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SAFETY USE OF COSMETICS

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Abstract

Cosmetics applied to human body for cleansing, beautifying, promoting attractiveness or altering the appearance without affecting structure or function. The need for cosmetic care varies from person to person because each person's skin type and their problems are different. Skin types changes to; normal, dry, oily, combination or sensitive skin. The skin products are classified according to their purpose of use. Products applied to the skin classified as cleaning products, moisturizers, deodorants/antiperspirants, antiaging products and sun protecting products. Some chemicals used in cosmetic products are, protective ingredients, active ingredients according to purpose of use; anti-aging agents, anti-acne agents, anti-dandruff agents, sun filters, deodorant/antiperspirant agents and special additives/nutrients. There are important issues to consider when choosing cosmetic products such as symbols and precautions against the unwanted effects of the cosmetic products. The symbols on the back of the packaging give us some information about the product which is important for our health and safety. Precautions are important for using products safely and effectively. In this article, it was aimed to review history of cosmetics, skin anatomy and types, classification of cosmetic products, some chemicals that used in cosmetic products, cosmetic law, cosmetovigilance and the issues to be considered in the selection of cosmetic products.

Keywords: Cosmetics, skin, precautions, cosmetovigilance

1. Introduction

According to European Union Cosmetics Directive; any chemical or preparation intended to be put in contact with the various external areas of the body (epidermis, hair system, nails, lips, and external genital organs) or with the oral cavity and teeth mainly to cleaning, perfuming, changing their appearance and / or correcting and / or protecting body odors or keeping in good condition (Cosmetics Directive 76/768/EEC). Small bowls in which paints applied to the face are mixed, ointment containers that still maintain their fragrance after thousands of years where found in archaeological excavations in ancient Egypt are proof of the widespread use of cosmetics in 4000 BC. It is known that these beauty products generally prepared by priests are obtained from fragrant plants, seeds and oils. The formulas of thyme, geranium, cedar wood, amber, musk, gum, resin and cosmetics prepared using various flowers, leaves and roots are kept very secret. It is understood from the paintings from that period and the finds in the graves that the making of cosmetics is a very important art. In these finds, it seen that eye makeup was very important in Ancient Egypt, and Egyptian women painted under the eyes green, smeared with a tiny stick made of ivory, bronze, wood or bone, and smeared the eyelashes with a black paint mixed with soot, antimony and lead, and also painted their eyelashes. The eye paints used are also thought to have a function such as protection from the burning sun of the desert. In these sources, it is explained that bathing in a water-filled tub is a custom started by the Egyptians, and

then the body was rubbed with fragrant oils to soften the skin. It can be said that the Egyptian Queen Nefertiti, who lived in 1400 BC, was the cosmetic expert of the time she lived, and the Egyptian Queen Cleopatra owed her beauty to the cosmetics she made. The knowledge of the Egyptians in the field of cosmetics has reached the Hebrews, Assyrians, Babylonians, Persians and Greeks. In Mesopotamia, women pulled on their eyes, dried the henna leaves into powder, and with this they painted their hair, nails, fingers, palms and soles. Henna is used for the same purpose today. In Babylon's Hanging Gardens, it is known that roses, lilies and various flowers and herbs are grown for use in making perfumes. In Ancient Greece, Athenian women used gold gilded hair pumps, fragrant ointments and nail paints. The Greek physician who managed to make the first oily cream is Galenos. It is a common tradition in the ancient Greeks to have guests take a bath and offer fragrant oils. It is known that the Romans, who were influenced by Greek culture, were fond of perfumes and cosmetics. In the sources of the first century, Neron used chalk powder to whiten the face, riding from Egypt to paint the eyes, red dyes to color the lips and cheeks, and pumice to whiten the teeth. It is also reported in the same sources that the women of the palace used a special soap brought from Gallic to lighten their hair, and the Romans kept their cosmetics and perfumes in beautiful bowls and boxes made of carved stone, like the Egyptians. It is known that perfume was made from jasmine and lotus in China in 2300 BC, and from Sandal, jasmine, rose, narcissus in India in 1500 BC. After the fall of the Roman Empire, the use of cosmetics in Europe has visibly decreased. The biggest factor in this situation is that the church is against bathing and perfume. During this period, the use of perfumes became widespread in Arab countries. It is known that Arabs have known and used spices, oil and fragrant resins for a long time, while Anatolian people practice traditions of smelling, using henna, and applying to eyes. Cosmetics became widespread in Europe during the Crusades. In various sources, it is explained that the women of the palace in Elizabeth I, England, rubbed their bodies and faces with wine after a hot bath to beautify, and the milk bath was the indispensable condition of beauty among the nobility. The use of perfumes and cosmetics became very common in England in the 18th century. In 1770, the British Parliament felt the need to take action on this issue and introduced a draft law envisaging heavy sanctions. In France, XIII. In the Louis period and in Italy, cosmetics were used as elements of decoration in the foreground. Vanilla and cocoa creams brought from Spain were used to whiten and soften ladies' skin. Perfume and beauty equipment became an industry branch in France in the 18th century. Towards the 1880s, a new era has started in the history of cosmetics with the advances in technology and especially in publishing and the discovery of advertising. In the 20th century, make-up in Europe and America has become one of the indicators of compliance with fashion. Especially in this period when performing arts such as theatre, musical and ballet were very common, important leading actors triggered this trend. However, the cinema industry has been the main locomotive of cosmetics spreading so fast. Firms such as Max Factor, Elizabeth Arden, and Helena Rubinstein, who noticed the rapid demand boom in the cosmetics sector early, were established in this period. The first synthetic hair dye of modern times was found in 1907 by Eugène Schueller, founder of L'oreal. In 1936, Eugène Schueller launched the first sunscreen cream. "New generation" red lipstick, red nail polish, dark eye makeup and bronze skin look of the 1920s were created by Coco Chanel. Thus, the obsession of the nobility's being white-skinned was destroyed. Chanel has produced dozens of different colours and types of products so that both men and women can get a bronze skin look. However, still being white skin in Asia seems to be a privilege. By the 1960s and 1970s, the wind of feminism that started to blow in the western world and the desire to appear as an "individual, not an object" caused women to prefer "zero makeup". The first deodorant started to be produced in 1888, the roll-on deodorant in 1952, and the gas deodorants began to be produced in 1965, but it is

