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# **Guidance for Industry**

## **Noncontraceptive Estrogen Drug Products for the Treatment of Vasomotor Symptoms and Vulvar and Vaginal Atrophy Symptoms — Recommended Prescribing Information for Health Care Providers and Patient Labeling**

### ***DRAFT GUIDANCE***

**This guidance document is being distributed for comment purposes only.**

Comments and suggestions regarding this draft document should be submitted within 60 days of publication in the *Federal Register* of the notice announcing the availability of the draft guidance. Submit comments to the Division of Dockets Management (HFA-305), Food and Drug Administration, 5630 Fishers Lane, rm. 1061, Rockville, MD 20852. All comments should be identified with the docket number listed in the notice of availability that publishes in the *Federal Register*.

If you have questions on the content of the draft document contact Margaret Kober at (301) 796-0934.

**U.S. Department of Health and Human Services  
Food and Drug Administration  
Center for Drug Evaluation and Research (CDER)**

**November 2005  
Labeling**

**Revision 4**

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## **Noncontraceptive Estrogen Drug Products for the Treatment of Vasomotor Symptoms and Vulvar and Vaginal Atrophy Symptoms — Recommended Prescribing Information for Health Care Providers and Patient Labeling**

*Additional copies of this guidance are available from:*

*Office of Training and Communications  
Division of Drug Information, HFD-240  
Center for Drug Evaluation and Research  
Food and Drug Administration  
5600 Fishers Lane  
Rockville, MD 20857  
(Tel) 301-827-4573  
<http://www.fda.gov/cder/guidance/index.htm>*

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***Contains Nonbinding Recommendations***

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40 Health (NIH) Women’s Health Initiative (WHI) trial.<sup>3</sup> A third draft of this guidance was issued  
41 on February 3, 2003 (68 FR 5300) incorporating the results of the NIH estrogen plus progestin  
42 clinical trial. The fourth draft of this guidance was issued on February 17, 2004 (69 FR 7492)  
43 incorporating the results of the NIH Women’s Health Initiative Memory Study (WHIMS).<sup>4</sup> This  
44 revised draft of this guidance, incorporating the results of the NIH estrogen-alone clinical trials,  
45 is being made available for comment.<sup>5,6</sup>

46  
47 FDA’s guidance documents, including this guidance, do not establish legally enforceable  
48 responsibilities. Instead, guidances describe the Agency’s current thinking on a topic and should  
49 be viewed only as recommendations, unless specific regulatory or statutory requirements are  
50 cited. The use of the word *should* in Agency guidances means that something is suggested or  
51 recommended, but not required.

52  
53

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<sup>3</sup> The results of the NIH Women’s Health Initiative estrogen plus progestin clinical trial were reported in the *Journal of the American Medical Association*, 2002; 288:321-333.

<sup>4</sup> The results of the NIH Women’s Health Initiative Memory Study estrogen plus progestin clinical trial were reported in the *Journal of the American Medical Association*, 2003; 289:2651-2662.

<sup>5</sup> The results of the NIH Women’s Health Initiative estrogen-alone clinical trial were reported in the *Journal of the American Medical Association*, 2004; 291:1701-1712.

<sup>6</sup> The results of the NIH Women’s Health Initiative Memory Study estrogen-alone clinical trial were reported in the *Journal of the American Medical Association*, 2004; 291:2947-2958.

54 **II. LABELING FOR HEALTH CARE PROVIDERS**

55

56 *We recommend including the following prescribing information for health care providers:*

57

**ESTROGENS INCREASE THE RISK OF ENDOMETRIAL CANCER**

58

59  
60 Close clinical surveillance of all women taking estrogens is important. Adequate diagnostic  
61 measures, including endometrial sampling when indicated, should be undertaken to rule out  
62 malignancy in all cases of undiagnosed persistent or recurring abnormal vaginal bleeding. There  
63 is no evidence that the use of “natural” estrogens results in a different endometrial risk profile  
64 than synthetic estrogens at equivalent estrogen doses. (See **WARNINGS, Malignant**  
65 **neoplasms, *Endometrial cancer.***)

66

**CARDIOVASCULAR AND OTHER RISKS**

67

68  
69 Estrogens with or without progestins should not be used for the prevention of cardiovascular  
70 disease or dementia. (See **WARNINGS, Cardiovascular disorders and Dementia.**)

71

72 The Women’s Health Initiative (WHI) study reported increased risks of stroke and deep vein  
73 thrombosis in postmenopausal women (50 to 79 years of age) during 6.8 years of treatment with  
74 oral conjugated estrogens (CE 0.625 mg) alone per day, relative to placebo. (See **CLINICAL**  
75 **STUDIES and WARNINGS, Cardiovascular disorders.**)

76

77 The WHI study reported increased risk of myocardial infarction, stroke, invasive breast cancer,  
78 pulmonary emboli, and deep vein thrombosis in postmenopausal women (50 to 79 years of age)  
79 during 5 years of treatment with oral conjugated estrogens (CE 0.625 mg) combined with  
80 medroxyprogesterone acetate (MPA 2.5 mg) per day, relative to placebo. (See **CLINICAL**  
81 **STUDIES and WARNINGS, Cardiovascular disorders and Malignant neoplasms, *Breast***  
82 ***cancer.***)

83

84 The Women’s Health Initiative Memory Study (WHIMS), a substudy of the WHI study, reported  
85 increased risk of developing probable dementia in postmenopausal women 65 years of age or  
86 older during 5.2 years of treatment with CE 0.625 mg alone and during 4 years of treatment with  
87 CE 0.625 mg combined with MPA 2.5 mg, relative to placebo. It is unknown whether this  
88 finding applies to younger postmenopausal women. (See **CLINICAL STUDIES,**  
89 **WARNINGS, Dementia, and PRECAUTIONS, Geriatric Use.**)

90

91 Other doses of oral conjugated estrogens with medroxyprogesterone acetate, and other  
92 combinations and dosage forms of estrogens and progestins were not studied in the WHI clinical  
93 trials and, in the absence of comparable data, these risks should be assumed to be similar.  
94 Because of these risks, estrogens with or without progestins should be prescribed at the lowest  
95 effective doses and for the shortest duration consistent with treatment goals and risks for the  
96 individual woman.

97

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98 **DESCRIPTION**

99

100 *This should be supplied by the manufacturer.*

101

102 **CLINICAL PHARMACOLOGY**

103

104 Endogenous estrogens are largely responsible for the development and maintenance of the  
105 female reproductive system and secondary sexual characteristics. Although circulating estrogens  
106 exist in a dynamic equilibrium of metabolic interconversions, estradiol is the principal  
107 intracellular human estrogen and is substantially more potent than its metabolites, estrone and  
108 estriol, at the receptor level.

109

110 The primary source of estrogen in normally cycling adult women is the ovarian follicle, which  
111 secretes 70 to 500 mcg of estradiol daily, depending on the phase of the menstrual cycle. After  
112 menopause, most endogenous estrogen is produced by conversion of androstenedione, secreted  
113 by the adrenal cortex, to estrone by peripheral tissues. Thus, estrone and the sulfate conjugated  
114 form, estrone sulfate, are the most abundant circulating estrogens in postmenopausal women.

115

116 Estrogens act through binding to nuclear receptors in estrogen-responsive tissues. To date, two  
117 estrogen receptors have been identified. These vary in proportion from tissue to tissue.

