

Physiological dermatological changes in women's female and skin care in a beauty salon

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Abstract

The cosmetic market offers a wide range of cosmetics for pregnant women. Substances contained in them have a task of keeping the skin in a proper condition during this particular period. Cosmetics for body care have moisturizing, oiling and elastic properties. Face preparations have a soothing, moisturizing, oiling and regenerating effect, some of them brightening. Intimate hygiene products have a moisturizing, soothing and anti-inflammatory effect. In addition to daily home care, pregnant women can take advantage of services of beauty salons where specially prepared treatments are offered for them, which will have a positive effect on their skin and psyche without affecting fetal development (and will not affect development of the fetus).

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Introduction

Pregnancy lasts an average of 280 days from the first day of the last menstrual period. This period is divided into three trimesters. The use of cosmetic services is not prohibited at this time. However, it should be remembered, not to use preparations and do not perform nursing and healing treatments, that could disturb this period. It is important to know the possible complications and the potential benefits of using the beauty salon offer [1].

The aim of the work is to approximate the physiological and dermatological changes taking place during pregnancy as well as cosmetic treatments which are indicated or contraindicated during this period.

Physiological dermatological changes in pregnant women

During pregnancy, hormonal, immunological and metabolic processes are modified. Physiological skin changes are mainly associated with rapid hormonal fluctuations of progesterone and estrogens. An important role is also played by cortisol and chorionic gonadotropin [2].

The most common dermatological changes occurring in over 90% of pregnant women are [3]:

- vascular changes of the skin,
- pigmentation changes in the skin,
- degenerative changes in the skin,
- changes in the skin appendages.

The above changes are defined as physiological, because they are the result of normal processes and adaptation of the pregnant woman's body to the needs of the developing fetus. They are classified as benign and usually do not pose a threat to the health of mother and child and most of them spontaneously disappear several months after childbirth [2].

Vascular changes of the skin

Vascular changes in pregnant women depend mainly on the increase in permeability and capillary frailty, increased vascular proliferation and vasomotor instability. They concern the arteriovenous and venous system [2]. During the first trimester of pregnancy

due to the increased concentration of estrogen and progesterone, there is an increase in extensiveness and decrease in blood vessel tension resulting in the widening of the superficial veins (mainly in the abdomen, crural nipples and nipples) and subsequent skin lesions [4]. The most frequent vascular changes are stellar angiomas. They appear between the second and fifth months of pregnancy. These changes are usually located on the face, neck, upper torso and upper limbs. Stellated hemangiomas are small, lively red spots (about 2-10 mm in diameter) surrounded by a network of dilated capillaries, growing with the development of pregnancy. Weakened by the pressure of oppression. They can be absorbed within three months from birth or fixation. They may appear again during subsequent pregnancies. Probably the cause of the formation of star hemangiomas is an elevated level of estrogen and ineffective metabolism of these hormones by the liver, which is overloaded for natural reasons during this period [5,6].

In the early stages of pregnancy, the erythema of the hand may also appear. It covers the entire outer surface or is limited to the area of a withers or a ball and persists up to about 2 weeks after delivery [6].

Another problem of pregnant women is varicose veins that occur as a result of the enlargement of the uterus, which, by compressing the inferior vena cava, causes an increase in pressure in the pelvic veins and lower limbs veins as well as an increase in blood volume. The most common place for the development of varicose veins is a sensitive area of thighs, shins, vulva and anus. There may also be superficial varicosity, which may be accompanied by arteriovenous fistulas with severe pain. Factors predisposing to the appearance of varicose veins include: genetic basis, standing or sitting position, wearing too tight clothing and footwear [2,6].

Skin pigmentation changes

During pregnancy, hyperpigmentation, both local and disseminated, affects about 90% of women [3]. The process of melanogenesis intensifies with increased secretion of estrogen, progesterone and melanotropin. Hyperpigmentation changes are most often located on the nipple of the nipples, mucosa of the external genitalia, the white line and axillary

folds. Fresh scars, freckles and pigmented pigments often appear to darken, which can also increase their number and size. Excessive pigmentation usually occurs in the first trimester of pregnancy and increases until delivery. Up to a year from birth, the changes are self-reversing but rarely reach pre-pregnancy status [2,7].

Chloasma (melasma, chloasma, “pregnancy mask”) is a very common skin lesion associated with hyperpigmentation. It appears most often in the second trimester of pregnancy on the skin of the face. It is characterized by the appearance of irregular, dark brown hair and well-delimited stains without preceding or accompanying inflammation [32,33]. There are three forms of melasma: central (most common, includes the forehead, nose, upper lip, chin and cheeks), zygomatic (refers to the nose and cheeks) and mandibular. In terms of histology, it stands out: epidermal melasma (melanin grains are deposited in the epidermis), cutaneous skin (melanin is deposited in macrophages of the dermis) and mixed skin. Probably the main reason for the formation of melasma is elevated levels of estrogen and progesterone. Increased UV exposure and insufficient photoprotection contribute to the intensification and consolidation of pigmentary changes. Folic acid deficiency, poor diet, inappropriate selection of cosmetics, liver diseases, parasites as well as genetic predisposition may also be significant. The treatment involves chloasma covering the epidermis, while localized in the deeper layers of the dermis is very difficult to remove. The most frequent treatment results are unstable brightening. Therapies should be carried out after lactation. For the treatment of chloasma, topical preparations with vitamin C, chemical peels are used and herbal and laser therapy. The constant, high protection against UV radiation after treatment is extremely important [2,4,6].