forbidden to produce and put on sale the old generation gas deodorants in countries that signed the Kyoto protocol on the grounds that it damaged the ozone layer. After the 1990s, anti-aging, dermo-cosmetic products based on scientific data, peptides, products containing herbal agents, colour cosmetics that do not harm nature, organic hair dyes without ammonia, natural hair reducers, SLES (sodium lauryl ether sulphate) and SLS (sodium lauryl sulphate), special shampoos, specially produced cosmetics for men and children are finding increasing market share. Some companies that realize the increasing demand for cosmetic products can also go for product development with second quality materials. Here, the responsibility falls on the consumer. When purchasing a product, it has become imperative to do research and pay much attention to the product content. This is the best way to choose both for distinguishing poor quality products and not paying high prices because they deserve a product. The size of the cosmetics market in the world today is around 250 billion dollars, while the cosmetics market in Turkey has only $ 2 billion in size and is under the control of foreign brands by 80%. While cosmetic falling expenditure per capita in Europe is 150 dollars, in Turkey it is still 30 dollars. However, reduction of the young population in the western world and in Turkey is projected to increase rapidly falling per capita spending on cosmetics Turkey due to increase in the near future (Çomoğlu, 2012). Thus, the word cosmetics has a broad meaning because it includes all ingredients, preparations, treatments, utensils, or operations used to improve a person's appearance. This classification can be seen in the Figure 1 (Isa et al., 2023).

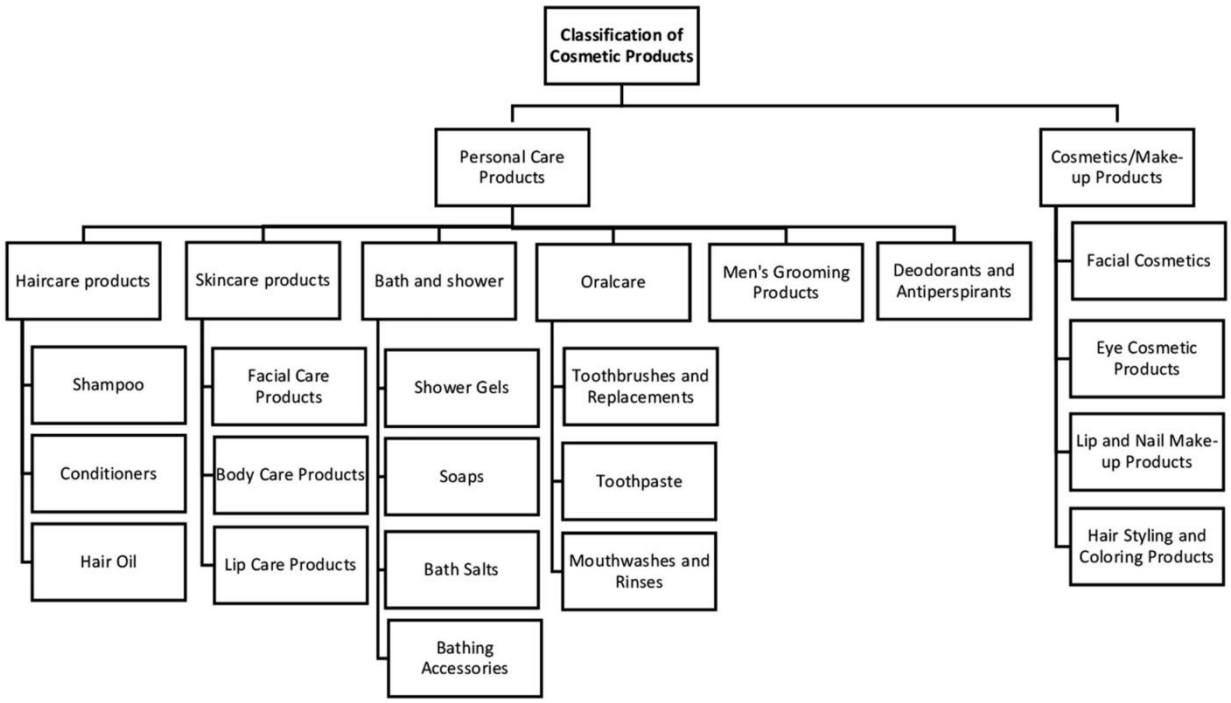


Figure 1. Classification of Cosmetic Products (Isa et al., 2023).

2. Classıfıcatıons Of Cosmetıcs Accordıng To Usage

Cosmetic preparations can be classified into the followings: skin cleansing products, moisturizers, sun protecting products, deodorants / anti-perspirants, anti-aging products.

2.1. Skin Cleansing Products

Regular cleaning is important for the health and care of the skin. The skin becomes contaminated during the day due to dust, UV rays, free radicals, air changes, sweat, sebum, its breakdown products, dead skin cells, residues of cosmetics, personal care products applied to skin (Baki and Alexander, 2015). If skin is not cleaned, dirt and oil accumulate in the pores. These accumulations quickly look tired and pale, produce acne and blackheads; in the long term, it causes spotting and skin aging and acne. A research was conducted to better understand young teenagers' attitudes and understanding about acne vulgaris. According to the findings of this study, questions concerning acne acquirement revealed that almost half of the participants (n = 99/209, 47.4%) did not actively seek information about acne (Figure 2A). In terms of acne etiology, the most often cited reasons were hormonal changes (n = 141/209, 67.5%), a rise in oil production (n = 135/209, 64.6%), inadequate hygiene (n = 125/209, 59.8%), and accumulate dirt (n = 124/209, 59.3%) (Figure 2B). Stress (n = 86/209, 41.1%) and bacterial overgrowth (n = 90/209, 43.1%) were mentioned as pathogenic causes by fewer responders (Toy et al., 2022). The main purpose in skin cleansing save the skin from internal and external factors. Since most of these compounds are not soluble in water, therefore washing skin with simple water is not enough for remove dirt. Skin cleansing products contain surfactants; these surfactants emulsify water-insoluble ingredients into micelles due to easily rinsed away from the skin. Ideal cleaners should not damage the skin and should not cause to irritation, dryness, redness and itching. Of course, there are some damages of skin cleansing products. After rinsing the cleansing products, surfactants may remain in stratum corneum. Because of the surfactants can damage to Stratum corneum structure and also weaken the barrier function.

