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The influence of sex hormones on female skin: a study for the practice of facial aesthetics

The influence of sex hormones on female skin: a study for the practice of facial aesthetics

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SUMMARY

The sex hormones estrogen, progesterone, and testosterone exert great influence on the skin, due to the large number of hormone receptors present in the structures of the epidermis and dermis. These hormones play crucial roles in the regulation and proper functioning of the skin and are capable of altering its state, functioning, functions and, consequently, generating unsightly facial changes. This work, aimed at beauticians, aimed to investigate the main unsightly dysfunctions resulting from fluctuations in sex hormones on the facial skin of adult women with regular and irregular menstrual cycles, pregnant women, menopausal women, and transgender women undergoing therapy and hormonal suppression, so that, based on this review, the professional has guidance on the possible applicable resources in the face of such changes. A bibliographic review was carried out using information available in physical and virtual libraries and in scientific articles published preferably in the period from 2014 to 2024 in the databases: LILACS, PubMed, Google Scholar, and SciELO.

Keywords: Sex Hormones, Skin, Unaesthetic Changes, Facial Aesthetics.

ABSTRACT

The sex hormones estrogen, progesterone and testosterone exert great influence on the skin, due to the large number of hormone receptors present in structures of the epidermis and dermis these hormones perform crucial functions in the regulation and proper functioning of the skin and are able to alter its state, functioning, functions and, consequently, generate unaesthetic facial changes. This work, aimed at beauticians, aimed to investigate the main unaesthetic dysfunctions resulting from fluctuations of sex hormones in the facial skin of adult women with regular and irregular menstrual cycle, pregnant women, menopausal and transgender in therapy and hormonal suppression, so that, from this review, the professional has a direction on the possible resources applicable to such changes. A bibliographic review was made using information available in physical, virtual libraries and in scientific articles preferably published in the period from 2014 to 2024 of the databases: LILACS, PubMed, Google Scholar and SciELO.

Keywords: Sex Hormones, Skin, Unaesthetic Changes, Facial Aesthetics.

1. INTRODUCTION

The skin is the largest organ in the human body, it is subdivided into epidermis, dermis and hypodermis.

It has sensitivity, thermoregulation, protection, metabolism and endocrine functions

peripheral, participating in hormonal stages, in addition to also being the target of the action of some

hormones, such as sexual hormones (ZOUBOULIS, 2004). Hormones are essential substances for the functioning of the organism and are produced by endocrine glands, mainly derivatives of proteins, polypeptides, amino acids and steroids, are secreted into the bloodstream blood to the target organ or tissue acting as chemical messengers. Hormones sexual are classified as steroids, with estrogen, progesterone and testosterone being the main ones that act on the female organism and their imbalance can culminate in pathophysiologies that can affect the facial skin, generating elementary lesions (BRIGO, 2021).

There is a link between the skin and sex hormones, as there are hormone receptors in various cells of the epidermis and dermis, such as epidermal and follicular keratinocytes, melanocytes, fibroblasts, sebaceous and sweat glands, dermal papillae and endothelial cells (ZOUBOULIS 2004; DREXLER et al., 2006).

Endocrine variations in adult women are rapid and intense and can affect the skin in a singular, cisgender women with regular or irregular menstrual cycles, menopausal, pregnant and transgender women undergoing suppression and hormone treatment exemplify the influence of sex hormones in female facial skin.

“The intersection between skin science and hormonal health is a vast and still largely unexplored territory. explored” BEZERRA, 2024. The lack of research related to the topic available in Portuguese, the provision of information mostly published outside Brazil and the possible positive effects of detailing knowledge for these justify this work which can potentially generate new perspectives for facial aesthetic treatments women.

2. THEORETICAL FRAMEWORK

2.1 SKIN: STRUCTURES AND FUNCTIONS

The skin has three layers: epidermis, dermis and hypodermis, and is the largest organ in the body. human, corresponds to about 5.5% of the body mass, has an area between 1.7m² and 2.0m² in adults, and has a pH that varies between 5.5 and 7.0 depending on the region. It covers the body and is the largest interface with the external environment, acting as a coating (MONTANARI, 2016).

