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# Guidance for Industry Labeling for Combined Oral Contraceptives

## *DRAFT GUIDANCE*

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Comments and suggestions regarding this draft document should be submitted within 60 days of publication of the *Federal Register* notice announcing the availability of the draft guidance.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, room 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*.

For questions on the content of the draft document contact Margaret Kober, 301-827-4243.

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

**March 2004  
Labeling**

**Revision 1**

# **Guidance for Industry Labeling for Combined Oral Contraceptives**

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# Guidance for Industry<sup>1</sup> Labeling for Combined Oral Contraceptives

This draft guidance, when finalized, will represent FDA's current thinking on this topic. It does not create or confer any rights for or on any person and does not operate to bind FDA or the public. You can use an alternative approach if it satisfies the requirements of the applicable statutes and regulations. If you want to discuss an alternative approach, contact the FDA staff responsible for implementing this guidance. If you cannot identify the appropriate FDA staff, call the appropriate number listed on the title page of this guidance.

## I. INTRODUCTION

This guidance describes the recommended labeling for health care providers and patient instructions for use for new drug applications (NDAs) and abbreviated new drug applications (ANDAs) for combined oral contraceptives (OCs) that contain estrogen and progestin. A draft guidance on this topic was issued for comment in June 2000. Many comments were received on the 2000 draft guidance and, as a result, many changes have been made to the guidance. Because of the many changes, we are making the guidance available again in draft to allow for additional public review and input. The references listed at the end of this guidance do not go in the labeling.

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<sup>1</sup> This guidance was developed by the Division of Reproductive and Urologic Drug Products in the Center for Drug Evaluation and Research (CDER), Food and Drug Administration (FDA).

**Contains Nonbinding Recommendations**

*Draft — Not for Implementation*

37 **II. LABELING FOR PACKAGE INSERT**  
38

39 We recommend the following labeling be used for combined oral contraceptives:

40 **PROPRIETARY NAME (ESTABLISHED NAME)**

41  
42 *Supplied by manufacturer*

43 **WARNING: CIGARETTE SMOKING**  
44

45 Combined oral contraceptives (OCs) are not recommended for women who are over 35 years old  
46 and smoke. Cigarette smoking increases the risk of serious cardiovascular side effects from OC  
47 use. The risk increases with age and with the number of cigarettes smoked.  
48

49 **This product does not protect against infection from HIV (the virus that causes AIDS) or**  
50 **other sexually transmitted diseases.**

51 **DESCRIPTION**  
52

53  
54 *Supplied by manufacturer*  
55

56 **CLINICAL PHARMACOLOGY**  
57

58 **Mode of action**  
59

60 OCs lower the risk of becoming pregnant primarily by suppressing ovulation. Other possible  
61 mechanisms may include cervical mucus changes that inhibit sperm penetration and endometrial  
62 changes that reduce the likelihood of implantation.

63 *Receptor binding studies can be summarized briefly here if clinically relevant.*  
64

65 **Pharmacokinetics**  
66

67 *Supplied by manufacturer, to include the following subsections:*  
68

- 69 • *Absorption*
- 70 • *Distribution*
- 71 • *Metabolism*
- 72 • *Excretion*
- 73 • *Special Populations*
- 74 • *Renal and Hepatic Impairment*
- 75 • *Drug-drug Interactions (include mechanism for drug interaction for specific product, refer to*  
76 *PRECAUTIONS for class-labeling for OC products.)*  
77

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### 78 INDICATIONS AND USAGE

79

80 *(Name of OC)* is indicated for use by women to lower the risk of becoming pregnant.

81 *Other approved indications appear here.*

82 *Pregnancy rates from clinical trials should be placed here.*

83 In clinical trials of *(insert name of OC here)*, about *(insert whole number here)* out of 100  
84 women became pregnant during the first year of use. The effectiveness of any OC depends on  
85 correct and consistent use, and factors that affect ability to conceive, including age and frequency  
86 of intercourse.

87

88 The following table shows estimates of the number of women who become pregnant during the  
89 first year of use, based mainly on clinical trial data, for various birth control methods.

90

Approximate Percentage of Women Who Become Pregnant During the First Year of Use of a Birth Control Method*	
METHOD	PREGNANCIES PER 100 WOMEN PER YEAR
estrogen/progestin injection levonorgestrel implants levonorgestrel IUD and copper IUD medroxyprogesterone acetate injection sterilization	Fewer than 1
estrogen/progestin contraceptive products: • pills • skin patch • vaginal ring	1
progestin-only pills	2
condom (male) diaphragm	15
spermicides	25 or more

91 \*The estimates for drugs, condoms, diaphragms, and IUDs are derived from clinical trial data reviewed by the Food  
92 and Drug Administration. The estimates for sterilization and spermicides come from the medical literature.

93

94

95

### Clinical Studies

96

97 *This section can contain a brief description of the extent of the Phase III program, such as the*  
98 *number of patients, the number of patients less than 35 years old, the number of treatment*  
99 *months. This section can also be used when there is an efficacy or safety issue specific to the*  
100 *product that is not addressed in class labeling. The location of this section may vary, depending*  
101 *on content.*

102

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### 103 **CONTRAINDICATIONS**

104

105 OCs should not be used by women who have the following conditions:

106

- 107 • Breast cancer or other hormone-sensitive cancer, now or in the past
- 108 • Liver tumors, now or in the past, or liver disease
- 109 • Undiagnosed abnormal genital bleeding
- 110 • Any condition predisposing to thrombotic diseases
- 111 • Thrombophlebitis or pulmonary embolism, now or in the past
- 112 • Cerebrovascular disease
- 113 • Coronary artery disease
- 114 • Thrombogenic valvular or thrombogenic rhythm diseases of the heart
- 115 • Congenital hypercoagulopathies
- 116 • Diabetes with vascular disease
- 117 • Uncontrolled hypertension
- 118 • Migraines with focal neurologic symptoms
- 119 • Smoking and over age 35
- 120 • Pregnancy
- 121 • Allergy to any components of this drug product

122

### 123 **WARNINGS**

124

125 The use of OCs with estrogen and progestin increases the risk of serious conditions, including  
126 myocardial infarction, thromboembolism, stroke, hepatic neoplasia, and gallbladder disease.  
127 However, the risk of serious morbidity or mortality is small in healthy women without  
128 underlying risk factors. When considering OCs for a woman with underlying risk factors, the  
129 risks of pregnancy and the feasibility of other birth control methods must also be considered.

