PATIENT & CAREGIVER EDUCATION

Estradiol (Systemic

This information from UpToDate® Lexidrug™ explains what you need to know about this medication, including what it's used for, how to take it, its side effects, and when to call your healthcare provider.

Brand Names: US

Alora; Climara; Delestrogen; Depo-Estradiol; Divigel; Dotti; Elestrin; Estrace [DSC]; Estrogel; Evamist; Femring; Lyllana; Menostar; Minivelle; Vivelle-Dot

Brand Names: Canada

Climara 25; Climara 50; Climara 75; Divigel; Estradot 100; Estradot 25; Estradot 37.5; Estradot 50; Estradot 75; Estrogel; Lupin-Estradiol; Oesclim [DSC]; PMS-Estradiol; SANDOZ Estradiol Derm 100; SANDOZ Estradiol Derm 50; SANDOZ Estradiol Derm 75

Warning
All products:

- The risk of endometrial cancer may be raised with the use of estrogen alone in people who have a uterus. Use of a progestogen along with estrogen may lower the risk. Call your doctor right away if you have unusual vaginal bleeding. If you have a uterus, talk with your doctor about taking a progestogen.

Skin gel and spray:

- Do not let anyone, especially a child, come into contact with the treated area. If they do, have them wash the area of contact with soap and water. Call the doctor if someone has come into contact with the treated area and you notice any unusual signs. This may include signs of unusual sexual development like breast changes in children.

What is this drug used for?

- It is used to prevent soft, brittle bones (osteoporosis) after menopause.
- It is used to treat symptoms of low estrogen levels caused by menopause.

- It is used to add estrogen to the body when the ovaries have been taken out or do not work the right way.
- Rarely, it is used to treat breast or prostate cancers.
- It may be given to you for other reasons. Talk with the doctor.

What do I need to tell my doctor BEFORE I take this drug?

All products:

- If you are allergic to this drug; any part of this drug; or any other drugs, foods, or substances. Tell your doctor about the allergy and what signs you had.
- If you have had any of these health problems: Bleeding disorder, blood clots, a higher risk of having a blood clot, breast cancer, liver problems or liver tumor, heart attack, stroke, or a tumor where estrogen makes it grow.
- If you have unexplained vaginal bleeding.
- If you are pregnant or may be pregnant. Do not take this drug if you are pregnant.

Vaginal ring:

- If you have any of these health problems: Some vaginal problems like narrow vagina or vaginal infection, uterus not in the normal spot, or other health problems that may raise the chance of vaginal irritation, vaginal ulcers, or make it more likely for the vaginal ring to come out.

Ask your doctor if you are not sure.

This is not a list of all drugs or health problems that interact with this drug.

Tell your doctor and pharmacist about all of your drugs (prescription or OTC, natural products, vitamins) and health problems. You must check to make sure that it is safe for you to take this drug with all of your drugs and health problems. Do not start, stop, or change the dose of any drug without checking with your doctor.

What are some things I need to know or do while I take this drug?

All products:

- Tell all of your health care providers that you take this drug. This includes your doctors, nurses, pharmacists, and dentists. This drug may need to be stopped before certain types of surgery as your doctor has told you. If this drug is stopped, your doctor will tell you when to start taking this drug again after your surgery or procedure.
- Do not use estrogen alone or with a progestin to prevent heart disease, heart attack, stroke, or dementia. A study of women taking a certain estrogen alone or with a progestin showed a raised chance of heart attack, stroke, blood clots, breast cancer, or dementia. Not all

estrogen or progestin products and doses were studied. It is not known if the same effects may happen with this drug.

