

A PATIENT RESOURCE GUIDE

Understanding Venous Thromboembolism

Prevention
and Treatment
Guidelines for
Patients

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How to use this workbook

This resource guide provides resources to physicians, hospitals, and patients to increase awareness of who is at risk for deep vein thrombosis (DVT) and pulmonary embolism (PE), what symptoms to look for, what can be done to prevent venous thromboembolism (VTE), and what current treatments are available. This resource provides engaging and easy-to-understand educational tools to help patients manage deep vein thrombosis and avoid pulmonary embolism.

Use the charts and worksheets in each chapter to remember and record important information about your health and lifestyle. There are links to additional resources to offer more support for you and your family.

Guiding Your Way

Throughout this *Patient Resource Guide*, use these interactive features to add to your learning experience:



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Play. Play videos and animations by pressing the play button.



Highlighted Text. Click on any highlighted text (in red) and you will see a definition of that word.



Learning Checks. Check what you have learned throughout this *Guide*.



Help. Click the help button on the Menu Bar to get help using this Patient Resource Guide.



What is venous thromboembolism?



The term venous thromboembolism, or VTE, refers to **deep vein thrombosis (DVT)** and/or the complication of DVT, pulmonary embolism.

A **pulmonary embolism** is a blood clot that develops in a blood vessel elsewhere in the body (most commonly in the leg), travels to an **artery** in the lung and blocks the artery.



What is deep vein thrombosis?

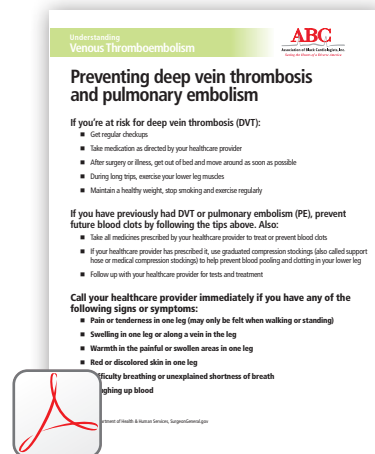
A deep vein thrombosis (DVT) is a blood clot that forms in a deep vein. These **veins** are located near the bones and are surrounded by muscle.

A blood clot, or thrombus, may form in the deep veins as a result of a blood-clotting abnormality, an injury, or prolonged inactivity such as a long airplane ride or bed rest.

A deep vein thrombus can break loose and travel through the bloodstream to the lung. This is called pulmonary embolism and can be dangerous.

A person with deep vein thrombosis may or may not have symptoms. If symptoms are present, they often include tenderness, pain or swelling.

Treatment usually includes the use of blood-thinning medications (**anticoagulants**) that prevent new clots from forming or prevent existing clots from getting larger.



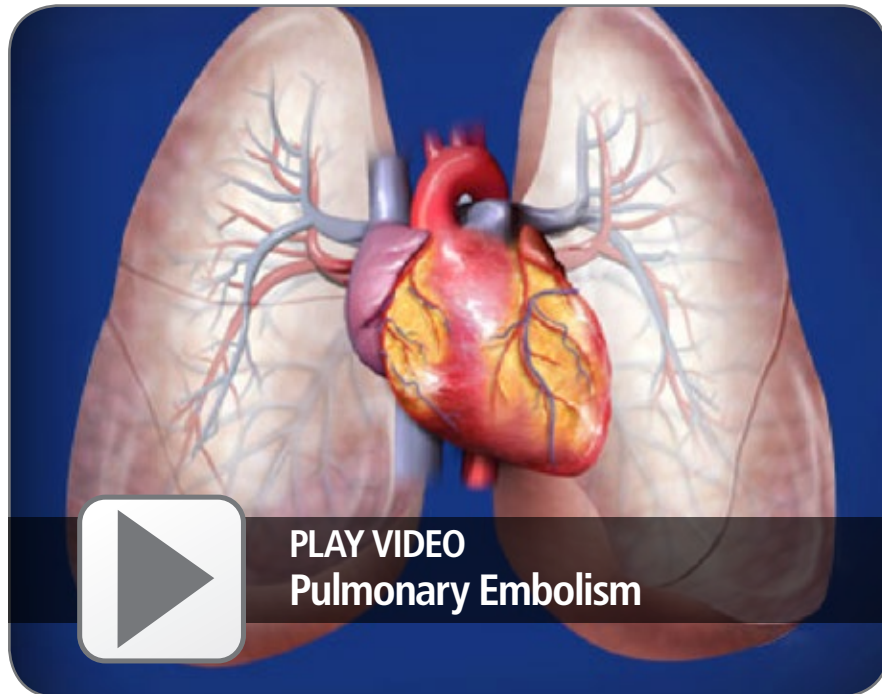
Preventing DVT and Pulmonary Embolism
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What is pulmonary embolism?