118

119 Circulating estrogens modulate the pituitary secretion of the gonadotropins, luteinizing hormone  
120 (LH) and follicle stimulating hormone (FSH), through a negative feedback mechanism.

121 Estrogens act to reduce the elevated levels of these hormones seen in postmenopausal women.

122

123 **A. Absorption**

124

125 *This section should be specific for the product in question. If the product in question is an oral*  
126 *dosage form, we recommend including the following information:*

127

128 1. The rate and extent of absorption (e.g.,  $C_{max}$ ,  $T_{max}$ ,  $C_{avg}$ , AUC, fluctuation index, and  
129 parent/metabolite ratio) generated during the clinical pharmacology and  
130 biopharmaceutical studies.

131

132 2. Dose proportionality data for the proposed dosing range.

133

134 3. The effect of food on the bioavailability of the product in question.

135

136 4. Tables and figures, including baseline unadjusted levels of estradiol and metabolites. In  
137 the event that baseline adjusted levels are more appropriate, this fact should be clearly  
138 indicated.

139

140 *If the product in question is a transdermal delivery system, we recommend including the*  
141 *following information:*

142

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- 143 1. The rate and extent of absorption (e.g.,  $C_{max}$ ,  $T_{max}$ ,  $C_{avg}$ , AUC, fluctuation index, and  
144 parent/metabolite ratio) generated during the clinical pharmacology and  
145 biopharmaceutical studies.  
146  
147 2. Data for all the anatomical application sites that will be proposed in the prescribing  
148 information.  
149  
150 3. Dose proportionality data for the proposed dosing range.  
151  
152 4. Tables and figures, including baseline unadjusted levels of estradiol and metabolites. In  
153 the event that baseline adjusted levels are more appropriate, this fact should be clearly  
154 indicated.  
155  
156 5. The nominal mean in vivo delivery rate.  
157

158 *If the product in question is a topical dosage form for vaginal administration or administration*  
159 *to another site and the estrogen is systemically available, we recommend including the following*  
160 *information:*

- 161  
162 1. The rate and extent of absorption (e.g.,  $C_{max}$ ,  $T_{max}$ ,  $C_{avg}$ , AUC, fluctuation index, and  
163 parent/metabolite ratio) generated during the clinical pharmacology and  
164 biopharmaceutical studies.  
165  
166 2. Data for all the anatomical application sites that will be proposed in the prescribing  
167 information (except for vaginally administered products).  
168  
169 3. Dose proportionality data for the proposed dosing range.  
170  
171 4. Tables and figures, including baseline unadjusted levels of estradiol and metabolites. In  
172 the event that baseline adjusted levels are more appropriate, this fact should be clearly  
173 indicated.  
174

175 *If the product in question is a topical dosage form or a dosage form to be administered vaginally*  
176 *and the estrogen is not systemically available, we recommend stating this clearly.*

### **B. Distribution**

179  
180 The distribution of exogenous estrogens is similar to that of endogenous estrogens. Estrogens  
181 are widely distributed in the body and are generally found in higher concentrations in the sex  
182 hormone target organs. Estrogens circulate in the blood largely bound to sex hormone binding  
183 globulin (SHBG) and albumin.

184  
185 *We recommend that additional protein binding and pharmacokinetic information be specific for*  
186 *the product in question.*  
187



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### **C. Metabolism**

188  
189  
190 Exogenous estrogens are metabolized in the same manner as endogenous estrogens. Circulating  
191 estrogens exist in a dynamic equilibrium of metabolic interconversions. These transformations  
192 take place mainly in the liver. Estradiol is converted reversibly to estrone, and both can be  
193 converted to estriol, which is the major urinary metabolite. Estrogens also undergo enterohepatic  
194 recirculation via sulfate and glucuronide conjugation in the liver, biliary secretion of conjugates  
195 into the intestine, and hydrolysis in the intestine followed by reabsorption. In postmenopausal  
196 women, a significant proportion of the circulating estrogens exist as sulfate conjugates,  
197 especially estrone sulfate, which serves as a circulating reservoir for the formation of more active  
198 estrogens.

199  
200 *We recommend that additional metabolic and pharmacokinetic information be specific for the*  
201 *product in question.*

### **D. Excretion**

202  
203  
204  
205 Estradiol, estrone, and estriol are excreted in the urine along with glucuronide and sulfate  
206 conjugates.

207  
208 *We recommend that additional pharmacokinetic information (e.g., apparent half-life(s) and*  
209 *clearance) be specific for the product in question.*

### **E. Special Populations**

210  
211  
212  
213 *This section should be specific for the product in question.*

### **F. Drug Interactions**

214  
215  
216  
217 *We recommend including the following information:*

218  
219 In vitro and in vivo studies have shown that estrogens are metabolized partially by cytochrome  
220 P450 3A4 (CYP3A4). Therefore, inducers or inhibitors of CYP3A4 may affect estrogen drug  
221 metabolism. Inducers of CYP3A4, such as St. John's Wort preparations (*Hypericum*  
222 *perforatum*), phenobarbital, carbamazepine, and rifampin, may reduce plasma concentrations of  
223 estrogens, possibly resulting in a decrease in therapeutic effects and/or changes in the uterine  
224 bleeding profile. Inhibitors of CYP3A4, such as erythromycin, clarithromycin, ketoconazole,  
225 itraconazole, ritonavir, and grapefruit juice, may increase plasma concentrations of estrogens and  
226 result in side effects.

227  
228 *This section should be specific for the product in question. If the product in question is a*  
229 *transdermal delivery system, we recommend adding the following section on adhesion:*

230

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### **G. Adhesion**

231  
232  
233 *Since the adhesion or lack of adhesion of transdermal systems to the skin is a critical factor*  
234 *directly related to drug delivery, therapeutic effect, and possibly to compliance, we recommend*  
235 *including in vivo adhesion information on the percentage of systems that lifted and/or were*  
236 *detached and replaced during the pharmacokinetic and clinical studies. Adhesion information*  
237 *should be specific for the transdermal product in question.*

### **CLINICAL STUDIES**

238  
239  
240  
241 *This section should be specific for the product in question and should include information*  
242 *concerning the appropriate endpoints to assess the effectiveness for the indication sought. A*  
243 *concise and objective description of the studies that provide primary support for effectiveness*  
244 *should include brief summaries of the following:*

- 245  
246 *a. Study designs*  
247 *b. Demographics of the intent-to-treat study populations*  
248 *c. Study results*

249  
250 *For the indication of treatment of moderate to severe vasomotor symptoms, we recommend*  
251 *including a table of results (number and severity of vasomotor symptoms combined in a single*  
252 *table or reported in separate tables) that provides the sample size, the mean number (standard*  
253 *deviation (SD)) or mean severity (SD) of hot flashes per day or per week at baseline and at*  
254 *weeks 4 and 12 for each treatment group, the mean change (SD) for number and severity from*  
255 *baseline at weeks 4 and 12 for each treatment group, and the P-value versus placebo for number*  
256 *and severity at weeks 4 and 12 for each treatment group.*

257  
258 *For the indication of treatment of moderate to severe symptoms of vulvar and vaginal atrophy, a*  
259 *description of the study results should be included in the text.*

260  
261 *We recommend reporting results from individual studies separately.*

### **Women's Health Initiative Studies**

262  
263  
264  
265 The WHI enrolled a total of 27,000 predominantly healthy postmenopausal women to assess the  
266 risks and benefits of either the use of oral conjugated estrogens (CE 0.625 mg) alone per day or  
267 the use of oral conjugated estrogens (CE 0.625 mg) plus medroxyprogesterone acetate (MPA 2.5  
268 mg) per day compared to placebo in the prevention of certain chronic diseases. The primary  
269 endpoint was the incidence of coronary heart disease (CHD) (nonfatal myocardial infarction and  
270 CHD death), with invasive breast cancer as the primary adverse outcome studied. A “global  
271 index” included the earliest occurrence of CHD, invasive breast cancer, stroke, pulmonary  
272 embolism (PE), endometrial cancer, colorectal cancer, hip fracture, or death due to other cause.  
273 The study did not evaluate the effects of CE or CE/MPA on menopausal symptoms.