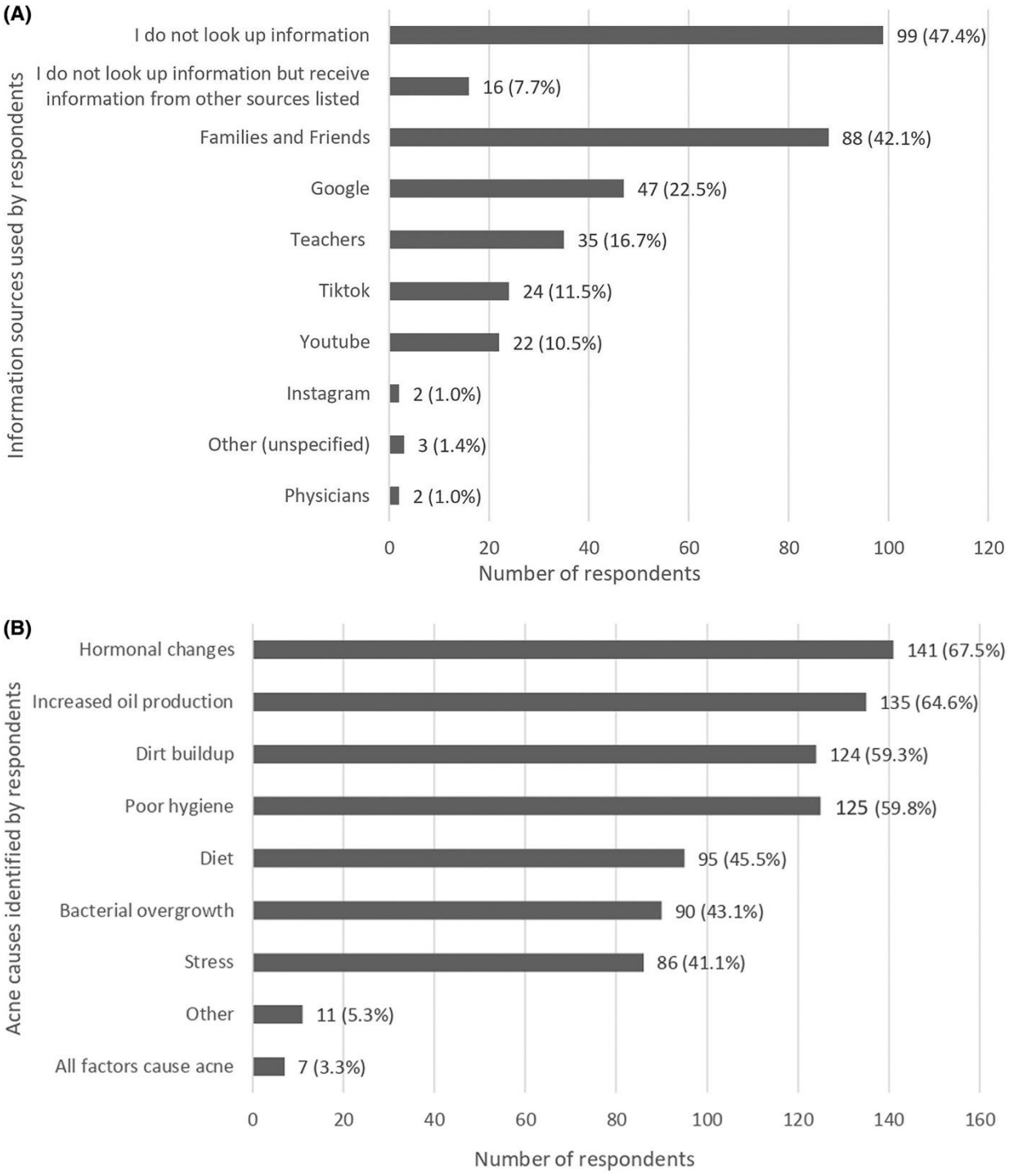


Figure 2. The frequency with which respondents responded to a quality improvement survey aimed to examine acne viewpoints and baseline knowledge. (A) Respondents' information sources. (B) Acne causes identified by respondents (Toy et al., 2022).

Soap and Cleanser Bars

Human epidermis has mild acidic pH between 5 to 5,5 (Yuan et al., 2022). Generally, soaps have alkaline pH higher than 7 (Ainiyah et al., 2023). Therefore, as an alternative to conventional standard soaps, synthetic detergent bars have been produced, whose pH is modified according to skin pH (Çomoğlu 2012).

Lipid-Free Cleansers

There are liquid products that clean the skin without using water and soap. They are not containing lipids. In their ingredients, there are water, glycerine, Cetyl alcohol and propylene glycol. They are especially suitable for sensitive and dry skins (Çomoğlu, 2012).

Astringents and Tonics

They are degreasing and relaxing products. They are recommended to be used after cleaning. They usually contain alcohol; they can apply to oily skin with no lesions (Çomoğlu, 2012; Lee & Oh, 2022).

Exfoliants

They usually consist of salicylic acid contain astringents. They show keratolytic feature in stratum corneum. They are suitable for oily skin prone to acne formation (Çomoğlu, 2012). Chemical peels exfoliate the skin and enhance its texture and look by using a number of chemicals. The ingredients utilized are determined by the desired amount of exfoliation as well as the skin issues being treated. It is crucial to remember that the concentration and pH of the chemical peel solution can also influence exfoliation and the risk of side effects. Chemical peels should only be conducted by skilled specialists who can choose the best ingredient and concentration for each individual's skin type and problems (Măgerușan et al., 2023).

2.2. Moisturizers

Repeated and excessive contact with cleansers and water, temperature, wind, air may be drying and irritating the skin. Moisturizers are designed to improve the quality of the skin, to protect and/or restore the water content of the SC as well as to keep it soft and pliable, and to reduce the symptoms of dry skin. Some of the moisturizers contain active ingredients to smooth out lines and wrinkles (Baki and Alexander, 2015).

Occlusives

These products contain ingredients that delay the transepidermal water loss such as silicone derivatives (dimethicone), fatty acids (lanolin alcohol, Cetyl alcohol), propylene glycols, vegetable oils, animal wax esters (lanoline, beeswax, Stearyl stearate), sterols (cholesterol), and phospholipids (lecithin) (Çomoğlu, 2012).

Humectants

They provide hydration of the stratum corneum by taking water from the air, when the humidity is high in the atmosphere, from the deep layers or dermis of the epidermis when it is low. They show hygroscopic feature. In the

absence of natural moisturizing factors such as 2-pyrrolidone carboxylic acid, urea and lactic acid, skin need to humectants for hydrate skin. Glycerine, AHAs, propylene glycol, sorbitol, hyaluronic acid, chondroitin sulphate, collagen, and elastin can be given for examples of humectants (Çomoğlu, 2012).