The epidermis is the outermost layer, varying between 0.05 and 1.5 mm in thickness. It is avascular. and is renewed through mitotic activity that occurs in the basal layer. It is divided into four layers: (FROM CAMARGO HARRIS, 2018; MONTANARI, 2016; ZORZI, 2007)

- Stratum corneum: composed of keratinized, anucleated and squamous cells, with intercellular space formed by lamellar structure, provides protection against friction, loss of transepidermal water and microorganisms.
- Stratum granulosum: composed of granulosa cells due to the presence of granules keratohyalin, in these cells the synthesis of an impermeable barrier occurs.
- Stratum spinosum: formed by spinous cells in the shape of a polygon, where the the process of keratinization, where desmosomes join together. This layer has Langerhans cells , which participate in the immune system.
- Basal layer: also known as the germinative layer, due to the accelerated mitotic activity and synthesis of cytokeratin intermediate filaments. They are present are melanocytes, responsible for the production of melanin, and cells of *Merkel,* which are tactile receptors.

The dermis is the middle layer and has a thickness between 0.5 and 3.0 mm, it is composed of fibers of collagen and elastin. It serves to support the epidermis, and also nourish the basal layer through the dermal papillae. In addition, this is where the blood and lymph vessels are located, nerves, sensory nerve endings and cutaneous appendages such as sweat glands, sebaceous gland, arrector pili muscle and hair follicle. It is subdivided into papillary dermis and reticular dermis: (DE CAMARGO HARRIS, 2018; MONTANARI, 2016; ZORZI, 2007)

- Papillary dermis: large number of fibroblasts that form type III collagen, which It has thin fibers that are not grouped into bundles, this being connective tissue loose.
- Reticular dermis: considerable amount of type I collagen and elastic fibers in different senses, increasing the density of this layer.

Given the facts, one cannot generalize “skin” without highlighting the differences between male skin and female skin, among the main differences are: perspiration rate, bacterial flora, pigmentation and dermal and epidermal thickness, hair growth, hormonal metabolism, appearance and immunological properties (COSTA, 2012)

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The skin has different layers with different functions, with the main roles being protection, sensitivity, thermoregulation and metabolism.

Taking into account the protective function, it presents itself as a barrier to damage external factors, such as fungi, bacteria, radiation and physical stimuli. As for sensitivity, the skin has receptors for touch, temperature, pain and pressure, making it one of the five sensory organs. Its thermoregulation function occurs through thermoreceptors that act by stimulating nerve fibers and carrying information to the thermal regulation center that is found in the hypothalamus; in the case of heat loss, the temperature is regulated by means of the increased blood flow, resulting in sweating, and for heat conservation, the action is minimal due to the lack of hair. In relation to metabolism, the skin constantly performs the process of secretion of sweat and sebum made, respectively, by the sweat glands and sebaceous glands in order to maintain homeostasis. In addition, through ultraviolet radiation the skin synthesizes vitamin D, acting in calcium metabolism and bone tissue formation. (HERNANDEZ, 1999; LEONARDI, 2008; ZORZI, 2007)

The progressive characterization of the skin and its structures clarifies that this organ fills the functional requirements to be considered an independent peripheral endocrine organ. Or that is, the skin is not only considered a target site for several hormones but also as a structure that is directly involved in the synthesis, activation, inactivation and elimination of various hormones (including sexual hormones). (ZOUBOULIS, 2004)

2.2 SEX HORMONES

Hormones are substances produced by glands and secreted into the bloodstream until an organ or tissue, and are essential for the functioning of the organism as they act as chemical messengers. Sex hormones are classified as steroids because their chemical structures, and are divided into three main groups: estrogens, androgens (such as testosterone) and pregnancy hormones or progestins (such as progesterone) (BRIGO, 2021).

