

# WOMEN and the RISK of BLOOD CLOTS

Nearly 900,000 people are affected by blood clots each year, leading to approximately 100,000 blood clot-related deaths annually. Dangerous blood clots such as *deep-vein thrombosis (DVT)* often form in the veins of a person's arm or leg. If a DVT is left untreated, the clot can break loose and travel to the lungs (*pulmonary embolism [PE]*), which can be life-threatening.

Men have a higher overall risk of thrombosis than women, but women have risks due to pregnancy, birth control, and postmenopausal hormone therapy that men do not. These risks are generally attributed to estrogen, a key ingredient in birth control pills, patches, and rings, and in postmenopausal hormone therapy.

Choices related to family planning, pregnancy, and the treatment of menopausal symptoms can affect a woman's risk for developing a blood clot. This is further increased if a woman has previously experienced a blood clot, has a family history of blood clots, or has been diagnosed with a genetic or acquired clotting disorder. Nearly half of people who experience a DVT do not experience symptoms, so it is important for women to learn the risks associated with blood clots.

Read below for more information about the risk factors for developing a blood clot that are specific to women.

This "Patient Education" tear sheet was produced in collaboration with the National Blood Clot Alliance ([stoptheclot.org](http://stoptheclot.org)).

In both men and women, certain factors increase a person's risk of experiencing a blood clot, including:

- hospitalization
- surgery
- traumatic physical injury
- immobility
- smoking
- obesity
- older age
- family history of clotting disorders

Symptoms of blood clots in the legs or arms include pain and swelling, and skin may be discolored and/or warm to the touch. Symptoms of blood clots in the lungs include chest pain (particularly when taking a deep breath), coughing up blood, shortness of breath, and an accelerated heart rate.

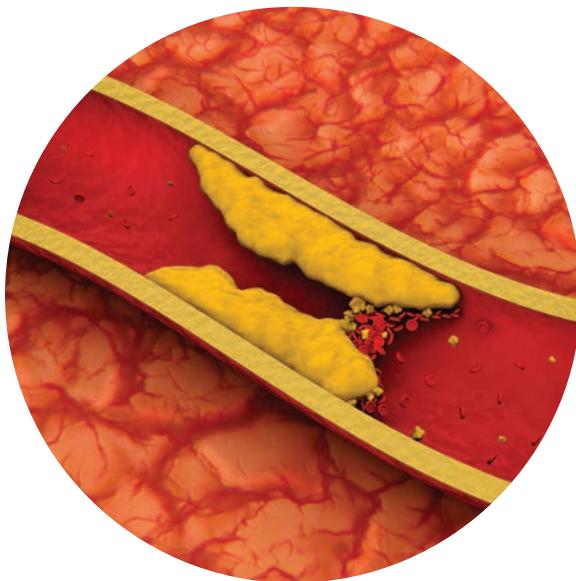
## Birth Control and Family Planning

Birth control methods that contain estrogen (i.e., birth control pills, patches, and rings) and synthetic progesterone (*progestin*) can increase a woman's risk for blood clots because they cause an increase in the level of clotting factors or clotting proteins in a woman's body.

The most common method of birth control in the United States is the birth control pill, and the vast majority of women taking estrogen-containing birth control pills will not experience a blood clot. The absolute risk of developing a blood clot is about 1 in 300 women. Some newer birth control methods, such as patches and rings, pose an even greater risk because the amount of estrogen absorbed from the patches is reported to be 60 percent higher than the amount of estrogen delivered by pills.

Safe birth control methods that do not include estrogen include:

- barrier methods
- spermicides
- progestin implant
- copper intrauterine device (IUD)
- progestin IUD



## Patient Education

**The National Blood Clot Alliance Resources**

The National Blood Clot Alliance (NBCA) is dedicated to advancing the prevention, early diagnosis, and successful treatment of life-threatening blood clots, such as DVT, PE, and clot-provoked stroke. NBCA works on behalf of those who may be susceptible to blood clots, including those with clotting disorders, atrial fibrillation, cancer, traumatic injury, risks related to surgery, lengthy immobility, child birth, and birth control.