130

131 Minimizing exposure to estrogen and progestin reduces the risk of thrombotic events. For any  
132 particular estrogen/progestin combination, the recommended dosage regimen is that which  
133 contains the least amount of estrogen and progestin that is compatible with a low pregnancy rate  
134 and the medical needs of the individual patient.

135

#### 136 **1. Vascular Risks**

137

##### 138 a. Mortality

139

140 For nonsmokers, the risk of cardiovascular death from OC use is less than the risk of death from  
141 pregnancy. However, for smokers over age 35, the risk of cardiovascular death from OC use is  
142 greater than the risk of death from pregnancy for women over age 35.<sup>1</sup>

143

##### 144 b. Thromboembolism

145

146 Observational studies suggest an increased risk of superficial thrombophlebitis, deep vein  
147 thrombosis, and pulmonary embolism in OC users compared to non-OC users.<sup>2,3,4,5,6,7,8,9,10</sup> The risk

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148 of thromboembolic disease associated with OCs is not related to length of use and disappears after  
149 use of the drug product is stopped.<sup>2</sup>

150  
151 A 2- to 4-fold increase in relative risk of postoperative thromboembolic complications has been  
152 reported with the use of OCs.<sup>7</sup> The relative risk of venous thrombosis in women who have  
153 predisposing conditions is twice that of women without such medical conditions.<sup>11</sup> If feasible, OCs  
154 should be stopped at least 4 weeks before through 2 weeks after elective surgery of a type associated  
155 with an increase in risk of thromboembolism and during prolonged immobilization.<sup>12,13</sup>

156  
157 OCs should be started no earlier than 3 to 4 weeks after delivery in women who elect not to breast-  
158 feed. The increased risk of thromboembolism in the postpartum period appears to decrease after the  
159 third postpartum week, whereas the risk of ovulation increases after the third postpartum week.<sup>14,15</sup>

160  
161 OCs are associated with retinal vein thrombosis in case reports. OCs should be discontinued if  
162 there is unexplained partial or complete loss of vision; onset of proptosis or diplopia, papilledema,  
163 or retinal vascular lesions. Symptoms of retinal vein thrombosis should be evaluated  
164 immediately.<sup>16,17,18</sup>

165  
166 OC use may also increase the risk of thrombosis in women with valvular heart conditions<sup>19</sup> or  
167 arrhythmias that predispose to thrombosis, such as atrial fibrillation.

168  
169 The presence of factor V Leiden mutation and other hereditary or acquired coagulation disorders  
170 increases the risk of thromboembolic disease.<sup>20</sup>

171  
172 *For desogestrel containing products: Several epidemiologic studies indicate that OCs containing*  
173 *desogestrel are associated with a higher risk of venous thromboembolism than OCs containing*  
174 *other progestins. In general, these studies indicate an approximate 2-fold increased risk, which*  
175 *corresponds to an additional 1 to 2 cases of venous thromboembolism per 10,000 women-years of*  
176 *use. However, data from other studies have not shown this 2-fold increase in risk.*

177  
178 c. Myocardial infarction

179  
180 An increased risk of myocardial infarction is attributed to OC use. This risk is mainly in women  
181 with underlying risk factors for coronary artery disease such as smoking, hypertension,  
182 hypercholesterolemia, morbid obesity, and diabetes. The relative risk of heart attack for current OC  
183 users compared to nonusers is estimated to be two to six.<sup>21,22,23,24,25,26,27</sup> The risk is very low under  
184 the age of 30.

185  
186 Smoking in combination with OC use contributes substantially to the incidence of myocardial  
187 infarctions in women in their mid-30s or older, with smoking accounting for the majority of excess  
188 cases. In one study, the relative risk of myocardial infarction in heavy smokers who use OCs was  
189 39, compared to 4.9 for nonsmokers who use OCs, and 1.0 for nonsmokers who do not use OCs.<sup>28</sup>  
190 Estimates of the annual mortality rate from cardiovascular disease in OC users over age 35 show a  
191 five-fold higher risk for smokers compared to nonsmokers.<sup>29</sup>

192



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193 OCs must be used with caution in women with cardiovascular disease risk factors. OCs may further  
194 increase the effects of well-known risk factors, such as hypertension, diabetes, hyperlipidemias, age,  
195 and obesity.<sup>30</sup>

196

### 197 d. Cerebrovascular diseases

198

199 In observational studies, OCs appear to increase the risk of strokes, although, in general, the risk is  
200 greatest among hypertensive women over age 35 who also smoke.<sup>31,32,33</sup>

201

202 The relative risk of thrombotic strokes has been shown to range from 3 for normotensive users to 14  
203 for users with severe hypertension.<sup>34</sup> The relative risk of hemorrhagic stroke is reported to be 1.2  
204 for nonsmokers who used OCs, 2.6 for smokers who did not use OCs, 7.6 for smokers who used  
205 OCs, 1.8 for normotensive users, and 25.7 for users with severe hypertension.<sup>24</sup>

206

### 207 e. Dose-related risk of vascular disease from OCs

208

209 A positive association has been observed between the amount of estrogen and progestin in OCs and  
210 the risk of vascular disease.<sup>35,36,37</sup> A decline in serum high-density lipoproteins (HDL) is seen with  
211 many progestational agents.<sup>38,39,40</sup>

212

## 213 **2. Carcinoma of the Breast and Cervix**

214

215 Women who currently have or have had breast cancer should not use oral contraceptives because  
216 breast cancer may be hormonally sensitive.

217

218 There is substantial evidence that OCs do not increase the incidence of breast cancer.<sup>41,42</sup> Although  
219 some past studies have suggested that OCs might increase the incidence of breast cancer, more  
220 recent and thorough studies have not confirmed such findings.

221

222 Some studies suggest that OCs are associated with an increase in the risk of cervical cancer or  
223 intraepithelial neoplasia.<sup>43,44,45,46</sup> However, there is controversy about the extent to which these  
224 findings are due to differences in sexual behavior and other factors.

225

## 226 **3. Liver Disease**

227

228 Benign hepatic adenomas are associated with OC use. Indirect calculations have estimated the  
229 attributable risk to be 3.3 cases/100,000 for OC users.<sup>47</sup> Rupture of benign, hepatic adenomas may  
230 cause death through intra-abdominal hemorrhage.<sup>48,49</sup>

231

232 Studies from Britain have shown an increased risk of developing hepatocellular carcinoma in long-  
233 term (more than 8 years) OC users.<sup>50,51,52,53</sup> However, the attributable risk (the excess incidence) of  
234 liver cancers in OC users is less than one per million users.