Estrogens are a group composed of estradiol, estrone and estriol, and are synthesized from cholesterol and secreted by the ovaries. This class is responsible for the emergence of secondary female characteristics that appear at the onset of puberty. Estradiol-E2 is the

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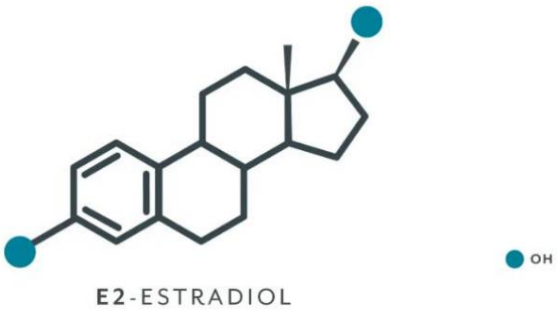
most active type of estrogen, which is the type that is involved in the menstrual cycle. This type of estrogen binds very strongly to estrogen receptors. (PUCCI, 2019., JONES et. al ., 2023)

Figure 1- Chemical composition of the Estradiol molecule.



SOURCE: PUCCI (2019)

Androgens include androstenedione, dehydroepiandrosterone (DHEA), and hydroxybenzoate sulfate. dehydroepiandrosterone and testosterone being the main hormone representing the group. In the female body they are produced by the adrenal glands and ovaries (SOARES, 2002). Testosterone is converted into estradiol under the action of the aromatase enzyme, being a precursor mandatory in the production of estrogen, and develops characteristics such as development of muscles, maturation of sexual organs and male physical characteristics such as deepening of the voice, body and facial hairiness (BRIGO, 2021., REIS, 2021., MOREIRA, 2023).

Figure 2 - Chemical composition of the Testosterone molecule.

SOURCE: PUCCI (2019)

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Progesterone is the essential hormone for pregnancy, being responsible for preparing the endometrium for implantation of the fertilized egg, is initially produced by the corpus luteum until the placenta assumes this role during pregnancy (BRIGO, 2021).

Figure 3 - Chemical composition of the Progesterone molecule.

SOURCE: PUCCI (2019)

Throughout life, women suffer from intense, rapid and very rapid hormonal fluctuations. significant, so that each hormone at high and low levels influences in its own way singular the skin; in cisgender women the menstrual cycle, irregular, pregnancy, menopause and in transgender women treatment and hormone suppression are examples of occasions where endocrine variations occur.

Table 1 - Expected hormone levels in a healthy biological female organism at different stages of pregnancy life.

ANDROGENS (Total Testosterone)	ESTROGEN (Estradiol)	PROGESTERONE
FROM MENARCHE 12 to 16 years: less of 75 ng/dl 17 to 18 years old: 20 to 75 ng/dl > or = 19 years: 8-60 ng/dL (10)	**DURING MENSTRUAL CYCLE REGULAR** Beginning of follicular phase: 20 to 150 pg/ml (73 to 551 pmol/l) Mid-cycle: 40 to 350 pg/ml (551 to 2753 pmol/l) Luteal phase: 30 to 450 pg/ml (110 to 1652 pmol/l) (18)	**DURING CYCLE REGULAR MENSTRUAL** Adult follicular fuse: 0.15 0.70 ng/ml (LOW) Adult Luteal Phase: 2 to 25 ng/ml (INTERMEDIARY)

DURING PREGNANCY	DURING PREGNANCY	DURING PREGNANCY
During pregnancy, total testosterone levels increase	First trimester of pregnancy: 188 to 2497 pg/ml Second trimester of pregnancy: 1278 to 7192 pg/ml Third trimester of pregnancy: 3460 to 6137 pg/ml (20)	First Quarter of pregnancy: 7.25 to 44 ng/ml (INTERMEDIARY) Second trimester of pregnancy: 19,582.5 ng/ml (HIGH) Third Quarter of pregnancy: 65 to 229 ng/ml (VERY LOUD)
MENOPAUSE	**MENOPAUSE**	**MENOPAUSE**
Circulating testosterone levels remain stable the same.	Estradiol levels in exams laboratory values of postmenopausal women are usually less than 20 pg ml (73 pmol/l).	<0.4 ng/ml (VERY LOW)

SOURCE: OWN AUTHORSHIP FROM STUDIES: BOUTOT et. al., 2019., RAY, 2019., TELFER et. al., 2019., VOEGTLINE et. al., 2017., VAN DE BEEK et.al., 2004).

