FDA's Hormone Therapy Decision: Implications for Aging Skin

Written by The Life Science Feed Editorial Team · Published 9 June 2026 · Edited by William Lopes

The management of menopausal symptoms frequently involves hormone therapy (HT), with the FDA recently reaffirming its position on its use. While the primary indications for HT relate to vasomotor symptoms and genitourinary syndrome of menopause, clinicians must also consider the evidence regarding its effects on skin integrity, a common patient concern during this life stage.

KEY TAKEAWAYS

- The Pivot: The FDA's consistent stance on hormone therapy for menopausal symptoms prompts a re-evaluation of its ancillary effects, particularly on skin.
- The Data: Estrogen therapy has been shown to increase dermal collagen content by 6.5% to 15% and improve skin hydration by 9% to 12%.
- The Action: When discussing HT, clinicians should accurately present the evidence on skin benefits as a secondary effect, not a primary indication, ensuring patient expectations are managed.

Menopause is characterised by a decline in estrogen levels, which has systemic effects, including changes in skin structure and function. Estrogen receptors are present in keratinocytes, fibroblasts, and melanocytes, indicating a direct role for estrogen in maintaining skin health.1 The reduction in estrogen is associated with decreased collagen synthesis, reduced skin elasticity, and diminished hydration, contributing to the visible signs of aging such as wrinkles and thinning skin.2 This physiological process typically begins in the perimenopausal period, with noticeable dermatological changes often accelerating in the early postmenopausal years. The impact on skin quality can significantly affect a woman's quality of life and self-perception, making it a common concern in clinical practice.

The FDA's regulatory framework for hormone therapy primarily focuses on its efficacy and safety for the treatment of moderate to severe vasomotor symptoms and prevention of postmenopausal osteoporosis. While skin aging is a significant concern for many women, it is not an approved indication for HT. However, the established physiological role of estrogen in skin maintenance means that HT, when prescribed for approved indications, may confer secondary dermatological benefits.

Evidence on Hormone Therapy and Skin

Multiple observational studies and randomised controlled trials have investigated the effects of systemic estrogen therapy on skin parameters. These studies consistently demonstrate that estrogen replacement can mitigate some of the adverse skin changes associated with menopause. For instance, estrogen therapy has been shown to increase dermal collagen content. Studies utilising skin biopsies have reported increases in collagen by 6.5% to 15% in women receiving estrogen

compared to placebo groups.3 This increase in collagen is critical for maintaining skin firmness and reducing the appearance of fine lines and wrinkles. The methodologies often involve quantitative analysis of collagen fibres in skin punch biopsies, comparing treated groups to control groups over several months of therapy.

Skin hydration is another parameter positively influenced by estrogen. Estrogen contributes to the production of hyaluronic acid and mucopolysaccharides in the dermis, which are essential for water retention. Clinical measurements using corneometry have indicated that estrogen therapy can improve skin hydration by 9% to 12%.4 This enhanced hydration contributes to a smoother skin texture and a reduction in dryness, a common complaint during menopause. These measurements are typically performed on standardised skin sites, such as the forearm or face, under controlled environmental conditions to ensure reproducibility.

Furthermore, estrogen therapy has been linked to improvements in skin elasticity. Elastin fibres, along with collagen, provide the skin with its elastic properties. While the effects on elastin are less pronounced than on collagen, some studies have reported modest improvements in skin elasticity, measured by cutometry, in women on HT.5 Skin thickness, which tends to decrease post-menopause, has also been shown to increase with estrogen therapy, with reported increases of up to 7% in dermal thickness.6 These studies often recruit postmenopausal women who are otherwise healthy and free from confounding skin conditions, allowing for a clearer assessment of estrogen's direct effects.

It is important to note that the magnitude of these dermatological benefits can vary depending on the type of estrogen, the dose, the duration of therapy, and the route of administration. Transdermal estrogen, for example, may have different systemic and local effects compared to oral formulations. The benefits are generally observed with systemic estrogen therapy rather than topical, non-prescription estrogen creams, which typically contain lower concentrations and have limited systemic absorption.7 The patient population in these studies typically includes women experiencing natural or surgical menopause, often within a few years of their last menstrual period, to capture the effects during the early stages of estrogen deficiency. Longer-term studies are less common, making it challenging to fully understand the sustained dermatological impact over many years.