235

236 OC-related cholestasis has been described in women with a history of pregnancy-related cholestasis.  
237 Women with a history of OC-related cholestasis may have the condition recur with subsequent OC  
238 use.<sup>54</sup>

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239  
240 OCs should be discontinued if jaundice develops. Steroid hormones may be poorly metabolized in  
241 patients with impaired liver function.

242

### **4. Gallbladder Disease**

244

245 Studies have shown that the increased relative risk of developing gallbladder disease among OC  
246 users may be minimal.<sup>55,56,57,58,59,60,61</sup>

247

### **5. Carbohydrate and Lipid Metabolic Effects**

249

250 OCs may decrease glucose tolerance in a dose-related fashion.<sup>62,63</sup> Therefore, prediabetic and  
251 diabetic women should be carefully monitored while taking OCs. However, in nondiabetic women,  
252 OCs appear to have no effect on fasting blood glucose.<sup>64</sup>

253

254 A small proportion of women will have adverse lipid changes while on OCs. Alternative  
255 contraception should be considered in women with uncontrolled dyslipidemias.<sup>65</sup> Elevations of  
256 plasma triglycerides may lead to pancreatitis and other complications.

257

### **6. High Blood Pressure**

259

260 Women with uncontrolled hypertension or hypertension with vascular disease should not use  
261 OCs.<sup>66,67,68</sup> An increase in blood pressure has been reported in women taking OCs,<sup>69</sup> and this  
262 increase is more likely in older OC users<sup>70</sup> and with extended duration of use. Data from the Royal  
263 College of General Practitioners<sup>71</sup> and subsequent randomized trials have shown that the incidence  
264 of hypertension increases with increasing progestational activity and concentrations of progestins.  
265 If OCs are prescribed for women with well-controlled hypertension, close blood pressure  
266 monitoring is recommended and OCs should be discontinued if blood pressure rises significantly.

267

### **7. Headache**

269

270 The onset or exacerbation of migraine or development of headache with a new pattern that is  
271 recurrent, persistent, or severe requires discontinuation of OCs and evaluation of the cause.

272

### **8. Vaginal Bleeding Problems**

274

275 Breakthrough bleeding and spotting are sometimes seen in patients on OCs, especially during the  
276 first 3 months of use. If bleeding persists, nonhormonal causes such as pregnancy or malignancy  
277 should be considered. If pathology and pregnancy are excluded, time or a change to another  
278 formulation may solve the problem.

279

280 Amenorrhea is sometimes seen in women who are using OCs. Pregnancy should be ruled out in the  
281 event of amenorrhea.

282

283 *A description of vaginal bleeding patterns from the controlled clinical trials that supported drug*  
284 *approval should be placed here if relevant.*

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### **PRECAUTIONS**

#### **1. General**

Women who are using oral contraceptives should have an annual history and physical examination, including special reference to blood pressure, breasts, abdomen and pelvic organs, as well as cervical cytology and relevant laboratory tests.

#### **2. Information for Patients**

See patient labeling.

#### **3. Hypocalcemia**

Estrogens should be used with caution in individuals with severe hypocalcemia because this condition may be aggravated.

#### **4. Drug Interactions**

##### **Changes in contraceptive effectiveness associated with co-administration of other products:**

##### **a. Anti-infective agents and anticonvulsants**

Contraceptive effectiveness may be reduced when hormonal contraceptives are co-administered with antibiotics, anticonvulsants, and other drugs that increase the metabolism of contraceptive steroids.<sup>72</sup> This could result in unintended pregnancy or breakthrough bleeding. Some examples include rifampin, barbiturates, phenylbutazone, phenytoin, carbamazepine, felbamate, oxcarbazepine, topiramate, and griseofulvin.

##### **b. Anti-HIV protease inhibitors**

Several of the anti-HIV protease inhibitors have been studied with co-administration of oral combination hormonal contraceptives; significant changes (increase and decrease) in the plasma levels of the estrogen and progestin have been noted in some cases. The safety and efficacy of OC products may be affected with co-administration of anti-HIV protease inhibitors. Health care providers should refer to the label of the individual anti-HIV protease inhibitors for further drug-drug interaction information.

##### **c. Herbal products**

Herbal products containing St. John's Wort (*hypericum perforatum*) may induce hepatic enzymes (cytochrome P450) and p-glycoprotein transporter and may reduce the effectiveness of contraceptive steroids. This may also result in breakthrough bleeding.

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### **330 Increase in plasma levels of estradiol associated with co-administered drugs:**

331  
332 Co-administration of atorvastatin and certain OCs containing ethinyl estradiol increase AUC values  
333 for ethinyl estradiol by approximately 20%. Ascorbic acid and acetaminophen may increase plasma  
334 ethinyl estradiol levels, possibly by inhibition of conjugation. CYP 3A4 inhibitors such as  
335 itraconazole or ketoconazole may increase plasma hormone levels.

### **337 Changes in plasma levels of co-administered drugs:**

338  
339 Combination hormonal contraceptives containing some synthetic estrogens (e.g., ethinyl estradiol)  
340 may inhibit the metabolism of other compounds. Increased plasma concentrations of cyclosporin,  
341 prednisolone, and theophylline have been reported with concomitant administration of OCs.  
342 Decreased plasma concentrations of acetaminophen and increased clearance of temazepam, salicylic  
343 acid, morphine and clofibrac acid, due to induction of conjugation have been noted when these  
344 drugs were administered with OCs.

## **346 5. Interactions with Laboratory Tests**

347  
348 Certain endocrine and liver function tests and blood components may be affected by OCs:

- 349
- 350 a. Increased prothrombin and factors VII, VIII, IX, and X; decreased antithrombin 3; increased  
351 norepinephrine-induced platelet aggregability.
  - 352
  - 353 b. Increased thyroid binding globulin (TBG) leading to increased circulating total thyroid  
354 hormone, as measured by protein-bound iodine (PBI), T4 by column or by  
355 radioimmunoassay. Free T3 resin uptake is decreased, reflecting the elevated TBG, free T4  
356 concentration is unaltered. Patients dependent on thyroid hormone replacement therapy who  
357 are also receiving estrogens may require increased doses of their thyroid replacement  
358 therapy.
  - 359
  - 360 c. Other binding proteins may be elevated in serum.
  - 361
  - 362 d. Sex hormone binding globulins are increased and result in elevated levels of total circulating  
363 sex steroids; however, free or biologically active levels either decrease or remain unchanged.
  - 364
  - 365 e. Triglycerides may be increased and levels of various other lipids and lipoproteins may be  
366 affected.
  - 367
  - 368 f. Glucose tolerance may be decreased.