For more information on NBCA, visit [stoptheclot.org](http://stoptheclot.org).

For more patient resources on blood clots, visit [stoptheclot.org/learn\\_more/about-clots.htm](http://stoptheclot.org/learn_more/about-clots.htm).

For more information specifically on a woman's risk for blood clots, visit [womenandbloodclots.org](http://womenandbloodclots.org).

- progestin-only pills, which studies show do not increase the risk for blood clots
- tubal ligation or vasectomy for their partner

Women should talk with their doctors about blood clotting risks both before and while taking an estrogen-based birth control method.

Women should also be familiar with their family history of blood clots. The most common inherited disorder leading to blood clots is factor V Leiden, which is typically suspected in individuals who develop blood clots at a young age, who are white with European ancestry, have a family history of clots, or have blood clots in unusual sites.

**Pregnancy and Child Birth**

Though pregnancy does not directly cause blood clots, it does introduce a four-fold increased risk of developing a blood clot. That risk increases to about 20-fold in the weeks immediately following childbirth, and is at its highest – 100-fold – in the first week after the baby is born.

Risk factors for blood clots related to pregnancy and childbirth include hospitalization, surgery, trauma, obesity, smoking, and immobility.

In general, there are three groups of women who are advised to take blood-thinning medication (*anticoagulation*) during pregnancy:

- women who have had a blood clot in the past and are already on blood-thinning medication
- women who have had a blood clot in the past, but are not currently on blood-thinning medication
- women who develop a blood clot during pregnancy

After labor and delivery, women who have not had a blood clot but who have major risk factors also may need anticoagulation for a short period of time. Major risk factors include:

- an inherited blood clotting disorder
- prolonged immobilization, such as bed rest
- smoking
- cancer

- heart failure
- age >60 years

**Anticoagulation Therapy During Pregnancy**

Though oral anticoagulants (such as warfarin, dabigatran, rivaroxaban, and apixaban) are the most commonly prescribed blood thinners, they are not considered safe for the fetus. Women who take blood thinners should contact their doctors immediately upon finding out they are pregnant. The doctor may recommend switching from oral anticoagulants to blood thinning medications that are injected under the skin (*subcutaneous administration*), such as standard or unfractionated heparin and low-molecular-weight heparin (LMWH). These medications do not cross the placenta or enter the bloodstream of the fetus.

**Childbirth While Taking Blood Thinners**

Women are at a higher risk for a blood clot in the six weeks following the baby's birth, but it may be necessary to suspend anticoagulation therapy to minimize postpartum bleeding complications. After delivery, women with clotting disorders should resume anticoagulation therapy (no sooner than 4-6 hours after vaginal delivery or 6-12 hours after Cesarean delivery) and continue taking anticoagulants – either injections or an oral anticoagulant – for at least six weeks post-delivery as the risk for bleeding is reduced. The duration of anticoagulation after this point should be determined by the individual woman's risk. Women can breastfeed while receiving LMWH injections or warfarin, but the safety of newer oral anticoagulants (including dabigatran, apixaban, and rivaroxaban) during breastfeeding has not yet been established.

Women should discuss their potential risk factors with their doctors, and make sure that they take steps to address any risks, including:

- taking any prescribed medications as directed
- avoiding sitting still for prolonged periods of time
- making lifestyle changes, like losing weight and quitting smoking
- exercising regularly

**Treatment of Menopausal Symptoms**

As women approach menopause, they begin to experience menopausal symptoms that are sometimes treated with a hormone therapy, which contains estrogen and can increase the risk of blood clots up to three-fold. Again, the absolute risk of blood clots associated with hormone therapy is 1 in 300 per year.

For women looking to avoid the risk of blood clots related to hormone therapy, the physical effects of menopause – such as mood changes, hot flashes, sleeplessness, and vaginal dryness – can be managed with non-estrogen-containing medications for symptomatic relief.

When entering menopause, women with a history of blood clots should only use hormone therapies containing estrogen or progestin if they also are taking anticoagulation. Women should talk with their doctor about starting hormone therapy and the risks involved. ●