The skin has an intimate relationship with sexual hormones, this is mainly due to estrogen, progesterone and testosterone receptors that are present in both the dermis and in the epidermis. “The skin is full of receptors for sex hormones” (DREXLER et al., 2006). Targets of hormonal action, such as organs, generally respond to hormonal stimuli. after binding to intracellular receptors or the cell surface, such interactions result in the formation of hormone-receptor complexes that trigger the activation of pathways intracellular culminating in modulation of specific cellular functions and activities (GARCIA-REYERO, 2018).

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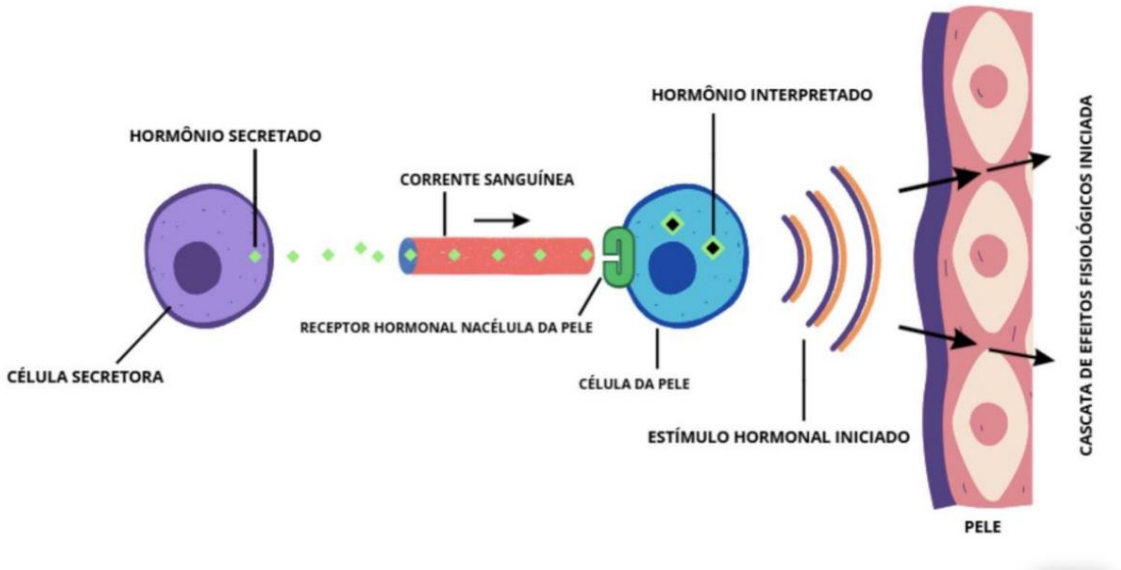

Figure 4 - Functioning of the physiological cascade from hormonal receptors in the skin

SOURCE: OWN AUTHORSHIP

The hormone receptors present in the skin are located across practically its entire length in cells and in some skin appendages. According to ZOUBOULIS (2004), the receptors hormonal, such as AR (androgen receptor), PR (progesterone receptor and ER-ÿ, -ÿ (estrogen receptor type beta and alpha), are present in epidermal keratinocytes, follicular keratinocytes, dermal papillae, endothelial cells, fibroblasts, melanocytes, sweat glands and sebaceous glands.

Figure 5 - Sex hormone receptors in human skin cells.