## **370 6. Carcinogenesis, Mutagenesis, Impairment of Fertility**

371  
372 See CONTRAINDICATIONS and WARNINGS (subsection 2. **Carcinoma of the Breast  
373 and Cervix**). *If the OC contains a new progestin or estrogen, data on animal carcinogenicity,  
374 mutagenicity, and return to fertility should be placed here.*

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375

### 376 **7. Pregnancy**

377

378 There appears to be little or no increased risk of birth defects in women who have used OCs  
379 inadvertently during early pregnancy.<sup>73,74</sup> *However, if any component of the drug product is*  
380 *associated with birth defects, add a statement about the types of defects, estimated frequency, the*  
381 *associated doses, and the gestational age of exposure, if known.*

382

383 *If the OC contains a new progestin or estrogen, a statement that summarizes what is known about*  
384 *pregnancy risk should be placed here, followed by a summary of the animal/human data.*

385

### 386 **8. Nursing Mothers**

387

388 Small amounts of OC steroids have been identified in the milk of nursing mothers. In addition, OCs  
389 given in the postpartum period may interfere with lactation by decreasing the quantity and quality of  
390 breast milk. If possible, the nursing mother should be advised to use other forms of contraception  
391 until she has weaned her child.

392

### 393 **9. Pediatric Use**

394

395 Safety and efficacy are expected to be the same for postpubertal adolescents and adult women. OCs  
396 are not indicated before menarche.

397

### 398 **10. Geriatric Use**

399

400 OCs have not been studied in postmenopausal women and are not indicated in this population.

401

## 402 **ADVERSE EXPERIENCES**

403

404 The most serious adverse reactions associated with the use of OCs are in the WARNINGS and  
405 PRECAUTIONS sections.

406

407 Other side effects commonly reported by OC users are:

408

- Nausea
- Breast tenderness
- Headaches

411

412 The following adverse reactions may occur less frequently:

413

- Acne
- Decreased libido
- Dizziness
- Fluid retention
- Increased cervical ectopia

414

415

416

417

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- 418 • Melasma
- 419 • Mood changes and depression
- 420 • Ocular effects, including decreased tolerability to contact lenses
- 421 • Vaginal candidiasis
- 422 • Vomiting and other gastrointestinal symptoms (e.g., bloating)
- 423 • Weight changes

424  
425 It is not always clear whether these side effects are caused by OCs and, if so, whether the  
426 estrogen and/or the progestin is responsible. These side effects are most common in the first 1 to  
427 3 pill cycles.

428 *Manufacturers should add additional details regarding adverse experiences and cycle control*  
429 *unique to the product.*

### **POSSIBLE HEALTH BENEFITS**

430  
431  
432  
433 Possible benefits associated with OC use beyond lowering of risk of becoming pregnant include the  
434 following effects on menses:

- 435
- 436 • More regular
- 437 • Less blood loss
- 438 • Less dysmenorrhea
- 439

### **OVERDOSAGE**

440  
441  
442 There have been no reports of serious ill effects from overdose, including ingestion by children.  
443 Overdose may cause nausea and withdrawal bleeding.

### **DOSAGE AND ADMINISTRATION**

444  
445  
446  
447 To achieve maximum contraceptive effectiveness, OCs must be taken as directed. One tablet is  
448 taken at about the same time every day. Single missed pills should be taken as soon as  
449 remembered. For detailed instructions, see the patient labeling that is printed below.

450  
451 OCs may be started 3 to 4 weeks postpartum in women who do not breast feed. When OCs are  
452 used during the postpartum period, the increased risk of thromboembolic disease associated with  
453 the postpartum period must be considered.<sup>14</sup> The possibility of ovulation and conception before  
454 starting OCs should also be considered.<sup>15</sup>

455

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456           **HOW SUPPLIED**

457

458    *Manufacturer to provide information on available dosage forms, potency, color, and packaging.*

459

460    *Manufacturer to include statement such as "Keep out of reach of children."*

461

462           **STORAGE**

463

464    *Manufacturer to provide information on pill storage.*

465

466           **REFERENCES**

467

468    *Supplied upon request.*

469

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470 **III. PATIENT LABELING**

471  
472  
473

**Guide for Using (*OC name*)**

474  
475

**WARNING TO WOMEN WHO SMOKE**

476  
477  
478  
479  
480

Do not use (*OC name*) if you smoke cigarettes and are over 35 years old. Smoking increases your risk of serious side effects from birth control pills, including death from heart attack, blood clots, or stroke. The risk increases with age and the number of cigarettes you smoke.

481  
482  
483

**Birth control pills help to lower the chances of becoming pregnant. They do not protect against HIV infection (AIDS) and other sexually transmitted diseases.**

484  
485

**WHAT IS (*OC NAME*)?**

486  
487  
488

(*OC name*) is a birth control pill. It contains two hormones, an estrogen called (*name of estrogen*), and a progestin called (*name of progestin*).

489  
490  
491

**HOW WELL DOES (*OC NAME*) WORK?**

492  
493  
494  
495  
496

Your chance of getting pregnant depends on how well you follow the directions for taking your birth control pills. The more carefully you follow the directions, the less chance you have of getting pregnant.

497  
498

In clinical studies, about (*insert whole number here*) out of 100 women got pregnant during the first year that they used (*insert *OC name* here*).

499  
500  
501

The following table shows how the birth control pill compares with some other methods of birth control. The numbers are estimates of the number of women out of 100 women who become pregnant in 1 year of use.<sup>2</sup>

502  
503  
504  
505  
506

---

<sup>2</sup> The estimates for drugs and devices come from clinical trial data reviewed by the Food and Drug Administration. The IUDs include the levonorgestrel IUD and the copper IUD. The estimates for sterilization and spermicides come from the medical literature.