Emollients

These products are intended to plasticize, soften and smooth the skin by filling the empty spaces between the corneocytes and replacing the lost lipids in the Stratum corneum. The emollient examples are; fatty acids (stearic acid, linoleic acid, and lauric acid) vegetable oils (almond oil), synthetic triglycerides (silicones) (Baki and Alexander, 2015).

2.3. Sun Protecting Products

The aim of these products is to protect from the harmful effects of the rays that make up from sun light. The Figure 3 shows the electromagnetic spectrum of sunlight. International Agency for Research on Cancer (IARC) determined the sunrays as the most important cause of skin cancer. Damage to the skin begins with the absorption of UV photons by DNA molecules (Figure 4), the rearrangement of electrons in molecules, and the formation of photoproducts. UV Rays are divided into 3 main groups according to their wavelengths: UVC rays are the rays that a wavelength of 200-280 nm. The UVC ray is blocked by oxygen and ozone in the atmosphere, preventing it from reaching the earth. UVB rays are the rays that a wavelength of 280-320 nm (Parwaiz & Khan, 2023).

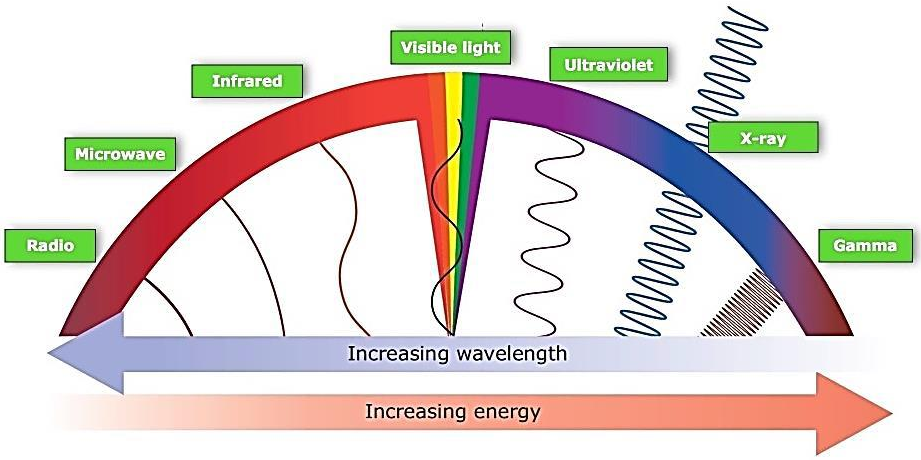


Figure 3. Electromagnetic spectrum of sunlight

By affecting the skin at the molecular level, it can cause significant damage such as sunburn, premature aging, colour change, spotting and cancer. UVA rays are the rays that a wavelength of 320-400nm. It penetrates deeper into the skin due to its wavelengths, it is effective in the epidermis and dermis and it is an important factor in the production of free radicals. For this reason, its main skin harm resource. The FDA recommends using products with a protective filter that has a protection factor of at least SPF 15 and can absorb both UVA and UVB wavelengths and repeat use of the product every 2 hours (FDA, 2019). The most striking example of photo aging is the image of right and left half face of a 69-year-old male truck driver. (Figure 5) It is a unilateral dermatoholiosis that occurs due to exposure

to UVA rays passing through the window glass while sitting in the driver's seat for 28 years. The sun protectant products that protect the skin from the effects of sun rays by creating chemical or physical barriers. The chemical protection is provided by the chemical filters in the product formulation absorbing the rays and converting heat such as avobenzone and octocrylene, and the physical protection is provided by scattering / reflecting the rays of solid particles such as titanium dioxide and zinc oxide. (UZUNER et al. 2017).

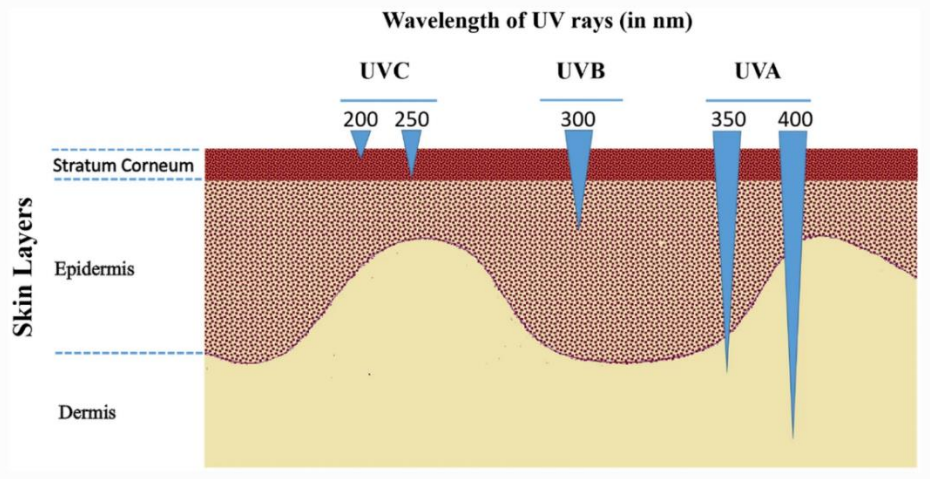


Figure 4. Depth of impact of ultraviolet radiations (UVA, UVB, and UVC) on the different skin layers

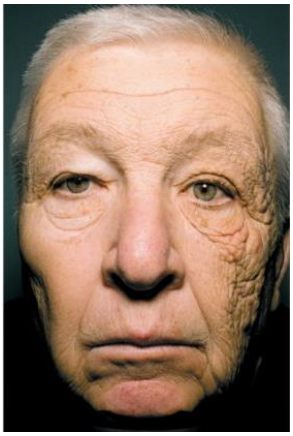


Figure 5. Unilateral dermatoheliosis

2.4. Deodorants / Anti-Perspirants

Sweating is a natural mechanism of the body that keeps us cool and prevents us from overheating as a result of an exercise or strain. People who sweat excessively, excessive body odour may occur due to excess sweat production. For prevent these bad odours there are some products (Oltulu, 2016). One of these substances is aluminium-based compounds. It is claimed that aluminium-based compounds will be absorbed through the skin and show an oestrogen-like effect. Since oestrogen can promote the development of breast cancer cells. Aluminium is one of the risk factors in the development of Alzheimer's disease (Süzen et al. 2017).

