

# FEMALE HORMONE THERAPY OPTIONS





The following tables have been compiled by Women's International Pharmacy staff pharmacists to represent some of the more frequently prescribed regimens for women in menopause and some alternatives. The Women's International Pharmacy logo is placed throughout the tables to signify the hormones and dosage forms Women's International Pharmacy compounds.

This material is for informational purposes. It is not intended as a substitute for medical advice. Please consult a qualified health care professional for individual health and medical advice.



= Compounded by Women's International Pharmacy

## Oral Estrogens


ORAL ESTROGENS			
BIODIDENTICAL	DOSAGES AVAILABLE	DOSING REGIMEN	COMMENTS/REFERENCES
<b>Estradiol (E2) capsules</b> (compounding pharmacies) 	Any	0.25mg - 2mg once daily. Some may require twice daily dosing.	Hargrove J. <i>Infertility &amp; Reproductive Med Clinic North America</i> 1995; 6(4):653-674.
<b>Estriol (E3) capsules</b> (compounding pharmacies) 	Any	1mg - 8mg once daily or in divided doses.	Head K. <i>Alt Med Rev</i> ; 1998; 3(2):101-113. Hudson T. <i>Women's Encyclopedia of Natural Medicine</i> (Lincolnwood, IL: Keats) 1999:170.
<b>Biestrogen (bi-est) capsules</b> 20% estradiol (E2), 80% estriol (E3) (compounding pharmacies) 	Any	1.25mg - 5mg once to twice daily	The 20:80 ratio may be altered to meet patient need. McKenna S. <i>The Phytogetic Hormone Solution</i> (NYC, NY: Villard Books) 2002:189-190.
<b>Triestrogen (tri-est, triple estrogen) capsules</b> 10% estrone (E1), 10% estradiol (E2), 80% estriol (E3) (compounding pharmacies) 	Any	1.25mg - 2.5mg once to twice daily	Although these ratios are commonly used and are based on the research done by Dr. Jonathan Wright, other formulas are available to accommodate individual needs. (Wright J, Morgenthaler J. <i>Natural Hormone Replacement for Women over 45</i> (Petaluma, CA: Smart Publications) 1997:104-5,127.)
<b>Estrace®</b> estradiol (E2) tablets (Alergan)	0.5mg, 1mg, 2mg	0.5mg - 2mg daily	Well absorbed orally. Micromedex Healthcare Series. DRUGDEX System. Greenwood Village, CO: Truven Health Analytics, 2013. <a href="https://www.micromedexsolutions.com/">https://www.micromedexsolutions.com/</a> . Accessed February 28, 2014 Generics Available



## ORAL ESTROGENS

NON-BIOIDENTICAL	DOSAGES AVAILABLE	DOSING REGIMEN	COMMENTS/REFERENCES
<b>Menest®</b> esterified estrogens tablet (Pfizer)	0.3mg 0.625mg 1.25mg 2.5mg	0.3mg - 2.5mg daily	Tablets contain 75-85% sodium estrone sulfate and 6-15% sodium equilin sulfate, in such proportion that the total of these 2 components is not less than 90% of the total esterified estrogens content. ( <i>Drug Facts And Comparisons</i> ; 2008:221.)
<b>Premarin®</b> conjugated equine estrogens tablets (CEE) (Pfizer)	0.3mg, 0.45mg, 0.625mg, 0.9mg, 1.25mg	0.3mg - 1.25mg daily	Most studied estrogen replacement.  Tablets contain a mixture of conjugated equine (horse) estrogens. ( <i>Drug Facts And Comparisons</i> ; 2008:220b.)

