

# LEVONORGESTREL ETHINYL ESTRADIOL



**NORDETTE®**  
**150 mcg/30 mcg Tablet**

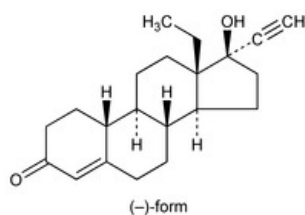
## 1.0 PHARMACOLOGIC CATEGORY

Hormonal Contraceptive

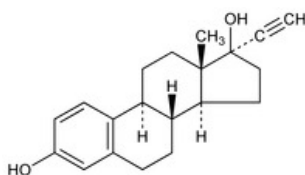
## 2.0 DESCRIPTION

This product contains Levonorgestrel and Ethinyl estradiol as its active pharmaceutical ingredients.

Levonorgestrel is synthetic progesterone, usually used in combination with estrogen as oral contraceptive. Its chemical name is (–) – 13-Ethyl-17-hydroxy-18,19-dinorpregn-4-en-20-yn-3-one, with chemical formula  $C_{21}H_{28}O_2$  and molecular weight of 312.44.



Ethinyl estradiol is a semi-synthetic alkylated estradiol, usually used in combination with progesterone as oral contraceptive. Its chemical name is (17 $\alpha$ )-19-Norpregna-1,3,5(10)-trien-20-yne-3,17-diol, with chemical formula  $C_{20}H_{24}O_2$  and molecular weight of 296.39.



Levonorgestrel and Ethinyl estradiol is a white, shiny tablet with a smooth surface.

## 3.0 FORMULATION/COMPOSITION

Each tablet contains:

Levonorgestrel ----- 150 mcg  
Ethinyl estradiol ----- 30 mcg

## **4.0 CLINICAL PARTICULARS**

### **4.1 Therapeutic Indications**

For the prevention of pregnancy.

Combined Oral Contraceptive (COC) products such as Levonorgestrel/Ethinyl estradiol (Nordette) should be used only when medically indicated.

### **4.2 Dosage and Method of Administration**

#### **How to take Levonorgestrel/Ethinyl estradiol (Nordette)**

Tablets 1-21 contain active ingredients (active tablets).

Tablets must be taken in the order directed on the package every day at about the same time. One active tablet is to be taken daily for 21 consecutive days, then followed by a 7-day tablet-free interval. Each subsequent pack is started on the day after the tablet-free interval. A withdrawal bleed usually starts on days 2-3, after the last active tablet and may not have finished before the next pack is started.

#### **How to start Levonorgestrel/Ethinyl estradiol (Nordette)**

##### ***No hormonal contraceptive use within the preceding month***

The user should begin taking Levonorgestrel/Ethinyl estradiol (Nordette) on Day 1 of her natural menstrual cycle (i.e., the first day of menstrual bleeding). Beginning Levonorgestrel/Ethinyl estradiol (Nordette) on days 2-7 of the menstrual cycle (e.g., Sunday start) is allowed; however, a nonhormonal back-up method of birth control (e.g., condoms, spermicide) is recommended during the first 7 days of Levonorgestrel/Ethinyl estradiol (Nordette) use.

##### ***Switching from another COC***

Preferably, Levonorgestrel/Ethinyl estradiol (Nordette) use should begin the day after the last active tablet of the previous COC pack has been taken, but no later than the day following the usual tablet-free or inactive tablet interval of the previous COC.

##### ***Switching from a progestin-only method of birth control (pill, implant, intrauterine device [IUD], injection)***

- The user may discontinue use of a progestin-only pill on any day; use of Levonorgestrel/Ethinyl estradiol (Nordette) should begin the following day.
- Levonorgestrel/Ethinyl estradiol (Nordette) use should begin on the same day that a progestin-only implant or a progestin-only IUD is removed.
- Levonorgestrel/Ethinyl estradiol (Nordette) use should begin on the day that the next progestin-only injection is scheduled.

In each of these situations, the user should be advised to use a nonhormonal back-up method of birth control during the first 7 days of

Levonorgestrel/Ethinyl estradiol (Nordette) use.

### ***Following first-trimester abortion***

Levonorgestrel/Ethinyl estradiol (Nordette) use may begin immediately. Additional contraceptive measures are not needed.