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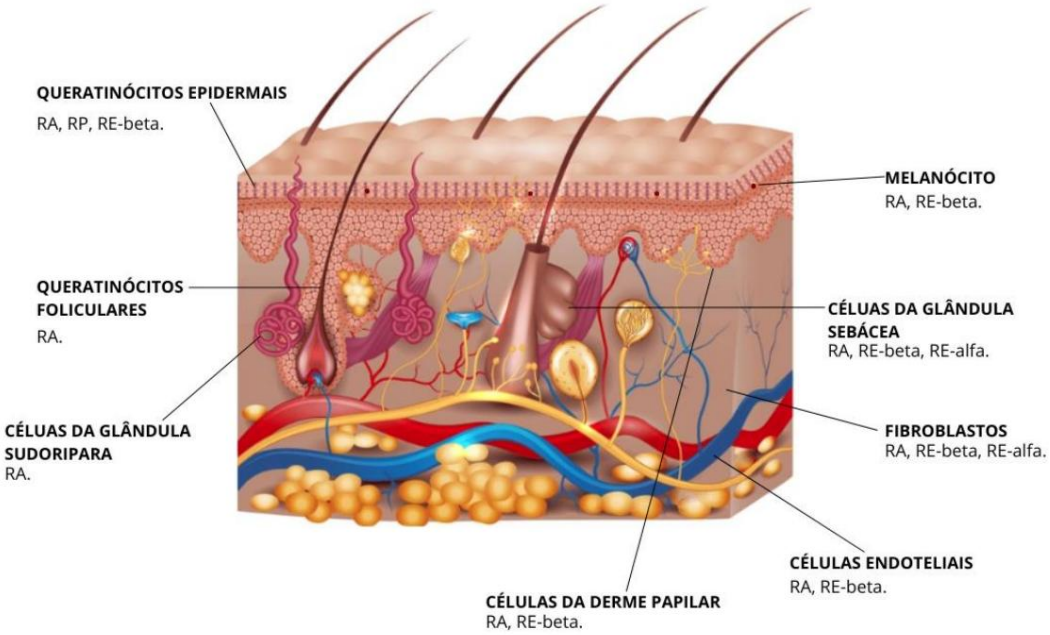

DESCRIPTION: AR (Androgen Receptor), RP (Progestogen Receptor), RE-beta (Estrogen Receptor beta), ER-alpha (Estrogen Receptor alpha).

SOURCE: OWN AUTHORSHIP

2.3 RELATIONSHIP BETWEEN SEX HORMONES AND SKIN

In relation to the female organism, hormonal changes closely linked to sex hormones have a major impact on all processes in the body. Despite this knowledge is already widely disseminated and the importance of the topic, in the area of aesthetics and related current studies reveal the lack of in-depth studies related to the skin of the face and fluctuations in sex hormones. According to BEZERRA, 2024 “The intersection between skin science and hormonal health is a vast and still little explored territory”.

It is possible to identify estrogen receptors in epidermal keratinocytes, in fibroblasts and dermal vessels, melanocytes, hair follicles and sebaceous glands (WOLPE et. al., 2020 *apud* BRINCAT, 2000. THORNTON et al., 2003).

Table 2 - The influence of estrogen on female facial skin

ESTROGEN	REFERENCE

Important for the functioning of the structures of the epidermis and of the dermis (vasculature, hair follicles, sebaceous glands, apocrine and eccrine glands and melanocytes).	(THORNTON, 2002 & VIDEIRA et al., 2013).
It is related to collagen synthesis, increased thickness of the skin, increased dermal water content, production of hyaluronic acid, improvement of barrier function, improvement of wound healing.	(SHAH, 2001).
Promotes collagen and elastin production.	(BEZERRA et al. 2024).
Low level causes collagen atrophy.	(SHAH, 2001).
Bacteria associated with short-chain fatty acid production (known for maintaining skin hydration) proliferate in phases of high estrogen levels.	(BEZERRA et al. 2024).
Increases mucopolysaccharide acid and hyaluronic acid, related to NMF (natural moisturizing factor).	(FIGUEIREDO, 2020)
Its increase induces salt and water retention, causing edema.	(THORNTON, 2002).
Reduces the inflammatory response and contributes to homeostasis cutaneous.	(BEZERRA et al. 2024).
Stimulates melanogenesis, together with tyrosine and melanocyte stimulating hormone.	(THORNTON, 2002., VIDEIRA et al 2013)

SOURCE: OWN AUTHORSHIP

Testosterone also plays an action on the skin, since there are androgen receptors distributed in the basal cells of the sebaceous gland and in the dermal papilla cells of the follicle hairy (SANTOS; WOLPE, 2020).