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Number of women out of 100 who become pregnant in 1 year	Fewer Pregnancies	Birth Control Method
Fewer than 1	↑	Sterilization, implants, intrauterine device (IUD), injection
1	↑	<b>Birth control pills</b> , skin patch, vaginal ring with hormones
15	↓	Condom, diaphragm
25 or more	↓	Spermicides
	More Pregnancies	

507

### 508 **HOW DO I TAKE (OC NAME)?**

509

510 *Consider the instructions given to women during clinical trials when crafting the text for this*  
511 *section. To minimize errors, all OC instructions should be similar, but some differences are*  
512 *inevitable because of the diversity of OCs.*

513

514 *To improve clarity, place the instructions for only one brand and regimen in the patient label for*  
515 *a given birth control pill. For example, package only 21-day pill instructions with 21-day pills,*  
516 *and only 28-day pill instructions with 28-day pills.*

517

518 *Insert illustration of pill pack, direction in which pills are taken, and other labeling that might*  
519 *make the directions clearer, such as which pills are active and which are inactive.*

520 *The sample answers below apply to an imaginary birth control pill named Brand X, a 28-day*  
521 *pack with 21 active pills. In the Brand X clinical trials, women were told to start the first pack*  
522 *on day 1 of their menstrual periods. Brand X instructions do not include Sunday Start*  
523 *instructions because Sunday Start was not studied in the clinical trials.*

524

525 If you have regular periods, take the first pill of the first pack on the first day of your period. If  
526 you are not having regular periods, talk with your health care provider about when to start your  
527 birth control pill.

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528  
529 Take one pill about the same time every day. Taking a pill every day must become a habit.  
530

531 When you finish a pill pack, start the next pack on the following day so you are always taking  
532 one pill a day, whether or not you are having your period. You are more likely to get pregnant if  
533 you start the next pack late or miss any pills.  
534

535 Look at the picture of your pill pack. There are 21 active (*insert color here*) pills that contain  
536 hormones and 7 inactive (*insert color here*) pills that do not contain hormones. You are most  
537 likely to have your period during the time you are taking the inactive pills.  
538

### **WHAT SHOULD I DO IF I MISS ANY BIRTH CONTROL PILLS?**

540  
541 *As noted in the preceding question, consider the instructions given to women during clinical*  
542 *trials when crafting the text for this section. The sample answers for Brand X follow.*  
543

544 Use a backup birth control method such as condoms or spermicide for 7 days after you miss any  
545 of the active (*insert color here*) pills.  
546

547 If you miss 1 active (*insert color here*) pill take it as soon as you remember. Take the next pill at  
548 your regular time. You may take 2 pills in 1 day.  
549

550 If you miss 2 active (*insert color here*) pills in a row in week 1 or week 2 of your pack, take 2  
551 pills as soon as you remember and 2 pills the next day. Then take 1 pill a day until you finish the  
552 pack.  
553

554 If you miss 2 active (*insert color here*) pills in a row in week 3 of your pack, throw out the rest  
555 of the pack and start a new pack that same day. You may not have your period this month.  
556 However, if you miss 2 periods in a row, call your health care provider to check for pregnancy.  
557

558 If you miss 3 or more active (*insert color here*) pills in a row during the first 3 weeks, throw out  
559 the rest of the pack and start a new pack that same day. Call your health care provider for further  
560 advice.  
561

562 If you forget any of the (*insert color here*) inactive pills, throw away the pills you missed and  
563 continue to take one pill a day. You do not need a backup method.  
564

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### 565 **WHO SHOULD NOT TAKE (OC NAME)?**

566  
567 Birth control pills are safe for most women. However, taking birth control pills can cause  
568 serious health problems, especially for women with certain conditions. Do not take (*name of*  
569 *OC*) if you have:

- 570
- 571 • Ever had breast cancer or any cancer that is sensitive to hormones
  - 572 • Liver disease, including liver tumors
  - 573 • Unexplained bleeding from your vagina
  - 574 • Ever had blood clots in your arms, legs, or lungs
  - 575 • Ever had a stroke
  - 576 • Ever had a heart attack or chest pains
  - 577 • Certain heart valve problems or heart rhythm abnormalities that can cause blood clots to
  - 578 form in the heart
  - 579 • An inherited problem with your blood that makes it clot more than normal
  - 580 • High blood pressure that medicine can't control
  - 581 • Diabetes with kidney, eye, or blood vessel damage
  - 582 • Severe migraine headaches

583  
584 Also, do not take birth control pills if you:

- 585
- 586 • Smoke and are over 35 years old
  - 587 • Are pregnant
  - 588 • Are allergic to anything in (*OC*)

589  
590 *If applicable, the following statement is inserted here: The risks for serious blood clots may be*  
591 *greater with desogestrel-containing pills such as (name of OC) than with certain other birth*  
592 *control pills.*

593  
594 Birth control pills may not be a good choice for you if you have ever had jaundice (yellowing of  
595 the skin or eyes) caused by pregnancy, also called cholestasis of pregnancy.

### 596 **WHAT ELSE SHOULD I KNOW ABOUT TAKING (OC NAME)?**

597  
598  
599 Do not skip any pills, even if you do not have sex often.

600

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601 If you miss a period, you could be pregnant. However, some women miss periods or have light  
602 periods on birth control pills, even when they are not pregnant. Contact your health care  
603 provider for advice if you:

- 604
- 605 • Think you are pregnant
- 606 • Miss 1 period and have not taken your birth control pills according to directions
- 607 • Miss 2 periods
- 608

609 Birth control pills should not be taken during pregnancy. However, birth control pills taken by  
610 accident during pregnancy do not seem to cause birth defects. *If the OC contains a new*  
611 *progestin or estrogen, note that fact and summarize what is known about pregnancy risk here. If*  
612 *any component of the drug product is associated with birth defects, add a statement about the*  
613 *types of defects, estimated frequency, the associated doses, and the gestational age of exposure,*  
614 *if known.*

615

616 You should consider another birth control method if you are breast-feeding because birth control  
617 pills may decrease the amount and quality of your milk. A small amount of the pill's hormones  
618 are passed on to your baby in your milk.

619

620 If you need laboratory tests, tell your health care provider that you are taking birth control pills.  
621 Birth control pills may affect some blood tests.

622

623 Tell your health care provider about all medicines and herbal products that you take. Some  
624 medicines and herbal products may make birth control pills less effective. Some examples are  
625 rifampin, medicines used for epilepsy (such as barbiturates, topiramate, carbamazepine, and  
626 phenytoin), phenylbutazone, certain medicines used to treat HIV or AIDS, certain antibiotics,  
627 and the herbal product St. John's Wort. Consider using another birth control method when you  
628 take medicines that may make birth control pills less effective.

629

630 If you have vomiting or diarrhea, your birth control pills may not work as well. Use another  
631 birth control method, like condoms, until you check with your health care provider.