A pulmonary embolism (PE) is a **blood clot** (embolism) that forms in a vein and travels through the blood into the lungs. It then lodges in the lungs and blocks blood flow. This forces the heart and lungs to work harder to get oxygen-rich blood out to the rest of the body. In severe cases, the stress this puts on the heart and lungs can cause them to fail.

Most commonly, a PE is the result of deep vein thrombosis.

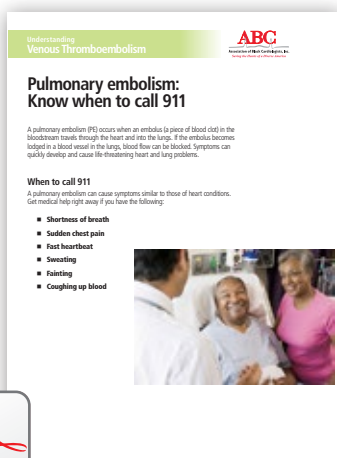


Who is at risk?

Anyone can get deep vein thrombosis. But there are a variety of factors that contribute to the development of the condition. The following risk factors make DVT more likely to occur:

- **Being inactive for a long period** (such as being bedridden due to illness or on a long trip in an airplane or car)
- **Injury to a vein**
- **Family history** of blood clots or having a previous DVT
- **Recent surgery**

Other risk factors include age, pregnancy, smoking, having another vein problem and being overweight. People who have **diabetes**, **high blood pressure** (hypertension) and high **cholesterol** levels are also at risk for DVT.



Pulmonary Embolism: Know When to Call 911

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What are DVT symptoms?

Deep vein thrombosis occurs without symptoms about 50 percent of the time. When symptoms do occur, they may include:

- **Pain, especially deep in the muscle**
- **Swelling**
- **Aching or tenderness**
- **Red or warm skin**

The symptoms of deep vein thrombosis may resemble other medical conditions or problems. Always consult your healthcare provider for a diagnosis.



Preventing DVT

Preventing deep vein thrombosis means improving blood flow back to your heart. Talk to your healthcare provider about a program of regular exercise, which can help. Elevate your legs whenever they feel swollen or heavy.

Follow these tips:

- **Elevate the foot of your bed 5-6 inches using a foam wedge**
- **When you're sitting, wiggle your toes and tighten your calves to keep blood moving**
- **Ask your healthcare provider if you should wear elastic stockings to help with circulation**



If you have any of these DVT symptoms, call your healthcare provider:

- **Swelling, pain, or both, often in one leg**
- **Sudden, continuous pain deep in the muscle**
- **Worsening ache when you are active or when you stand still for a long time**



Learning Check! Click the button to take a short quiz on what you've learned in Chapter 1.

Controlling risk factors



Depending on your risk factors, there are certain things you can do to prevent DVT.

Anticoagulant medications may be given to certain surgical patients to prevent DVT after the risk of surgical bleeding has subsided. Those patients who have had a previous clot should follow the instructions of their healthcare provider.

If you have to sit or recline for long periods, move your lower leg by flexing or bending your knee.



Other preventive measures include:

- **Getting up and moving as soon as possible after surgery or illness**—moving helps prevent clots from forming by stimulating blood circulation
- **Wearing elastic stockings to reduce swelling and promote circulation**
- **Keeping conditions such as diabetes, high blood pressure and high cholesterol under control**

Consult your healthcare provider for proper diagnosis and treatment.