## ORAL PROGESTERONE





BIOIDENTICAL	DOSAGES AVAILABLE	DOSING REGIMEN	COMMENTS/REFERENCES
<b>Progesterone</b> (compounding pharmacies) 	Any	Continuous: 50mg twice daily or 100mg once to twice daily.  Cyclic: 200-400mg daily for 12 days.	Optimal absorption includes powder micronization and suspension in oil. (Hargrove J, Maxson W, et al. <i>Am J OB/GYN</i> , 1989; 161(4):948-951.) (Hargrove J. <i>OB/GYN</i> 73(4):606-612.) (Dr. Christiane Northrup, <i>Women's Bodies, Women's Wisdom</i> , (New York: Bantam Books) 2004:475.)
<b>Prometrium®</b> progesterone in peanut oil capsules (Solvay)	100mg 200mg	Continuous: 100mg daily.  Cyclic: 200mg - 300mg last 12-14 days of estrogen treatment each cycle.	Transient dizziness may occur. Contraindication: allergy to peanuts. PEPI Trials showed that Premarin® with Prometrium® produced more favorable lipid profiles than medroxyprogesterone plus Premarin®. (PEPI Trial Writing Group. <i>JAMA</i> , 1995; 273:199-208.) Generics available.



## ORAL PROGESTINS

NON-BIOIDENTICAL	DOSAGES AVAILABLE	DOSING REGIMEN	COMMENTS/REFERENCES
<b>Aygestin®</b> norethindrone acetate tablets (Teva)	5mg	Cyclic: 2.5mg to 10mg daily for 5 to 10 days	Indicated for amenorrhea; abnormal uterine bleeding due to hormonal imbalance in the absence of organic pathology. ( <i>Drug Facts And Comparisons</i> ; 2008:231.). Generics available.
<b>Provera®</b> medroxyprogesterone acetate tablets (MPA) (Pharmacia Upjohn)	2.5mg 5mg 10mg	Continuous: 2.5mg daily Cyclic: 5-10mg daily for 5-10 days	Indicated to prevent endometrial hyperplasia with concurrent estrogen use and secondary amenorrhea/ abnormal uterine bleeding due to hormonal imbalance in the absence of organic pathology. PMS like side effects: insomnia, depression, nausea, thrombophlebitis and others. ( <i>Drug Facts And Comparisons</i> ; 2008:231.) Generics available.

## ORAL ESTROGEN/PROGESTERONE COMBINATIONS

BIOIDENTICAL	DOSAGES AVAILABLE	DOSING REGIMEN	COMMENTS/REFERENCES
<b>Estradiol (E2) with Progesterone</b> (compounding pharmacies) 	Any	0.5 - 2mg Estradiol with 50mg Progesterone twice daily or 100mg once to twice daily	See Oral Estrogen - Estradiol and Oral Progesterone comments and references.
<b>Estriol (E3) with Progesterone</b> (compounding pharmacies) 	Any	1 - 4mg Estriol with 50mg Progesterone twice daily or 100mg once to twice daily	See Oral Estrogen - Estriol and Oral Progesterone comments and references.
<b>Biestrogen (E2E3) with Progesterone</b> (compounding pharmacies) 	Any	1.25 - 2.5mg Biestrogen with 50mg Progesterone twice daily or 100mg once to twice daily	See Oral Estrogen - Biestrogen and Oral Progesterone comments and references.
<b>Triestrogen (E1E2E3) with Progesterone</b> (compounding pharmacies) 	Any	1.25 - 2.5mg Triestrogen with 50mg Progesterone twice daily or 100mg once to twice daily	See Oral Estrogen - Triestrogen and Oral Progesterone comments and references.



## ORAL ESTROGEN/PROGESTERONE COMBINATIONS

<b>BIOIDENTICAL</b>	<b>DOSAGES AVAILABLE</b>	<b>DOSING REGIMEN</b>	<b>COMMENTS/REFERENCES</b>
<b>Bijuva®</b> (estradiol/progesterone capsule) (TherapeuticsMD)	1mg estradiol/ 100mg progesterone	1 capsule each evening	Used to treat moderate to severe vasomotor symptoms due to menopause. Take with food. Package insert ( <a href="http://www.bijuva.com/pi.pdf">www.bijuva.com/pi.pdf</a> ) accessed January 24, 2020




