



CORSET AND CLOTHING PHISIOLOGY

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Abstract:

Scoliosis is a common disease in teen ages. Depending on the severity of the disease requires conservative treatment, which means a 5 mm thick plastic armor, which is to be worn 24 hours a day. To wearing it not just physical hardship but it cause psyche trouble as well.

The aim of my research is the children life to be easier and they feel comfort in their "special garment". I want to use feature of raw material to improve feeling comfort of the body.

The topic of clothing physiology help me find a solution between the underwear and the corset. I research the air- and vapor permeability of the materials and corset as well as the pressure between of the skin and corset. I examine the technology of the corset making, the hardship of the wearing with my own corset as well as the effect of clothing philosophy without and with corset.

This research has not finished yet, there are new underwear models under testing.

Keywords: corset, clothing physiology, underwear, comfort

1 INTRODUCTION

Garment is an important part of the underwear. The comfort and good hygiene is largely determined by the material of underwear, technological development, the method of production. However, there are situations in life when an illness is part of the patient's medical aids to be worn every day. In these cases, even more important role in the underwear. This paper, the more severe forms of scoliosis are dealing with when the district is required to wear for the patient. This disease typically affects children under age of puberty, a higher percentage of them are girls. The corsette will only be effective if the 23 hours from 24 hours is wearing per day. The constant wear not only the physical burden, but it can cause very serious psychological problems. The dressing is difficult, because a 5 mm thick plastic "armor" to wear on one side of the body, pressure on the other side is not touching the body. Where the body and the plastic plates meet, it often happens that rubbed the skin, which paid and discomfort. The Budapest University of Technology and his colleagues within the framework of a project working on the creation of a composite material, which is lighter than the currently used plastic, and intelligent features. After assessing the needs of the design models - editing, modeling, technology implementation - we strive to meet those needs, which are tailored for this particular outfit. Work out some model variants, and we chose to build a functional textiles with properties tailored to meet their expectations: antibacterial, moisture and aloe finishing. The technological development is also affected by the lingerie wearing comfort. The material properties are taken into account - which are based on different textil tests, we try to identify additional opportunities, which improve the comfort of children [1].



2 THE TREATMENT OF SCOLIOSIS WITH CHÊNEAU CORSET

The conservative treatment of scoliosis and is now one of the most popular - according to current knowledge - the most effective, a good cosmetic effect ensure the creation of district-type prof. Jacques Chêneau twit. Dr. Chêneau more than forty years ago it created the corset, which now bears his name, *and* that over the past decades has shown a very strong conservative treatment of scoliosis.[2]



Figure 1: spine X-ray



Figure 2: Chêneau corset

2.1 Preparation of corset

- The corsette is made of high thermoplastic plastic after sampling of the body is made of plaster.
- Physiotherapist adjusts for sampling the child's posture.
- Orthopedic technician create of the plaster molds to determine the basis pressure points, and free places left.

2.2 Corset production technology

Material of corset is 180 degrees thermoplastic plastic. The corset material must be hard and rigid. On the 2 figure can be seen material thickness usually 5 mm.

The principle of corsette production:

- "The body appears curvature must be pressured;
- Each curve on opposite sides of a large expanse of free surfaces to be constructed
- The corsette connecting the three-point systems and components is constructed (as straightening a curve, we need three points). "

The preparation of corsette:

sampling, X-ray, pressing areas, open spaces design, milling, trial

Everyone has a different problem is the backbone, these devices are unique and taking of measurements based on X-rays are developed. [3]



3 CLOTHING PHYSIOLOGY

Clothing requirements:

The garment will be fashionable and comfortable to wear, not to hinder the movement remains unnoticeable while wearing!

The pleasant heat feeling is a state where neither cold nor warm, pleasant climate we feel. The pleasant heat feeling on condition that people are rid of the heat quantity produced. This has an important role in the proper attire.

The man's body temperature exactly constant at 37 °C must be made.

3.1 Energy of the body

In the body, heat exchange is constant, which is constantly changing. The body and muscular activity in the human body through the power / heat / generated, which warms the body. The energy to get through diet, which is in accordance with the requirements of the air we breathe oxygen through biochemically transformed. This energy transformation in the functioning of organs and muscle activity in low efficiency, but still a significant amount of heat generated. Only the energy required for the functioning of the bodies - which can arise during sleep, the so-called base energy produced. Muscle work through the body along with the increased functionality comes to the job increases. The two together give a gross energy flows. Physically energy flows per unit time, so the proper performance of traffic in watts (W). On the other side of the man always gives off heat to the environment, air, and it cools. [4]

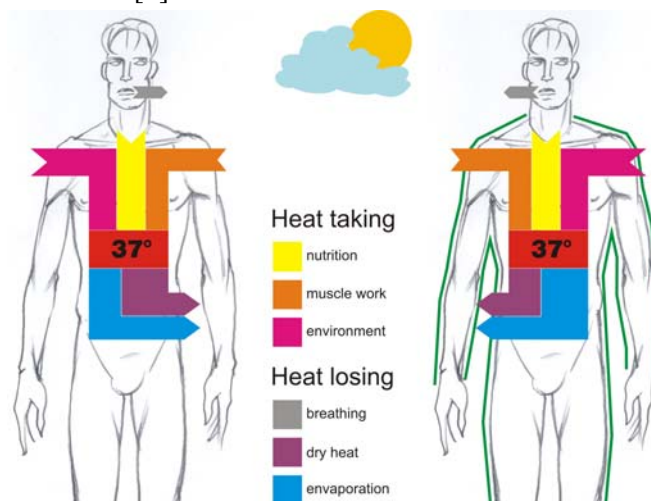


Figure 3: Human body's heat take and loss

Various activities eg. sleeping, sitting, standing, physical work, sport, etc.. the body produces different amounts of heat, which lead to the environment. (Figure 3)

The fundamental purpose of the clothing to protect body and keep body temperature constant. The human body' heat take and loss depend on intensity of movement and the weather. The heat loss can be through the skin and the evaporation of sweat through [4].