274  
275 The estrogen-alone substudy was stopped early because an increased risk of stroke was observed.  
276 Results of the estrogen-alone substudy, which included 10,739 women (average age of 63 years,

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277 range 50 to 79; 75.3 percent white, 15 percent black, 6.1 percent Hispanic), after an average  
 278 follow-up of 6.8 years are presented in Table (*insert number*).  
 279

<b>Table (<i>insert number</i>) RELATIVE AND ABSOLUTE RISK SEEN IN THE ESTROGEN-ALONE SUBSTUDY OF WHI<sup>a</sup></b>			
Event <sup>c</sup>	Relative Risk* Premarin vs. Placebo at 6.8 Years (95% CI)	Placebo n = 5,429	Premarin n = 5,310
		Absolute Risk per 10,000 Women-Years	
CHD events	0.91 (0.75-1.12)	54	49
<i>Nonfatal MI</i>	<i>0.89 (0.70-1.12)</i>	<i>41</i>	<i>37</i>
<i>CHD death</i>	<i>0.94 (0.65-1.36)</i>	<i>16</i>	<i>15</i>
Invasive breast cancer	0.77 (0.59-1.01)	33	26
Stroke	1.39 (1.10-1.77)	32	44
Pulmonary embolism	1.34 (0.87-2.06)	10	13
Colorectal cancer	1.08 (0.75-1.55)	16	17
Hip fracture	0.61 (0.41-0.91)	17	11
Death due to causes other than the events above	1.08 (0.88-1.32)	50	53
Global index <sup>b</sup>	1.01 (0.91-1.12)	190	192
Deep vein thrombosis <sup>c</sup>	1.47 (1.04-2.08)	15	21
Vertebral fractures <sup>c</sup>	0.62 (0.42-0.93)	17	11
Total fractures <sup>c</sup>	0.70 (0.63-0.79)	195	139

280 <sup>a</sup> Adapted from JAMA, 2004; 291:1701-1712

281 <sup>b</sup> A subset of the events was combined in a “global index,” defined as the earliest occurrence of CHD events, invasive  
 282 breast cancer, stroke, pulmonary embolism, endometrial cancer, colorectal cancer, hip fracture, or death due to other  
 283 causes

284 <sup>c</sup> Not included in global index

285 \* Nominal confidence intervals unadjusted for multiple looks and multiple comparisons

286  
 287 For those outcomes included in the WHI “global index” that reached statistical significance, the  
 288 absolute excess risk per 10,000 women-years in the group treated with Premarin alone was 12  
 289 more strokes, while the absolute risk reduction per 10,000 women-years was 6 fewer hip  
 290 fractures. The absolute excess risk of events included in the “global index” was a nonsignificant  
 291 2 events per 10,000 women-years. There was no difference between the groups in terms of all-  
 292 cause mortality. (See **BOXED WARNINGS**, **WARNINGS**, and **PRECAUTIONS**.)  
 293

294 The CE/MPA substudy was stopped early because, according to the predefined stopping rule, the  
 295 increased risk of breast cancer and cardiovascular events exceeded the specified benefits  
 296 included in the “global index.” Results of the CE/MPA substudy, which included 16,608 women  
 297 (average age of 63 years, range 50 to 79; 83.9 percent white, 6.5 percent black, 5.5 percent  
 298 Hispanic), after an average follow-up of 5.2 years are presented in Table (*insert number*).  
 299

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<b>Table (insert number) RELATIVE AND ABSOLUTE RISK SEEN IN THE CE/MPA SUBSTUDY OF WHI<sup>a</sup></b>			
Event <sup>c</sup>	Relative Risk CE/MPA vs. placebo at 5.2 Years (95% CI*)	Placebo n = 8,102	CE/MPA n = 8,506
		Absolute Risk per 10,000 Women-Years	
CHD events	1.29 (1.02-1.63)	30	37
<i>Nonfatal MI</i>	<i>1.32 (1.02-1.72)</i>	23	30
<i>CHD death</i>	<i>1.18 (0.70-1.97)</i>	6	7
Invasive breast cancer <sup>b</sup>	1.26 (1.00-1.59)	30	38
Stroke	1.41 (1.07-1.85)	21	29
Pulmonary embolism	2.13 (1.39-3.25)	8	16
Colorectal cancer	0.63 (0.43-0.92)	16	10
Endometrial cancer	0.83 (0.47-1.47)	6	5
Hip fracture	0.66 (0.45-0.98)	15	10
Death due to causes other than the events above	0.92 (0.74-1.14)	40	37
Global index <sup>c</sup>	1.15 (1.03-1.28)	151	170
Deep vein thrombosis <sup>d</sup>	2.07 (1.49-2.87)	13	26
Vertebral fractures <sup>d</sup>	0.66 (0.44-0.98)	15	9
Other osteoporotic fractures <sup>d</sup>	0.77 (0.69-0.86)	170	131

300 <sup>a</sup> Adapted from JAMA, 2002; 288:321-333  
301 <sup>b</sup> Includes metastatic and nonmetastatic breast cancer with the exception of in situ breast cancer  
302 <sup>c</sup> A subset of the events was combined in a “global index,” defined as the earliest occurrence of CHD events, invasive  
303 breast cancer, stroke, pulmonary embolism, endometrial cancer, colorectal cancer, hip fracture, or death due to other  
304 causes  
305 <sup>d</sup> Not included in global index  
306 \* Nominal confidence intervals unadjusted for multiple looks and multiple comparisons

307  
308 For those outcomes included in the “global index,” the absolute excess risks per 10,000 women-  
309 years in the group treated with CE/MPA were 7 more CHD events, 8 more strokes, 8 more PEs,  
310 and 8 more invasive breast cancers, while the absolute risk reductions per 10,000 women-years  
311 were 6 fewer colorectal cancers and 5 fewer hip fractures. The absolute excess risk of events  
312 included in the “global index” was 19 per 10,000 women-years. There was no difference  
313 between the groups in terms of all-cause mortality. (See **BOXED WARNINGS, WARNINGS,**  
314 **and PRECAUTIONS.**)

315  
316 **Women’s Health Initiative Memory Study**

317  
318 The estrogen-alone WHIMS, a substudy of the WHI study, enrolled 2,947 predominantly healthy  
319 postmenopausal women 65 years of age and older (45 percent were aged 65 to 69 years, 36  
320 percent were 70 to 74 years, and 19 percent were 75 years of age and older) to evaluate the  
321 effects of conjugated estrogens (CE 0.625 mg) on the incidence of probable dementia (primary  
322 outcome) compared with placebo.  
323

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324 After an average follow-up of 5.2 years, 28 women in the estrogen-alone group (37 per 10,000  
325 women-years) and 19 in the placebo group (25 per 10,000 women-years) were diagnosed with  
326 probable dementia. The relative risk of probable dementia in the estrogen-alone group was 1.49  
327 (95 percent confidence interval (CI), 0.83-2.66) compared to placebo. It is unknown whether  
328 these findings apply to younger postmenopausal women. (See **BOXED WARNINGS**,  
329 **WARNINGS, Dementia**, and **PRECAUTIONS, Geriatric Use**.)