### **WHAT ARE COMMON SIDE EFFECTS OF BIRTH CONTROL PILLS?**

632

633 The most common side effects of birth control pills are:

- 634
- 635
- 636
- 637 • Nausea
- 638 • Breast tenderness
- 639 • Headache
- 640 • Bleeding between menstrual periods
- 641

642 These side effects are usually mild and may disappear with time.

643

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644 Less common side effects are:

645

- 646 • Bloating or fluid retention.
- 647 • Darkening of the skin, especially on the face. This problem may be related to the
- 648 darkening of the skin that sometimes happens during pregnancy.
- 649 • High blood sugar, especially in women who already have diabetes.
- 650 • High triglycerides (high fat levels in the blood).
- 651 • Depression, especially if you have had depression in the past. Call your health care
- 652 provider immediately if you have any thoughts of harming yourself.
- 653 • Weight changes.

654

655 This is not a complete list of possible side effects. Talk to your health care provider if you  
656 develop any side effects that concern you.

657

658 No serious problems have been reported from a birth control pill overdose, even when  
659 accidentally taken by children.

660

### **WHAT ARE THE MOST SERIOUS RISKS OF TAKING BIRTH CONTROL PILLS?**

662

663 Like pregnancy, birth control pills increase the risk of serious blood clots. It is possible to die  
664 from a problem caused by a blood clot, such as a heart attack or a stroke. Some examples of  
665 serious blood clots are blood clots in the:

666

- 667 • Legs (thrombophlebitis)
- 668 • Lungs (pulmonary embolus)
- 669 • Eyes (blindness)
- 670 • Heart (heart attack)
- 671 • Brain (stroke)

672

673 A few women who take birth control pills may get

674

- 675 • Rare cancerous or noncancerous liver tumors
- 676 • Gallbladder problems
- 677 • High blood pressure

678

679

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### **680 Call your health care provider right away if you have:**

681

- 682 • Persistent pain in the calf (lower leg)
- 683 • Sudden shortness of breath
- 684 • Sudden blindness, partial or complete
- 685 • Severe pain in your chest
- 686 • Sudden, severe headache
- 687 • Weakness or numbness in an arm or leg, or trouble speaking
- 688 • Yellowing of the skin or eyeballs

689

### **690 DO BIRTH CONTROL PILLS CAUSE CANCER?**

691

692 Birth control pills do not seem to cause breast cancer. However, if you have breast cancer now,  
693 or have had it in the past, do not use birth control pills because some breast cancers are sensitive  
694 to hormones.

695

696 Women who use birth control pills may have a slightly higher chance of getting cervical cancer.  
697 However, this may be due to other reasons such as having more sexual partners.

698

699

### **700 WHAT IF I WANT TO BECOME PREGNANT?**

701

702 Consider a visit with your health care provider for a pre-pregnancy checkup before you stop  
703 taking the pill. Your health care provider may advise you to wait for your first regular period  
704 before you try to become pregnant. A daily dose of the vitamin called folic acid is recommended  
705 for all women who are planning a pregnancy.

706

### **707 ARE THERE OTHER BENEFITS OF THE BIRTH CONTROL PILL?**

708

709 Yes. Your menstrual periods may become:

710

- 711 • More regular
- 712 • Lighter
- 713 • Less painful

714

715

716

717

718

---

### **General Advice about (*OC name*)**

719

720 Your health care provider prescribed (*OC name*) for you. Please do not share (*OC name*) with  
721 anyone else. Keep (*OC name*) out of the reach of children.

722

723 Birth control pills are sometimes prescribed for reasons other than those listed in your Guide. If  
724 you have concerns or questions, ask your health care provider. You may also ask your health  
725 care provider for a more detailed label written for medical professionals.

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726  
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728  
729  
730  
731  
732  
733

*List the name and place of business of the manufacturer, packer, or distributor of OC here.*

*Write the date of the most recent revision of the Guide here.*

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<sup>1</sup> Schwingl PJ, Ory HW, and Visness CM. Estimates of the risk of cardiovascular death attributable to low-dose oral contraceptives in the United States. *Am J Obstet Gynecol* 1999; 180:241-249

<sup>2</sup> Stadel BV. Oral contraceptives and cardiovascular disease. (Pt.1). *N Engl J Med* 1981; 305:612-618

<sup>3</sup> Stadel BV. Oral contraceptives and cardiovascular disease. (Pt.2). *N Engl J Med* 1981; 305:672-677

<sup>4</sup> Inman WH, Vessey MP. Investigation of death from pulmonary, coronary, and cerebral thrombosis and embolism in women of child-bearing age. *Br Med J* 1968; 2(5599):193-199

<sup>5</sup> Maguire MG, Tonascia J, Sartwell PE, Stolley PD, Tockman MS. Increased risk of thrombosis due to oral contraceptives: a further report. *Am J Epidemiol* 1979; 110(2):188-195

<sup>6</sup> Petitti DB, Wingerd J, Pellegrin F, Ramacharan S. Risk of vascular disease in women: smoking, oral contraceptives, noncontraceptive estrogens, and other factors. *JAMA* 1979; 242:1150-1154

<sup>7</sup> Vessey MP, Doll R. Investigation of relation between use of oral contraceptives and thromboembolic disease. *Br Med J* 1968; 2(5599):199-205

<sup>8</sup> Vessey MP, Doll R. Investigation of relation between use of oral contraceptives and thromboembolic disease. A further report. *Br Med J* 1969; 2(658):651-657

<sup>9</sup> Porter JB, Hunter JR, Danielson DA, Jick H, Stergachis A. Oral contraceptives and non-fatal vascular disease-recent experience. *Obstet Gynecol* 1982; 59(3):299-302

<sup>10</sup> Vessey M, Doll R, Peto R, Johnson B, Wiggins P. A long-term follow-up study of women using different methods of contraception: an interim report. *J Biosocial Sci* 1976; 8:375-427

<sup>11</sup> Royal College of General Practitioners: Oral Contraceptives, venous thrombosis, and varicose veins. *J Royal Coll Gen Pract* 1978; 28:393-399

<sup>12</sup> Guillebaud, J. Surgery and the pill. *Br Med J* 1985; 29:498-499

<sup>13</sup> Robinson GE, Burren T, Mackie IJ, Bounds W, Walshek, et al. Changes in haemostasis after stopping the combined contraceptive pill: implications for major surgery. *Br Med J* 1991;302: 269-271

<sup>14</sup> Dahlman T, Hellgren M, Blombach M. Changes in blood coagulation and fibrinolysis in the normal puerperium. *Gynecol Obstet Invest* 1985; 20:37-44

