**estrogens, esterified**
*Estratab, Estratest, Estratest H.S., Menest*

**Pharmacologic class:** Estrogen  
**Therapeutic class:** Replacement hormone, antineoplastic, antiosteoporotic  
**Pregnancy risk category X**

**Action**
Bind to nuclear receptors in responsive tissues (such as female genital organs, breasts, and pituitary gland), enhancing DNA, RNA, and protein synthesis. In androgen-dependent prostate cancer, estrogens compete for androgen receptor sites, inhibiting androgens. Also decreases pituitary release of follicle-stimulating hormone and luteinizing hormone.

**Availability**
*Tablets:* 0.3 mg, 0.625 mg, 1.25 mg, 2.5 mg

**Indications and dosages**

➢ Moderate to severe vasomotor symptoms or atrophic vaginitis  
**Adults:** 0.3 to 1.25 mg P.O. daily, adjusted to lowest effective dosage; usually given in cycles of 3 weeks on, 1 week off  
➢ Female hypogonadism  
**Adults:** 2.5 to 7.5 mg P.O. daily in divided doses for 20 days, followed by rest period of 10 days. If no bleeding occurs, repeat same dosing schedule. If bleeding occurs before end of rest period, start 20-day estrogen-progestin cycle, with progestin P.O. given during last 5 days of estrogen therapy.  
➢ Inoperable prostate cancer  
**Adults:** 1.25 to 2.5 mg P.O. t.i.d. In long-term therapy, gauge efficacy by symptomatic response and serum phosphatase level.

➢ Selected breast cancers (inoperable, progressing)  
**Adults:** 10 mg P.O. t.i.d. for at least 3 months in selected men and postmenopausal women  
➢ Prevention of osteoporosis  
**Adults:** Initially, 0.3 mg P.O. daily, increased as needed to a maximum dosage of 1.25 mg/day

**Contraindications**
- Hypersensitivity to drug  
- Thromboembolic disease (current or previous)  
- Undiagnosed vaginal bleeding  
- Breast and reproductive cancers (except in metastatic disease)  
- Estrogen-dependent neoplasms  
- Pregnancy

**Administration**
- Administer with food or fluids.  
- Give cyclically as prescribed, except when used palliatively for cancer treatment.

<table>
<thead>
<tr>
<th>Route</th>
<th>Onset</th>
<th>Peak</th>
<th>Duration</th>
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<tbody>
<tr>
<td>P.O.</td>
<td>Slow</td>
<td>Days</td>
<td>Unknown</td>
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**Adverse reactions**

CNS: headache, dizziness, lethargy, depression, asthenia, paresthesia, syncope, increased risk of cerebrovascular accident (CVA), seizures  
CV: hypertension, chest pain, myocardial infarction (MI), thromboembolism, pulmonary embolism  
EENT: contact lens intolerance, worsening of myopia or astigmatism, otitis media, sinusitis, rhinitis, pharyngitis  
GI: nausea, vomiting, diarrhea, dyspepsia, flatulence, gastritis, gastroenteritis, enlarged abdomen, hemorrhoids, colitis, gallbladder disease, anorexia, pancreatitis  
GU: urinary incontinence, dysuria, amenorrhea, dysmenorrhea, endometrial hyperplasia, urinary tract infection, leukorrhea, vaginal discomfort or pain, vaginal hemorrhage, genital
eruptions, gynecomastia, breast tenderness, breast enlargement or secretion, reduced libido, impotence, testicular atrophy, increased risk of breast cancer, endometrial cancer, hemolytic uremic syndrome

Hepatic: cholestatic jaundice, hepatic adenoma

Metabolic: hyperglycemia, hypercalcemia, sodium and fluid retention, reduced carbohydrate tolerance

Musculoskeletal: leg cramps, back pain, skeletal pain

Respiratory: upper respiratory tract infection, bronchitis

Skin: acne, increased pigmentation, urticaria, pruritus, erythema nodosum, hemorrhagic eruption, alopecia, hirsutism

Other: increased appetite, weight changes, edema, flulike symptoms, hypersensitivity reactions

Interactions

Drug-drug. Corticosteroids: enhanced corticosteroid effects
CYP450 inducers (such as barbiturates, rifampin): decreased estrogen efficacy
Hypoglycemics, warfarin: altered requirement for these drugs
Phenytoin: loss of seizure control
Tamoxifen: interference with tamoxifen efficacy
Tricyclic antidepressants: reduced antidepressant effect

Drug-diagnostic tests. Antithrombin III, folate, low-density lipoproteins, pyridoxine, total cholesterol, urine pregnanediol: decreased values
Cortisol; factors VII, VIII, IX, and X; glucose; high-density lipoproteins; phospholipids; prolactin; prothrombin; sodium; triglycerides: increased values
Metyrapone test: false decrease
Thyroid function tests: false interpretation

Drug-food. Caffeine: increased caffeine levels

Drug-herb. Black cohosh: increased risk of adverse reactions

Red clover: interference with estrogen therapy
Saw palmetto: antiestrogenic effects
St. John’s wort: decreased drug blood level and effects

Drug-behaviors. Smoking: increased risk of adverse cardiovascular reactions

Precautions

Use cautiously in:
• cardiovascular disease, severe hepatic or renal disease, asthma, bone disease, migraines, seizures, breast nodules, fibrocystic breasts, abnormal mammograms
• family history of breast or genital tract cancer
• breastfeeding.

Patient monitoring

• Monitor fluid intake and output; weigh patient daily.
• Evaluate patient for breast tenderness and swelling; as needed, administer analgesics and apply cool compresses.

Know that drug increases risk of thromboembolism, CVA, and MI.
• Monitor liver function test results and assess abdomen for liver enlargement.
• Check serum phosphatase levels in patients with prostate cancer.
• Monitor calcium and glucose levels.

Patient teaching

• Instruct patient to recognize and immediately report signs and symptoms of thrombophlebitis and thromboembolism.
• Teach patient how to perform breast self-examination; emphasize importance of monthly checks.
• Tell patient to report breakthrough vaginal bleeding.
• Mention that drug may cause contact lens intolerance; advise patient to report vision changes.
• Inform men that drug may cause gynecomastia.
• As appropriate, review all other significant and life-threatening adverse reactions

Canada

Clinical alert

Reactions in bold are life-threatening
reactions and interactions, especially those related to the drugs, tests, foods, herbs, and behaviors mentioned above.