330  
331 The estrogen plus progestin WHIMS substudy enrolled 4,532 predominantly healthy  
332 postmenopausal women 65 years of age and older (47 percent were aged 65 to 69 years, 35  
333 percent were 70 to 74 years, and 18 percent were 75 years of age and older) to evaluate the  
334 effects of conjugated estrogens (CE 0.625 mg) plus medroxyprogesterone acetate (MPA 2.5 mg)  
335 on the incidence of probable dementia (primary outcome) compared with placebo.

336  
337 After an average follow-up of 4 years, 40 women in the estrogen/progestin group (45 per 10,000  
338 women-years) and 21 in the placebo group (22 per 10,000 women-years) were diagnosed with  
339 probable dementia. The relative risk of probable dementia in the hormone therapy group was  
340 2.05 (95 percent CI, 1.21-3.48) compared to placebo. Differences between groups became  
341 apparent in the first year of treatment. It is unknown whether these findings apply to younger  
342 postmenopausal women. (See **BOXED WARNING, WARNINGS, Dementia**, and  
343 **PRECAUTIONS, Geriatric Use**.)

### **INDICATIONS AND USAGE**

344  
345  
346 (Trade Name) is indicated in the:

347  
348  
349 *Depending on the specific drug, dosage form, and clinical trials performed, the prescribing*  
350 *information can include appropriate indications from those listed here.*

- 351
- 352 1. Treatment of moderate to severe vasomotor symptoms associated with menopause.  
353
  - 354 2. Treatment of moderate to severe symptoms of vulvar and vaginal atrophy associated with  
355 menopause. When prescribing solely for the treatment of symptoms of vulvar and  
356 vaginal atrophy, topical vaginal products should be considered.

### **CONTRAINDICATIONS**

357  
358  
359 (Trade Name) should not be used in women with any of the following conditions:

- 360
- 361 1. Undiagnosed abnormal genital bleeding.  
362
  - 363 2. Known, suspected, or history of cancer of the breast.  
364
  - 365 3. Known or suspected estrogen-dependent neoplasia.  
366
  - 367 4. Active deep vein thrombosis, pulmonary embolism, or history of these conditions.  
368
- 369

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- 370 5. Active or recent (e.g., within the past year) arterial thromboembolic disease (e.g., stroke,  
371 myocardial infarction).  
372  
373 6. Liver dysfunction or disease.  
374  
375 7. Known hypersensitivity to the ingredients of (Trade Name).  
376  
377 8. Known or suspected pregnancy. There is no indication for (Trade Name) in pregnancy.  
378 There appears to be little or no increased risk of birth defects in children born to women  
379 who have used estrogens and progestins from oral contraceptives inadvertently during  
380 early pregnancy. (See **PRECAUTIONS.**)  
381

382 **WARNINGS**

383  
384 See **BOXED WARNINGS.**

385  
386 **1. Cardiovascular disorders**

387  
388 Estrogen and estrogen/progestin therapies have been associated with an increased risk of  
389 cardiovascular events such as myocardial infarction and stroke, as well as venous thrombosis and  
390 pulmonary embolism (venous thromboembolism (VTE)). Should any of these occur or be  
391 suspected, estrogens should be discontinued immediately.  
392

393 Risk factors for arterial vascular disease (e.g., hypertension, diabetes mellitus, tobacco use,  
394 hypercholesterolemia, and obesity) and/or venous thromboembolism (e.g., personal history or  
395 family history of VTE, obesity, and systemic lupus erythematosus) should be managed  
396 appropriately.  
397

398 **a. Coronary heart disease and stroke**

399  
400 In the WHI estrogen-alone substudy, an increased risk of stroke was observed in women  
401 receiving CE compared to placebo (44 versus 32 per 10,000 women-years). The increase in risk  
402 was observed in year 1 and persisted. (See **CLINICAL STUDIES.**)  
403

404 In the CE/MPA substudy of the WHI study, an increased risk of CHD events (defined as nonfatal  
405 myocardial infarction and CHD death) was observed in women receiving CE/MPA compared to  
406 women receiving placebo (37 versus 30 per 10,000 women-years). The increase in risk was  
407 observed in year 1 and persisted. In the same substudy of the WHI study, an increased risk of  
408 stroke was observed in women receiving CE/MPA compared to women receiving placebo (29  
409 versus 21 per 10,000 women-years). The increase in risk was observed after the first year and  
410 persisted. (See **CLINICAL STUDIES.**)  
411

412 In postmenopausal women with documented heart disease (n = 2,763, average age 66.7 years), a  
413 controlled clinical trial of secondary prevention of cardiovascular disease (Heart and  
414 Estrogen/Progestin Replacement Study (HERS)) treatment with CE/MPA (0.625mg/2.5mg per  
415 day) demonstrated no cardiovascular benefit. During an average follow-up of 4.1 years,

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416 treatment with CE/MPA did not reduce the overall rate of CHD events in postmenopausal  
417 women with established coronary heart disease. There were more CHD events in the CE/MPA-  
418 treated group than in the placebo group in year 1, but not during the subsequent years.  
419 Participation in an open label extension of the original HERS trial (HERS II) was agreed to by  
420 2,321 women. Average follow-up in HERS II was an additional 2.7 years, for a total of 6.8 years  
421 overall. Rates of CHD events were comparable among women in the CE/MPA group and the  
422 placebo group in HERS, HERS II, and overall.

423

424 Large doses of estrogen (5 mg conjugated estrogens per day), comparable to those used to treat  
425 cancer of the prostate and breast, have been shown in a large prospective clinical trial in men to  
426 increase the risk of nonfatal myocardial infarction, pulmonary embolism, and thrombophlebitis.

427

### ***b. Venous thromboembolism***

428

429  
430 In the WHI estrogen-alone substudy, an increased risk of deep vein thrombosis was observed in  
431 women receiving CE compared to placebo (21 versus 15 per 10,000 women-years). The increase  
432 in deep vein thrombosis risk was observed during the first year. (See **CLINICAL STUDIES**.)

433

434 In the CE/MPA substudy of the WHI study, a twofold greater rate of VTE, including deep  
435 venous thrombosis and pulmonary embolism, was observed in women receiving CE/MPA  
436 compared to women receiving placebo. The rate of VTE was 34 per 10,000 women-years in the  
437 CE/MPA group compared to 16 per 10,000 women-years in the placebo group. The increase in  
438 VTE risk was observed during the first year and persisted. (See **CLINICAL STUDIES**.)

439

440 If feasible, estrogens should be discontinued at least 4 to 6 weeks before surgery of the type  
441 associated with an increased risk of thromboembolism, or during periods of prolonged  
442 immobilization.

