

fluid is 6.5-7. The test strip changes the color when it starts to come in contact with a liquid in which the pH is greater than 5.5.

When analyzing the market for women's hygiene products, in particular linings, we found that in the majority of cases the range is represented by foreign producers such as Poland, Hungary, Slovakia, Italy, China, Czech Republic, etc. Nationale manufacturers are represented, but in small quantities.

**Conclusion:** Today the modern assortment of women's hygiene products, in particular laces, is presented in a wide choice and is in high demand among consumers. When analyzing the State Register of Medical Equipment and Medical Products of Ukraine, it is established that foreign producers are mostly registered, while domestic products are presented in small quantities.

## STUDYING CONSUMER CAPABILITIES OF MASSAGE DEVICES

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**Introduction.** Massage is the easiest method of treatment known since ancient times. Devices for massage and self-massage are produced by many manufacturers.

Massage hardware had a swift development at the end of the XVIII century - during this period, various massage vibration devices were designed by specialists for both local and general vibration.

**Aim.** Analysis of modern assortment, consumer properties of massagers in the domestic market.

**Materials and methods.** The information presented is based on the research of scientific literature, materials of Internet resources and personal conclusions.

**Results and discussion.** Modern hardware massage includes several types. Each of them differs both physiological influence on an organism, and the principle of device devices.

All masseuses on the market can be divided into several categories - a massage of the body, which they focus on - Universal massagers ( "traditional"), Foot Massage, Facial Massage, Muscle Stimulation vacuum massage.

There is a variety of all-purpose massage devices presented on the market, particularly electro-armchairs, equipped with several nozzles for different types of massages and for different parts of the body. The set of nozzles are a crucial part, the functionality of the device depends on it. A special group of devices consists of massagers for the feet - they are made in the form of hydromassage baths. Facial massages are usually quite compact, working on batteries. They are intended not only for skin massage, but also to clean it from keratinous cells, and to clean it before applying make-up. Miostimulator promotes intensive fat splitting in the most problematic places of women. You can talk about the benefits of massagers. The main thing is to understand the purpose for which they are to be used.

In Ukraine massagers are represented by the following manufacturers: Corporation "Electron" (Ukraine), Beurer (Germany), Casada (Germany), HoMedics (USA), iRest (China), MaxConcept (China), Medisana (Germany), US Medica (USA) and Zenet (China).

**Conclusions.** The modern rhythm of life prompts people to look for more effective methods of taking care of themselves. The result of many years of work of scientists and specialists in the field of medicine is the emergence of useful devices for all humanity, namely - massagers. Therefore, most consumers prefer multifunctional massagers.

## RESEARCH OF ASSORTMENT AND CONSUMER CHARACTERISTICS OF CALORIE COUNTERS

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**Introduction.** Nowadays there is a big amount of people who pay attention to healthy lifestyle. To satisfy the requirements of people, special devices, called calorie counters, were created.

**Aim.** The purpose of the work is the research of modern assortment and consumer characteristics of calorie counters on the domestic market.

**Materials and methods.** We have used materials, that were based on the research of regulatory documents, internet sources (official sites of producers, scientific articles) and own conclusions of research.

**Result and discussion.** At the beginning of the research, special attention was paid to the food quality, i.e. the presence of vital substances such as proteins, carbohydrates, fats, vitamins and others. As a result we started to measure the caloric value of products. Consequently the concept of consumption norms and diet appeared, which are necessary during various loads for work and life. the concept of therapeutic diets also appeared.

One of the first researchers of product calorie value was German chemist Justus von Liebig. He was the first person in the world, who created a table of product calorie value.

The next person, who presented information regarding this issue, was American agrochemist Wilbur Olin Atwater. He is considered the father of dietetics, his system is used in the calculation of the energy value of food (proteins (4 cal /g), alcohol (7 cal /g), and fats (9 cal /g), etc.).

Nowadays, every contemporary fitness tracker or advanced application for a smartphone determines the daily calorie consumption rate of a user by one of the classic formulas known for more than a hundred years.

The calorie needs depend on on the basic metabolic processes (about 70% of all energy, a third part of which is the work of the brain), temperature of the environment, and even the emotional state. Energy consumption from physical activity usually amounts to no more than 20% of the total energy expenditure - most of which is in daily movement, and not in training at the gym. Sport does not burn a significant amount of calories.