### ***Postpartum***

Because the immediate postpartum period is associated with an increased risk of thromboembolism, Levonorgestrel/Ethinyl estradiol (Nordette) use should begin no sooner than the 28<sup>th</sup> postpartum day following either delivery in the nonlactating mother or second-trimester abortion. The woman should be advised to use a nonhormonal back-up method of birth control during the first 7 days of Levonorgestrel/Ethinyl estradiol (Nordette) use. However, if intercourse has already occurred, pregnancy must be ruled out before Levonorgestrel/Ethinyl estradiol (Nordette) use is begun; otherwise, the woman must wait until her first menstrual period before beginning of Levonorgestrel/Ethinyl estradiol (Nordette) use (see sections **4.4. Special Warnings and Precautions for Use** and **4.6 Fertility, Pregnancy and Lactation**).

### **Management of missed tablets**

Contraceptive protection may be reduced if active tablets are missed, particularly if the missing of tablets extends the tablet-free interval.

- If one active tablet is missed, but is remembered within 12 hours of the usual dose, it should be taken as soon as it is remembered. Subsequent tablets should be taken at the usual time.
- If one active tablet is missed and is remembered more than 12 hours after the usual dose or if two or more active tablets are missed, contraceptive protection may be reduced. The last missed tablet should be taken as soon as it is remembered, which may result in the user taking two tablets on the same day. Subsequent tablets should be taken at the usual time. A nonhormonal back-up method of birth control must be used for the next 7 days.

If the user takes the last active tablet before the 7-day interval (during which use of a nonhormonal back-up method of birth control is required) has ended, she must begin a new pack immediately; there should be no tablet-free interval between packs. This prevents an extended break in the tablet-taking interval, thereby reducing the risk of escape ovulation. The user is unlikely to have a withdrawal bleed until all tablets in the new pack are taken, although she may experience spotting or breakthrough bleeding on tablet-taking days. If the user does not have a withdrawal bleed after all tablets in the new pack are taken, pregnancy must be ruled out before tablet taking is resumed.

### **Alternative Management of Missed Tablets**

- If one active tablet is missed, it should be taken as soon as it is remembered. Subsequent tablets should be taken at the usual time.

- If two consecutive active tablets are missed during week 1 or week 2, two tablets should be taken on both the day remembered and the following day. Subsequent tablets should be taken at the usual time. A nonhormonal back-up method of birth control must be used for the next 7 days.
- If two consecutive active tablets are missed during week 3 or if three or more consecutive active tablets are missed during weeks 1-3, the following apply:
  - Day 1 starters should discard any tablets remaining in the current pack and start a new pack the same day.
  - Sunday starters should continue taking one tablet every day until the following Sunday. On Sunday, any tablets remaining in the current pack should be discarded, and a new pack should be started the same day.
  - Both Day 1 and Sunday starters must use a nonhormonal back-up method of birth control for the next 7 days. The user may not have a withdrawal bleed until all tablets in the new pack have been taken. If the user does not have a withdrawal bleed after all tablets in the new pack have been taken, pregnancy must be ruled out before tablet-taking is resumed.

#### **Advice in case of vomiting and/or diarrhea**

If vomiting or diarrhea occurs within 4 hours after tablet-taking, tablet absorption may be incomplete. Use of tablets from a back-up pack is required, as outlined below. Refer to recommendations for *Management of missed tablets* (see section **4.2. Dosage and Method of Administration, Management of missed tablets**).

The user must take the needed active tablet(s) from a back-up pack.

#### **How to delay a period**

To delay a menstrual period, the user should skip the tablet-free interval and immediately begin a new pack of Levonorgestrel/Ethinyl estradiol (Nordette). The delay may be continued for as long as desired up until all the tablets in the new pack are taken. During the delay, the user may experience breakthrough bleeding or spotting. Regular intake of Levonorgestrel/Ethinyl estradiol (Nordette) should be resumed after the usual 7-day tablet-free interval.