443

## **2. Malignant neoplasms**

444

### ***a. Endometrial cancer***

445

446 The use of unopposed estrogens in women with intact uteri has been associated with an increased  
447 risk of endometrial cancer. The reported endometrial cancer risk among unopposed estrogen  
448 users is about 2 to 12 times greater than in nonusers, and appears dependent on duration of  
449 treatment and on estrogen dose. Most studies show no significant increased risk associated with  
450 use of estrogens for less than 1 year. The greatest risk appears associated with prolonged use,  
451 with an increased risk of 15- to 24-fold for 5 to 10 years or more. This risk has been shown to  
452 persist for at least 8 to 15 years after estrogen therapy is discontinued.

453

454  
455  
456 Clinical surveillance of all women taking estrogen/progestin combinations is important.  
457 Adequate diagnostic measures, including endometrial sampling when indicated, should be  
458 undertaken to rule out malignancy in all cases of undiagnosed persistent or recurring abnormal  
459 vaginal bleeding. There is no evidence that the use of natural estrogens results in a different  
460 endometrial risk profile than synthetic estrogens of equivalent estrogen dose. Adding a progestin

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461 to estrogen therapy has been shown to reduce the risk of endometrial hyperplasia, which may be  
462 a precursor to endometrial cancer.

463

### ***b. Breast cancer***

465

466 The use of estrogens and progestins by postmenopausal women has been reported to increase the  
467 risk of breast cancer. The most important randomized clinical trial providing information about  
468 this issue is the CE/MPA substudy of the WHI study (see **CLINICAL STUDIES**). The results  
469 from observational studies are generally consistent with those of the WHI clinical trial and report  
470 no significant variation in the risk of breast cancer among different estrogens or progestins,  
471 doses, or routes of administration.

472

473 The CE/MPA substudy of the WHI study reported an increased risk of breast cancer in women  
474 who took CE/MPA for a mean follow-up of 5.6 years. Observational studies have also reported  
475 an increased risk for estrogen/progestin combination therapy, and a smaller increased risk for  
476 estrogen-alone therapy, after several years of use. In the WHI trial and from observational  
477 studies, the excess risk increased with duration of use. From observational studies, the risk  
478 appeared to return to baseline in about 5 years after stopping treatment. In addition,  
479 observational studies suggest that the risk of breast cancer was greater, and became apparent  
480 earlier, with estrogen/progestin combination therapy as compared to estrogen-alone therapy.

481

482 In the CE/MPA substudy, 26 percent of the women reported prior use of estrogen-alone and/or  
483 estrogen/progestin combination hormone therapy. After a mean follow-up of 5.6 years during  
484 the clinical trial, the overall relative risk of invasive breast cancer was 1.24 (95 percent CI, 1.01-  
485 1.54), and the overall absolute risk was 41 versus 33 cases per 10,000 women-years, for  
486 CE/MPA compared with placebo. Among women who reported prior use of hormone therapy,  
487 the relative risk of invasive breast cancer was 1.86, and the absolute risk was 46 versus 25 cases  
488 per 10,000 women-years, for CE/MPA compared with placebo. Among women who reported no  
489 prior use of hormone therapy, the relative risk of invasive breast cancer was 1.09, and the  
490 absolute risk was 40 versus 36 cases per 10,000 women-years, for CE/MPA compared with  
491 placebo. In the same substudy, invasive breast cancers were larger and diagnosed at a more  
492 advanced stage in the CE/MPA group compared with the placebo group. Metastatic disease was  
493 rare with no apparent difference between the two groups. Other prognostic factors such as  
494 histologic subtype, grade, and hormone receptor status did not differ between the groups.

495

496 The use of estrogen plus progestin has been reported to result in an increase in abnormal  
497 mammograms requiring further evaluation. All women should receive yearly breast  
498 examinations by a health care provider and perform monthly breast self-examinations. In  
499 addition, mammography examinations should be scheduled based on patient age, risk factors,  
500 and prior mammogram results.

501

### **3. Dementia**

503

504 In the estrogen-alone WHIMS, a population of 2,947 hysterectomized women aged 65 to 79  
505 years was randomized to CE or placebo. In the estrogen plus progestin WHIMS, a population of  
506 4,532 postmenopausal women aged 65 to 79 years was randomized to CE/MPA or placebo.



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507  
508 In the estrogen-alone substudy, after an average follow-up of 5.2 years, 28 women in the  
509 estrogen-alone group and 19 women in the placebo group were diagnosed with probable  
510 dementia. The relative risk of probable dementia for estrogen alone versus placebo was 1.49 (95  
511 percent CI, 0.83-2.66). The absolute risk of probable dementia for estrogen alone versus placebo  
512 was 37 versus 25 cases per 10,000 women-years. It is unknown whether these findings apply to  
513 younger postmenopausal women. (See **CLINICAL STUDIES** and **PRECAUTIONS,**  
514 **Geriatric Use.**)

515  
516 After an average follow-up of 4 years, 40 women being treated with CE/MPA (1.8 percent, n =  
517 2,229) and 21 women in the placebo group (0.9 percent, n = 2,303) received diagnoses of  
518 probable dementia. The relative risk for CE/MPA versus placebo was 2.05 (95 percent CI, 1.21-  
519 3.48), and was similar for women with and without histories of menopausal hormone use before  
520 WHIMS. The absolute risk of probable dementia for CE/MPA versus placebo was 45 versus 22  
521 cases per 10,000 women-years, and the absolute excess risk for CE/MPA was 23 cases per  
522 10,000 women-years. It is unknown whether these findings apply to younger postmenopausal  
523 women. (See **CLINICAL STUDIES** and **PRECAUTIONS, Geriatric Use.**)

524  
525 **4. Gallbladder disease**

526  
527 A two- to fourfold increase in the risk of gallbladder disease requiring surgery in postmenopausal  
528 women receiving estrogens has been reported.

529  
530 **5. Hypercalcemia**

531  
532 Estrogen administration may lead to severe hypercalcemia in patients with breast cancer and  
533 bone metastases. If hypercalcemia occurs, use of the drug should be stopped and appropriate  
534 measures taken to reduce the serum calcium level.

535  
536 **6. Visual abnormalities**

537  
538 Retinal vascular thrombosis has been reported in patients receiving estrogens. Discontinue  
539 medication pending examination if there is sudden partial or complete loss of vision, or a sudden  
540 onset of proptosis, diplopia, or migraine. If examination reveals papilledema or retinal vascular  
541 lesions, estrogens should be permanently discontinued.

542  
543 **PRECAUTIONS**

544  
545 **A. General**

546  
547 **1. Addition of a progestin when a woman has not had a hysterectomy**

548  
549 Studies of the addition of a progestin for 10 or more days of a cycle of estrogen administration,  
550 or daily with estrogen in a continuous regimen, have reported a lowered incidence of endometrial  
551 hyperplasia than would be induced by estrogen treatment alone. Endometrial hyperplasia may be  
552 a precursor to endometrial cancer.

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553

554 There are, however, possible risks that may be associated with the use of progestins with  
555 estrogens compared to estrogen-alone regimens. These include a possible increased risk of  
556 breast cancer.

557

558 **2. Elevated blood pressure**

559

560 In a small number of case reports, substantial increases in blood pressure have been attributed to  
561 idiosyncratic reactions to estrogens. In a large, randomized, placebo-controlled clinical trial, a  
562 generalized effect of estrogens on blood pressure was not seen. Blood pressure should be  
563 monitored at regular intervals with estrogen use.