When you travel and must sit for longer than four hours, the National Heart Lung, and Blood Institute suggests that you:

- **Walk up and down the aisles (if traveling by plane or bus)**
- **Stop about every hour and walk a little (if traveling by car)**
- **While sitting, stretch your feet and move your legs**
- **Wear loose clothing**
- **Avoid alcohol**
- **Drink plenty of fluids**



What happens if you're hospitalized?

If you have to be admitted to the hospital to treat your deep vein thrombosis, you may be hospitalized for 5-10 days.

You'll be given anticoagulants (commonly called blood thinners) to control and prevent further clotting. Anticoagulants can be given in pill form, by an IV (**intravenous**) line, or as an injection.

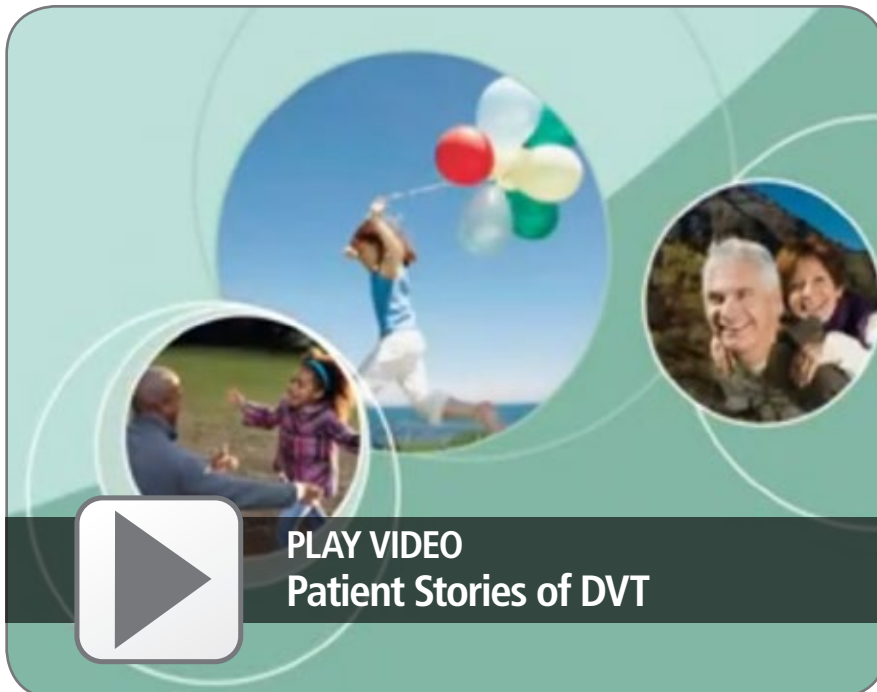
Bed rest may be ordered and your leg elevated to reduce swelling. Before going home, you may be fitted with prescription elastic support stockings. These help prevent ongoing leg swelling that can cause tissue damage.



Special procedures and treatments

Your healthcare provider will determine specific treatment for DVT based on:

- **Your age, overall health and medical history**
- **Extent of the disease**
- **Your signs and symptoms**
- **Your tolerance for specific medications, procedures or therapies**
- **Expectations for the course of the disease**
- **Your opinion or preference**



The goal of treatment is to prevent the clot from growing, to ensure it doesn't break off and travel through the veins to the lungs, and to help reduce the possibility of another blood clot forming.



Treatment may include:

