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

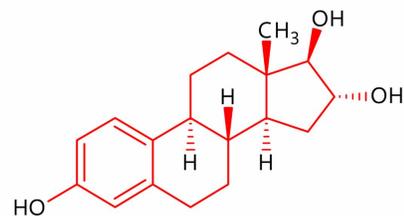
## Estriol: Various Clinical Benefits

Estriol is the main estrogen in pregnancy, but other benefits are receiving attention. It is well known that pregnancy has an immunosuppressive effect on many autoimmune diseases such as multiple sclerosis, psoriasis, thyroiditis, uveitis, and rheumatoid arthritis. Emerging evidence indicates that estriol has potential immunomodulatory benefits for many disease states including autoimmune, inflammatory, and neurodegenerative conditions.

Estriol appears to offer a potentially cost-effective approach to a variety of conditions and may offer a wide range of health benefits. Estriol offers considerable benefits for postmenopausal women with reduced risks when compared to traditional hormone therapies. These benefits include improved control of menopausal symptoms and better urogenital health. Moreover, the immunomodulatory role of estriol in reducing proinflammatory cytokines may be an important new therapeutic option for chronic auto-immune and neurodegenerative illnesses. Since estriol is a relatively weak estrogen, there is potential for use in men for conditions such as multiple sclerosis.

Ali et al. of the Texas Tech University Health Science Center reviewed emerging roles for estriol in the treatment of menopausal symptoms, osteoporosis, cancer, hyper-lipidemia, vascular disease, and multiple sclerosis. The group referenced 72 articles from 1974 through 2016 and concluded that transvaginal estriol potentially offers a suitable physiologic delivery and cost-effective alternative to currently available estrogen regimens in selected patients. Additional studies on mode of delivery, safety, and efficacy merit further investigation.

Estriol



# Estriol for Vulvovaginal Atrophy in Postmenopausal Women

A literature review was conducted to evaluate the efficacy and safety of estriol for the treatment of vulvovaginal atrophy in postmenopausal women. Of the 22 studies that met the inclusion criteria; 13 were controlled clinical trials and nine were quasi-experimental, and 1217 women were included. These studies confirmed the efficacy of local estrogens to treat symptoms of vulvovaginal atrophy with few adverse effects reported. Following treatment, serum estriol levels rose, peaking at 1 hour. At the 6-month follow-up, there was no increase in serum estriol in treated women. The available evidence (of low and moderate quality) shows that, when administered vaginally, estriol preparations may be considered as a treatment option for women who have risk factors related to systemic estrogen therapy.

[Climacteric. 2017 Aug;20\(4\):321-330.](#)

## Oral vs. Transdermal Hormone Therapy: Effects on Sleep and Vasomotor Symptoms

Poor sleep quality is common in recently menopausal women. To determine whether two different formulations of hormone therapy (oral conjugated equine estrogens– CEE- or transdermal 17 $\beta$ -estradiol plus cyclic progesterone, or placebo) affected sleep, physicians and researchers from prestigious hospitals and universities including the Mayo Clinic, Brigham and Women's Hospital, Harvard Medical School, the Department of Obstetrics and Gynecology at University of Washington, Yale University School of Medicine, and Emory University, analyzed findings from the Kronos Early Estrogen Prevention Study (KEEPS).

Participants completed the Pittsburgh Sleep Quality Index at baseline and during the intervention at 6, 18, 36, and 48 months. Global sleep quality and individual sleep domain scores were compared between treatments and correlated with vasomotor symptom scores. Scores for sleep satisfaction and latency improved with both types of hormone therapy. The score for sleep disturbances improved more with transdermal estradiol than CEE or placebo. Global sleep scores significantly correlated with vasomotor symptom severity.

[Menopause. 2018 Feb; 25\(2\): 145–153.](#)

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