Deodorants

Deodorants are the products that used on armpit or whole body as a body spray to control body door. The ingredients such as alcohol and antimicrobials such as triclosan to kill bacteria and include fragrance to mask bad smells (Bhargava and Leonard, 1996).

Antiperspirants

Antiperspirants are the products that affect the function of the body by reducing amount of sweat that reaches the skin surface and not just masking the odour. antiperspirant mixes with perspiration on skin surface and in sweat duct, chemical reaction occurs forming precipitate salt then inside the sweat duct the antiperspirant forms a shallow plug reducing the flow of perspiration (Grotheer, 2020).

3. Cosmetic Legislations and Cosmetovigilance

In Türkiye, the cosmetic law number 5324, which was determined by the council of ministers on 24.03.2005; The purpose of this law; in order to ensure that the cosmetic products reach the society in a safe, effective and quality way, it is to determine the principles regarding the notification of the products before placing them on the market, conducting market surveillance and inspection, and the control of the production sites of these products. It covers all preparations or substances that intended to be applied to different external parts of the human body such as epidermis, nails, hairs, hair, lips and external genital organs, teeth and oral mucosa, its sole or primary purpose is to clean these parts, give smell, change their appearance and / or correct body doors and / or protect or maintain in a good condition. It is mandatory to notify the Ministry of Health before the cosmetic product is placed on the market for the first time. It is mandatory to notify the changes that occur in the product or manufacturer after the notification. The supervision of the production sites of the cosmetics products put on the market and the market surveillance are carried out by the Ministry of Health. Any cosmetic product cannot be placed on the market without informing the Ministry of Health Poison Research Centre. When the cosmetic product is applied under normal and recommended conditions by the manufacturer, or when it is applied according to the terms of use foreseen by considering the presentation, labelling, use of the product or the information provided by the manufacturer, it must not be harmful to human health. If there are certain indications that a product is not safe in terms of general health, the placing on the market of this product will be temporarily stopped by the Ministry of Health until control even the product compliance with the legislation issued according to this law (Sağlık Bakanlığı, 2005).

European regulations of the safety of cosmetics were introduced in 1976 by the EU Cosmetic Directive which has been periodically updated (EU, 2007). Cosmetic product safety and ingredient safety are the manufacturer's responsibilities in the EU; pre-marketing approval is not needed for cosmetic goods. Unfortunately, before being marketed, a number of ingredients—including UV filters (Annex VII of the Directive), preservatives (Annex VI), colorants (Annex IV), and, most recently, hair dyes—need to have their safety approved. In the same manner, compounds that are restricted by concentration are specified in Annex III of the Directive, whereas prohibited elements are included in Annex II. The EU Scientific Committee of Consumer Products/Safety (SCCP, formerly SCC, SCCNFP, and recently renamed SCCS) receives safety dossiers as part of the approval process and provides

opinions on the safety of the ingredient; however, a working group comprising EU member states decides whether an ingredient is safe and/or can be included in the relevant Annex. The "Notes of Guidance for the Testing of Cosmetic Ingredients and their Safety Evaluation" is a list of safety standards for cosmetic items. The following are general safety requirements for a regulated cosmetic component, such as UV filters or hair dyes: I) Use and physical/chemical data, II) Acute toxicity, III) Dermal absorption/penetration, IV) Dermal irritation, V) Mucous membrane irritation, VI) Skin sensitization, VII) Sub-chronic toxicity, VIII) Genetic toxicity, IX) Phototoxicity and photogenotoxicity, X) Human data. Cosmetic product importers and manufacturers operating in the European Union must create a safety dossier for each product they sell. This dossier must include information on the product's composition, specifications, and product safety assessment, which must be completed by a qualified expert and cover both the final product and its ingredients. Recently, important facets of the EU's assessment of cosmetic safety as well as the difficulty of new limitations on animal research were examined (Nohynek et al., 2010).

Millions of people in the US, the EU, and other countries apply sunscreen to a significant portion of their body throughout the summer, including their lips and face. Additionally, contemporary skin care and makeup products also have UV filters. UV filters need to be safe since they have the ability to expose people locally and systemically. UV filters are regarded as cosmetic ingredients in the EU, and the EU SCCS assesses their safety. Annex VII of the EU Cosmetic Directive has a positive list of certified UV filters. Under US, Canadian, or Australian law, UV filters are considered over-the-counter medications. This implies that proof of their efficacy and safety is needed, in addition to the appropriate medical bodies' clearance. UV filters in Japan require approval from the relevant health authority (Nohynek et al., 2010).

The term cosmetovigilance was first used in the literature in 1977 in France. This concept has been defined as "surveillance" or "cosmetic product safety monitoring" when it is used internationally. In recent years, the likelihood of undesirable effects on users has also increased due to the rapid increase in the number and variety of cosmetic products. This necessitated the establishment of a notification system in which undesired effects are recorded (Vigan, 1997). Before reporting the undesirable effects, it is necessary to make sure that they meet the severity criteria and make the necessary causality assessment. The purpose of causality assessment methods is to evaluate the cause-effect relationship between one or more products and the emergence of undesirable effects. Causality assessment is related to the impact on individuals. It does not evaluate the risk of a product on the general population (SUE, 2012). While reported the undesired effect, “Unwanted Effect / Serious Unwanted Effect Notification Form of the End User to the Manufacturer” is used. This form is filled, signed and sent to the manufacturer's address on the packaging. In this form, the information of the person who is making the notification, the information of the person who has adverse effect, the brand, the form, the purpose of use, the serial number, the name of the manufacturer, the place of the purchase and the time and duration of use of the product, the undesired effects and their locations, treatments and the results are added. Cosmetics have many kinds of adverse effect such as allergic contact dermatitis, contact dermatitis caused by irritation, photoallergic contact dermatitis, contact dermatitis caused by phototoxic effect, conjunctivitis, urticaria, acne cosmetica / folliculitis, mouth cavity mucous membrane irritation / desquamation, granuloma, onycholysis, sublingual hemorrhage, tooth sensitivity, hyper / hypopigmentation, alopecia, anoxia and different systemic effects. In case of measures (such as recall) and / or changes to the product (packaging, content change, etc.) after the reports are examined, this information is reported to the producer institution. (TITCK, 2020).