## ORAL ESTROGEN/PROGESTIN COMBINATIONS

NON-BIOIDENTICAL	DOSAGES AVAILABLE	DOSING REGIMEN	COMMENTS/REFERENCES
<b>Activella®</b> estradiol and norethindrone acetate tablets (Novo Nordisk)	0.5mg estradiol/ 0.1mg norethindrone acetate 1mg estradiol/ 0.5mg norethindrone acetate	1 tablet daily	Estradiol is bioidentical; progestin is not. Combines estrogen and progestin for continuous administration.  Generic available for higher strength. ( <i>Drug Facts and Comparisons</i> ; 2011:232a.)
<b>Mimvey®</b> estradiol and norethindrone acetate tablets (Teva)	1mg estradiol/ 0.5mg norethindrone acetate	1 tablet daily	Estradiol is bioidentical; progestin is not. Combines estrogen and progestin for continuous administration. ( <i>Drug Facts and Comparisons</i> ; 2011:232a.)
<b>Angeliq®</b> estradiol and drospirenone tablets (Bayer)	0.5mg estradiol 0.25mg drospirenone 1mg estradiol 0.5mg drospirenone	1 tablet daily	Estradiol is bioidentical; progestin is not. Combines estrogen and progestin for continuous administration. The lowest effective dose has not been determined. ( <i>Drug Facts and Comparisons</i> ; 2006:232.)
<b>Prefest®</b> estradiol and norgestimate tablets (Teva)	Biphasic: 1mg estradiol (15 tablets) 1mg estradiol with 0.09mg norgestimate (15 tablets)	1 tablet daily	Estrogen is bioidentical; progestin is not. Combines continuous estrogen with intermittent progestin to increase receptor sensitivity ( <i>J. Soc Gynecol Invest</i> 1996; 3(5).)
<b>Prempro®</b> conjugated equine estrogen (CEE) and medroxyprogesterone acetate tablets (MPA) (Wyeth)	0.3mg (CEE)/ 1.5mg (MPA) 0.45mg (CEE)/ 1.5mg (MPA) 0.625mg (CEE)/ 2.5mg (MPA) 0.625mg (CEE)/ 5mg (MPA)	1 tablet daily	The WHI Study (Women's Health Initiative) indicated that the Prempro® group had a higher than normal incidence of blood clotting, breast cancer, and cardiovascular events. Because of the increased risks, the investigators stopped this portion of the study early. (WHI Writing Group. <i>JAMA</i> 2002; 288:321-333.)  Also see Oral Estrogen - Premarin® and Oral Progestin - Provera® comments.
<b>Premphase®</b> conjugated equine estrogen (CEE) and medroxyprogesterone acetate tablets (MPA) (Wyeth)	Biphasic: 0.625mg (CEE) (14 tablets) 0.625mg (CEE) with 5mg (MPA) (14 tablets) (28 day pack)	1 tablet daily	Also see Oral Estrogen - Premarin® and Oral Progestin - Provera® comments and references.
<b>FemHRT®</b> ethinyl estradiol (EE) and norethindrone acetate tablets (Allergan)	2.5mcg (EE)/ 0.5mg norethindrone acetate	1 tablet daily	Combines synthetic estrogen and progestin for continuous administration. Generic available. Micromedex Healthcare Series. DRUGDEX System. Greenwood Village, CO: Truven Health Analytics, 2013. <a href="https://www.micromedexsolutions.com/">https://www.micromedexsolutions.com/</a> . Accessed February 28, 2014



## ORAL TESTOSTERONE

BIOIDENTICAL	DOSAGES AVAILABLE	DOSING REGIMEN	COMMENTS/REFERENCES
<b>Testosterone</b> (compounding pharmacies) 	Any	2mg - 10mg once daily or in divided doses.	Testosterone may convert to estrogens in the body. Brownstein D. <i>The Miracle of Natural Hormones</i> , 3rd Edn. (W. Bloomfield, MI: Medical Alternatives Press) 2003:128.

## ORAL TESTOSTERONE

NON-BIOIDENTICAL	DOSAGES AVAILABLE	DOSING REGIMEN	COMMENTS/REFERENCES
<b>Methyltestosterone (MT)</b> (some compounding pharmacies)	Any	0.25mg - 0.75mg daily	Rako S. <i>The Hormone of Desire</i> (New York: Harmony) 1996:113.

