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LeAnn Chambers, Pharm.D. and Matthew Chambers, Pharm.D.

Impact of Menopausal Hormone Therapy on Colorectal Cancer Risk in Genetically Predisposed Women

A recent study explored the relationship between Menopausal Hormone Therapy (MHT) and colorectal cancer (CRC) risk, considering the genetic predisposition of postmenopausal women. The researchers aimed to assess how a polygenic risk score (PRS), based on 141 genetic variants associated with CRC, interacts with MHT to influence CRC risk. The study involved 28,486 postmenopausal women of European descent, including 11,519 CRC cases and 16,967 controls, using a quartile-based approach to categorize PRS levels.



The findings indicate that MHT is associated with a reduction in CRC risk, particularly in women with a higher genetic predisposition. Women in the highest PRS quartile experienced a greater reduction in CRC risk when using MHT compared to those in the lowest quartile. Specifically, women in the highest PRS quartile who used MHT had a 30-year cumulative risk of CRC of 3.7%, compared to 6.1% for those not using MHT. In contrast, the difference in CRC risk for women in the lowest PRS quartile was smaller, with a reduction from 2.2% to 1.6%.

The study assessed both multiplicative and additive interactions between PRS and MHT. While there was no significant multiplicative interaction, significant additive interactions were found, indicating that the combined effect of high PRS and MHT use provided a

more substantial reduction in CRC risk than would be expected from the individual effects of each factor.

The biological mechanisms underlying the relationship between MHT and CRC risk may involve nuclear estrogen and progesterone receptors, which regulate processes such as DNA repair, cell cycle progression, and apoptosis. Although these mechanisms are not fully understood, the study suggests that genetic factors, specifically PRS, play a crucial role in modulating MHT's protective effect against CRC.

The research highlights the potential for incorporating genetic risk information into clinical decision-making regarding MHT use. For women with a high genetic predisposition to CRC, the benefits of MHT may outweigh the risks. However, the authors caution against using MHT solely as a chemopreventive measure.

Overall, the study provides new insights into the interaction between genetic risk and MHT in the context of CRC prevention, suggesting that personalized approaches to MHT use based on genetic profiles could enhance risk-benefit assessments in clinical practice.

Our pharmacist can discuss our approach to customized hormone therapy to see if it would be an appropriate option for your patient.

[Br J Cancer. 2024 Jun 1; 130\(10\): 1687–1696.](#)

The Role of Estrogen in Skin Health: Implications for Menopausal and Postmenopausal Women

Estrogen plays a critical role in more than 400 functions within a woman's body, and estrogen deficiency can manifest in a variety of ways, especially in menopausal and postmenopausal women. Common skin-related signs of estrogen deficiency include reduced skin firmness, delayed wound healing, an increase in both the number and depth of wrinkles, skin thinning, and dryness.

A key function of estrogen is its influence on the structural integrity of the skin, particularly its interaction with collagen and elastin fibers. Collagen, which is essential for maintaining skin elasticity, progressively diminishes with age. Estrogen helps inhibit collagen breakdown, thereby maintaining collagen levels and supporting skin structure. Elastin fibers, also critical to skin resilience, also benefit from estrogen. Research indicates that topical estrogen can enhance the number and thickness of these fibers, helping to contribute to healthier, more elastic skin.

Skin dryness is another prevalent concern among older women. Adequate skin hydration is vital for skin health, and it is influenced by hormonal fluctuations, including those associated with age and the menstrual cycle. Clinical studies have shown that topical estrogen therapy can improve the skin's water retention by boosting naturally occurring moisturizing factors, such as hyaluronic acid. Additionally, estrogen has a direct impact on sebaceous gland activity. While estrogen alone has a sebum-suppressive effect, leading to smaller and fewer sebaceous glands, the combination of estrogen with progesterone has been shown to increase skin surface lipids, potentially improving skin hydration and texture.

These findings show the importance of estrogen in maintaining skin health and provide a rationale for considering estrogen therapy as a potential treatment option for skin-related aging concerns in postmenopausal patients.

[Maturitas. 2001 Jul 25;39\(1\):43-55](#)



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