

# Keeping in circulation



VASCULAR DISEASE  
FOUNDATION

the official newsletter of the Vascular Disease Foundation

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## our mission

The Vascular Disease Foundation's mission is "To reduce the widespread prevalence and affects of vascular diseases by increasing public awareness of the benefits of prevention, prompt diagnosis and comprehensive management and rehabilitation."

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## Deep Vein thrombosis

### What to Know

Deep vein thrombosis, commonly referred to as "DVT", is when a blood clot, or thrombus, develops in the large veins of the legs or higher up in the pelvic area. DVT's may cause no pain, or can be quite painful, but with prompt diagnosis and treatment, the majority are not life threatening. However, a clot that forms in the invisible "deep veins" can be an immediate threat to your life, as compared to clots of the more visible "superficial" veins that are visible below your skin. A clot that forms in these larger, deep veins is more likely to break free and travel through the vein. It is then called an embolus. When an embolus travels from the legs or pelvis to lodge in a lung artery, the condition is known as a "pulmonary embolism", or PE, a potentially fatal condition if not immediately diagnosed and treated.

### What are the Causes of DVT?

Generally, a DVT is caused by a combination of two of three underlying conditions: 1) slow or sluggish blood flow through a major vein, 2) a tendency for a person's blood to clot quickly, and 3) irritation or inflammation of the internal lining of the vein. There are a variety of settings in which this clotting process can occur. First, individuals at bedrest (such as during or after a surgical procedure or medical illness, such as heart attack or stroke), or confined and unable to walk (such as during prolonged air or car travel) are common settings. It can occur in certain families in whom there is a history of parents or siblings who have suffered vein or other clots; or in whom active cancer or its treatment may predispose the blood to clotting. Recent major surgical procedures, especially those associated with hip and knee orthopedic surgery or those requiring prolonged bedrest, also predispose the blood to clotting.

The third condition occurs when a leg vein is injured by a major accident or medical procedure. Also, there are specific medical conditions that may increase your risk of developing a DVT via these three mechanisms, such as congestive heart failure, severe obesity, chronic respiratory failure, a history of smoking, varicose veins, pregnancy and estrogen treatment. If you are concerned that you may be at risk due to any of these conditions, please consult with your physician.

### Who is at Risk?

DVT occurs in about 2 million Americans each year and affects both men and women, all ethnic groups and all social levels. It is seen most often in adults over the age of 40, and more frequently in elderly patients, but can occur at any age. Women in the later stages of pregnancy or around the time of delivery are at increased risk. As noted above, other conditions may increase one's risk, and individuals who smoke and who do not exercise are at increased risk.

### What Are the Symptoms of DVT?

Approximately half of those with a DVT never have recognized symptoms. When symptoms are present, the most common is leg pain and tenderness in the calf muscles, or one may observe swelling or a change in color of one leg to

Continued on page 6

# The Excellence in Care Award

The Vascular Disease Foundation is pleased to announce the first recipients of the “**Vascular Disease Foundation Excellence in Care Award.**” Congratulations to:

## **Charles Kiell, MD**

Dr. Kiell is a vascular surgeon and also serves as medical director for the Wound Treatment Center at Frye Regional Medical Center, Hickory, NC. He was nominated by co-workers who consider themselves lucky that they have a vascular surgeon who “exemplifies outstanding patient care with the levels of his credentials in our community.” He has implemented new patient care policies and procedures and has been the driving force behind our intermittent claudication program. He also has been instrumental in educating the community about the health risks of AAA (abdominal aortic aneurysm). One colleague wrote, “Dr. Kiell is extremely knowledgeable, always on the cutting edge of research and program advancements... his willingness to explore and exhaust all possibilities is only surpassed by his personal care for the individuals he treats.”



## **Christina M. Braun, R.N.**

“Tina” Braun was nominated by fifteen co-workers and patients at the Providence Surgical Care Group in Providence, RI. Tina is the principal coordinator of the Vascular Exercise Program. Besides the exemplary care she shows her patients, she has also written several papers and articles on the value of exercise therapy for intermittent claudication. Her patients speak of her dedication, her depth of knowledge and her sense of humor. As one man wrote, “Tina has provided care and attention far beyond the ‘call of duty’ during my several years in the vascular rehab program. There is no detail too small for her concern... a sick grandchild, offer congratulations or provide a favorite ‘tune’ to exercise with. All of this is in addition to the amazing nursing care she provides.”



You can read additional comments for award recipients on our web site at [www.vdf.org](http://www.vdf.org), click on “Excellence in Care Awards” on our home page.

*To nominate a health care professional for our “Excellence in Care Award,” send us a note or email with a tax-deductible donation telling us who you wish to honor and why they deserve the recognition. Checks or credit card charges of any amount are accepted. Be sure to identify the honoree's name, address and phone number so we can send them their award. Also send us your name and address so we can thank you as well!*

## We Need Your Help!



Summer is a great time to help the Vascular Disease Foundation. Organize your friends, families or social group to sponsor a fundraiser for us! The ideas are endless. You may want to do a walkathon, a golf tournament, bingo, bridge, a potluck or bake sale. Contact us for materials and for ideas and ways to make your ideas a success. You can make a difference.

We'll reward your efforts. We will give a gift to all fundraising events that raise \$150 or more. The gift, an electronic pedometer, can be used as a door prize or to recognize the top fundraiser. We'll also list your event in our newsletter along with any pictures you provide. It's a fun fundraiser that lets you decide what would be fun. Please help the Foundation. We're counting on you!