### **4.3 Contraindications**

COCs must not be used in women with any of the following conditions:

- Deep vein thrombosis (current or history)
- Thromboembolism (current or history)
- Cerebrovascular or coronary artery disease
- Thrombogenic valvulopathies
- Thrombogenic rhythm disorders

- Hereditary or acquired thrombophilias
- Headache with focal neurological symptoms, such as aura
- Diabetes with vascular involvement
- Uncontrolled hypertension
- Known or suspected carcinoma of the breast, or other known or suspected estrogen-dependent neoplasia
- Hepatic adenomas or carcinomas or active liver disease, as long as liver function has not returned to normal
- Undiagnosed vaginal bleeding
- Pancreatitis associated with severe hypertriglyceridemia (current or history)
- Known or suspected pregnancy
- Hypersensitivity to the active ingredients Levonorgestrel and Ethinyl estradiol or any of the inactive ingredients such as lactose, corn starch, povidone, magnesium stearate, talc, sucrose, macrogol, calcium carbonate, white wax, wax carnauba.

COCs are contraindicated for concomitant use with certain anti-viral hepatitis C virus (HCV) medicinal products such as ombitasvir, paritaprevir, ritonavir and dasabuvir (see sections **4.4 Special Warnings and Precautions for Use, *Hepatic neoplasia/Liver disease/Hepatitis C*** and **4.5 Interaction with Other Medicinal Products and Other Forms of Interaction**).

#### **4.4 Special Warnings and Precautions for Use**

##### **Special Warnings**

Cigarette smoking increases the risk of serious cardiovascular adverse reactions from COC use. This risk increases with age and with the extent of smoking (in epidemiology studies, smoking 15 or more cigarettes per day was associated with a significantly increased risk), and is quite marked in women over 35 years of age. Women who use COCs should be strongly advised not to smoke.

##### ***Venous and arterial thrombosis and thromboembolism***

Use of COCs is associated with an increased risk of venous and arterial thrombotic and thromboembolic events.

Minimizing exposure to estrogens and progestins is in keeping with good principles of therapeutics. For any particular estrogen/progestin combination, the dosage regimen prescribed should be one which contains the least amount of estrogen and progestin that is compatible with a low failure rate and the needs of the individual patient.

New acceptors of COCs should be started on preparations containing less than 50 µg of estrogen.

##### ***Venous thrombosis and thromboembolism***

Use of COCs increases the risk of venous thrombotic and thromboembolic events. Reported events include deep venous thrombosis and pulmonary

embolism. For information on retinal vascular thrombosis (see section **4.4 Special Warnings and Precautions for Use, *Ocular lesions***)

The use of any COC carries an increased risk of venous thrombotic and thromboembolic events compared with no use. The excess risk is highest during the first year a woman ever uses a CoC. This increased risk is less than the risk of venous thrombotic and thromboembolic events associated with pregnancy which is estimated as 60 cases per 100,000 women-years. Venous thromboembolism is fatal in 1% to 2% of cases.

Epidemiological studies have shown that the incidence of venous thromboembolism in users of low-estrogen oral contraceptives (<50 mcg ethinyl estradiol) ranges from about 20 to 40 cases per 100,000 women-years; this risk estimate varies according to the progestin. This compares with 5 to 10 cases per 100,000 women-years for non-users.

The risk of venous thrombotic and thromboembolic events is further increased in women with conditions predisposing for venous thrombosis and thromboembolism. Caution must be exercised when prescribing COCs for such women.

**Examples of predisposing conditions for venous thrombosis and thromboembolism are:**

- obesity
- surgery or trauma with increased risk of thrombosis
- recent delivery or second-trimester abortion
- prolonged immobilization
- increasing age

Further risk factors, which represent contraindications for the use of COCs, are listed in section **4.3 Contraindications**.

The relative risk of postoperative thromboembolic complications has been reported to be increased two- to four-fold with the use of COCs. The relative risk of venous thrombosis in women with predisposing conditions is twice that of women without such conditions. If feasible, COCs should be discontinued:

- for four weeks prior to and for two weeks after elective surgery with increased risk of thrombosis, and
- during prolonged immobilization.

Because the immediate post-partum period is associated with an increased risk of thromboembolism, COC use should begin no sooner than the 28<sup>th</sup> postpartum day following either delivery in a nonlactating woman or second-trimester abortion.

**Arterial thrombosis and thromboembolism**

The use of COCs increases the risk of arterial thrombotic and thromboembolic events. Reported events include myocardial infarction and cerebrovascular events (ischemic and hemorrhagic stroke, transient ischemic attack). For information on retinal vascular thrombosis, (see section **4.4 Special Warnings and Precautions for Use, *Ocular lesions***).

The risk of arterial thrombotic and thromboembolic events is further increased in women with underlying risk factors.

Caution must be exercised when prescribing COCs for women with risk factors for arterial thrombotic and thromboembolic events.