- Talk with your doctor if you will need to be still for long periods of time like long trips, bedrest after surgery, or illness. Not moving for long periods may raise your chance of blood clots.
- If you are allergic to tartrazine (FD&C Yellow No. 5), talk with your doctor. Some products have tartrazine.
- If you have high blood sugar (diabetes), you will need to watch your blood sugar closely.
- High blood pressure has happened with drugs like this one. Have your blood pressure checked as you have been told by your doctor.
- Have your blood work and bone density checked as you have been told by your doctor.
- Be sure to have regular breast exams and gynecology check-ups. You will also need to do breast self-exams as you have been told.
- High triglyceride levels have happened with this drug. Tell your doctor if you have ever had high triglyceride levels.
- This drug may cause dark patches of skin on your face. Avoid sun, sunlamps, and tanning beds. Use sunscreen

and wear clothing and eyewear that protects you from the sun.

- This drug may affect certain lab tests. Tell all of your health care providers and lab workers that you take this drug.
- Use care if you have risks for heart disease. Some of these risks include high blood pressure, high cholesterol, high blood sugar or diabetes, being overweight, or tobacco use. Talk with your doctor about your risks for heart disease.
- If you drink grapefruit juice or eat grapefruit often, talk with your doctor.
- This drug may affect growth in children and teens in some cases. They may need regular growth checks. Talk with the doctor.
- If you are 65 or older, use this drug with care. You could have more side effects.
- Tell your doctor if you are breast-feeding. You will need to talk about any risks to your baby.

Soft, brittle bones (osteoporosis):

- This drug works best when used with calcium/vitamin D and weight-bearing workouts like walking or PT (physical therapy).

- Follow the diet and exercise plan that your doctor told you about.

All skin products:

- Talk with your doctor before you use other drugs or products on your skin. This includes soaps.

Skin gel and spray:

- Check with your doctor about how to use sunscreen with this drug.

Vaginal ring:

- Tell your doctor if you have trouble getting the ring out. Sometimes, the ring has gotten stuck to the vaginal wall and surgery was needed.
- Contact with blood during use may cause the ring to change colors. This will not affect how well this drug works.

What are some side effects that I need to call my doctor about right away?

WARNING/CAUTION: Even though it may be rare, some people may have very bad and sometimes deadly side effects when taking a drug. Tell your doctor or get medical help right away if you have any of the following signs or symptoms that may be related to a very bad side effect:

All products:

- Signs of an allergic reaction, like rash; hives; itching; red, swollen, blistered, or peeling skin with or without fever; wheezing; tightness in the chest or throat; trouble breathing, swallowing, or talking; unusual hoarseness; or swelling of the mouth, face, lips, tongue, or throat.
- Signs of liver problems like dark urine, tiredness, decreased appetite, upset stomach or stomach pain, light-colored stools, throwing up, or yellow skin or eyes.
- Signs of gallbladder problems like pain in the upper right belly area, right shoulder area, or between the shoulder blades; yellow skin or eyes; fever with chills; bloating; or very upset stomach or throwing up.
- Signs of a pancreas problem (pancreatitis) like very bad stomach pain, very bad back pain, or very bad upset stomach or throwing up.
- Signs of high blood pressure like very bad headache or dizziness, passing out, or change in eyesight.
- Signs of high or low calcium levels like bone pain, confusion, constipation, feeling tired, headache, muscle cramps or spasms, numbness or tingling, seizures, upset stomach and throwing up, or weakness.
- Weakness on 1 side of the body, trouble speaking or thinking, change in balance, drooping on one side of the

face, or blurred eyesight.

- Sudden, severe headache or throwing up.
- Eyesight changes or loss, bulging eyes, or change in how contact lenses feel.
- A lump in the breast, breast pain or soreness, or nipple discharge.
- Vaginal itching or discharge.
- Vaginal bleeding that is not normal.
- Depression or other mood changes.
- Memory problems or loss.
- Fever.
- Not able to pass urine or change in how much urine is passed.
- Pain when passing urine.
- This drug may cause you to swell or keep fluid in your body. Tell your doctor if you have swelling, weight gain, or trouble breathing.
- Call your doctor right away if you have signs of a blood clot like chest pain or pressure; coughing up blood; shortness of breath; swelling, warmth, numbness, change of color, or pain in a leg or arm; or trouble speaking or swallowing.