564

565 **3. Hypertriglyceridemia**

566

567 In patients with preexisting hypertriglyceridemia, estrogen therapy may be associated with  
568 elevations of plasma triglycerides leading to pancreatitis and other complications.

569

570 **4. Impaired liver function and past history of cholestatic jaundice**

571

572 Estrogens may be poorly metabolized in patients with impaired liver function. For patients with  
573 a history of cholestatic jaundice associated with past estrogen use or with pregnancy, caution  
574 should be exercised, and in the case of recurrence, medication should be discontinued.

575

576 **5. Hypothyroidism**

577

578 Estrogen administration leads to increased thyroid-binding globulin (TBG) levels. Patients with  
579 normal thyroid function can compensate for the increased TBG by making more thyroid  
580 hormone, thus maintaining free T<sub>4</sub> and T<sub>3</sub> serum concentrations in the normal range. Patients  
581 dependent on thyroid hormone replacement therapy who are also receiving estrogens may  
582 require increased doses of their thyroid replacement therapy. These patients should have their  
583 thyroid function monitored to maintain their free thyroid hormone levels in an acceptable range.

584

585 **6. Fluid retention**

586

587 Estrogens may cause some degree of fluid retention. Because of this, patients who have  
588 conditions that might be influenced by this factor, such as a cardiac or renal dysfunction, warrant  
589 careful observation when estrogens are prescribed.

590

591 **7. Hypocalcemia**

592

593 Estrogens should be used with caution in individuals with severe hypocalcemia.

594

595 **8. Ovarian cancer**

596

597 The CE/MPA substudy of the WHI study reported that estrogen plus progestin increased the risk  
598 of ovarian cancer. After an average follow-up of 5.6 years, the relative risk for ovarian cancer

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599 for CE/MPA versus placebo was 1.58 (95 percent CI, 0.77-3.24) but was not statistically  
600 significant. The absolute risk for CE/MPA versus placebo was 4.2 versus 2.7 cases per 10,000  
601 women-years. In some epidemiologic studies, the use of estrogen alone, in particular for 10 or  
602 more years, has been associated with an increased risk of ovarian cancer. Other epidemiologic  
603 studies have not found these associations.

604

### **9. Exacerbation of endometriosis**

605

606  
607 Endometriosis may be exacerbated with administration of estrogens. A few cases of malignant  
608 transformation of residual endometrial implants have been reported in women treated post-  
609 hysterectomy with estrogen-alone therapy. For patients known to have residual endometriosis  
610 post-hysterectomy, the addition of progestin should be considered.

611

### **10. Exacerbation of other conditions**

612

613  
614 Estrogens may cause an exacerbation of asthma, diabetes mellitus, epilepsy, migraine or  
615 porphyria, systemic lupus erythematosus, and hepatic hemangiomas and should be used with  
616 caution in women with these conditions.

617

### **B. Information for Patients**

618

619  
620 Physicians are advised to discuss the Patient Information leaflet with patients for whom they  
621 prescribe (Trade Name).

622

### **C. Laboratory Tests**

623

624  
625 Estrogen administration should be initiated at the lowest dose approved for the indication and  
626 then guided by clinical response rather than by serum hormone levels (e.g., estradiol, FSH).

627

628 *This section should be specific for the product in question.*

629

### **D. Drug/laboratory Test Interactions**

630

631  
632 1. Accelerated prothrombin time, partial thromboplastin time, and platelet aggregation time;  
633 increased platelet count; increased factors II, VII antigen, VIII antigen, VIII coagulant  
634 activity, IX, X, XII, VII-X complex, II-VII-X complex, and beta-thromboglobulin;  
635 decreased levels of antifactor Xa and antithrombin III, decreased antithrombin III  
636 activity; increased levels of fibrinogen and fibrinogen activity; increased plasminogen  
637 antigen and activity.

638

639 2. Increased TBG levels leading to increased circulating total thyroid hormone levels as  
640 measured by protein-bound iodine (PBI), T<sub>4</sub> levels (by column or by radioimmunoassay),  
641 or T<sub>3</sub> levels by radioimmunoassay. T<sub>3</sub> resin uptake is decreased, reflecting the elevated  
642 TBG. Free T<sub>4</sub> and free T<sub>3</sub> concentrations are unaltered. Patients on thyroid replacement  
643 therapy may require higher doses of thyroid hormone.

644

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- 645 3. Other binding proteins may be elevated in serum (i.e., corticosteroid binding globulin  
646 (CBG), SHBG) leading to increased total circulating corticosteroids and sex steroids,  
647 respectively. Free hormone concentrations may be decreased. Other plasma proteins  
648 may be increased (angiotensinogen/renin substrate, alpha-1-antitrypsin, ceruloplasmin).  
649
- 650 4. Increased plasma HDL and HDL<sub>2</sub> cholesterol subfraction concentrations, reduced LDL  
651 cholesterol concentration, increased triglycerides levels.  
652
- 653 5. Impaired glucose tolerance.  
654
- 655 6. Reduced response to metyrapone test.  
656

### **E. Carcinogenesis, Mutagenesis, Impairment of Fertility**

658  
659 Long-term continuous administration of estrogen, with or without progestin, in women with or  
660 without a uterus, has shown an increased risk of endometrial cancer, breast cancer, and ovarian  
661 cancer. (See **BOXED WARNINGS**, **WARNINGS**, and **PRECAUTIONS**.)  
662

663 Long-term continuous administration of natural and synthetic estrogens in certain animal species  
664 increases the frequency of carcinomas of the breast, uterus, cervix, vagina, testis, and liver.  
665

666 *This section should be specific for the product in question.*  
667

### **F. Pregnancy**

668  
669 (Trade Name) should not be used during pregnancy. (See **CONTRAINDICATIONS**.)  
670  
671

### **G. Nursing Mothers**

672  
673 Estrogen administration to nursing mothers has been shown to decrease the quantity and quality  
674 of the milk. Detectable amounts of estrogens have been identified in the milk of mothers  
675 receiving this drug. Caution should be exercised when (Trade Name) is administered to a  
676 nursing woman.  
677

### **H. Pediatric Use**

678  
679  
680  
681 *Complete as appropriate in accordance with 21 CFR 201.57(f)(9).*  
682

### **I. Geriatric Use**

683  
684  
685 *Complete as appropriate in accordance with 21 CFR 201.57(f)(10).*  
686

687 Of the total number of subjects in the estrogen-alone substudy of the WHI study, 46 percent (n =  
688 4,943) were 65 years and older, while 7.1 percent (n = 767) were 75 years and older. There was  
689 a higher relative risk (CE versus placebo) of stroke in women less than 75 years of age compared  
690 to women 75 years and older.