**Examples of risk factors for arterial thrombotic and thromboembolic events:**

- smoking
- hypertension
- hyperlipidemias
- obesity
- increasing age

COC users with migraine (particularly migraine with aura) may be at increased risk of stroke (see section **4.3 Contraindications**).

Further risk factors that represent contraindications for the use of COCs are listed in section **4.3 Contraindications**.

***Ocular lesions***

With use of COCs, there have been reports of retinal vascular thrombosis, which may lead to partial or complete loss of vision. If there are signs or symptoms such as visual changes, onset of proptosis or diplopia, papilledema, or retinal vascular lesions, the COC should be discontinued and the cause immediately evaluated.

***Blood pressure***

Increases in blood pressure have been reported in women taking COCs.

In women with hypertension, a history of hypertension or hypertension-related diseases (including certain renal diseases), another method of birth control may be preferable. If COCs are used in such cases, close monitoring is recommended; if a significant increase in blood pressure occurs, COCs should be discontinued.

Elevated blood pressure associated with COC use will generally return to baseline after stopping COCs, and there appears to be no difference in the occurrence of hypertension among ever- and never-users.

COC use is contraindicated in women with uncontrolled hypertension (see section **4.3 Contraindications**).

***Carcinoma of the reproductive organs***

**Cervical cancer**

The most important risk factor for cervical cancer is persistent human papillomavirus infection.

Some studies suggest that COC use may be associated with an increase in the risk of cervical intraepithelial neoplasia or invasive cervical cancer in some populations of women. For example, the results of one meta-analysis of 24 epidemiological studies indicated that among current users of oral contraceptives, the relative risk of invasive cervical cancer increased with increasing duration of use. The relative risk for 5 or more years' use versus never-use was 1.90 (95% confidence interval 1.69-2.13). The relative risk declined after use ceased and by 10 or more years was not significantly different from that in never-users. However, there continues to be controversy about the extent to which such findings may be due to differences in sexual behavior and other factors. In cases of undiagnosed abnormal genital bleeding, adequate diagnostic measures are indicated.

### **Breast cancer**

Established risk factors for the development of breast cancer include increasing age, family history, obesity, nulliparity, and late age for first full-term pregnancy.

A meta-analysis from 54 epidemiological studies reported that there is a slightly increased relative risk (1.24) of having breast cancer diagnosed in women who are using COCs compared to never-users. The increased risk gradually disappears during the course of the 10 years after cessation of COC use. These studies do not provide evidence for causation. The observed pattern of increased risk of breast cancer diagnosis may be due to earlier detection of breast cancer in COC users (due to more regular clinical monitoring), the biological effects of COCs, or a combination of both. Because breast cancer is rare in women under 40 years of age, the excess number of breast cancer diagnoses in current and recent COC users is small in relation to the lifetime risk of breast cancer. Breast cancers diagnosed in ever-users tend to be less advanced clinically than the cancers diagnosed in never-users.

### **Hepatic neoplasia/Liver disease/Hepatitis C**

In very rare cases, hepatic adenomas, and in extremely rare cases, hepatocellular carcinoma may be associated with COC use. The risk appears to increase with duration of COC use. Rupture of hepatic adenomas may cause death through intra-abdominal hemorrhage.

Women with a history of COC-related cholestasis and women who develop cholestasis during pregnancy are more likely to develop cholestasis with COC use. Such patients who use COCs should be carefully monitored, and COC use should be discontinued if cholestasis recurs.

Hepatocellular injury has been reported with COC use. Early identification of drug-related hepatocellular injury can decrease the severity of hepatotoxicity when the drug is discontinued. If hepatocellular injury is diagnosed, patients should stop their COC, use a non-hormonal form of birth control and consult their doctor.

Acute or chronic disturbances of liver function may necessitate the discontinuation of COC use until liver function has returned to normal.



### **Hepatitis C**

During clinical trials with patients treated for HCV infections with the medicinal products containing ombitasvir/paritaprevir/ritonavir and dasabuvir with or without ribavirin, transaminase (ALT) elevations higher than 5 times the upper limit of normal (ULN) occurred significantly more frequently in women using ethinylestradiol-containing medications such as COCs (see sections **4.3 Contraindications** and **4.5 Interaction with Other Medicinal Products and Other Forms of Interaction**).