Table 3 - The influence of testosterone on female facial skin

TESTOSTERONE	**REFERENCE**
Increases the secretion of the sebaceous glands, increasing the degree of skin oiliness.	(MOREIRA 2023; RANGEL 2009; REIS, 2013).
Development of acne.	
Promotes hair growth, like hirsutism.	

SOURCE: OWN AUTHORSHIP

The effects of progesterone are less clear than those of estrogen, but many skin changes are associated with direct and indirect actions of this hormone. “Levels cyclically fluctuating levels of estrogen and progesterone influence numerous characteristics of the epidermis, including skin surface lipid secretion and sebum production, thickness of the skin, fat deposition, skin hydration and barrier function. The collagen content, which contributes to skin elasticity and wrinkle resistance, is also influenced. [...] Furthermore, changing hormone levels throughout the menstrual cycle produce variations in immune function and susceptibility to diseases” (WOLPE & GANZOTTI, 2020).

Table 4 - The influence of progesterone on female facial skin

PROGESTERONE	**REFERENCE**
Increases skin sensitivity and modulates response inflammatory.	(FIGUEIREDO, 2020)
It induces a decrease in the immune system.	(CORRIGAN et al., 1998).
It is believed that progesterone has an indirect action with the emergence of dermatitis in the luteal phase, due to its high levels during this phase.	(HART, 1977; STEPHENS, 2002).

In low, it causes increased vascularization and production of tallow.	(RAGHUNATH, VENABLES, MILLINGTON, 2015).
Causes sagging in blood vessels (impaired drainage) of liquids).	(TACANI et al., 2015)
Progesterone has a thermogenic effect, explaining the increase in body temperature in the luteal phase (from 0.3°C to 0.5°C).	(KAMI, 2017).

SOURCE: OWN AUTHORSHIP

The hormones estrogen, testosterone and progesterone play crucial roles in regulation and proper functioning of the body. Through interaction with receptors specific hormones present in skin structures, this becomes a target organ for action hormonal, receiving and sending chemical signals capable of altering its state, functioning, functions and, consequently, unsightly facial changes. “The changes Hormonal effects influence the physiological properties of the skin before the physical effects occur. become evident” (WOLPE et. al., 2020 apud OHTA, 1998)

3. Material and Method

This is a bibliographic review with basic research, qualitative approach. embedded quantitative, exploratory in nature, employing the deductive scientific method. The bibliographic survey was carried out between March and November 2024, using information found in books present in physical and virtual libraries, and the databases: Latin American and Caribbean Literature in Health Sciences (LILACS), PubMed, Google Scholar and SciELO, using the keywords: Sex Hormones, Skin, Unaesthetic Changes, Facial Aesthetics. The inclusion criteria were original materials, in Portuguese and English, preferably with a publication date from 2014 to 2024, available in full and free of charge; while the exclusion materials were incomplete, paid, and in languages other than those described above.

4. Results and Discussions

The word “aesthetics” comes from the Greek “aisthésis”, which can mean: experience, sensitivity, sensitive knowledge, feeling, sensation, perception and has always been associated with philosophy of beauty, since it was an instrument for studying art (SOUZA, 2021).

The face has a fundamental function in the appearance of human beings as it causes a “first impression” impression”, this makes people look for aesthetic treatments, thus, the
The professional beautician plays a role that goes beyond improving the client's aesthetics, as it also helps with self-esteem, self-confidence, self-perception and motivation, consequently also improving quality of life, health and physical well-being, emotional and mental, since satisfaction with the individual's facial aesthetics is linked to the personal fulfillment and social relationships (ANDRADE, 2022; DA SILVA RIGOTI, 2023; LIMA, 2021; MARTINS, 2020; SOUSA, 2019).