Despite these observed benefits, the decision to initiate or continue HT must be based on a comprehensive assessment of the individual patient's symptoms, risk factors, and overall health profile, in accordance with established guidelines for menopausal hormone therapy. The potential dermatological benefits are considered secondary and should not be the primary driver for prescribing HT, especially given the known risks associated with long-term systemic hormone use, such as increased risk of venous thromboembolism, stroke, and certain cancers in specific patient populations.8

The limitations of current research include the heterogeneity of study designs and the focus on surrogate markers rather than patient-reported cosmetic outcomes. Further research is needed to delineate the precise mechanisms and optimal therapeutic strategies for leveraging estrogen's dermatological benefits within a safe and evidence-based framework.

To delve deeper into the complexities of skin conditions and their evidence-based management, readers might find the Oxford Handbook of Medical Dermatology invaluable.

> **CLINICAL IMPLICATIONS**
>
> The FDA's consistent stance on hormone therapy for menopausal symptoms provides a clear framework for its primary indications. However, the ancillary effects on skin, while not a primary indication, are a frequent patient query. Clinicians should be prepared to discuss the evidence for these secondary benefits with precision. It is

not sufficient to dismiss patient concerns about skin aging; rather, the data on collagen synthesis, hydration, and elasticity should be presented accurately, ensuring patients understand these are not the approved reasons for prescribing HT.

The industry, particularly pharmaceutical companies marketing HT, must continue to focus their messaging on the approved indications. Any implication that HT is a primary anti-aging skin treatment would be a misrepresentation of the regulatory position and the evidence base. While the cosmetic market capitalises on anti-aging narratives, medical professionals must maintain a clear distinction. The evidence, while present, does not support HT as a first-line intervention for dermatological aging alone, especially when considering the established risks.

Patients, often exposed to broad claims about anti-aging solutions, need clear, evidence-based communication. When a patient is a candidate for HT based on approved indications, the discussion can include the potential for improved skin parameters as a secondary, welcome effect. However, for those not indicated for HT, alternative dermatological interventions, which carry different risk profiles and are specifically designed for skin aging, should be recommended. This nuanced approach respects both the scientific evidence and patient autonomy, ensuring that therapeutic decisions are made on sound medical grounds, not aspirational cosmetic outcomes.

EDITORIAL & AI STANDARDS

AI tools are used solely to structure and summarise evidence from peer-reviewed primary sources. No AI-generated conclusions appear in The Life Science Feed without editor verification against the primary source.

REFERENCES

1. 1. Thornton MJ. Estrogens and aging skin. Dermatoendocrinol. 2013;5(2):264-270. doi:10.4161/derm.23872
2. 2. Rzepecki AK, et al. Estrogen and the skin: an overview of the effects of estrogen on skin health. Int J Womens Dermatol. 2019;5(2):85-90. doi:10.1016/j.ijwd.2019.01.002
3. 3. Castelo-Branco C, et al. Skin collagen changes related to age and hormone replacement therapy. Maturitas. 1994;20(2-3):113-119. doi:10.1016/0378-5122(94)90048-3
4. 4. Verdier-SÃ©vrain S, et al. Estrogens and skin: an overview. Climacteric. 2007;10(4):289-297. doi:10.1080/13697130701460327
5. 5. Pierard-Franchimont C, et al. The effect of hormone replacement therapy on skin elasticity. J Eur Acad Dermatol Venereol. 1998;11(2):142-146. doi:10.1111/j.1468-3083.1998.tb00806.x
6. 6. Punnonen R, et al. Effects of oral oestrogen on skin collagen and thickness in postmenopausal women. Br J Obstet Gynaecol. 1987;94(8):792-796. doi:10.1111/j.1471-0528.1987.tb02271.x
7. 7. Schmidt JB, et al. Topical estrogen therapy in postmenopausal women. Int J Dermatol. 1996;35(9):666-670. doi:10.1111/j.1365-4362.1996.tb03672.x
8. 8. Rossouw JE, et al. Risks and benefits of estrogen plus progestin in healthy postmenopausal women: principal results From the Women's Health Initiative randomized controlled trial. JAMA. 2002;288(3):321-333. doi:10.1001/jama.288.3.321

LICENCE & RIGHTS

MEDICAL DISCLAIMER

This content is intended for healthcare professionals only and does not constitute medical advice. Clinical decisions must be made by qualified practitioners based on individual patient circumstances.

FOLLOW THE LIFE SCIENCE FEED

Instagram @lifesciencefeed **LinkedIn** linkedin.com/company/thelifesciencefeed

thelifesciencefeed.com