Cosmetic monitoring is a novel method of ensuring the safety of cosmetic goods. It is an essential part of public health activities. As post-sale cosmetics surveillance grows increasingly popular across the world, flaws in these goods may be recognized and addressed, ensuring safety. Physicians have an essential role in recognizing adverse drug reaction induced by cosmetic goods and, as a result, encourage patients to report adverse drug reaction. Raising awareness about this new concept will make a significant contribution to worldwide public health. In general, the Cosmetovigilance system can help to avoid both major and mild side effects. Healthcare professionals must be educated and encouraged as part of the Cosmetovigilance feedback system since the notification mechanism is crucial to the system. To keep up with Turkey's growing cosmetics industry, some regulatory changes are necessary (Dhiman & Kumar, 2023). The global cosmetics market is extremely competitive and ever-changing. Cosmetic items are regulated and monitored on a worldwide basis to guarantee their safety and efficacy. However, regulatory systems now differ widely among nations, posing obstacles for global commerce and marketing of cosmetics. As a result, selling the same product in every market is nearly impossible, complicating commerce between EU members and the rest of the globe. One of the key obstacles is the language used in regulatory frameworks, which is only available in the national language in certain countries and does not have an English equivalent. While the cosmetic legislation of the nations listed in this assessment may be found on the websites of various competent organizations, language remains a difficult challenge in many situations. A further barrier to the export of cosmetics from the EU to foreign nations is the fact that different governments classify them differently. For example, the EU classifies all cosmetics into a single category and examines those that are on the borderline individually. Conversely, other regions—like the MERCOSUR—classify cosmetics into two groups, each with its own notification protocols. It is difficult for firms to sell their products internationally because of this requirement that they possess in-depth knowledge of the many rules. Animal testing is a major problem for the free market. Animal experimentation is still permitted in some areas even though Regulation 1223/2009 outlaws it entirely in the EU. Although a number of non-EU nations are aware of the moral dilemmas raised by animal experimentation, many have not yet adopted a firm policy to outlaw the practice. All things considered, there is a need for further harmonization of the regulatory frameworks governing the cosmetics industry, as this would encourage market growth and improve product accessibility and safety for customers everywhere. However, even though harmonizing cosmetic regulations globally could encourage uniform safety and efficacy standards, it's vital to take into account any potential negative effects, such stifling market competition and preventing innovation. Furthermore, distinct cultural tastes and attitudes on cosmetics may exist in many nations and geoeconomic regions, and a uniform approach can overlook these variations (Morel et al., 2023).

4. Skin Types

4.1. According to Hydration State and Lipid Content

It is important to maintain skin hydrated for provide entirety of the skin barrier and prevent water loss. Scientist differentiate skin types (Figure 6) among oily, dry, combination, normal and sensitive skin (Baki and Alexander, 2015).

Figure 6. The figure shows different skin types according to hydration state and lipid content.

Normal Skin

Normal skin generally described as neither too oily nor too dry. Normal skin is taken as a reference for the purpose of compare with other skin types. Normal skin is structurally and functionally balanced, has small pores and it is smooth.

Dry Skin

Dry skin is a skin condition that is caused by a lack of adequate water in the epidermis. It can be characterized by scaly, rough and dull. Mostly elder people experienced dry skin is the reason for wrinkles on their skin. People can experience dry skin due to various factors. Dry climates, cold weather, sunlight is affects skin to dry (Baki and Alexander, 2015). Some medications can cause to dry skin such as diuretics and isotretinoin. Dry skin can also precursor of some diseases such as hypothyroidism, diabetes and atopic dermatitis. Untreated dry skin may cause eczematous dermatitis, secondary bacterial infections and also skin discoloration. (Fitzpatrick, T. B., & AZ, E. 1993).

Oily Skin

Oily skin seems very shiny and greasy because of excessive production of sebaceous glands. Oily skin usually develops with puberty and affects young people. Genetic factors, hormonal changes, diet, stress and external factors such as cosmetics, chemicals and UV light can lead to oily skin. People who have an oily skin generally suffer from acne and dandruff. (Baki and Alexander, 2015).

Combination Skin

It can be characterized by normal and oily skin or oily and dry skin. In combination skin, T-zone of the forehead, noes and chin seems oily, the other parts of skin are normal or dry (Baki and Alexander, 2015).

Sensitive Skin

Sensitive skin defined by abnormal sensory symptoms, according to American Academy of Dermatology (AAD) there are four types; tingling, chafing, burning or prickling and contact dermatitis. Their common characteristic feature is inflammation. Sensitive skin's reactions can be caused by various chemicals such as cosmetics, soaps, water and pollution, physical factors such as UV light, heat, cold and wind, microorganisms, physiologic factors such as stress and hormones such as menstrual cycles. It can be seen in all skin types against some various irritants (Baki and Alexander, 2015).

4.2. According to Sensitivity to UV-Light

In 1975, Fitzpatrick developed a skin type classification based on the answer of the skin to UV radiation exposure. There are six categories of skin types for UV-light sensitivity (Baki and Alexander et al. 2015):

Type 1

Type 1 skin includes people red and blond hair, blue eyes, freckles and very light skin. People who have this skin type difficult in tan and burn, they are very sun sensitive.

Type 2

Type 2 skin includes people with light skin, red or blond hair. These people are very sun sensitive. They can burn easily but difficult in tan.

Type 3

Includes people with cream white to olive skin, light, generally brown and sandy hair and can have any eye colour. These people are sun sensitive, it can gradually tan to light brown, sometimes burn.

Type 4

Includes people with dark brown skin, dark brown hair, green, hazel or brown eyes. People who have this skin type tans to moderate brown, minimal burning and sun sensitivity.

Type 5

Includes people with dark brown skin, tan well and rarely burn and insensitive to sun. Usually they have dark black hair and dark brown eyes.

Type 6

People who have type 6 skin type have deeply pigmented black skin. They have black hair dark brown eyes. They are insensitive to sun and they always tan and never burn.

5. Points To Consider In Choosing And Using A Cosmetic Product

5.1. Symbols on the Back of the Packaging

Packaging can be defined as covering, wrapping, covering or combining with a recyclable material that protects the content and the environment of the product, facilitates its transportation, storage, sale and use, and can be throw away completely or partially in the future. The packaging has four basic functions: Product protection function, convenience function, promotion function and consumer information function. The information on the label of some products is determined by laws and regulations. Cosmetics regulations have been issued in order to ensure that cosmetic products are delivered to the consumer with accurate understandable information in a way that will not cause illusion and harm human health, and to regulate the procedures and principles regarding the technical qualities, packaging information, inspections and measures to be taken after inspection. In this regulation, the information to be included in the inner and outer (Figure 7 and Table 1) packaging of the cosmetic product is given. According to this; the information contained in the inner and outer packaging of cosmetic products can be offered for sale provided that they are indelible, easily visible and readable. Cosmetics constitute an area that can threaten human health and safety, since chemical and artificial substances are used in their composition. In order for cosmetics not to pose any threat in terms of consumer health and safety, consumers should be informed especially in this context by taking all precautions (TITCK, 2005).

