Antiperspirants and Deodorants

Antiperspirants: ***they are astringents aimed to reduce the amount of both accrine 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® 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:***
- ***carful 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.*