## ORAL ESTROGEN/TESTOSTERONE COMBINATION

NON-BIOIDENTICAL	DOSAGES AVAILABLE	DOSING REGIMEN	COMMENTS/REFERENCES
<b>Covaryx®</b> , <b>Covaryx HS®</b> esterified estrogens (E) with methyltestosterone (MT) tablets (Centrix)	1.25mg (E)/ 2.5mg (MT) (Covaryx®) 0.625mg (E)/ 1.25mg (MT) (Covaryx HS®)	1 tablet daily (usually 21 days per month)	Increased risk of hepatotoxicity especially with oral methylated androgens. Generic Available. ( <i>Drug Facts And Comparisons</i> ; 2007:259.) Methyltestosterone is not readily converted to estrogen in the body. (Rako S. <i>The Hormone of Desire</i> (New York: Harmony) 1996:113.)

## ORAL SERMS (SELECTIVE ESTROGEN RECEPTOR MODULATORS)

Although the selective estrogen receptor modulators are non-steroidal, they do act directly at hormone receptors and are indicated for the treatment and prevention of osteoporosis in postmenopausal women; particularly for women in which the administration of estrogen is contraindicated.





NON-BIOIDENTICAL	DOSAGES AVAILABLE	DOSING REGIMEN	COMMENTS/REFERENCES
<b>Evista®</b> raloxifene tablets (Eli Lilly)	60mg	1 tablet daily	Raloxifene's biological actions are mediated through estrogen receptor binding, resulting in activation of certain estrogenic pathways and blockade of others. ( <i>Drug Facts And Comparisons</i> ; 2008:225.) Increased risk for DVTs. ( <i>Drug Facts And Comparisons</i> ; 2008:225.) Increased incidence of hot flashes (29%). ( <i>Drug Facts And Comparisons</i> ; 2008:227.)



## ORAL SERMS (SELECTIVE ESTROGEN RECEPTOR MODULATORS) CONT.

NON-BIOIDENTICAL	DOSAGES AVAILABLE	DOSING REGIMEN	COMMENTS/REFERENCES
<b>Duavee</b> conjugated estrogens (CE) with bazedoxifene tablets (Pfizer)	0.45mg (CE)/20mg	1 tablet daily	Indicated in women with a uterus for the treatment of moderate to severe vasomotor symptoms associated with menopause and the prevention of postmenopausal osteoporosis. Bazedoxifene is used, instead of progestin, to prevent endometrial hyperplasia that may result from estrogen-alone treatment. (Duavee [package insert]. Pfizer, New York, NY; 2013.)

## TOPICAL CREAMS/GELS – ESTROGEN-ONLY

BIOIDENTICAL	DOSAGES AVAILABLE	DOSING REGIMEN	COMMENTS/REFERENCES
<b>Estradiol (E2)</b> cream or gel (compounding pharmacies) 	Any	0.5mg - 2mg once to twice daily	Lorrain et al. found Estradiol 0.75mg is equivalent to Premarin® 0.3mg with a starting dose of 1.5mg daily. (Lorrain et al <i>Menopause Management</i> Jan/Feb 1999: 11-15.)
<b>Estriol (E3)</b> cream or gel (compounding pharmacies) 	Any	2 to 5mg once daily or in divided doses.	Conley E. <i>Safe Estrogen</i> (Flint, MI: Vitality Press) 2003:43.
<b>Biestrogen (E2E3)</b> cream or gel (compounding pharmacies) 	Any	1.25mg - 5mg once daily or in divided doses.	Collins J. <i>What's Your Menopause Type</i> (Roseville, CA: Prima) 2000:293.
<b>Triestrogen (E1E2E3)</b> cream or gel (compounding pharmacies) 	Any	1.25mg - 2.5mg once to twice daily	Laux M, Conrad C. <i>Natural Woman, Natural Menopause</i> (New York: Harper Collins) 1998:116-117. Brownstein D. <i>The Miracle of Natural Hormones</i> 3rd edn (W. Bloomfield, MI: Medical Alternative Press) 2003:110. Also see Oral Estrogens - Triestrogen comments.
<b>Divigel®</b> estradiol topical gel (Vertical Pharmaceuticals, LLC.)	1mg/gram	Apply daily to thigh	Apply gel to an area on thigh that measures 5 x 7 inches. Supplied in single-dose foil packets of 0.25, 0.5, and 1 gram, containing 0.25, 0.5, and 1 mg of estradiol, respectively. (Divigel® package insert.)
<b>EstroGel®</b> estradiol topical gel (Ascend Therapeutics, Inc.)	0.75mg per pump	Apply 1 pump once daily to entire arm	Topical, colorless, alcohol gel. Supplied in a metered pump with a 0.06% concentration. Each 1.25 gram dose contains 0.75mg of estradiol. Pump delivers 64 metered doses. ( <i>Drug Facts And Comparisons</i> ; 2009:224d.)