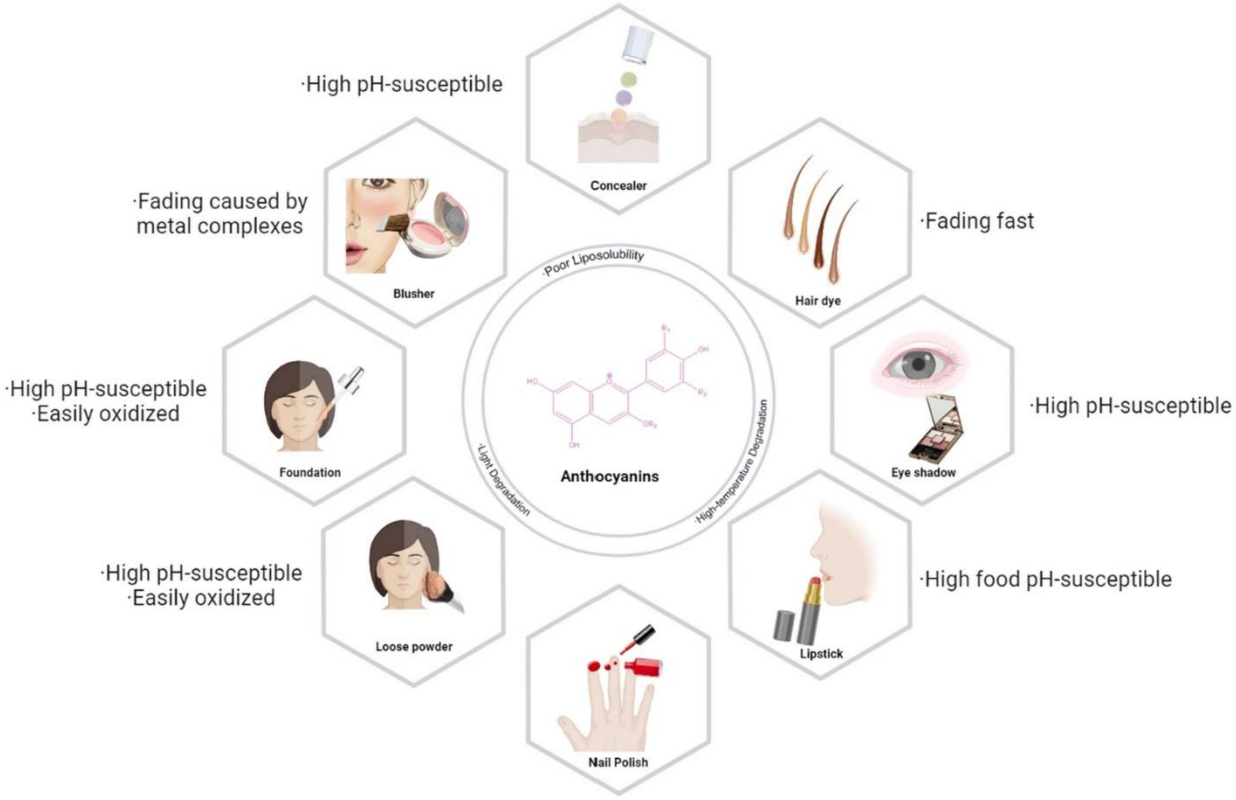
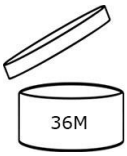


Figure 7. Some examples of symbols on the back of the packaging (Li et al., 2023)

Table 1. Cosmetic labels use symbols to convey information about the product within, including weight, volume, and recyclable container status. In addition to the legal need on manufacturers to accurately label their cosmetic items, customers are becoming more aware of product labels as they become more mindful of what they put in and on their bodies. The symbols and their meanings that are seen on cosmetic labels in the US and the EU are displayed in the table.

Icon or symbol	Justification and meaning
	Period After Opening (PAO): The open jar sign indicates the number of months or years that the product will remain effective after it has been opened. If the time span is expressed in months, it can be shown as "M" within or next to the jar symbol, or as a number accompanied by the phrase "month(s)". Cosmetic makers are not required by the U.S. FDA to publish expiry dates on its labels; however, the European Union mandates this information, but only for goods whose "minimum durability" is greater than thirty months. items that don't open (such as sealed packaging or sprays), single-use items, and products not at danger of degradation are all free from E.U. requirements for expiration dates.
	"Best Before End of" Date (BBE): The item's label must include the BBE date if its shelf life is shorter than thirty months. The date or the phrases "Best before end of," which can be shortened to "BBE" or "Exp," can come after the hourglass symbol. Similar to the PAO declaration, BBE is exclusively necessary within the EU.
	E-Mark: In the EU, a lowercase "e" is used to indicate a product's net amount at the moment it is poured into its package. Grams (g) or milliliters (ml) are used to indicate solids or liquids in cosmetics, respectively. Single-use packets, free samples, and products with a net amount of less than 5g or 5ml are exempt from the e-mark requirement.
	Open Flame: The "flammable" sign alerts users to the product's flammability and should be used with caution near flames or intense heat. Certain cosmetic goods, such as deodorant, hairspray, nail paint, and nail polish remover, include components like alcohol and propellant gas, which can catch fire.

Refer to Insert: When a hand points to a book, it indicates that the information or directions on a booklet, leaflet, or other insert are located there and cannot be found on the main label. The details may include a list of components, usage guidelines, or cautions. Smaller cosmetic goods, whose containers don't have enough room to include all detail about them, can really benefit from this sign.

Triangle for Recycling Arrows: Also referred to as a "Mobius loop," this symbol designates a recyclable container. To convey information about the container, several versions of the sign are used. For instance, if the container is composed of recycled materials, the symbol will be enclosed in a solid circle. The container is manufactured partially of recycled material if the triangle sign is enclosed in a circle and contains a percentage either inside the symbol or next to it. In order to facilitate recycling, the number within the triangle and letter below indicates the specific resin that was used to make the plastic of the container.

The Leaping Bunny: This globally recognizable icon indicates that the producer abstains from using animals in testing and complies with guidelines established by the Coalition for Consumer Information on Cosmetics.