### **Migraine/Headache**

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

Women with migraine (particularly migraine with aura) who take COCs may be at increased risk of stroke (see section **4.3 Contraindications**).

### **Immune**

#### **Angioedema**

Exogenous estrogens may induce or exacerbate symptoms of angioedema, particularly in women with hereditary angioedema.

### **Precautions**

#### ***Medical examinations***

Before COC use is initiated, a thorough individual history, family history, and physical examination, including a blood pressure determination, should be performed. An examination of the breasts, liver, extremities, and pelvic organs should also be conducted. A Papanicolaou (Pap) smear should be performed if the patient has been sexually active or if it is otherwise indicated.

Such medical examinations should be repeated at least annually during the use of COCs.

The first follow-up visit should occur 3 months after COCs are prescribed. At each annual visit, examination should include those procedures that were performed at the initial visit, as described previously.

#### ***Carbohydrate and lipid effects***

Glucose intolerance has been reported in COC users. Women with impaired glucose tolerance or diabetes mellitus who use COCs should be carefully monitored (see section **4.3 Contraindication**).

A small proportion of women will have adverse lipid changes while taking OCs. Nonhormonal birth control should be considered in women with uncontrolled dyslipidemias. Persistent hypertriglyceridemia may occur in a small proportion of COC users. Elevations of plasma triglycerides in COC users may lead to pancreatitis and other complications.

Estrogens increase serum high-density lipoproteins (HDL cholesterol), whereas a decline in serum HDL cholesterol has been reported with many progestational agents. Some progestins may elevate low-density lipoprotein (LDL) levels and may render the control of hyperlipidemias more difficult. The net effect of a COC depends on the balance achieved between doses of estrogen and progestin and the nature and absolute amount of progestins used in the contraceptive. The amount of both hormones should be considered in the choice of a COC.

Women who are being treated for hyperlipidemias should be followed closely if they elect to use COCs.

### ***Genital bleeding***

In some women, withdrawal bleeding may not occur during the tablet-free interval. If the COC has not been taken according to directions prior to the first missed withdrawal bleed, or if two consecutive withdrawal bleeds are missed, tablet-taking should be discontinued and a nonhormonal back-up method of birth control should be used until the possibility of pregnancy is excluded.

Breakthrough bleeding/spotting may occur in women taking COCs, especially during the first three months of use. The type and dose of progestin may be important. If this bleeding persists or recurs, nonhormonal causes should be considered and adequate diagnostic measures may be indicated to rule out pregnancy, infection, malignancy, or other conditions. If pathology has been excluded, continued use of the COC or a change to another formulation may solve the problem.

Some women may encounter post-pill amenorrhea (possibly with anovulation) or oligomenorrhea, especially when such a condition was preexistent.

### ***Depression***

Women with a history of depression who use COCs should be carefully observed and the drug discontinued if depression recurs to a serious degree. Patients becoming significantly depressed while taking COCs should stop the medication and use an alternative method of birth control in an attempt to determine whether the symptom is drug-related.

### ***Others***

Patients should be counselled that this product does not protect against HIV infection (AIDS) or other sexually transmitted diseases.

Diarrhea and/or vomiting may reduce hormone absorption resulting in decreased serum concentrations (see sections **4.2 Dosage and Method of Administration**, ***Advice in case of vomiting*** and **4.5 Interaction with Other Drugs and Other Forms of Interaction**).

## Use in Special Population

### *Use in pediatric population*

Safety and efficacy of COCs have been established in women of reproductive age. Use of these products before menarche is not indicated.

### *Use in geriatric population*

COCs are not indicated for use in postmenopausal women.

## 4.5 Interaction with Other Medicinal Products and Other Forms of Interaction

Interactions between ethinyl estradiol (EE) and other substances may lead to decreased or increased serum EE concentrations, respectively.

Concomitant use with the medicinal products containing ombitasvir/paritaprevir/ritonavir and dasabuvir, with or without ribavirin may increase the risk of ALT elevations (see sections **4.3 Contraindications** and **4.4 Special Warnings and Precautions for Use, *Hepatic neoplasia/Liver disease/Hepatitis C***).

Therefore, COC users must switch to an alternative method of contraception (e.g., progestagen-only contraception or non-hormonal methods) prior to starting therapy with anti-viral HCV medicinal products such as ombitasvir, paritaprevir, ritonavir, dasabuvir. COCs can be restarted 2 weeks following completion of treatment with an anti-viral HCV medicinal product.