With the advent of training exercise equipment and gym installations, we have come closer to our dream of an ideal body. Exact measuring instruments, which determine the amount of calorie intake, help us to be better. You can easily balance your nutrition, intake of protein and carbohydrates with calorie counters. Another advantage of these devices is that they can be used at home, at work, on vacation. Almost all of them have comfortable screens, reflecting the general displays of data for a week or a month. The instruments have light and sound indicators.

After researching the calorie counters, their following types were identified: counter clock; counter scanner; counter, which analyzes photos; counter, which analyzes the exhaled air; counter application on your phone.

There are several models of counter watches that are able to count the calorie consumption of users who have an active lifestyle: Fitbit Flex (USA) (classic calorie meter), Polar RS300S Computer and Heart Rate Monitor (Finland) (measurements of heart rate, speed and distance, with Olympic precision), Garmin Vivofit 2 (Taiwan) (has a powerful GPS, and a sound signal reminding about your time to walk), Nike+Fuelbandse (USA) (measures the distance and time on the treadmill, at the same time counting the calories spent), Misfit Shine (USA) (measurement of various indicators), Timex Men's Ironman (Poland) (measures your heart's work and your calorie burn during classes), Jawbone Up24 (USA) (bracelets, which summarize information about one's activity per day), Basis Peak (USA) (clock with the function of tracking calories, measuring heart rate), X-Doria Kidfit (USA) (for children aged 5 to 13 years, device for tracking activity and sleep), Polar FT4 Heart Rate Monitor (Finland) (chest belt for measuring heart rate, tracking calories).

Counter scanner Calo Rieco (Japanese corporation Panasonic) (contactless measurement of food calorie value).

The counter, which analyzes a photo, (Sony company) is able to determine the level of caloric content of dishes on the photo.

NTT Docomo company introduced a device that connects to a smartphone, and based on the analysis of exhaled air, determines the amount of calories burned by a person.

The mobile application YAZIO for calorie counting contains information about a large quantity of diverse food products.

**Conclusions.** It has been proven that it is impossible to accurately calculate calories, because the process of cooking and even chewing can change the calorie value of food.

But the given types of counters can still rightly be called a pendulum, which will help the person move in the right direction. Special functions that are placed, for example, in applications on smartphones

or counter clocks, allow you to analyze the state of health. As a result, if you know the characteristics of your body, you can conclude, which amount of consumed calories is the norm for the organism, and which is not. That's why these inventions should not be ignored, because they can provide quite exact information on calorie counting.

## **COMMODITY ANALISYS OF MEDICAL PRODUCTS: CITO-TESTS-FOR ONCOMARKERS DEFINITION.**

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**Introduction.** The increase in the incidence of oncological pathologies, the development of malignant neoplasms, children's oncology are one of the most serious medical problems. To diagnose cancer on an early stage, medical samples are used, oncomarkers that detect specific substances, the products of the vital activity of tumor cells, or substances produced by normal tissues in response to invasion of cancer cells in the blood and / or urine. Tumor markers can be antigens located on the surface of cell membranes, cytoplasm fragments, enzymes, etc. Today, more than two hundred oncomarkers are known. Some are quite specific, this means that by the value of the analysis it is possible to determine the localization of the tumor in the human body, which is a great advantage in diagnosing this pathology among the population.

**Aim.** To study the types of medical products intended for recognition of oncomarkers, as well as for early diagnosis of a tumor process.

**Materials and methods.** In carrying out these studies, we have used such empirical and theoretical methods: observation, analysis of literature data of consumer questioning, classification, generalization, description.

**Results and discussions.** In medical practice, there are situations when the results of laboratory research should be obtained in the shortest possible time. Often urgent diagnostics relieve serious complications and health consequences, and often the life of a patient depends on their urgency. In the early treatment of cancer, early diagnosis is important (including analysis for oncomarkers). There are many criteria for the classification of oncomarkers, but in practice, two are distinguished - based on their origin and localization of the diagnosed tumor. By origin, oncomarkers are classified into: immunological, enzymes, hormones, metabolic products, plasma proteins, receptors, protein decay products of tumors. On the localization of the tumor: mammary glands, ovaries, lungs and other human organs. The leading manufacturers of these medical products are companies: ORGENTEC Diagnostika GmbH, BCM Diagnostics, Bender MedSystems GmbH, Technoclone GmbH, Bio-Rad Laboratories, Inc. and etc. The price for oncomarkers depends on the indicators being checked, their variety, urgency and price policy of the chosen medical institution. The average price range depending on the type of test is from 90 to 150 UAH.

**Conclusion:** we have studied the species, assortment, manufacturers and the range of prices for medical products cito-tests for determining oncomarkers.