

Surgical dressings

- Surgical dressings are made from fibres that are woven into fabrics for the specific purpose of wound healing.
- Fibres and the surgical dressing they produce are of Immense importance in medicinal and pharmaceutical practice.

Functions of Surgical dressings

- Management and subsequently aid in the healing of wounds
- Provide protection to the exposed tissue against microbial infection
- Prevent further tissue damage
- Used as a medium for the application of medicament

Natural Fibres

- Natural fibres are tissues from plant and animal origin
- Examples of Plant fibres; Trichomes: eg Cotton
Phloem fibres: eg jute
Pericyclic fibres: eg Flax, Hemp
- Pericyclic tissue; its usually found in the stems and roots, located btw the endodermis and Phloem
- Examples of Animal fibre; wool, silk

Macroscopical and microscopical characters:

- The strands of Flax fibres have more tensile strength than cotton.
- They are about 50 cm in length.
- The individual fibre; vary in length from 12 to 30 μm ;
- Have very thick walls, uniform narrow lumen and finely pointed ends.

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- **Constituents:** Cellulose wadding consists almost entirely of pure cellulose.

- **Uses:** uses of cellulose wadding are similar to those of absorbent cotton wool. For certain purpose it is preferred to absorbent cotton wool because of its superior absorbent property and readiness with which it disintegrates.

Macroscopical and Microscopical Characters.

- Viscose rayon occurs in fibres which are white.
- Its tensile strength is much less than that of cotton.
- The fibres are solid and transparent, and have a diameter ranging from 15 to 25 μ m.
- Viscose rayon gives cellulose test with N/50 iodine solution and 80 per cent sulphuric acid (blue colour).
- It is soluble in cuoxam and 60 per cent cold sulphuric acid, but insoluble in 5 per cent boiling potassium hydroxide solution.

WOOL

- **Synonyms:** Animal Wool, Sheep's Wool
- **Biological source:** Wool consists of the hairs of the fleece of the sheep, *Ovis aries* Linn.
- Family: Bovidae.
- **Geographical source:** Wool is produced and exported by the U.S.A., Australia, Argentina, Russia and the British Isles.
- **Preparation of wool:** The hairs are cut from the sheep at appropriate intervals and dirt removed by beating on a sieve screen. The dirt-free hairs are then thoroughly cleansed by washing with soap and sodium carbonate. The wool is then bleached with sulphur dioxide or hydrogen peroxide, thoroughly washed and dried by hot air on wire netting.

NYLON

- **Source:** Nylon is a synthetic fibre, chemically synthesised by polymerisation from long-chain adipic acid and hexamethylenediamine. The poly-condensation product in molten condition is pumped through a spinning machine and the resultant filaments are cold-drawn to increase their length.
- **Description:** Nylon fibres are smooth, solid, cylindrical filaments of variable diameters.
- In cross sections they appear uniformly circular.
- In appearance they may be highly lustrous to dull white or coloured.
- The filaments are very strong in their tensile strength.
- Nylon fibres occur as staples or filaments or threads.

MEDICATED GAUZES

- These are absorbent gauzes treated with the respective medicaments. They include the following:
- **Boric Acid Gauze:** this gauze contains 3 to 7% of Boric acid and is tinted pink with a suitable dye. (keeps gauze dressing from sticking to a wound, a bacteriostatic agent)
- **Euflavine Gauze:** this gauze is medicated with 0.1% of Euflavine (antiseptic activity, treatment of burns)
- **Double Cyanide Gauze:** This contains a mixture of Mercury cyanide (0.5 to 1.5%) and Zinc cyanide (1.5 to 3.0%) and is tinted purple with suitable dye. (antiseptic)

STANDARD DRESSINGS

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- This group of surgical dressings includes some standardised compound dressings described in the British Pharmaceutical Codex and other official publications.
- These dressings are prepared ready for use and consist of a pad of medicated cotton wool, gauze or lint stitched to an open-weave bandage at certain distance from one end.