Vaginal ring:

- Toxic shock syndrome (TSS) has happened in a few patients using vaginal rings. TSS is rare, but can be deadly. Tell your doctor right away if you have diarrhea, dizziness or light-headedness, passing out, fever, muscle pain, upset stomach, throwing up, or a sunburn-like rash.

What are some other side effects of this drug?

All drugs may cause side effects. However, many people have no side effects or only have minor side effects. Call your doctor or get medical help if any of these side effects or any other side effects bother you or do not go away:

All products:

- Dizziness or headache.
- Hair loss.
- Upset stomach or throwing up.
- Constipation.
- Stomach pain or cramps.
- Bloating.
- Gas.
- Enlarged breasts.
- Tender breasts.

- Vaginal bleeding or spotting.
- Painful periods.
- Signs of a common cold.
- Nose or throat irritation.
- Weight gain or loss.
- Joint pain.
- Leg cramps.
- Change in sex interest.

Gel, spray, injection, patch, and vaginal ring:

- Irritation where this drug was used.

These are not all of the side effects that may occur. If you have questions about side effects, call your doctor. Call your doctor for medical advice about side effects.

You may report side effects to your national health agency.

You may report side effects to the FDA at 1- 800-332-1088. You may also report side effects at https://www.fda.gov/medwatch.

How is this drug best taken?

Use this drug as ordered by your doctor. Read all information given to you. Follow all instructions closely.

Injection:

- It is given as a shot into a muscle.
- If you will be giving yourself the shot, your doctor or nurse will teach you how to give the shot.
- Do not use if the solution is cloudy, leaking, or has particles.
- This drug is colorless to a faint yellow. Do not use if the solution changes color.
- Throw away needles in a needle/sharp disposal box. Do not reuse needles or other items. When the box is full, follow all local rules for getting rid of it. Talk with a doctor or pharmacist if you have any questions.

Tablets:

- Take this drug at the same time of day.
- There may be days when you will not take this drug.
- Take with or without food. Take with food if it causes an upset stomach.

Skin gel and spray:

- Do not take this drug by mouth. Use on your skin only. Keep out of your mouth, nose, and eyes (may burn).
- Use this drug at the same time of day.
- Wash your hands before and after use.
- Put on clean, dry, healthy skin.
- Certain products are to be put on certain parts of the body. Be sure you know where to put this drug. Read the package insert for more details.
- Do not use on skin that has any problems.
- Do not put on the face, breast, or vagina.
- Some products come in pumps. Some products come in packets. If you are using a pump, you will need to prime it before you use it the first time. Prime the pump as you are told in the package insert.
- Do not have another person put this drug on you. If someone else does put it on you, be sure they wear gloves and do not touch the drug.
- Avoid fire, flames, or smoking until dry.
- Let dry before covering with clothing.
- After putting this drug on, you will need to wait some time before you bathe, shower, or swim. Be sure you

know how long you need to wait. Read the package insert for more details.

- Do not let another person or pet come into contact with the treated area for at least 1 hour after you apply it.

Skin spray:

- Hold container upright and rest plastic cone flat on the skin while spraying.
- If your dose is more than 1 spray, move site with each spray as you have been told.
- Do not rub into skin.

Skin patch:

- Do not take this drug by mouth. Use on your skin only. Keep out of your mouth, nose, and eyes (may burn).
- Use this drug at the same time of day.
- Wash hands before and after use.
- Put patch on clean, dry, healthy skin on the lower belly or upper buttocks. Move the site with each new patch.
- Do not put a patch on the same site for at least 7 days.
- Do not use on skin that has any problems.
- Do not put on the breast.
- Do not put on skin where you have just used creams, oils,

lotions, powder, or other skin products. The patch may not stick as well.