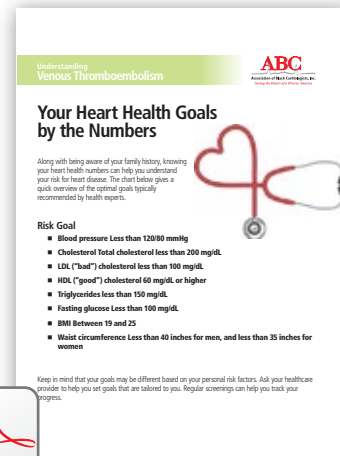
- **Medications.** Various types of medications may be used in the treatment of DVT. Although anticoagulants (blood thinners) don't destroy clots, they may keep the clot from growing and other clots from forming. Treatment with blood thinners may last from three to six months. The most common side effect of blood-thinning medication is bleeding. Bruising or bleeding should be reported to your healthcare provider right away.
- **Thrombolysis.** This procedure is used to dissolve a large clot. A thin tube called a **catheter** is inserted into the affected vein. X-rays are taken of the vein and the clot. Then, clot-dissolving medication is delivered to the clot through the catheter. In some cases, a mechanical device is also used to break up the clot. Although thrombolysis is a very effective treatment for blood clots, it has a small risk for serious bleeding complications.
- **Angioplasty.** This procedure may be used to widen the affected vein and improve blood flow. Narrowing (stenosis) of the vein can block blood flow and make it more likely for a blood clot to form. A catheter with a balloon on the end is inserted into the affected vein. X-rays are used to position the catheter. Once the catheter is in place, the balloon is inflated to widen your vein. In some cases a wire mesh device called a **stent** may also be placed in your vein to help keep it open.
- **Inferior vena cava (IVC) filter.** In some cases, a **vena cava filter** may be inserted via catheter into the vena cava (the large vein which returns blood from the body to the heart) of patients who can't take medication or if blood thinners aren't working. The filter is a kind of "clot catcher." Your healthcare provider may perform this procedure if you have a blood clot in your leg. It may also be done before surgery, if you are at risk for pulmonary embolism.





Managing your anticoagulant medication

- To keep blood from forming clots, oral anticoagulants must be taken at the same time every day. Make this easier to do by always taking your medication at the same mealtime each day.
- While taking anticoagulants, do not use over-the-counter or prescription medications without first checking with your healthcare provider. The combined effect of the drugs may be dangerous.
- You'll also have frequent blood tests—**prothrombin time (PT)** with **international normalized ratio (INR)**—done to monitor how well your medication is controlling clotting. Too much medication may cause bleeding; too little may allow clots to form.



Your Heart Health Goals by the Numbers

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Diabetes



PLAY VIDEO
Diabetes Detective



Learning Check! Click the button to take a short quiz on what you've learned in Chapter 2.

Living a healthier life



Here are a few tips to help you quit smoking, eat better, get more exercise and lose weight. Doing these things will not only help you prevent deep vein thrombosis, they'll help you to feel better about yourself!



To quit smoking:

- **Get medical help.** Ask your healthcare provider for advice on stop-smoking programs and smoking cessation aids.
- **Get support.** Join a support group. Ask for help from your family and friends.
- **Don't give up.** Often it takes several tries to succeed in quitting.
- **Remove the temptation to smoke.** Stick to your decision to quit!



For a heart-healthy diet:

- **Add more vegetables, fruits, whole grains and beans.** These contain fiber, which helps improve cholesterol levels.



- **Reduce salt.** Too much salt (sodium) can raise blood pressure. Packaged and processed foods are often high in sodium.
- **Eat less fat.** A high-fat diet can lead to higher blood cholesterol levels.
- **Choose the right kinds of fat.** Healthier sources of fat include vegetable oils, nuts, seeds and fish. Reduce unhealthy sources of fat, such as meat, cheese, processed foods and deep-fried foods.
- **Read food labels.** Knowing what you're buying can help you make good choices about the foods you eat.