At the body heat and steam deliver the clothing is very important. If a 5 mm thick plastic armor is between two layers of clothing and the body is not able to deliver the vapor to the environment, the "pleasant heat feeling" can not be guaranteed.



3.2 Regulate of the human body and heat production of the body

The human body power output is the result of the metabolism (M). In the man's body partially out (extern) energy develops muscle outputs (P_{ex}). The greater part of the heat (H).

This equation can be expressed by:

$$M = P_{ex} + H(W) \quad (1)$$

The performance of the power unit is given in Watts. The people heat production during physical activity are very different. The body temperature is depend on heat production of the body. The basic requirement of a constant body temperature is realised, the man continued to deliver heat to the environment. This heat causes a temperature decrease. [4] All the important material used in clothing product features that not only the material of the yarns, but the weaving, knitting method, from the finishing, the thickness of the fabric, but it also depends on the abundance of the product.

4 CLOTHING PHYSIOLOGY AND CORSET

Thermal insulation of clothing and material composition of the corset due to be tested in different temperature conditions, the body's "comfort". Materials must be sought in the corset under which these physiological conditions improve, and a built-in intelligent systems will be developed to facilitate the improvement of comfort. The two most important features of the clothing insulation and water vapour flow. They affect the human thermal regulation. The tests of different material, design and tailoring in the underwear and the current corset and an enhanced version of the Air and Water permeability, which can be improved by means of perforation. It should be mentioned in the corset and the body pressure point of connection the problem of pressure sores, which can affect the size of the holes in the skin extrusion, which may cause permanent damage.4 Figure shows the location of the completed pressure of corset plane unfolded form.



Figure 4: Corset pressing points

4.1 Test of corset

The corset is not only physical but psychic burden of the adverse impact of very young girls. The corset design and appropriate accompanying the wearing comfort in order to improve the clothing worn underwear or over the corset aesthetic qualities should be improved.



Corset wearing according to the weather circumstances, with the continuous increase in the time interval. Very hot in summer, cold in winter physiological feeling.

My experienced during the test observations:

The upper body movement is very limited it can not bend down, left-right turning is limited.

- The pressure points in place of the skin becomes red,
- Underwear in the seams pressed deeply into the skin.
- At armpit experienced strong pressure and rubbing.
- Wearing especially during movement of the body sweats more strongly.

4.2 Tests

On the poster [5] presented products I tested the corset wearing. These products (Fig. 2) were designed taking into account that the corset. The pressing points and cut lines avoid (Fig. 4), in areas where a vigorous rubbing a special foam was applied. (Figure 5). Wearing my experience log recorded, which documented the test data, temperature, time interval, the wearing conditions.

5 MEGFELELŐ ALAPANYAGOK KIVÁLASZTÁSÁNAK SZEMPONTJAI

A smart and functional textiles, which are due to their composition or finishing result used to protect the health, quality of life. In our study we were looking for answers to the newly developed commercially available materials which parameters in test conditions, which are the physiological needs of customers in the best fit.

- Good air permeability
- Antibacterial
- Moisture
- Good abrasion
- Washable
- Easy use in garment trade

5.1 Underwears design point of view

The underwears designed to be taken into account the heat of body in addition to the material properties and those special needs that arise for the corset wearers. Thus, the design in the 3.3 cut forms mentioned point of view, designed patterns. The pilot versions of the samples contained our poster.

5.2 Selected materials and their properties

Garments of the materials distributed by the Hungarian textile trade in textiles were selected. Typically, these types of cotton knitted products. Better to increase the physiological properties in one side Meryl Skinlife-bacteriostatic yarn on the face side and Tactel Micro big capillar twine, the rapid evacuation of moisture for combination products are made from material prepared. A higher temperature or at vigorous physical effect sweat onset of fabrics with a high surface finish and fast drive direct vicinity of the skin. The special materials have been provided by the Felina Hungária Kft.

5.3 Special design conception

The design takes into account the material properties and the specific physiological needs, which arise for the corset wearers. Primary consideration when designing products in the seam, relocation, removal armpit seam, and the less cutline longitudinal design. A "hard armor" is one feature of the wearer's armpits to push, helping to maintain proper spine.



6 SUMMERY

In our work we dealt with in detail in the corset to wear the difficulties of creating special underwears, and the related garment physiology tests. Our goal is to underwears in primary and corset-developed property, which also meets the criteria garment physiology. This is the first step in looking at the ingredients can be purchased commercially, and wearing test was designed product variations. The product is being tested, the results of these data, in the case are appropriate for further processing.

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