<sup>15</sup> Gray RH, Campbell OM, Zacur HA, Labbok MH, MacRae SL. Postpartum return of ovarian activity in nonbreastfeeding women monitored by urinary assays. *J Clin Endocrin Metabol* 1987; 64(4):645-650

<sup>16</sup> Jaais F, Habib, ZA. Unilateral superior ophthalmic vein thrombosis in a user of oral contraceptives. *Med J Malaysia* 1994; 49:416-418

## ***Contains Nonbinding Recommendations***

*Draft — Not for Implementation*

- 
- <sup>17</sup> Leong KC, Tan PL. Central retinal vein thrombosis in a woman on contraceptive pills. *Singapore Med J* 1974; 15:156-157
- <sup>18</sup> Varga M. Recent experience on the ophthalmologic complications of oral contraceptives. *Ann Ophthalmol* 1976; 8:925-934
- <sup>19</sup> WHO Collaborative Study of Cardiovascular Disease and Steroid Hormone Contraception. Acute myocardial infarction and combined oral contraceptives: results of an international multicentre case-control study. *Lancet* 1997; 349:1202-1209
- <sup>20</sup> Vandembroucke JP, Koster T, Briet E, Teitsma PH, Bertina RM, Rosendaal FR. Increased risk of venous thrombosis in oral-contraceptive users who are carriers of factor V Leiden mutation. *Lancet* 1994; 334:1453-1457
- <sup>21</sup> Adam SA, Thorogood M. Oral contraception and myocardial infarction revisited: the effects of new preparations and prescribing patterns. *Br J Obstet Gynaecol* 1981; 88:838-845
- <sup>22</sup> Mann JI, Inman WH. Oral contraceptives and death from myocardial infarction. *Br Med J* 1975; 2(5965):245-248
- <sup>23</sup> Mann JI, Vessey MP, Thorogood M, Doll R. Myocardial infarction in young women with special reference to oral contraceptive practice. *Br Med J* 1975; 2(5959):241-245
- <sup>24</sup> Royal College of General Practitioners' Oral Contraception Study. Further analyses of mortality in oral contraceptive users. *Lancet* 1981; 1:541-546.
- <sup>25</sup> Slone D, Shapiro S, Kaufman DW, Rosenberg L, Miettinen OS, Stolley PD. Risk of myocardial infarction in relation to current and discontinued use of oral contraceptives. *N Engl J Med* 1981; 305:420-424
- <sup>26</sup> Vessey MP. Female hormones and vascular disease-an epidemiological overview. *Br J Fam Plann* 1980; 6(Supplement):1-12
- <sup>27</sup> Russell-Briefel RG, Ezzati TM, Fulwood R, Perlman JA, Murphy RS. Cardiovascular risk status and oral contraceptive use, United States 1976-80. *Prevent Med* 1986; 15:352-362
- <sup>28</sup> Goldbaum GM, Kendrick JS, Hogelin GC, Gentry EM. The relative impact of smoking and oral contraceptive use on women in the United States. *JAMA* 1987; 258:1339-1342
- <sup>29</sup> Schwingl, PJ, Ory HW, Visness CM. Estimates of the risk of cardiovascular death attributable to low-dose oral contraceptives in the United States. *Am J Obstet Gynecol* 1999; 180:241-249
- <sup>30</sup> Knopp RH. Arteriosclerosis risk: the roles of oral contraceptives and postmenopausal estrogens. *J Reprod Med* 1986; 31(9) (Supplement):913-921
- <sup>31</sup> Collaborative Group for the Study of Stroke in Young Women. Oral contraception and increased risk of cerebral ischemia or thrombosis. *N Engl J Med* 1973; 288:871-878
- <sup>32</sup> Petitti DB, Wingerd J. Use of oral contraceptives, cigarette smoking, and risk of subarachnoid hemorrhage. *Lancet* 1978; 2:234-236
- <sup>33</sup> Inman WH. Oral contraceptives and fatal subarachnoid hemorrhage. *Br Med J* 1979; 2(6203):1468-1470



## ***Contains Nonbinding Recommendations***

*Draft — Not for Implementation*

- 
- <sup>34</sup> Collaborative Group for the Study of Stroke in Young Women. Oral Contraceptives and stroke in young women: associated risk factors. *JAMA* 1975; 231:718-722
- <sup>35</sup> Inman WH, Vessey MP, Westerholm B, Engelund A. Thromboembolic disease and the steroidal content of oral contraceptives. A report to the Committee on Safety of Drugs. *Br Med J* 1970; 2:203-209
- <sup>36</sup> Meade TW, Greenberg G, Thompson SG. Progestogens and cardiovascular reactions associated with oral contraceptives and a comparison of the safety of 50- and 35-microgram oestrogen preparations. *Br Med J* 1980; 280(6224):1157-1161
- <sup>37</sup> Kay CR. Progestogens and arterial disease--evidence from the Royal College of General Practitioners' Study. *Am J Obstet Gynecol* 1982; 142:762-765
- <sup>38</sup> Krauss RM, Roy S, Mishell DR, Casagrande J, Pike MC. Effects of two low-dose oral contraceptives on serum lipids and lipoproteins: differential changes in high-density lipoprotein subclasses. *Am J Obstet Gynecol* 1983; 145:446-452
- <sup>39</sup> Wahl P, Walden C, Knopp R, Hoover J, Wallace R, et al. Effect of estrogen/progestin potency on lipid/lipoprotein cholesterol. *N Engl J Med* 1983; 308:862-867
- <sup>40</sup> Wynn V, Niththyanathan R. The effect of progestin in combined oral contraceptives on serum lipids with special reference to high-density lipoproteins. *Am J Obstet Gynecol* 1982;142:766-771
- <sup>41</sup> Collaborative Group on Hormonal Factors in Breast Cancer. Breast cancer and hormonal contraceptives: collaborative reanalysis of individual data on 53,297 women with breast cancer and 100,239 women without breast cancer from 54 epidemiological studies. *Lancet* 1996; 347:1713-1727
- <sup>42</sup> Marchbanks PA, McDonald JA, Wilson HG, Folger SG, Madel MG, et al. Oral contraceptives and the risk of breast cancer. *N Engl J Med* 2002; 346:2025-2032
- <sup>43</sup> Vessey MP, Lawless M, McPherson K, Yeates D. Neoplasia of the cervix uteri and contraception: a possible adverse effect of the pill. *Lancet* 1983; 2:930
- <sup>44</sup> Brinton LA, Huggins GR, Lehman HF, Malli K, Savitz DA, et al. Long-term use of oral contraceptives and risk of invasive cervical cancer. *Int J Cancer* 1986; 38:339-344
- <sup>45</sup> WHO Collaborative Study of Neoplasia and Steroid Contraceptives. Invasive cervical cancer and combined oral contraceptives. *Br Med J* 1985; 290:961-965
- <sup>46</sup> Moreno V, Bosch FX, Munoz N, Meijer CJLM, Shah KV, et al. Effect of oral contraceptives on risk of cervical cancer in women with human papillomavirus infections: the IARC multicentric case-control study. *Lancet* 2002; 359:1085-1092
- <sup>47</sup> Rooks JB, Ory HW, Ishak KG, Strauss LT, Greenspan JR, et al. Epidemiology of hepatocellular adenoma: the role of oral contraceptive use. *JAMA* 1979; 242:644-648
- <sup>48</sup> Bein NN, Goldsmith HS. Recurrent massive hemorrhage from benign hepatic tumors secondary to oral contraceptives. *Br J Surg* 1977; 64:433-435
- <sup>49</sup> Klatskin G. Hepatic tumors: possible relationship to use of oral contraceptives. *Gastroenterology* 1977; 73:386-394
- <sup>50</sup> Henderson BE, Preston-Martin S, Edmondson HA, Peters RL, Pike MC. Hepatocellular carcinoma and oral contraceptives. *Br J Cancer* 1983; 48:437-440