Decreased EE serum concentrations may cause an increased incidence of breakthrough bleeding and menstrual irregularities and may possibly reduce efficacy of the COC.

During concomitant use of EE-containing products and substances that may lead to decreased EE serum concentrations, it is recommended that a non-hormonal back-up method of birth control (such as condoms and spermicide) be used in addition to the regular intake of Levonorgestrel/Ethinyl estradiol (Nordette). In the case of prolonged use of such substances, COCs should not be considered the primary contraceptive.

After discontinuation of substances that may lead to decreased EE serum concentrations, use of a non-hormonal back-up method is recommended for at least 7 days. Longer use of a back-up method is advisable after discontinuation of substances that have led to induction of hepatic microsomal enzymes, resulting in decreased EE serum concentrations. It may sometimes take several weeks until enzyme induction has completely subsided, depending on dosage, duration of use and rate of elimination of the inducing substance.

Examples of substances that may decrease serum EE concentrations:

- Any substance that reduces gastrointestinal transit time and, therefore, EE absorption

- Substances that induce hepatic microsomal enzymes, such as rifampicin, rifabutin, barbiturates, primidone, phenylbutazone, phenytoin, dexamethasone, griseofulvin, topiramate, some protease inhibitors, modafinil
- *Hypericum perforatum*, also known as St. John's wort, and ritonavir\* (possibly by induction of hepatic microsomal enzymes)

Examples of substances that may increase serum EE concentrations:

- Atorvastatin
- Competitive inhibitors for sulfation in the gastrointestinal wall, such as ascorbic acid (Vitamin C) and paracetamol (acetaminophen)
- Substances that inhibit cytochrome P450 3A4 isoenzymes such as indinavir, fluconazole, and troleandomycin

Troleandomycin may increase the risk of intrahepatic cholestasis during co-administration with COCs.

EE may interfere with the metabolism of other drugs by inhibiting hepatic microsomal enzymes, or by inducing hepatic drug conjugation, particularly glucuronidation. Accordingly, plasma and tissue concentrations may either be increased (e.g., cyclosporine, theophylline, corticosteroids) or decreased (e.g., lamotrigine).

In patients treated with flunarizine, use of oral contraceptives has been reported to increase the risk of galactorrhea.

There have been reports of pregnancy when COCs were co-administered with certain antibiotics (e.g., ampicillin and other penicillins, tetracyclines).

The prescribing information of concomitant medications should be consulted to identify potential interactions.

\*Although ritonavir is an inhibitor of cytochrome P450 3A4, treatment with ritonavir has been shown to decrease EE serum concentrations (see above).

### **Effects on laboratory parameters:**

The use of COCs may cause certain physiologic changes that may be reflected in the results of certain laboratory tests, including:

- biochemical parameters of liver function (including a decrease in bilirubin and alkaline phosphatase), thyroid function (increased total T3 and T4 due to increased TBG, decreased free T3 resin uptake), adrenal function (increased plasma cortisol, increased cortisol binding globulin, decreased dehydroepiandrosterone sulfate (DHEAS), and renal function (increased plasma creatinine and creatinine clearance)
- plasma levels of (carrier) proteins, such as corticosteroid-binding globulin and lipid/lipoprotein fractions
- parameters of carbohydrate metabolism
- parameters of coagulation and fibrinolysis
- decreased serum folate levels

## 4.6 Fertility, Pregnancy and Lactation

### Pregnancy

If pregnancy occurs during treatment with COCs, further intake should be discontinued. There is no conclusive evidence that the estrogen and progestin contained in the COC will damage the developing child if conception accidentally occurs during COC use (see section **4.3 Contraindications**).

### Lactation

Small amounts of contraceptive steroids and/or metabolites have been identified in the milk of nursing mothers and a few adverse effects on the child have been reported, including jaundice and breast enlargement. Lactation may be affected by COCs, as COCs may reduce the quantity and change the composition of breast milk.

The use of COCs is generally not recommended until the nursing mother has completely weaned her child.

## 4.7 Effects on Ability to Drive and Use Machines

None known.