The beautician is the professional who works to physiologically improve the skin, through the application of manual, cosmetic and electrophototherapeutic techniques taking care of well-being, health and skin beautification. Therefore, facial aesthetics is everything that encompasses care and beautification of the face through treatments and use of cosmetics (CAVALLI, 2023; SCHMITZ, 2010).

The assessment of the aesthetics professional becomes a fundamental tool in identifying of hormonal influence on women's facial skin, it is at this stage that the application of the knowledge to identify the characteristic changes of estrogen influence, progesterone and testosterone. Through understanding endocrine fluctuations and the uniqueness of the anatomical and functional characteristics of the skin, the professional beautician becomes capable of intervening and treating facial aesthetic dysfunctions using manual techniques, cosmetics and electrophototherapeutic treatments with the purpose of improving skin health and quality of life of women.

The main unsightly facial changes related to hormonal fluctuations in women adult are: acne, post-inflammatory hyperpigmentation, edema, atopic dermatitis, dehydration, seborrhea, erythema associated with increased temperature, hirsutism, acanthosis nigricans, folliculitis, rhytids, tissue sagging, xerosis, telangiectasia and pruritus. (WOLPE AND GRANZOTI, 2020., SPINEDI et al., 1990., ROSENFIELD, 2001., AACE, 2001., RIBEIRO, 2009.,

ALJEFRI, 2021., CALLEJA-AGIUS, 2012., MONTEIRO 2021., SILVA SANTOS, 2022., WINES, 2001., FERNANDES; GARCIA, 2020., DA SILVA, 2019., BRADFORD et al., 2021; LEE et al., 202., IMHOF et al., 2020 and CARIO, 2019., TRINDADE et. al, 2019)

For all the changes mentioned, except for manual techniques, electrophototherapeutic techniques and cosmetics applied by beauticians for their treatment or mitigation,

Table 5 - Unaesthetic changes related to hormonal fluctuations in women in adulthood and possible aesthetic treatments.

CHANGE UNESTHETIC	WOMAN'S PHASES ADULT	RELATIONSHIP HORMONAL	TREATMENTS AESTHETIC
Acne	- Follicular and luteal phases of the regular menstrual cycle - Menstrual Cycle Irregular - Gestation - Women transgender on hormone treatment	- Increased estradiol levels - Increased progesterone levels - Hyperandrogenism smo - Estrogen therapy sink	- Skin Cleansing - High Frequency - Clay therapy (green, black and white) - LED (Blue, Green, Infra-red) - Low power laser (Infra-red) - Chemical Peeling - Lymphatic Drainage Manual - IPL (420 nanometer) - Microdermabrasion (Diamond and crystal peeling) - Therapy with vegetable and essential oils - Microcurrents - Ionization
Post-inflammatory hyperpigmentation	- Follicular and luteal phases of the regular menstrual cycle - Irregular menstrual cycle - Gestation - Women transgender on hormone treatment	- Increased estradiol levels - Increased progesterone levels - Hyperandrogenism smo - Estrogen therapy sink	- Chemical peeling - Microneedling - Cosmetic lighteners and depigmenting agents - Therapy with vegetable and essential oils - Clay therapy (white) - Microdermabrasion (Diamond and crystal peeling) - LED (Blue, Green) - IPL (480 nanometers)
Edema	- Follicular and luteal phases of the regular menstrual cycle	- Increased estradiol levels	- Lymphatic Drainage Manual - Microcurrents - LED (Green)