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691  
692 In the estrogen-alone substudy of the WHIMS, a population of 2,947 hysterectomized women,  
693 aged 65 to 79 years, was randomized to estrogen alone (CE 0.625 mg) or placebo. In the  
694 estrogen-alone group, after an average follow-up of 5.2 years, the relative risk (CE versus  
695 placebo) of probable dementia was 1.49 (95 percent CI, 0.83-2.66).  
696

697 Of the total number of subjects in the estrogen plus progestin substudy of the WHI study, 44  
698 percent (n = 7,320) were 65 years and older, while 6.6 percent (n = 1,095) were 75 years and  
699 older. There was a higher relative risk (CE/MPA versus placebo) of stroke and invasive breast  
700 cancer in women 75 and older compared to women less than 75 years of age.  
701

702 In the estrogen plus progestin substudy of WHIMS, a population of 4,532 postmenopausal  
703 women, aged 65 to 70 years, was randomized to conjugated estrogens (CE 0.625 mg) plus  
704 medroxyprogesterone acetate (MPA 2.5 mg) or placebo. In the estrogen plus progestin group,  
705 after an average follow-up of 4 years, the relative risk (CE/MPA versus placebo) of probable  
706 dementia was 2.05 (95 percent CI, 1.21-3.48).  
707

708 Pooling the events in women receiving CE or CE/MPA in comparison to those in women on  
709 placebo, the overall relative risk of probable dementia was 1.76 (95 percent CI, 1.19-2.60).  
710 Since both substudies were conducted in women aged 65 to 79 years, it is unknown whether  
711 these findings apply to younger postmenopausal women. (See **BOXED WARNINGS** and  
712 **WARNINGS, Dementia.**)  
713

### **ADVERSE REACTIONS**

714 See **BOXED WARNINGS, WARNINGS, and PRECAUTIONS.**  
715

716 *This section should be revised to state the following when including a table of all treatment*  
717 *emergent adverse events regardless of drug relationship reported as a frequency of greater than*  
718 *or equal to 5 percent with Trade Name.*  
719  
720

721 Because clinical trials are conducted under widely varying conditions, adverse reaction rates  
722 observed in the clinical trials of a drug cannot be directly compared to rates in the clinical trials  
723 of another drug and may not reflect the rates observed in practice. The adverse reaction  
724 information from clinical trials does, however, provide a basis for identifying the adverse events  
725 that appear to be related to drug use and for approximating rates.  
726  
727

728 *We recommend including the following:*  
729

730 The following additional adverse reactions have been reported with estrogen and/or progestin  
731 therapy.  
732

#### **1. Genitourinary system**

733  
734 Changes in vaginal bleeding pattern and abnormal withdrawal bleeding or flow; breakthrough  
735 bleeding; spotting; dysmenorrhea, increase in size of uterine leiomyomata; vaginitis, including  
736

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737 vaginal candidiasis; change in amount of cervical secretion; changes in cervical ectropion;  
738 ovarian cancer; endometrial hyperplasia; endometrial cancer.

739

### **2. Breasts**

741

742 Tenderness, enlargement, pain, nipple discharge, galactorrhea; fibrocystic breast changes; breast  
743 cancer.

744

### **3. Cardiovascular**

746

747 Deep and superficial venous thrombosis; pulmonary embolism; thrombophlebitis; myocardial  
748 infarction; stroke; increase in blood pressure.

749

### **4. Gastrointestinal**

751

752 Nausea, vomiting; abdominal cramps, bloating; cholestatic jaundice; increased incidence of  
753 gallbladder disease; pancreatitis, enlargement of hepatic hemangiomas.

754

### **5. Skin**

756

757 Chloasma or melasma that may persist when drug is discontinued; erythema multiforme;  
758 erythema nodosum; hemorrhagic eruption; loss of scalp hair; hirsutism; pruritus, rash.

759

### **6. Eyes**

761

762 Retinal vascular thrombosis, intolerance to contact lenses.

763

### **7. Central nervous system**

765

766 Headache; migraine; dizziness; mental depression; chorea; nervousness; mood disturbances;  
767 irritability; exacerbation of epilepsy, dementia.

768

### **8. Miscellaneous**

770

771 Increase or decrease in weight; reduced carbohydrate tolerance; aggravation of porphyria;  
772 edema; arthralgias; leg cramps; changes in libido; urticaria, angioedema,  
773 anaphylactoid/anapylactic reactions; hypocalcemia; exacerbation of asthma; increased  
774 triglycerides.

775

## **OVERDOSAGE**

777

778 Serious ill effects have not been reported following acute ingestion of large doses of estrogen-  
779 containing drug products by young children. Overdosage of estrogen may cause nausea and  
780 vomiting, and withdrawal bleeding may occur in females.

781

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782 **DOSAGE AND ADMINISTRATION**

783

784 *Depending on the specific drug and dosage form, the prescribing information can include*  
785 *appropriate dosage and administration from those listed here.*

786

787 When estrogen is prescribed for a postmenopausal woman with a uterus, a progestin should also  
788 be initiated to reduce the risk of endometrial cancer. A woman without a uterus does not need  
789 progestin. Use of estrogen, alone or in combination with a progestin, should be with the lowest  
790 effective dose and for the shortest duration consistent with treatment goals and risks for the  
791 individual woman. Patients should be re-evaluated periodically as clinically appropriate (e.g., 3-  
792 month to 6-month intervals) to determine if treatment is still necessary (see **BOXED**  
793 **WARNINGS** and **WARNINGS**). For women who have a uterus, adequate diagnostic measures,  
794 such as endometrial sampling, when indicated, should be undertaken to rule out malignancy in  
795 cases of undiagnosed persistent or recurring abnormal vaginal bleeding.

796

797 *The manufacturer should supply specific dosage information for treatment of moderate to severe*  
798 *vasomotor symptoms and for treatment of moderate to severe symptoms of vulvar and vaginal*  
799 *atrophy associated with menopause.*

800

801 *For products with multiple doses:*

802

803 Patients should be started at the lowest dose.

804

805 *We recommend that manufacturers whose clinical development program did not identify the*  
806 *lowest effective dose include:*

807

808 The lowest effective dose of (Trade Name) has not been determined.

809

810 **HOW SUPPLIED**

811

812 *The manufacturer should supply information on available dosage forms, potency, color, and*  
813 *packaging. The manufacturer should also provide a storage statement.*

814

815 *The manufacturer should include a statement such as “Keep out of reach of children” in both the*  
816 *instructions and the dispenser.*

817

818

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819 **III. PATIENT INFORMATION**

820

821 *The recommended text for the Patient Information leaflet is as follows:*

822

823

**PATIENT INFORMATION**

824

825

(Updated *insert full date*)

826

827

**Trade Name**

828

(*Insert chemical name*)

829

830 Read this Patient Information leaflet before you start taking (Trade Name) and read what you get  
831 each time you refill (Trade Name). There may be new information. This information does not  
832 take the place of talking to your health care provider about your medical condition or your  
833 treatment.

834

835

**WHAT IS THE MOST IMPORTANT INFORMATION I SHOULD KNOW ABOUT  
(TRADE NAME) (AN ESTROGEN HORMONE)?**

836

837

- Estrogens increase the chance of getting cancer of the uterus.

838

839

840 Report any unusual vaginal bleeding right away while you are taking estrogens. Vaginal  
841 bleeding after menopause may be a warning sign of cancer of the uterus (womb). Your health  
842 care provider should check any unusual vaginal bleeding to find out the cause.

843

844

- Do not use estrogens with or without progestins to prevent heart disease, heart attacks, or  
strokes.

845

846

847 Using estrogens with or without progestins may increase your chance of getting heart attacks,  
848 strokes, breast cancer, and blood clots.

849

850

- Do not use estrogens with or without progestins to prevent dementia.

851

852 Using estrogens with or without progestins may increase your risk of dementia.

853

854 You and your health care provider should talk regularly about whether you still need treatment  
855 with (Trade Name).