- Put patch on a site without hair.
- Do not put the patch on the waistline.
- Do not put the patch on a site where sitting will make it come off.
- If the patch falls off, put it back on. If you cannot put the patch back on, put on a new one in a different area.
- Wear only one patch at a time.
- After you take off a skin patch, be sure to fold the sticky sides of the patch to each other. Throw away used patches where children and pets cannot get to them.

Vaginal ring:

- Put into the vagina and leave in place for 90 days.
- To use, wash your hands and take ring from the pouch.
- Be sure your hands are dry before you touch this drug.
- Press sides of ring at the same time between thumb and index finger and put folded ring into the vagina.
- Perfect placement is not needed for the ring to work. The ring will not hurt.
- To take out, hook the index finger around the rim or hold rim between index finger and middle finger and pull

out.

- Do not throw the vaginal ring in the toilet.
- Wash hands after use.

What do I do if I miss a dose?

Injection and vaginal ring:

- Call your doctor to find out what to do.

Skin patch:

- Put on a missed patch as soon as you think about it after taking off the old one.

Skin gel and spray:

- Use a missed dose as soon as you think about it.
- If it is less than 12 hours until the next dose, skip the missed dose and go back to your normal time.
- Do not use 2 doses at the same time or extra doses.

Tablets:

- Take a missed dose as soon as you think about it.
- If it is close to the time for your next dose, skip the missed dose and go back to your normal time.
- Do not take 2 doses at the same time or extra doses.

How do I store and/or throw out this drug?

Injection:

- If you need to store this drug at home, talk with your doctor, nurse, or pharmacist about how to store it.

All other products:

- Store at room temperature in a dry place. Do not store in a bathroom.

Skin gel and spray:

- Protect from heat or open flame.
- If you are using a pump, throw away any part not used after labeled number of doses are used.

Skin patch:

- Store in protective pouch until ready for use.

All products:

- Keep all drugs in a safe place. Keep all drugs out of the reach of children and pets.
- Throw away unused or expired drugs. Do not flush down a toilet or pour down a drain unless you are told to do so. Check with your pharmacist if you have questions about the best way to throw out drugs. There may be drug take-back programs in your area.

General drug facts

- If your symptoms or health problems do not get better or if they become worse, call your doctor.
- Do not share your drugs with others and do not take anyone else's drugs.
- Some drugs may have another patient information leaflet. If you have any questions about this drug, please talk with your doctor, nurse, pharmacist, or other health care provider.
- Some drugs may have another patient information leaflet. Check with your pharmacist. If you have any questions about this drug, please talk with your doctor, nurse, pharmacist, or other health care provider.
- If you think there has been an overdose, call your poison control center or get medical care right away. Be ready to tell or show what was taken, how much, and when it happened.

Consumer Information Use and Disclaimer

This generalized information is a limited summary of diagnosis, treatment, and/or medication information. It is not meant to be comprehensive and should be used as a tool to help the user understand and/or assess potential diagnostic and treatment options. It does NOT include all information about conditions, treatments, medications,

side effects, or risks that may apply to a specific patient. It is not intended to be medical advice or a substitute for the medical advice, diagnosis, or treatment of a health care provider based on the health care provider's examination and assessment of a patient's specific and unique circumstances. Patients must speak with a health care provider for complete information about their health, medical questions, and treatment options, including any risks or benefits regarding use of medications. This information does not endorse any treatments or medications as safe, effective, or approved for treating a specific patient. UpToDate, Inc. and its affiliates disclaim any warranty or liability relating to this information or the use thereof. The use of this information is governed by the Terms of Use, available at https://www.wolterskluwer.com/en/know/clinical-effectiveness-terms.

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If you have questions or concerns, contact your healthcare provider. A member of your care team will answer Monday through Friday from 9 a.m. to 5 p.m. Outside those hours, you can leave a message or talk with another MSK provider. There is always a doctor or nurse on call. If you're not sure how to reach your healthcare provider, call 212-639-2000.

For more resources, visit www.mskcc.org/pe to search our virtual library.

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