	- Gestation	- Increased progesterone levels	
Atopic Dermatitis	- Luteal phase of the regular menstrual cycle - Women transgender on hormone treatment	- Increased progesterone levels - Estrogen therapy sink	- LED (Blue and Infra-red) - Therapy with vegetable oils and essences - Hydration Cosmetics - Low power laser (Infra-red) - Cosmetic intervention with corticosteroid like
Dehydration	- Menstrual and ovulatory phases of the regular menstrual cycle	- Decreased estradiol levels	- Cosmetic hydration - LED (Blue and violet) - Microcurrents - Therapy with vegetable and essential oils - Ionization - Ozone Vapor
Erythema (associated with increased temperature)	- Menstrual and ovulatory phases of the regular menstrual cycle	- Decreased progesterone levels	- Cold steam from Ozone - Cosmetic intervention with cryotherapeutic actives - Frozen spheres
Seborrhea	- Menstrual and ovulatory phases of the regular menstrual cycle - Menstrual Cycle Irregular - Gestation	- Decreased progesterone levels - Hyperandrogenism smo	- Descaling - Clay therapy (green and black) - Chemical Peeling - Cosmetic intervention with sebum-regulating active ingredients
Hirsutism or insufficient hair loss	- Irregular menstrual cycle - Menopause - Gestation - Women transgender on hormone treatment	- Decreased estradiol levels - Hyperandrogenism smo - Increased levels of progesterone - Estrogen therapy sink	- IPL (640 - 690 nanometers) - Cosmetic reduction of hair follicle activity - Cosmetic inhibition of androgen receptors in the skin
Acanthosis Nigricans	- Irregular menstrual cycle	- Hyperandrogenism smo	- Chemical Peeling - LED (Blue and Green)

	- Women transgender on hormone treatment	- Estrogen therapy sink	- Cosmetic whitening and depigmenting agents - Microdermabrasion (Diamond and crystal peeling)
Rhytids and Sagging Tissue	- Menopause	- Decreased estradiol levels	- Radiofrequency - Low power laser (Red) - Peeling - Microneedling - Electrolifting - Plasma Jet - IPL (480 nanometers) - Ultrasound Microfocused - Microcurrents - Electrostimulation - LED (Violet, Red and Infra-red) - Lifting Massage Manual - Lymphatic Drainage Manual
Folliculitis	- Irregular menstrual cycle - Women transgender on hormone treatment	- Hyperandrogenism smo - Estrogen therapy sink	- LED (Blue and Infra-red) - Low power laser (Infra-red) - Microdermabrasion (Diamond and crystal peeling) - Clay therapy (Green and white) - Chemical Peeling - Therapy with vegetable and essential oils
Xerosis	- Menopause - Women transgender on hormonal suppression	- Decreased estradiol levels - Suppression of testosterone levels	- Cosmetic hydration - LED (Blue) - Microcurrents - Ionization - Therapy with vegetable and essential oils
Telangiectasia	- Gestation	- Increased estradiol levels and progesterone	- IPL (530 nanometers) - Low power laser (Infra-red) - LED (Infra-red)
Itching	- Women	- Estrogen therapy	- Intervention

	transgender on hormone treatment	sink	cosmetics with corticosteroid like - LED (Blue) - Hydration Cosmetics - Therapy with vegetable and essential oils - Microcurrents

SOURCE: OWN AUTHORSHIP

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5. Final Considerations

Through the data collected on sexual hormones it can be concluded that fluctuations in estrogen, progesterone and testosterone alter the physiology of female facial skin. By highlighting the anatomical and functional singularity of the skin of cisgender women with menstrual cycles regular, irregular, pregnant, menopausal and transgender women in suppression and treatment hormonal it was possible to identify the main unsightly changes resulting from these endocrine changes.

Aesthetic dysfunctions can be treated or alleviated through the application of resources electrophototherapeutic, manual and cosmetic products within the domain of the aesthetics professional. The content produced in the present study on endocrine fluctuations, hormonal mechanisms, anatomical and functional singularity and physiological changes of female facial skin, can be used by beauticians as reference material and possibly contribute to improving the clinical practice during the identification and treatment of facial aesthetic dysfunctions resulting from the action of the hormones estrogen, progesterone and testosterone in the target audiences, potentially generating new perspectives for promoting health, aesthetics and well-being for the different stages of adult women.

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