856

857 **What is (Trade Name)?**

858

859 (Trade Name) is a medicine that contains estrogen hormones.

860

861 **What is (Trade Name) used for?**

862

863 *We recommend including only approved indications.*

864



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865 (Trade Name) is used after menopause to:

866

- 867 • **Reduce moderate to severe hot flashes**

868

869 Estrogens are hormones made by a woman’s ovaries. The ovaries normally stop making  
870 estrogens when a woman is between 45 to 55 years old. This drop in body estrogen  
871 levels causes the “change of life” or menopause (the end of monthly menstrual periods).  
872 Sometimes, both ovaries are removed during an operation before natural menopause  
873 takes place. The sudden drop in estrogen levels causes “surgical menopause.”

874

875 When the estrogen levels begin dropping, some women develop very uncomfortable  
876 symptoms, such as feelings of warmth in the face, neck, and chest, or sudden strong  
877 feelings of heat and sweating (“hot flashes” or “hot flushes”). In some women, the  
878 symptoms are mild, and they will not need estrogens. In other women, symptoms can be  
879 more severe. You and your health care provider should talk regularly about whether you  
880 still need treatment with (Trade Name).

881

- 882 • **Treat moderate to severe dryness, itching, and burning in and around the vagina**

883

884 You and your health care provider should talk regularly about whether you still need  
885 treatment with (Trade Name) to control these problems. If you use (Trade Name) only to  
886 treat your dryness, itching, and burning in and around your vagina, talk with your health  
887 care provider about whether a topical vaginal product would be better for you.

888

889 **Who should not take (Trade Name)?**

890

891 Do not start taking (Trade Name) if you:

892

- 893 • **Have unusual vaginal bleeding**

894

- 895 • **Currently have or have had certain cancers**

896

897 Estrogens may increase the chance of getting certain types of cancers, including cancer of  
898 the breast or uterus. If you have or have had cancer, talk with your health care provider  
899 about whether you should take (Trade Name).

900

- 901 • **Had a stroke or heart attack in the past year**

902

- 903 • **Currently have or have had blood clots**

904

- 905 • **Currently have or have had liver problems**

906

- 907 • **Are allergic to (Trade Name) or any of its ingredients**

908

909 See the end of this leaflet for a list of ingredients in (Trade Name).

910

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- 911           • **Think you may be pregnant**

912

913 Tell your health care provider:

914

- 915           • **If you are breastfeeding**

916

917 The hormone in (Trade Name) can pass into your milk.

918

- 919           • **About all of your medical problems**

920

921 Your health care provider may need to check you more carefully if you have certain  
922 conditions, such as asthma (wheezing); epilepsy (seizures); migraine; endometriosis;  
923 lupus; problems with your heart, liver, thyroid, or kidneys; or have high calcium levels in  
924 your blood.

925

- 926           • **About all the medicines you take**

927

928 This includes prescription and nonprescription medicines, vitamins, and herbal  
929 supplements. Some medicines may affect how (Trade Name) works. (Trade Name) may  
930 also affect how your other medicines work.

931

- 932           • **If you are going to have surgery or will be on bed rest**

933

934 You may need to stop taking estrogens.

935

936 **What are the ingredients in (Trade Name)?**

937

938 *We recommend providing a list of all active and nonactive ingredients.*

939

940 **How should I take (Trade Name)?**

941

942 *We recommend providing instructions on how to take (Trade Name). If (Trade Name) comes in*  
943 *several strengths, include #1.*

944

945 1. Start at the lowest dose and talk to your health care provider about how well that dose is  
946 working for you.

947

948 2. Estrogens should be used at the lowest dose possible for your treatment only as long as  
949 needed. (Sponsors whose clinical development program did not identify the lowest  
950 effective dose are recommended to include: The lowest effective dose of (Trade Name)  
951 has not been determined. You and your health care provider should talk regularly (e.g.,  
952 every 3 to 6 months) about the dose you are taking and whether you still need treatment  
953 with (Trade Name)).

954

955 **What are the possible side effects of estrogens?**

956

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957 **Less common but serious side effects include:**

958

- 959 • **Breast cancer**
- 960 • **Cancer of the uterus**
- 961 • **Stroke**
- 962 • **Heart attack**
- 963 • **Blood clots**
- 964 • **Dementia**
- 965 • **Gallbladder disease**
- 966 • **Ovarian cancer**

967

968 **Some of the warning signs of serious side effects include:**

969

- 970 • **Breast lumps**
- 971 • **Unusual vaginal bleeding**
- 972 • **Dizziness and faintness**
- 973 • **Changes in speech**
- 974 • **Severe headaches**
- 975 • **Chest pain**
- 976 • **Shortness of breath**
- 977 • **Pains in your legs**
- 978 • **Changes in vision**
- 979 • **Vomiting**

980

981 Call your health care provider right away if you get any of these warning signs, or any other  
982 unusual symptom that concerns you.

983

984 **Common side effects include:**

985

- 986 • **Headache**
- 987 • **Breast pain**
- 988 • **Irregular vaginal bleeding or spotting**
- 989 • **Stomach/abdominal cramps, bloating**
- 990 • **Nausea and vomiting**
- 991 • **Hair loss**

992

993 **Other side effects include:**

994

- 995 • **High blood pressure**
- 996 • **Liver problems**
- 997 • **High blood sugar**
- 998 • **Fluid retention**
- 999 • **Enlargement of benign tumors of the uterus (“fibroids”)**
- 1000 • **Vaginal yeast infection**

1001

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1002 These are not all the possible side effects of (Trade Name). For more information, ask your  
1003 health care provider or pharmacist.

1004

### **What can I do to lower my chances of a serious side effect with (Trade Name)?**

1006

1007 Talk with your health care provider regularly about whether you should continue taking (Trade  
1008 Name). If you have a uterus, talk to your health care provider about whether the addition of a  
1009 progestin is right for you. In general, the addition of a progestin is recommended for women  
1010 with a uterus to reduce the chance of getting cancer of the uterus. See your health care provider  
1011 right away if you get vaginal bleeding while taking (Trade Name). Have a breast exam and  
1012 mammogram (breast X-ray) every year unless your health care provider tells you otherwise. If  
1013 members of your family have had breast cancer or if you have ever had breast lumps or an  
1014 abnormal mammogram, you may need to have breast exams more often. If you have high blood  
1015 pressure, high cholesterol (fat in the blood), diabetes, are overweight, or if you use tobacco, you  
1016 may have a higher chance of getting heart disease. Ask your health care provider for ways to  
1017 lower your chance of getting heart disease.

1018

### **Have an annual gynecologic exam**

1019

1020

### **General information about safe and effective use of (Trade Name)**

1021

1022

1023 Medicines are sometimes prescribed for conditions that are not mentioned in patient information  
1024 leaflets. Do not take (Trade Name) for conditions for which it was not prescribed. Do not give  
1025 (Trade Name) to other people, even if they have the same symptoms you have. It may harm  
1026 them.

1027

### **Keep (Trade Name) out of the reach of children**

1028

1029

1030 This leaflet provides a summary of the most important information about (Trade Name). If you  
1031 would like more information, talk with your health care provider or pharmacist. You can ask for  
1032 information about (Trade Name) that is written for health professionals. You can get more  
1033 information by calling the toll-free number (*add number here*).

1034