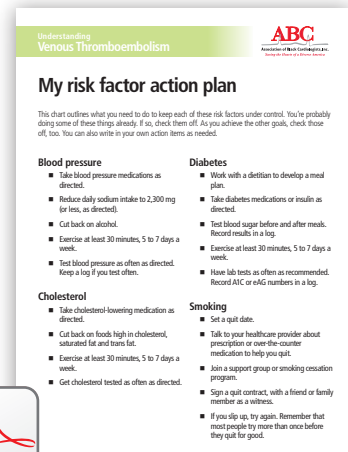
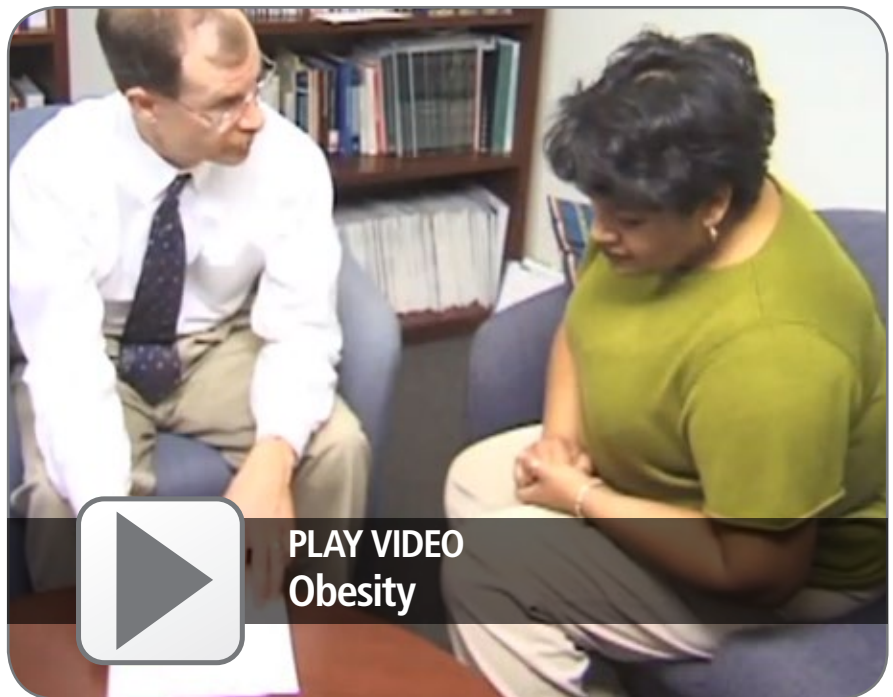
To get started exercising:

- **Talk to your healthcare provider** before starting an exercise program. He or she may order a stress test to assess your condition.
- **Start slowly.** Work up to more vigorous exercise. Aim for at least 30 minutes of moderate exercise most days of the week.
- **Walk as much as you can.** Whenever you get into a car, ask yourself, "Could I walk instead?"
- **Wear shoes that fit and support your feet.** It will make your workout safer and more comfortable.



To lose weight:

- **Reduce portion sizes.** You don't have to give up your favorite foods. But do eat less.
- **Cut out empty calories.** These include added sugar and added fat.
- **Burn calories with exercise.** This helps you reach and maintain a healthy weight.
- **Steer clear of fad diets.** There's no magical solution to weight loss.
- **Weigh yourself weekly.** It will help you see trends better than daily weighing does.



My Risk Factor Action Plan

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Learning Check! Click the button to take a short quiz on what you've learned in Chapter 3.

Resources

American College of Cardiology (ACC)

800-253-4636, ext. 5603

www.acc.org

American Diabetes Association (ADA)

703-549-1500

800-DIABETES

www.diabetes.org

Academy of Nutrition and Dietetics

800-366-1655

www.eatright.org

American Heart Association

800-242-8721

www.heart.org

American Kidney Fund

800-638-8299

www.kidneyfund.org

American Stroke Association

a division of The American Heart Association

888-4STROKE (888-478-7653)

www.StrokeAssociation.org

Association of Black Cardiologists, Inc. (ABC)

800-753-9222

www.abcardio.org

Association of Black Psychologists

301-449-3082

www.abpsi.org

Calorie Control Council

www.caloriecontrol.org

Cardiosmart

www.cardiosmart.org

Centers for Disease Control and Prevention (CDC)

800-232-4636

www.cdc.gov

Clinical Trials

www.clinicaltrials.gov

Million Hearts

www.millionhearts.hhs.gov

National Heart, Lung, and Blood Institute

NHLBI Information Center

301-592-8573

www.nhlbi.nih.gov

National Diabetes Information Clearinghouse (NDIC)

800-860-8747

diabetes.niddk.nih.gov

National Medical Association

202-347-1895

www.nmanet.org

National Stroke Association

800-STROKES (800-787-6537)

www.stroke.org

The Society for Cardiovascular Angiography and Interventions (SCAI)

800-992-7224

www.scai.org



And now, please tell us what you think about this workbook!

We need your suggestions to make sure that this has everything you need to know to manage your health in the best way possible. Go to our online survey

https://www.surveymonkey.com/s/ABC_VTE

and answer just a few questions. It will only take a few minutes of your time.

Thank you for your help!