## TOPICAL CREAMS/GELS – ESTROGEN-ONLY CONT.

BIODIDENTICAL	DOSAGES AVAILABLE	DOSING REGIMEN	COMMENTS/REFERENCES
<b>Elestrin®</b> estradiol topical gel (Mylan)	0.52mg per pump	Apply 1 pump per day to the upper arm	Topical, colorless, alcohol gel. Supplied in a metered pump with a 0.06% concentration. Each 0.87 gram dose contains 0.52mg of estradiol. Pump delivers 100 metered doses. (Elestrin® package insert.)
<b>Evamist®</b> estradiol transdermal spray (Perrigo)	1.53mg per spray	One spray once daily to forearm, may increase to two or three sprays	Transdermal alcohol spray. Supplied in a glass vial fitted with a metered dose pump encased in a plastic housing. Pump delivers 56 sprays of 90mcL after priming. (Evamist® package insert.)


## TRANSDERMAL PATCHES – ESTROGEN-ONLY

BIODIDENTICAL	DOSAGES AVAILABLE	DOSING REGIMEN	COMMENTS/REFERENCES
<b>Alora®</b> estradiol (E2) (Allergan)	0.025, mg 0.05, mg 0.075 mg 0.1 mg	One patch changed twice weekly	Patch may be cut to modify dose but is not recommended by the manufacturer. (Pharmacist Letter 1998; 14(7):140712.)
<b>Climara®</b> estradiol (E2) (Bayer)	0.025 mg 0.0375 mg 0.05 mg 0.06 mg 0.075 mg 0.1 mg	One patch changed once weekly	Patch may be cut to modify dose but is not recommended by the manufacturer. (Pharmacist Letter 1998; 14(7):140712.) Generics available.
<b>Menostar®</b> estradiol (E2) (Bayer)	0.014mg	One patch changed once weekly	Patch is a clear, dime-sized matrix type patch. Patch may be cut, but is not recommended by the manufacturer. (Pharmacist Letter 1998; 14(7):140712.) Approved for prevention of osteoporosis in postmenopausal women.
<b>Minivelle®</b> estradiol (E2) (Noven)	0.025mg 0.0375mg 0.05mg 0.075mg 0.1mg	One patch changed twice weekly	Patch is smaller than dime-sized matrix patch. Place on a clean, dry area of the lower abdomen or buttocks. The lowest strength, 0.025mg/day is only approved for prevention of post-menopausal osteoporosis. Generics available. Package insert ( <a href="http://www.noven.com/grove-ETS.php">www.noven.com/grove-ETS.php</a> ) accessed online January 24, 2020.
<b>Vivelle-Dot®</b> estradiol (E2) (Novartis)	0.025 mg 0.0375 mg 0.05 mg 0.075 mg 0.1mg	One Dot patch changed twice weekly	Approximately 1/3 the size of a regular Vivelle® patch. (Vivelle® patch replaced by Dot system.) Patch may be cut, but is not recommended by the manufacturer. (Pharmacist Letter 1998; 14(7):140712.)









## TOPICAL CREAMS / GELS - PROGESTERONE ONLY

BIODIDENTICAL	DOSAGES AVAILABLE	DOSING REGIMEN	COMMENTS/REFERENCES
<b>Progesterone</b> cream or gel (compounding pharmacies) 	Any Common range: 20 – 100 mg/gram	25mg - 100mg once to twice daily	Laux M, Conrad C. <i>Natural Woman, Natural Menopause</i> (New York: Harper Collins) 1998: 116-117. Brownstein D. <i>The Miracle of Natural Hormones</i> 3rd edn (W. Bloomfield, MI: Medical Alternative Press) 2003:99.