Degenerative changes in the skin

Stretch marks are the most common degenerative changes in pregnant women. They appear around the 6th month of pregnancy. They arise within the abdominal, breasts, thighs, buttocks as well as in the lumbosacral region, while less often on the shoulders. The first stage (inflammatory phase) is

characterized by the formation of hypertrophic, spindle-shaped stripes in vivid red or purple. They look like a fresh scar. The epidermis in this place is very thin, smoothed, devoid of glands and hair follicles. In the second stage (atrophic phase or scarring), the changes become atrophic, brighter with a pearl-white color. Stretch marks usually appear in clusters in the form of numerous, parallel lines. Their length reaches even a few centimeters and the width varies from 1 to 10 mm. They are located perpendicular to the direction of skin tension. The cause of stretch marks in addition to weight gain and stretching the skin is an elevated level of adrenocortical hormones, genetic predisposition, endogenous factors (relaxing and estrogens) as well as improper care. The lifestyle and diet can also affect the appearance of stretch marks [5,6,8,9,10].

Changes in the skin appendages

The period of pregnancy predisposes to changes in hair, nails, sweat glands and sebaceous glands [2].

In the second and third trimester of pregnancy, the number of follicles increases in the anagen phase, which results in the reduction of hair loss. As a result, they become denser and healthier. However, one month after delivery, the majority of the follicles are in the telogen phase, which results in fast and numerous hair loss. This effect may persist up to 15 months after termination and its cause is instability of the endocrine system and so-called “post-partum stress” [8,11].

A phenomenon occurring in a few pregnant women is gestational hirsutism (excessive hair growth around the face, lower limbs, arms and back), which is caused by the increased concentration of androgens, gonadotropins and adrenal hormones [33, 36].

At the end of pregnancy, due to a decrease in gonadotropic activity, the problem of male pattern baldness may appear. These changes are quite rare and usually disappear after childbirth [11].

During pregnancy there is an increased activity of sebaceous glands throughout the entire body. This leads to the emergence or exacerbation of acne vulgaris especially in typical seborrheic locations, which include: T-zone (forehead, nose area) and beards, seborrheal gutter (on the back) and around

the neckline (triangle). The sebaceous glands combined with the milk ducts increase their activity causing the formation of 2-3 nodules of brown papules on capsules (the so-called Montgomery glands) [2].

Weight gain and increased secretion of thyroid glands lead to increased activity of the eccrine sweat glands. Excessive perspiration can be the cause of the so-called perspiration and eczema. However, apocrine glands (present in the genital area and groin region) during pregnancy decrease their activity [11].

From the first weeks of pregnancy, there are changes in the nail plate. This leads to increased brittleness, softness, delamination of the plaque as well as accelerated growth and subsonic keratosis. Sometimes the tiles may come out from the side of the free shore. Due to the occurrence of these problems, it is recommended to cut nails short, avoid colorful nail varnishes and use appropriate nutrients. After the dissolution, the nail growth rate returns to its pre-pregnancy state and the Beau line (transverse furrows and stripes) may appear on the plate [9, 11].

Cosmetic minerals and pregnancy

During pregnancy, due to adaptive changes of the whole body, the skin requires exceptional care. The increase in body mass accumulated mainly in the abdominal region causes that the skin requires special care here. Stretching the skin leads to its tension, tightness and excessive dryness. Often, the appearance of stretch marks occurs here. Therefore, it is recommended to regularly moisturise and lubricate the skin [12,13].

During pregnancy, the immunological reactivity and dryness of the whole body are increased, which may lead to redness, irritation and onerous pruritus. During pregnancy, an unnatural odor of one's own body may also arise due to a change in the bacterial flora, skin pH, increased sebaceous and sweat glands, and the production and leakage of colostrum from breast glands. In this particular period, the tendency to irritate intimate parts and the appearance of fungal and bacterial infections also increases [14].

Increased estrogen concentration causes an increase in skin hydration and blood vessel permeability, which results in easier absorption of cosmetics from the skin surface. This may be the reason for the passage of some substances into the circulatory system of the mother and then through the placenta to the fetus [7,15].

