

MEDICAL TEXTILES – PART I

REF: TT/ SEPT 2022/ WK 1

Introduction

Medical textiles are fiber-based products used in a medical industry either for the treatment of an injury or to provide an appropriate condition for health care applications such as prevention, care, and hygiene. Medical or healthcare textiles constitute one of the highest growing sectors in the technical textile market due to the increased use of textile materials across healthcare and medical products. The applications of medical textiles range from cotton bandage to tissue engineering. Examples of products from medical textiles are dressings, implants, surgical sutures, medical devices, diapers, sanitary napkins, wipes, and barrier fabrics. The textile material used in medical industry should possess the basic textile properties such as filtering, flexibility, lightness, softness, etc.

Advancement in textile and medical technologies has made medical healthcare an important industry in textiles. Textiles are used in the production of a variety of medical devices, including replacements for damaged, injured, or non-functioning organs. The increased demand for medical textiles has been caused by the present-day societal changes such as hazards of civilization and human activity such as sports and transport accidents, diseases, fire and cold, the need to increase the human lifespan, and changing population sizes. In the field of medical application, textiles are not just used in contact with skin, but also fulfill important functions within the body like intra-corporal applications like implants. These have become possible only due to the development of new yarns and manufacturing technologies of yarn and fabric. Medical textiles include many fiber types, yarns, fabrics, non-woven materials, woven, braided, as well as knitted fabrics. Physical and chemical reengineering of fibers, the use of functional finishes, and the production of stimuli-sensitive materials are major approaches for developing innovative medical textiles.

Medical textile has an important role in preserving human life. Like PPE cover, surgical gowns, are in high demand gowns, aprons, masks, gloves, goggles, face shields, and respirators.

Classification of medical textile

- **Non-implantable materials** –Non-implantable textiles are mainly utilized for outer utilization of the body; for example, it is used to help in the healing of different injuries on the external piece of the body. These materials should be non-harmful and impervious to allergies and malignant growth-causing powerhouses. Eg: for wound care that includes absorbent pad and bandages that can include simple inelastic/elastic, orthopedic, plasters, gauzes, lint, padding.
- **Implantable materials** –There is an exceptional kind of material construction utilized for different purposes inside the human body. The utilization of implantable material can be seen in the medical substitution procedure. For instance: sutures, soft tissue inserts, orthopedic inserts, cardiovascular inserts, etc.



- **Textiles in extracorporeal devices** – This material are used to remove different organs inside the assemblage of contaminated individuals. These devices should have non-toxic, non-carcinogenic, , biocompatible properties.
- **Healthcare/hygiene products** – Textiles provide protection and comfort to the medical and hygiene industries. A significant space of medical textile material is medical services and cleanliness. These materials are utilized to secure healthcare professionals and prepare clinics while treating patients. These products include bedding, clothing, surgical clothes, products for feminine hygiene like stationary napkins, baby and adult diapers, filters, bandages, support and protective material, surgical sutures, dental floss etc.

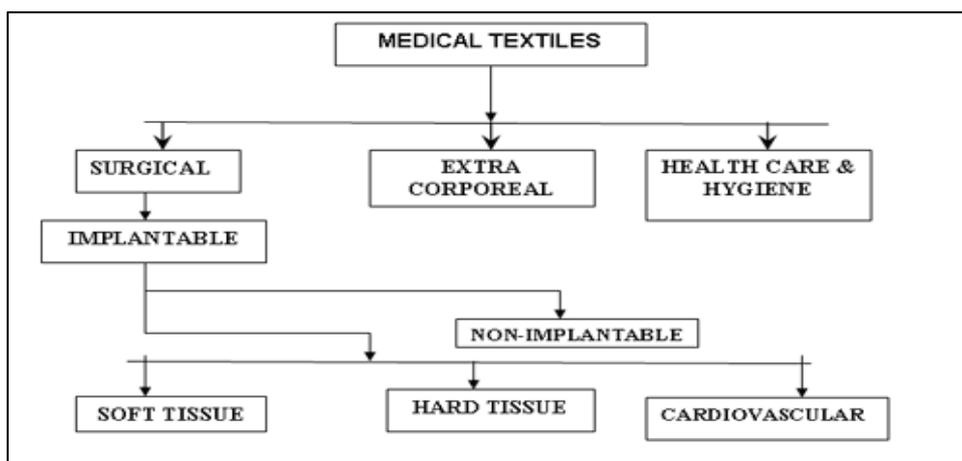


Fig 1.1 Classification of medical textile

Ref: textilestudy365.blogspot.com

References:

1. <https://www.healthtechzone.com/>
2. <https://www.technicaltextile.net/>
3. <https://textilelearner.net/>
4. <https://textileapex.blogspot.com/>

.....To be continued.....

UNSCRAMBLE THE JUMBLE WORDS
SUTSIE
ALTHARECEH
LUTDA
RETPLSA

Last week`s Answers: 1) HUMAN 2) BETTERMENT 3) EVOLVED 4) PURCHASE

Wishing you a great week ahead!

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