## *Contains Nonbinding Recommendations*

*Draft — Not for Implementation*

---

- <sup>51</sup> Neuberger J, Forman D, Doll R, Williams R. Oral contraceptives and hepatocellular carcinoma. *Br Med J* 1986; 292:1355-1357
- <sup>52</sup> Forman D, Vincent TJ, Doll R, Cancer of the liver and oral contraceptives. *Br Med J* 1986; 292:1357-1361
- <sup>53</sup> Palmer JR, Rosenberg L, Kaufman DW, Warshauer ME, Stolley P, et al. Oral contraceptive use and liver cancer. *Am J Epidemiol* 1989; 130:878-882
- <sup>54</sup> Lindberg MC. Hepatobiliary complications of oral contraceptives. *J of Gen Intern Med* 1992; 7:199-209
- <sup>55</sup> Thijs C, Knipschild P. Oral contraceptives and the risk of gallbladder disease: a meta-analysis. *Am J Public Health* 1993; 83:1113-1120
- <sup>56</sup> Vessey M, Painter R. Oral contraceptive use and benign gallbladder disease; revisited. *Contracept Rep* 1994; 50:167-73
- <sup>57</sup> Grodstein F, Colditz GA, Hunter DJ, Manson JE, Willett WC, et al. A prospective study of symptomatic gallstones in women: relation with oral contraceptives and other risk factors. *Obstet Gynecol* 1994; 84:207-214
- <sup>58</sup> Boston Collaborative Drug Surveillance Program. Oral contraceptives and venous thromboembolic disease, surgically confirmed gallbladder disease, and breast tumors. *Lancet* 1973; 1:1399-1404
- <sup>59</sup> Layde PM, Vessey MP, Yeates D. Risk of gallbladder disease: a cohort study of young women attending family planning clinics. *J Epidemiol Community Health* 1982; 36:274-278
- <sup>60</sup> Rome Group for Epidemiology and Prevention of Cholelithiasis (GREPCO): Prevalence of gallstone disease in an Italian adult female population. *Am J Epidemiol* 1984; 119:796-805
- <sup>61</sup> Storm BL, Tamragouri RT, Morse ML, Lazar EL, West SL, et al. Oral contraceptives and other risk factors for gallbladder disease. *Clin Pharmacol Ther* 1986; 39:335-341
- <sup>62</sup> Wynn V, Godsland I. Effects of oral contraceptives on carbohydrate metabolism. *J Reprod Med* 1986; 31(9)(Supplement):892-897
- <sup>63</sup> Wynn V, Adams PW, Godsland IF, Melrose J, Niththyananthan R, et al. Comparison of effects of different combined oral contraceptive formulations on carbohydrate and lipid metabolism. *Lancet* 1979; 1:1045-1049
- <sup>64</sup> Perlman JA, Roussel-Briefel RG, Ezzati TM, Lieberknecht G. Oral glucose tolerance and the potency of oral contraceptive progestogens. *J Chronic Dis* 1985; 38:857-864
- <sup>65</sup> Knopp RH, LaRosa JC, Burkman RT Jr. Contraception and dyslipidemia. *Am J Obstet Gynecol* 1993;168:1994-2005
- <sup>66</sup> Improving access to quality care in family planning: Medical eligibility criteria for contraceptive use. Second Edition. Geneva: WHO, Family and Reproductive Health, 2000
- <sup>67</sup> Laragh AJ. Oral contraceptives--induced hypertension--nine years later. *Am J Obstet Gynecol* 1976; 126:141-147

## ***Contains Nonbinding Recommendations***

*Draft — Not for Implementation*

---

<sup>68</sup> Ramcharan S, Peritz E, Pellegrin FA, Williams WT. Incidence of hypertension in the Walnut Creek Contraceptive Drug Study cohort. In Pharmacology of steroid contraceptive drugs. Garattini S, Berendes HW. Eds. New York, Raven Press, 1977; pp. 277-288, (Monographs of the Mario Negri Institute for Pharmacological Research Milan)

<sup>69</sup> Royal College of General Practitioners' Oral Contraception Study. Effect on hypertension and benign breast disease of progestogen component in combined oral contraceptives. *Lancet* 1977; 1:624

<sup>70</sup> Fisch IR, Frank J. Oral contraceptives and blood pressure. *JAMA* 1977; 237:2499-2503

<sup>71</sup> Layde PM, Beral V. Further analyses of mortality in oral contraceptive users; Royal College of General Practitioners' Oral Contraception Study (Table 5). *Lancet* 1981; 1:541-546

<sup>72</sup> Stockley I. Interactions with oral contraceptives. *J Pharm* 1976; 216:140-143

<sup>73</sup> Briggs GG, Freeman RK, Yaffe SJ. Oral Contraceptives. In *Drugs in pregnancy and lactation: a reference guide to fetal and neonatal risk*. Fifth Edition. Maryland: Williams & Wilkins, 1998, pp. 805-807

<sup>74</sup> Reprotox®. Oral Contraceptives. From summary updated based on a complete literature search in February, 2001. <http://www.tomescps.com/DATA/RX/RX1162.HTM>