## 4.8 Undesirable Effects

Adverse reactions are listed in the Table per CIOMS frequency categories:

Very Common:	≥10%
Common:	≥1% and <10%
Uncommon:	≥0.1% and <1%
Rare:	≥0.01% and <0.1%
Very Rare:	<0.01%

Use of COCs has been associated with increased risk of the following:

- Arterial and venous thrombotic and thromboembolic events, including myocardial infarction, stroke, transient ischemic attack, venous thrombosis and pulmonary embolism
- Cervical intraepithelial neoplasia and cervical cancer
- Breast cancer diagnosis
- Benign hepatic tumors (e.g., focal nodular hyperplasia, hepatic adenoma)

See also section **4.4 Special Warnings and Precautions for Use**.

<i>System Organ Class</i>	<i>Adverse Reaction</i>
<b>Infections and Infestations</b>	
Common	Vaginitis, including candidiasis
<b>Neoplasms benign, malignant, and unspecified</b>	
Very Rare	Hepatocellular carcinomas

<i>System Organ Class</i>	<i>Adverse Reaction</i>
<b>Immune system disorders</b>	
Rare	Anaphylactic/anaphylactoid reactions, including very rare cases of urticaria, angioedema, and severe reactions with respiratory and circulatory symptoms
Very Rare	Exacerbation of systemic lupus erythematosus
	Other reactions of possible immunologic origin may be listed under other organ system subheadings.
<b>Metabolism and nutrition disorders</b>	
Uncommon	Changes in appetite (increase or decrease)
Rare	Glucose intolerance
Very Rare	Exacerbation of porphyria
<b>Psychiatric disorders</b>	
Common	Mood changes, including depression; changes in libido
<b>Nervous system disorders</b>	
Very common	Headache, including migraines
Common	Nervousness; dizziness
Very Rare	Exacerbation of chorea
<b>Eye disorders</b>	
Rare	Intolerance to contact lenses
Very Rare	Optic neuritis*; retinal vascular thrombosis
<b>Vascular disorders</b>	
Very Rare	Aggravation of varicose veins
<b>Gastrointestinal disorders</b>	
Common	Nausea; vomiting; abdominal pain
Uncommon	Abdominal cramps; bloating
Very Rare	Pancreatitis; ischemic colitis
Unknown	Inflammatory bowel disease (Crohn's Disease, ulcerative colitis)
<b>Hepato-biliary disorder</b>	
Rare	Cholestatic jaundice
Very Rare	Gallbladder disease, including gallstones**
Unknown	Hepatocellular injury (e.g., hepatitis, hepatic function abnormal)

<i>System Organ Class</i>		<i>Adverse Reaction</i>
<b>Skin and subcutaneous tissue disorders</b>		
	Common	Acne
	Uncommon	Rash; chloasma (melasma), which may persist; hirsutism; alopecia
	Rare	Erythema nodosum
	Very Rare	Erythema multiforme
<b>Renal and urinary disorders</b>		
	Very Rare	Hemolytic uremic syndrome
<b>Reproductive system and breast disorders</b>		
	Very common	Breakthrough bleeding/spotting
	Common	Breast pain, tenderness, enlargement, secretion; dysmenorrhea; change in menstrual flow; change in cervical ectropion and secretion; amenorrhea
<b>General disorders and administration site conditions</b>		
	Common	Fluid retention/edema
<b>Investigations</b>		
	Common	Changes in weight (increase or decrease)
	Uncommon	Increase in blood pressure; changes in serum lipid levels, including hypertriglyceridemia
	Rare	Decrease in serum folate levels***

\* Optic neuritis may lead to partial or complete loss of vision.

\*\* COCs may worsen existing gallbladder disease and may accelerate the development of this disease in previously asymptomatic women.

\*\*\* Serum folate levels may be depressed by COC therapy. This may be of clinical significance if the woman becomes pregnant shortly after discontinuing COCs.

## 4.9 Overdose and Treatment

Symptoms of oral contraceptive overdosage in adults and children may include nausea, vomiting, breast tenderness, dizziness, abdominal pain, drowsiness/fatigue; withdrawal bleeding may occur in females. There is no specific antidote and further treatment of overdose, if necessary, is directed to the symptoms.

## 5.0 PHARMACOLOGICAL PROPERTIES

### 5.1 Pharmacodynamic Properties

#### Mechanism of Action

COCs suppress gonadotropins in a manner that inhibits ovulation, which leads to contraception.