On the cosmetics market, we can find a wide range of cosmetics for pregnant women. These are preparations for body and breast care with moisturizing, oiling and firming properties, and for the face with brightening, soothing, moisturizing, oiling, regenerating and intimate hygiene with moisturizing, anti-inflammatory, anti-irritant and antifungal properties and antibacterial. However, there are no specially dedicated preparations for the daily care of the face skin of pregnant women in the form of washing gel, micellar liquid, tonic, etc. [13].

Products dedicated to pregnant women are subject to strict restrictions on chemical composition. They can not threaten the health and life of the developing fetus. Therefore, cosmetics intended for pregnant women should be free from ingredients with an allergenic effect, eg strong preservatives, dyes, fragrances. These preparations should not contain strong detergents but mild cleansing substances that do not damage the skin's natural lipid coat. The ingredients of these cosmetics should not be, for example, petroleum and acrylic acid derivatives, silicones or solvents [7,13,14,15].

Vegetable raw materials according to ESCOP (European Scientific Cooperative on Phytotherapy) which should not be used during pregnancy are: wormwood herb, aloe, anise oil, boldo leaf, bedchamber rhizome, dill oil, fenugreek seed, buckthorn bark, ginkgo leaf, root / rhizome of licorice, juniper fruit, rhizomes of the Common Truss, American buckthorn bark, root roasting, sage leaf, Senna leaf / fruit and bearberry leaf [16].

In addition, during pregnancy, the use of cosmetics containing substances such as: retinol, alpha-hydroxy acids, beta-hydroxy acids, extracts of plants stimulated by diuresis and fat burning, some essential oils (e.g. bergamot), triclosan, azelaic acid, tetracyclines, fluorine and ammonia is not recommended [3].

Treatments and pregnancy

Metabolic, hormonal and immunological changes that occur during pregnancy cause a number of changes in the body as well as in the skin and hair of a woman. Pregnancy which is a normal physiological condition that is normal is not a contraindication to cosmetic procedures, however, it should be borne in mind related limitations and the negative impact of some treatments on fetal development restrictions with the possibility of a negative impact on fetal development [3].

Contraindications during pregnancy include [17,18,19]:

- treatments using currents (eg iontophoresis, electroplating), radio waves, lasers – can cause burns and can negatively affect the developing fetus;
- ultrasound treatments (cavitation peeling, sonophoresis);
- ultraviolet radiation (solarium) – causes the decomposition of folic acid, can cause premature birth;
- warming treatments (eg sauna) – may cause excessive permanent dilation of the skin's blood vessels and premature muscle contractions;
- treatments using sea algae (compresses) – it is not recommended because of their intense odor and high content of iodine;
- exfoliating treatments using acids from the group AHA (alpha-hydroxy acids) e.g. glycolic, almond – they can cause skin irritation;
- exfoliating treatments using BHA (beta-hydroxy acids – salicylic acid) – can cause fetal malformations and blood coagulation disorders in the newborn;
- anti-acne treatments using azelaic acid – has teratogenic and abortifacient effects;
- treatments using retinol – may cause fetal damage and teratogenicity;
- slimming treatments (eg with caffeine) and drainage (eg body wrapping, sleeves with negative pressure) – increase blood pressure;
- massage with the use of essential oils during pregnancy, i.e. basil, myrrh, laurel and mint. Sage, bergamot, juniper, cedar, jasmine and

rosemary oils – have abortifacient and teratogenic effects;

- hair removal using warm wax – as a strong pain stimulant, it can cause circulation disorders and skin irritation;
- treatments that cut the continuity of the epidermis (permanent make-up, percing, needle mesotherapy) – can lead to infection, is a strong pain stimulus;
- treatments in cryotherapy chambers;
- treatments with the use of a Chinese bubble;

Due to concerns about care for the health of the unborn child and with the sacrifices that pregnant women must face, various forms of relaxation are recommended. One of them is the use of cosmetic services offered by salons. Such a visit will be beneficial for the body and psyche of the future “mother”. Cosmetic salons offer an ever wider range of treatments, including [3,18,19]:

- face, neck, cleavage and body massage excluding the abdominal area – it improves blood circulation, prevents swelling and crosses. It also works relaxing;
- moisturizing, soothing, eliminating inflammation and strengthening the blood vessels of the face and body with the use of delicate cosmetic peels, masks, serum / ampoules and creams;
- alternate showers with the use of hot and cold water (offered by SPA beauty salons) – they improve the tension and blood circulation of the skin;
- treatments to prevent stretch marks and cellulite with the use of cosmetics with moisturizing and elasticizing properties, eg collagen, hyaluronic acid, sweet almond oil, macadamia oil, shea butter;
- biological and Japanese manicure – improving the appearance and condition of the nail plate.

Summary

To prevent unsightly skin changes, the body needs to be nourished with appropriate cosmetics. There are series of products created especially for pregnant women on the market. These are preparations

containing appropriately selected active ingredients. They have a low content of preservatives and are deprived of materials not recommended during pregnancy. The offer of balms and creams for body care is wide, however, there are no products for daily face care such as: gels for cleaning, tonics or lotions for removing make-up.

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