

# The Designer and Clothing as Therapy in the Treatment of Upper Limb Lymphedema

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## ABSTRACT

Given the lack of studies to substantiate the complexity of the pathological sequel in the design and creation of compressive armbands/sleeves for women with upper limb lymphedema, the experiment aims to create and support with coverage the use of compressive armbands produced with bioactive textiles as a protective therapy. The object of the research is a group of sixty women with upper limb lymphedema resulting from a mastectomy, all patients from three oncologic health centers from Sao Paulo (Brazil). Using the trans disciplinary epistemological methodology, priority is given to the explicit and implicit needs.

## INTRODUCTION

By the alarming growth of breast cancer and the mystery of lymphedema resulting from post-mastectomy in the upper limb, studying the complexity of the design with the use of bioactive textiles in the production of armbands/sleeves as protection therapies of lymphedema in the upper limb, requires from designers a multidisciplinary approach between several areas of health, engineering and technology. This complementary knowledge will provide a therapeutic role for the armband/sleeve. With the use of bioactive textiles, the design will complement the therapy, protecting the upper member, whilst it stimulates the drainage of the retained lymph in the upper limb, preventing and minimizing trauma resulting from the pathology itself. The dualities: design/materials, woman/pathology, lymph path/textile bioactivity and pattern design/sewing technology when considered together during the design process assure the psychological, sensorial and physiological comfort these women need.

The dualities allow independent analysis which, when crossed, shall provide to the individual comfort, aesthetics and quality of life.

## LITERATURE REVIEW

The lymph is a highly protein fluid, whitish in color, which circulates in the lymphatics and is part of the nervous circulatory system.

The lymphedema of the upper limb it is an edema, which in most cases results after the removal of the axillary lymphoma chain during a mastectomy surgery (Camargo, 2000).

Lymphedema can appear in the upper limb unilateral or bilateral, causing deformities in the woman's body that highly affect their aesthetics together with limited functions in the performance of simple daily routines. Failure to treat the affected limb can lead to severe infections, wounds like erysipelas and others. Figure 1 represents a woman with unilateral lymphedema in the left arm.



Figure 1: Left unilateral lymphedema.

Faced with the sequels and the physical limitations, it is responsibility of the designer to evaluate the complexity of creating a device that meets generically the aggression that the pathology entails the female "I" (Grave, 2010). Depending on the type of sequel, designers must meet the larger goal "the needs of the individual", following the Gestalt theory, working in the field of theory, using in an applied way the perceptions, language, learning, memory,

exploratory conduct and the social groups dynamics (Gomes, 2003).

### **METHODOLOGY**

The study is being conducted at weekly meetings for six months, understanding the need for improvement of the armbands offered by the market with the adverse assessments that lymphedema exposes the women's body, physical and psychologically. The designer should be aided by a trans disciplinary methodology, contributing to an evolutionarily synchronism, the pro-perception, or the perception of comfort and ample protection of the body, presenting solutions that also assist the clothing industry.

### **CONCLUSIONS**

This research will provide data for the design and industrial production of compressive armbands for women with lymphedema, with contemporary design valuing therapy, comfort and quality of life.

### **KEYWORDS**

Design, bioactive textiles, mastectomy, armband.

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