## TOPICAL CREAMS/GELS – ESTROGEN/PROGESTERONE COMBINATIONS


BIODIDENTICAL	DOSAGES AVAILABLE	DOSING REGIMEN	COMMENTS/REFERENCES
<b>Estradiol (E2) with Progesterone</b> cream or gel (compounding pharmacies) 	Any	0.5mg - 2mg estradiol with 25mg - 100mg progesterone once to twice daily	See Topical Estrogen – Estradiol and Topical Progesterone comments.
<b>Estriol (E3) with Progesterone</b> cream or gel (compounding pharmacies) 	Any	1mg - 3mg estriol with 25mg - 100mg progesterone once to twice daily.	See Topical Estrogen – Estriol and Topical Progesterone comments.
<b>Biestrogen (E2E3) with Progesterone</b> cream or gel (compounding pharmacies) 	Any	1.25mg - 2.5mg Biestrogen with 25mg - 100mg progesterone once to twice daily	See Topical Estrogen – Biestrogen and Topical Progesterone comments.
<b>Triestrogen (E1E2E3) with Progesterone</b> cream or gel (compounding pharmacies) 	Any	1.25mg - 2.5mg Triestrogen with 25mg - 100mg progesterone once to twice daily	See Topical Estrogen – Triestrogen and Topical Progesterone comments.

## TRANSDERMAL PATCHES – ESTROGEN/PROGESTIN COMBINATIONS



NON-BIODIDENTICAL	DOSAGES AVAILABLE	DOSING REGIMEN	COMMENTS/REFERENCES
<b>Climara Pro®</b> estradiol (E2) and levonorgestrel (Bayer)	0.045mg (E2)/0.015mg levonorgestrel	One patch changed once weekly	Estradiol is bioidentical; progestin is not. Patch not recommended to be cut by manufacturer. (Pharmacist Letter 1998; 14(7):140712.)
<b>Combi Patch®</b> estradiol (E2) and norethindrone acetate (Noven)	0.05mg (E2)/0.14mg norethindrone 0.05mg (E2)/ 0.25mg norethindrone	One patch changed twice weekly	Estradiol is bioidentical; progestin is not. Patch may be cut but not recommended by manufacturer. (Pharmacist Letter 1998; 14(7):140712.)



## TOPICAL CREAMS/GELS - TESTOSTERONE-ONLY

BIODIDENTICAL	DOSAGES AVAILABLE	DOSING REGIMEN	COMMENTS/REFERENCES
<b>Testosterone</b> cream or gel (compounding pharmacies) 	Any	1mg - 20mg once daily or in divided doses.	2.5 to 5mg daily. (Laux M, Conrad C. <i>Natural Woman, Natural Menopause</i> (New York: Harper Collins) 1998:118.) 2 to 10mg daily. (Brownstein D. <i>The Miracle of Natural Hormones</i> 3rd edn (W. Bloomfield, MI: Medical Alternative Press) 2003:128.)

