* *acrid or pungent odor.*
- ⊠ *the presence of hair has no effect on the amount or intensity of the odor.*
- ⊠ *apocrine secretion is linked with the sex hormones, which mean that the odor is limited in the adult.*

## *Composition of Deodorants:*

### *a) Active ingredients:*

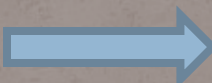
- 1. Odor masker.*
- 2. Absorbers.*
- 3. Antibacterial preparation.*
- 4. Antioxidant.*
- 5. Enzyme inhibitor.*

### *b) Auxiliary substance and formulation bases*

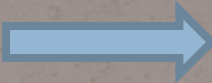


**a) Active ingredients:**

**1. Odor absorber:**

- They capture & neutralize odor compound.
- They lower the partial evaporation pressure  reduce odor diffusion.
- Must be active against odor only & not perfumes.
- It has no effect against bacteria.
- Examples: complex zinc salt of ricinolic acid or mixture of specialized odor- neutral scents.

## *2. Antibacterial preparation:*


- *We must use antibacterial preparation that have a selective effectiveness against odor-producing bacteria.*
- *Its function is to control the bacterial growth “bacteriostatic” and not to eradicate it “bactericidal”.*
- *bactericidal  disrupt the skin flora.*
- *Its effective against gm +ve bacteria.*
- *Examples:*
  1. *2,4,4' trichloro-2-hydroxydiphenylether*
  2. *Chlorohexidine*
  3. *TCC ( 3,4,4' trichloro carbanilide)*

4. quaternary ammonium comp. involve in small conc. 0.1-0.3%.

- Some numerous scents and perfumes exhibit antibacterial effect.

- Clove, menthol, thyme oil has antibacterial effect, but not used bec. Of their overpowering scents.

### **3. Enzyme inhibitor:**

- \* it inhibit certain biochemical processes by  the key enzyme.

- \* They deactivate the enzyme responsible for sweat decomposition “lipase enzyme”.

•*Example: Hydagen<sup>®</sup> Deo, composed of citric acid triethylester.*

#### *4. Anti Oxidants:*

*It is based on the principal that the odor of the body is due to the oxidation of apocrine sweat by air.*

***b) Auxiliary substance and formulation bases.***

- *the active ingredients must be first formulated in to base.*
- *this demands the following:*
- *careful measurment of the ingredients to insure long stability.*
- *Release of active ingredients from the base after application.*
- *the base should exhibit an adhesive properties for the active ingredients to the body area.*

- *examples: Alcohol, aqueous alcohol solution, emulsion, gel, oil, wax/fat solid and powder.*
- *also it contain stabilizer, antifoaming, coloring agent.*