Hormones and the Skin
Understanding life changes

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Hormones control nearly every aspect of the human body. These chemical messengers are the reasons our immune system functions; they metabolize food into fuel; they control our moods; and they kick-start the many changes associated with puberty and the physiological changes in our skin as we move from youth to old age.

Both men and women go through different stages of hormonal activity during their lives. Often unpredictable in their timing, these fluctuations can have a considerable impact on the skin. Most important are three of the sex hormones: estrogen, progesterone, and testosterone. Here’s how they operate in men and women of different ages, and some of the effects they bring.

**Girls and Women**

For girls, puberty begins around the ages of 9 to 14 and lasts an average of four years. Throughout a woman’s fertile years, her estrogen, progesterone, and testosterone levels fluctuate with the menstrual cycle, affecting skin clarity throughout the month.
Perimenopausal skin can be difficult to treat because the hormonal shifts do not follow a set pattern.

Estrogen levels peak during menstruation, leaving the skin clear of breakouts, then begin to decline on day seven of the menstrual cycle, allowing testosterone to become more dominant. With more testosterone comes increased oil production. On days 15–28, estrogen continues to decrease, while progesterone begins to increase. This is the time of the month acne breakouts are most likely to occur: as progesterone rises, the follicle walls swell, trapping excess sebum and cell debris in an anaerobic environment—conditions in which acne bacteria thrive.

Perimenopause, when a woman's fertility begins to decline, can start as early as 35. During this stage, there are volatile hormonal shifts in the rise and fall of estrogen and progesterone. This constant fluctuation creates a multitude of unwanted changes. Melasma can return or worsen, and acne breakouts can surge. Perimenopausal skin can be difficult to treat because the hormonal shifts do not follow a set pattern.

Menopause marks the end of fertility. The age at which it occurs depends on many factors: diet, genetics, health, and lifestyle. Menopause brings a significant decrease in estrogen. This often leads to surface dryness, which traps sebum beneath the skin and provides a perfect environment for acne breakouts. The hormonal shift can also cause melasma and other pigmentation changes, as well as the textural changes and wrinkling that come with collagen and elastin breakdown.
A regimen to address the challenges of menopausal skin should include ingredients to encourage collagen and elastin production, including vitamins A and C, palmitoyl tripeptide-38, and retinoids. For older women with dry skin, introduce highly moisturizing ingredients like shea butter, niacinamide, and silicones.

**Boys and Men**

Puberty for boys generally starts between the ages of 10 and 17, and lasts an average of seven years. During this time, the male body primarily produces testosterone, which increases sebum production. Coupled with the less-than-ideal hygiene habits of many teenage boys, this frequently results in challenging acne breakouts.

Throughout their teens and early 20s, men experience several more spikes in testosterone production. Typically, acne outbreaks cease after this time. Those with a family history of acne, however, may continue to experience breakouts well into their late 20s and sometimes into their early 30s. For these clients, daily care products formulated specifically to treat acne may be needed until testosterone production begins to slow during the next stage of life.

After age 30, testosterone production in men begins to decrease at a rate of 10 percent per decade. Andropause, the male equivalent of menopause, brings a steep drop in testosterone production. The skin may become dry and rough due to a reduction in sebum production. Medically, this drop in testosterone is referred to as partial androgen decline in the aging male (PADAM), aging-associated androgen deficiency (AAAD), or male hypogonadism.

An older man’s skin care regimen should include the same ingredients recommended for an older woman. Although the hormonal changes involved are different, the result is the same: collagen and elastin production slows, and skin becomes drier. Older men typically need hydrating products to combat hormone-related skin dehydration. Include lightweight humectants such as lactic acid, hyaluronic acid, niacinamide, glycerin, and urea.

**Common Hormonal Skin Conditions**

**ACNE**

Acne can occur at any time of life, but it is most common during puberty (in males and females) and perimenopause (in females). Regardless of the client’s age or gender, the causes are the same:

- Increased keratinization within the follicle.
- Increased sebum production.
- Increased *Propionibacterium acnes* bacteria.
- Inflammation.

Adolescent acne clients typically have oily, resilient skin, and should have a professional treatment every two weeks. For adult females whose acne follows monthly hormonal fluctuations, use the client’s menstrual cycle as a guide and treat every four weeks. Perimenopausal acne patients will also be fighting age-related skin concerns.
In-office treatments should be designed to increase cell turnover and decrease bacteria and oil production. These may include modified and enhanced Jessner’s formulas, salicylic acid treatments blended with anti-inflammatory ingredients, deep pore-cleansing treatments, and circulation-enhancing treatments.

Consistent home care is essential. Encourage your acne clients to include the following products:

- An antibacterial cleanser containing alpha hydroxy acids (AHAs), benzoyl peroxide (BPO), gluconolactone, or salicylic acid.
- An alcohol-free toner containing AHAs, anti-inflammatory agents, and antioxidants.
- Treatment products containing BPO, licorice extract, retinoids, or salicylic, azelaic, kojic, or lactic acids.
- A moisturizer containing antibacterial and anti-inflammatory ingredients.
- A lightweight, broad-spectrum sunscreen suitable for breakout-prone skin.

**MELASMA**

Melasma is characterized by large, dense patches of pigmentation. According to the American Academy of Dermatology, 90 percent of all melasma cases occur in women.

Melasma is still not completely understood, making it a frustrating condition to treat. It is known to be a hormonal condition, but puberty and normal menstrual cycles do not often cause it. Many melasma patients first develop the condition during pregnancy (it is sometimes called “the mask of pregnancy” for this reason). It can also be brought on by the use of hormonal contraceptives, hormone replacement therapy, or perimenopause.

Consistent, long-term treatment with low doses of melanogenesis-inhibiting ingredients is key when treating melasma. Hydroquinone at 2–4 percent is the industry standard, but this ingredient is contraindicated during pregnancy and lactation, making it unsuitable for many melasma clients. Fortunately, there are many alternatives: arbutin, azelaic acid, kojic acid, lactic acid, licorice extract, mulberry extract, phenylethyl resorcinol, rumex extract, and undecylenoyl phenylalanine. Combining several ingredients often provides the best outcome.

Another treatment option is blended chemical peels. Although these, too, cannot be performed during pregnancy and lactation, blended peels are an important step in clearing the pigment deposit once lactation has ended. Effective ingredient combinations are low-percentage trichloroacetic acid (TCA), lactic acid, and retinol in conjunction with additional melanogenesis-inhibiting ingredients. For best results, treatments should be performed every three weeks until the skin is clear, with monthly maintenance treatments after that.

Daily use of a broad-spectrum sunscreen is critical. Melasma worsens with ultraviolet exposure, so failing to protect the skin will slow or halt any improvement already achieved.

Finally, remember that any client who is pregnant or lactating should consult her physician prior to beginning any skin treatments.

**Know the Client**

Understanding the most common hormonal actions and resulting skin challenges at different life stages is a very useful addition to any esthetician’s professional knowledge. Awareness of these potential issues, combined with the ability to build solid client relationships and encourage compliance, and an in-depth understanding of ingredients’ mechanisms of action, will help you provide home care and in-office treatments to best suit each individual client.

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