## VAGINAL ESTROGENS


BIODIDENTICAL	DOSAGES AVAILABLE	DOSING REGIMEN	COMMENTS/REFERENCES
<b>Estradiol</b> (E2) cream, non-alcohol gel, suppository, drops or clear capsule (compounding pharmacies) 	Any	Insert vaginally every night for 2 wks then 2-3 times weekly (anecdotal)	Cream and non-alcohol gel are dispensed with vaginal applicator calibrated in 1 gram increments up to 4 grams. Suppositories and clear capsules are dispensed with an applicator. Drops may be inserted with a clean finge .
<b>Estriol</b> (E3) cream, non-alcohol gel, suppository, drops or clear capsule (compounding pharmacies) 	Any	0.5mg vaginally for 2 weeks then 0.5mg every 2-3 days	Gerbaldo D et al. <i>Maturitas</i> 1991; 13(4):269-274. Raz P, Stamm WE. <i>NEJM</i> 1993; 329(11): 753-756.
<b>Estrace</b> <sup>®</sup> estradiol vaginal cream (Pfizer)	0.1mg/gm	Insert 2-4 grams every night for 2 wks then 1-2 grams for 1-2 wks then 1 gram 3 times weekly	pH between 3.5-6.5. The 42.5 gram tube comes with a calibrated applicator in 1 gram increments up to 4 grams. Generic Available. (Drug Facts And Comparisons; 2009:224a.)
<b>Estring</b> <sup>®</sup> estradiol vaginal silicone ring (Pharmacia)	2mg	Place 1 ring vaginally continuously for 3 months	Releases estradiol at a mean rate of 7.5mcg/ 24 hours for up to 90 days. (Drug Facts And Comparisons; 2009:224a.)
<b>Imvexxy</b> <sup>®</sup> estradiol vaginal insert (TherapeuticsMD)	4mcg 10mcg	Insert 1 daily vaginally for 2 weeks, then 1 twice weekly every 3 - 4 days.	Approved only for moderate to severe dyspareunia, a symptom of vulvar and vaginal atrophy. Insert with a clean finge . Package insert ( <a href="http://www.imvexxy.com/pi/pdf">www.imvexxy.com/pi/pdf</a> ) accessed November 26, 2019.
<b>Vagifem</b> <sup>®</sup> estradiol hemihydrate vaginal tablet (Novo Nordisk)	10.3mcg estradiol hemihydrate (equivalent to 10mcg estradiol)	Insert 1 tablet vaginally once daily for 2 weeks, then 1 tablet vaginally twice weekly	Approved only for atrophic vaginitis. Each tablet is contained in a disposable, single-use applicator. Generic Available. (Drug Facts And Comparisons; 2006:224.) Generic available



## VAGINAL ESTROGENS


NON-BIOIDENTICAL	DOSAGES AVAILABLE	DOSING REGIMEN	COMMENTS/REFERENCES
<b>Femring®</b> estradiol acetate vaginal ring (Allergan)	0.05mg/day 0.1mg/day	Place 1 ring vaginally continuously for 3 months	Contains 12.4mg Estradiol acetate that releases 0.05mg per day for 3 months. Contains 24.8mg Estradiol acetate that releases 0.1mg per day for 3 months. ( <i>Drug Facts And Comparisons</i> ; 2009:224a.)
<b>Premarin®</b> cream conjugated equine estrogens (CEE) (Pfizer)	0.625mg/gm	0.5-2 grams daily for 3 weeks with 1 week off	pH between 7.1 and 7.9; contains mineral oil. The 42.5 gram tube comes with or without an applicator. Can use 0.5gm twice weekly to treat painful intercourse. ( <i>Drug Facts And Comparisons</i> ; 2009:224b.)

## VAGINAL PROGESTERONE

BIOIDENTICAL	DOSAGES AVAILABLE	DOSING REGIMEN	COMMENTS/REFERENCES
<b>Progesterone</b> cream, non-alcohol gel, supposi- tory, or clear capsule (compounding pharmacies) 	Any Common range: 20 – 100 mg/gram	25mg - 100mg vaginally once to twice daily	50mg vaginal suppository twice daily. ( <i>The Merck Manual of Diagnosis and Therapy</i> Sec. 18, Ch. 245.)
<b>Crinone® / Prochieve®</b> progesterone vaginal gel (Actavis Pharma, Inc./Columbia Lab, Inc)	45mg per applicator 90mg per applicator	Contents of 1 applicator vaginally once to twice daily	Gel contains mineral oil. Gel coats the vaginal mucosa to provide long lasting release of progesterone, Supplied in a 4 or 8% concentration in disposable, single-use applicators. Each 1.125 grams of gel delivers either 45mg or 90mg of progesterone. ( <i>Drug Facts And Comparisons</i> ; 2006:230.)
<b>Endometrin®</b> progesterone vaginal insert (Ferring Pharmaceuticals)	100mg	Insert 1 vaginally two or three times daily	Indicated to support embryo implantation and early pregnancy. Each insert is packed individually in a sealed foil pouch and supplied with disposable applicators. (Endometrin® package insert.)