### **Pharmacodynamics, Clinical Efficacy**

When taken consistently and correctly, the probable failure rate of COCs is 0.1% per year; however, the failure rate during typical use is 5% per year for all types of oral contraceptives. The efficacy of most methods of contraception depends upon the reliability with which they are used. Method failure is more likely if COC tablets are missed.

The following non-contraceptive health benefits related to the use of COCs are supported by epidemiological studies that largely utilized COC formulations containing doses exceeding 35 µg of EE or 50 µg of mestranol.

#### Effects on menses

- Improved menstrual cycle regularity
- Decreased blood loss and decreased incidence of iron-deficiency anemia
- Decreased incidence of dysmenorrhea

#### Effects related to inhibition of ovulation

- Decreased incidence of functional ovarian cysts
- Decreased incidence of ectopic pregnancies

#### Other non-contraceptive health benefits

- Decreased incidence of fibroadenomas and fibrocystic disease of the breast
- Decreased incidence of acute pelvic inflammatory disease
- Decreased incidence of endometrial cancer
- Decreased incidence of ovarian cancer
- Decreased severity of acne

## **5.2 Pharmacokinetic Properties**

### **Absorption**

#### EE:

- Rapidly, completely absorbed from the gastrointestinal tract.
- Absolute bioavailability: approximately 40-60%.
- Peak serum concentrations reached within 1-2 hours.

#### LNG:

- Rapidly, completely absorbed from the gastrointestinal tract.
- Absolute bioavailability: approximately 100%.
- Peak serum concentrations reached in about 1 hour.

### **Distribution**

#### EE:

- Highly bound to serum albumin (approximately 98%).
- Induces an increase in the serum concentrations of sex hormone binding globulin (SHBG).



LNG:

- Primarily bound to SHBG and, to a lesser extent, to albumin.
- Only 1-2% of the total serum drug concentration present as free steroid.
- Accumulates during repeated administration, with steady-state conditions reached during the second half of a treatment cycle.

### **Metabolism**

EE:

- Subject to presystemic conjugation (small bowel mucosa, liver) and enterohepatic circulation.
- 2-hydroxylation by cytochrome P450 enzymes is the major oxidative reaction.
- A wide variety of hydroxylated and methylated metabolites formed; present as free metabolites and as conjugates with glucuronides and sulfate.

LNG:

- Most important metabolic pathway: reduction of the  $\Delta^4$ -3-oxo group and hydroxylation at positions  $2\alpha$ ,  $1\beta$ , and  $16\beta$ , followed by conjugation.
- Most of the metabolites that circulate in the blood are sulfates of  $3\alpha,5\beta$ -tetrahydro-levonorgestrel.

### **Elimination**

EE:

- Serum levels decrease in two phases.
- Terminal half-life: approximately 16-18 hours.
- Metabolites excreted to a greater extent in the feces than in the urine.

LNG:

- Terminal disposition phase half-life: approximately 21-26 hours during repeated administration.
- LNG and its metabolites, predominantly in the form of glucuronides, excreted to a greater extent in the urine than in the feces.

## **6.0 PHARMACEUTICAL PARTICULARS**

### **6.1 Shelf Life**

See outer package for expiration date of the product.

### **6.2 Storage Conditions**

Store at temperatures not exceeding 30°C. Protect from light and moisture.

### **6.3 Availability**

Alu/PVC Blister Pack x 21 tablets (Box of 10 blisters).

## **7.0 FDA REGISTRATION NUMBER**

Levonorgestrel 150 mcg/Ethinyl estradiol 30 mcg (Nordette) Tablet: DR-XY23241.

## **8.0 DATE OF FIRST AUTHORIZATION/ RENEWAL OF THE AUTHORIZATION**

Levonorgestrel 150 mcg/Ethinyl estradiol 30 mcg (Nordette) Tablet: 7 July 2003.

**Keep out of reach of children.**

**For suspected adverse drug reaction, report to the FDA: [www.fda.gov.ph](http://www.fda.gov.ph)**

**Seek medical attention immediately at the first sign of any adverse drug reaction.**

**CAUTION:** Foods, Drugs, Devices and Cosmetics Act prohibits dispensing without prescription.

**Manufactured by:**  
**PFIZER IRELAND PHARMACEUTICALS**  
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Revision No.: 3.1 Revision Date: 03 November 2023 Reference: CDS 15.0 / BOH approval with changes Reference Date: 11 February 2019 / 03 November 2023
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