UVA (circled in): This emblem attests to a product's compliance with European UVA protection criteria for preventing skin cancer. The circle is the symbol's key. If the UVA stamp is absent from the circle, it indicates that the product provides some UVA protection but falls short of the suggested level of protection.

This sign is the Soil Association's accreditation mark, indicating that an item has complied with COSMOS requirements, which are generally accepted as the industry norm when it comes to organic health and beauty at a worldwide basis. With regard to leave-on cosmetics, this mark indicates that a minimum of 20% of the total components are organic as well as a minimum of 95% of the physically processed ingredients are organic.

The Vegan Society owns the Vegan Trademark. It indicates that there are no animal components in the product at all.

5.2. Precautions Against the Unwanted Effects of Cosmetic Products

Today, cosmetics and personal care products have become an indispensable part of both daily care and apparel. Since we cannot abandon the use of cosmetic products, what we should pay attention to avoid some undesired effects of these products is stated below (Çomoğlu, 2012; Kaymak and Tırnaksız et al. 2007):

- The product should be tightly closed after use.
- If there is an eye infection, the product should not be used.
- The two products should not be mixed with each other.
- The product should never be shared with another person.
- Aerosol products are next to fire and while smoking should not be used
- Check the manufacture / expiration date when buying cosmetics products with reduced usage time should not be taken.
- The smell, texture and colour of the spoiled product change. It is seen as separated into phases in the form of water and oil.
- There are preservation suggestions on the product you bought. Like, "Protect from the sun, keep it in the cold or at room temperature". These suggestions must be followed.
- The product should be taken with a spatula / applicator and not a finger, so that no bacteria can grow in the product, and it should not be touched inside the cover.
- The products stored in the package are better protected.
- Products should be protected from extreme heat, cold and moisture.
- Small size products should be preferred.
- No other products or water should be added to the product.
- Unpacked products should not be purchased

6. Discussion

All involved—consumers, regulators, and manufacturers—want cosmetics and personal care products and their contents to be safe, meaning that they shouldn't pose any significant health risks to users when used as directed (Nohynek et al., 2010). The word cosmetics has a broad meaning because it includes all ingredients, preparations, treatments, utensils, or operations used to improve a person's appearance (Isa et al., 2023). Thus, this term can be further border lined and harmonized via making international legislations in terms of ingredients, languages, packaging, and transportation. But, some legislations can differ in accordance to needs. For example, the three categories of items for external use in Brazil are governed by Resolução da Diretoria Colegiada Regulation n. 752/2022: hygiene products, cosmetics, and perfumes. There are two classifications for all of these products: grade 1 and 2. Products with fundamental and elemental formulation qualities that don't need extensive instructions or usage limitations fall under the grade 1 category; they also can't contain UV filters or other prohibited materials. Conversely, grade 2 products (sunscreens, antiperspirants, suntan creams/lotions, baby products, dandruff shampoo/conditioner) have specific indications and features that demand safety and/or efficacy evaluates in addition to information, methods, and constraints of use on efficacy and/or restrictions on the methods of use. While The

Indonesia National Agency of Drug and Food Control (NADFC) issues GMP certificates for cosmetics, which are the manufacturer's legal proof that the facility and system have complied with NADFC standards. The NADFC will inspect the manufacturer and conduct a certification renewal process if the manufacturer does not have one of these certificates. Non-ASEAN manufacturers must also submit a GMP certificate from a government or other recognized body in order to be notified (Morel et al., 2023). Organic UV filters are molecules that have allergic potentials and can cross the skin barrier due to their low molecular weight and lipophilic properties. Therefore, we can say that organic filters are more toxic than inorganic filters. There is still no clear fact that inorganic UV filters can cross the skin barrier. Therefore, warning users against UV filter toxicity will decrease the use of sunscreen products, mostly UV exposure and eventually increase melanoma and other skin cancers. The carcinogenic effects of the chemicals contained in deodorants and antiperspirants, and their effects on Alzheimer's disease are discussed. In order to protect from these effects, we can prefer products with natural content. Although some sources show cytotoxic properties of ZnO and TiO_2 molecules, this issue is still unclear because there is not enough data. Therefore, based on the data at hand, there is no definite information about whether sunscreens are reliable or not. Numerous organic UV filters and paraben preservatives, which are often found in personal care products, are substances of growing concern because of their potential to cause thyroid disruption and other negative consequences. (Cotrina et al., 2023). Results suggest that certain organic UV filters regulate hyaluronan metabolism in human keratinocytes (Chang et al., 2023). Skin has many types (Lee & Oh, 2022; Gazeau & Nguyen, 2023), thus with a standardized approach to differentiate and evaluate various skin types, entities may ensure the maximum degree of safety and advantages while choosing cosmetic products in our evolving global phenotypic, as well as improve the efficacy of person’s evaluations. Labels and packages of personal care and cosmetic products contain icons and symbols on, and these icons getting more important day by day. Regardless of the type of cosmetic product, it is imperative that the producer labels the item with legible, precise information. Symbols on cosmetic labels can provide consumers with additional information about the producer, such as its recycling policies or animal welfare standards, in addition to helping them comprehend the product they are about to purchase or use.

7. Conclusion

Cosmetics are products that have been used since the Ancient Egyptians to clean, smell, change appearance and / or correct and / or protect body odours or keep them in good condition. Besides the many benefits that cosmetics provide us, there are of course damages because they are chemical. Microorganism contamination in cosmetic products can pose an important risk for consumer health. Preservatives that are compatible with other substances in the formulation, are broad spectrum and have no allergic, toxic or irritant effects on the user are added to cosmetics. The safety of sunscreens is a matter of debate. While some studies show the harmful effects of these products on cells, some studies do not support these hypotheses. It is very important to know our own skin and the products we use in order to minimize these damages. When we know our skin correctly, we can determine the product we need correctly. At the same time, knowing the content of the product we use and knowing the possible side effects are important for us to evaluate in terms of benefit and harm. In conclusion, evaluating the safety of cosmetics and their constituents is a complicated subject that is influenced by a variety of factors, including the ethics of animal testing, regional regulatory requirements, and scientific inquiries. An international harmonization on the methods for

evaluating the safety of these goods and their constituents is desperately needed, for the benefit of consumers, manufacturers, regulatory agencies, and all stakeholders.

CONFLICT OF INTEREST

The authors declared no conflict of interest.

AUTHOR STATEMENT

No ethical approval was needed in this research.

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