## VAGINAL DHEA

BIODIDENTICAL	DOSAGES AVAILABLE	DOSING REGIMEN	COMMENTS/REFERENCES
<b>DHEA</b> (dehydroepiandrosterone) cream, non-alcohol gel, suppository, or clear capsule (compounding pharmacies) 	Any	3.25 - 13mg vaginally once daily	Improves signs and symptoms of vaginal atrophy and improves sexual function. (Labrie F. et al.; Menopause 2009; 16(5): 897-906.)
<b>Intrarosa®</b> prasterone vaginal insert (Amag Pharmaceuticals)	6.5mg	Insert 1 vaginally daily at bedtime	Indicated for moderate to severe dyspareunia, a symptom of vulvar and vaginal atrophy due to menopause. (Intrarosa® package insert)

## INJECTABLES / PELLETS

BIODIDENTICAL	DOSAGES AVAILABLE	DOSING REGIMEN	COMMENTS/REFERENCES
<b>Progesterone</b> in sesame oil (various, e.g., APP, Watson)	50mg/ml	5 to 10 mg intramuscularly daily for 6 to 8 days	Has been used for amenorrhea or abnormal uterine bleeding. (Drug Facts and Comparisons; 2008:230.)
<b>Estradiol</b> pellets (some compounding pharmacies)	Any	Pellets implanted subcutaneously	"Ten women with estrogen deficiency symptoms because of premature menopause, gonadal dysgenesis, or surgical menopause received subcutaneous implants consisting of 25-75 mg estradiol with or without 75 mg testosterone. Clinically, all patients had symptomatic improvement within 24-48 hours." Kapetanakis E, Dmowski WP, Auletta F, Scommegna A. Int J Gynaecol obstet. 1982 Oct;20(5):387-99. Endocrine and clinical effects of estradiol and testosterone pellets used in long-term replacement therapy.
<b>Testosterone</b> pellets (some compounding pharmacies)	Various	Pellets implanted subcutaneously	Testosterone blood levels peak at 1 month then sustained in normal range for 4 to 6 months. Requires surgical incision for insertions; pellets may extrude spontaneously. (Bhasin S, et al. Journal of Clinical Endocrinology & Metabolism Vol 91, issue 6; 1995-2010.)
<b>Premarin IV®</b> conjugated equine estrogens (CEE) (Pfizer)	25mg	25 mg intravenously or intramuscularly repeat in 6 to 12 hours if necessary	Used for abnormal uterine bleeding. (Drug Facts and Comparisons; 2008:220b.)



## INJECTABLES / PELLETS

NON-BIOIDENTICAL	DOSAGES AVAILABLE	DOSING REGIMEN	COMMENTS/REFERENCES
<b>Depo-Estradiol®</b> estradiol cypionate* in cottonseed oil (Wyeth)	5mg/ml	1 to 5 mg intramuscularly every 3 to 4 weeks	Short-term cyclical use for moderate to severe vasomotor symptoms and vulva/vaginal atrophy. Taper or discontinue medication at 3 to 6 month intervals. ( <i>Drug Facts and Comparisons</i> ; 2009:224a.)

## INJECTABLES / PELLETS

NON-BIOIDENTICAL	DOSAGES AVAILABLE	DOSING REGIMEN	COMMENTS/REFERENCES
<b>Makena®</b> hydroxyprogesterone caproate* in castor oil (AMAG Pharmaceuticals, Inc.)	250mg/ml	250mg intramuscularly once weekly	To reduce preterm birth in a single pregnancy for women who have a history of preterm birth in single pregnancy. Begin between week 16, 0 days and week 20, 6 days gestation. Continue until week 37 0 days gestation or delivery. Available as 5ml multidose vial or 1ml single use preservative-free vial. Auto injector available for subcutaneous injection. Package insert accessed January 31, 2020.
<b>Delestrogen®</b> estradiol valerate* in sesame oil (Par Sterile Products, LLC)	10mg/ml 20mg/ml 40mg/ml	10 to 20 mg intramuscularly every 4 weeks	For moderate to severe vasomotor symptoms and vulva/vaginal atrophy associated with menopause. Attempts to discontinue medication at 3 to 6 month intervals. ( <i>Drug Facts and Comparisons</i> ; 2008:220a.) Generics available.

\*Bioidentical hormones may be bound to various esters to increase the length of activity. Only when the ester is removed from the hormone by the body does the hormone become bioidentical.