## IN THE NEWS

### AAAA Information Now on VDF Website! ([www.vdf.org](http://www.vdf.org))

We have just added a new information section to our web site on AAA—abdominal aortic aneurysms. Explore this comprehensive section to find out what the disease is and how it's diagnosed and treated. Comparable to our other disease sections on the site, this information was written and edited by some of the top vascular specialists in the country. We are grateful to Cordis Endovascular for a grant to enable us to provide this new section.

### Wild Oats Day

The Vascular Disease Foundation was awarded 5% of profits generated on February 24th at Denver's Wild Oats Market. This was a great opportunity to raise awareness, pass out materials and answer questions on vascular disease with their shoppers and employees. Thank you to Wild Oats Market.

### Vascular Meetings

The VDF staff was fortunate to attend or exhibit at several vascular professional meetings. These included: The **Society of Interventional Radiology** (Salt Lake City in March), **Society for Vascular Nursing** (Philadelphia in March), **American College of Cardiology** (Chicago in March), **American College of Physicians** (San Diego in April) and the **American Diabetes Association Consensus Development Conference on PAD in Diabetes** in Virginia in May. We also will be attending the **Society for Vascular Medicine and Biology**, and the **American Association for Vascular Surgery** and the **Society for Vascular Surgery** meetings in June in Chicago. These are wonderful opportunities to introduce the goals, missions and publications of the organization to those involved in the everyday care of patients with vascular diseases.

### VDF to Attend AARP

The Foundation will have a booth at the AARP National Event called "Life@50+: A Celebration of You." The conference will be held September 5-7 in Chicago. For information about the conference contact AARP at [www.aarp.org](http://www.aarp.org). If you go, please be sure to stop by and see us in Booth #1432.

## Frequently Asked Questions

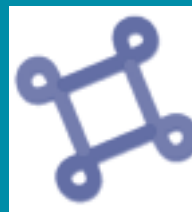
**Q.** My wife has an infection in her toe which has persisted for over a month. She had a Doppler exam of the right leg the other evening but it was negative. Still her doctor believes the problem is vascular. Do you have information on the internet where I could read a simple description of this problem?

**A.** Your wife's doctor is probably correct in suspecting that she has vascular disease. A foot ulcer or sore that does not heal can be a strong indication of peripheral arterial disease. It is possible that her arteries are narrowed or blocked and are not delivering a sufficient amount of blood to her feet. Not all cases of arterial disease will show up on Doppler tests or ankle brachial index tests, especially if the arteries are hardened due to diabetes or normal aging. You can read about further tests on our website and treatment options at [www.vdf.org](http://www.vdf.org). We encourage you and your wife to continue working closely with her doctors and continue to ask good questions.

**Q.** My 76-year-old mother had femoral bypass surgery this week. Can you just tell me what the average recuperation time is after this surgery? I'm hoping to fly her home with me two weeks after she's back home. If all goes as expected, would that usually be possible?

**A.** Naturally each patient's recovery time will vary, but on average the hospital stay is about 5-7 days. Some individuals may also require rehabilitation services at home or in the hospital. After resting at home, they are usually feeling back to normal in about 4-5 weeks unless any wound problems or leg swelling has occurred. The time period you are wondering about seems reasonable for her to fly provided all goes well. The most common complication is infection at the groin incision. Keep a close watch on her wounds and gradually return her activity to normal depending how she is feeling.

### Partner Spotlight



The Society for Vascular Medicine and Biology is a professional organization that was founded in 1989 as a community of vascular clinicians and scientists. The goals of the Society are to improve the integration of vascular

biological advances into medical practice, and to maintain high standards of clinical vascular medicine. The Society is distinguished by its emphasis on clinical approaches to vascular disorders. Optimal vascular care is best accomplished by the collegial interaction of a community of vascular professionals, including individuals with expertise in vascular medicine, vascular surgery, interventional radiology, vascular nursing, vascular technology, and other disciplines.

# AIR TRAVEL AND BLOOD CLOTS: Is There a Link?

The formation of blood clots in the leg veins that has been linked to long distance air travel has received much attention in the national and international news media, a phenomenon called “Air-Travel Related Thromboembolism”. These blood clots, or deep vein thromboses, that arise in the venous system of leg veins have the potential to break off and travel to the heart and lungs, causing a potentially fatal lung clot, or pulmonary embolism. In September 2000, news coverage of an apparently healthy 28 year old woman collapsing and dying from a pulmonary embolism after a 20 hour flight from Australia to London fueled international attention to this matter. It is also now known that both President Richard Nixon and Vice-President Dan Quayle developed leg clots after spending considerable time sitting on airplanes. The death of a television reporter during the recent war in Iraq was attributed to a DVT that occurred while riding in a cramped tank in the desert. The syndrome was once thought to be more prevalent in the more cramped space of coach class, hence the name “coach-class thrombosis.” However, we know now that persons flying in any part of the airplane may be at risk.

**How large is this risk?** A number of recent reports have linked blood clots with air travel, especially long flights of over 6,000 miles, but the overall risk appears to be very low. In one research study, only 1 in 200,000 persons had any signs and symptoms of serious pulmonary embolism diagnosed within 1 hour of arrival. The greatest risk for developing blood clots appear to be in persons with heart and lung disease, a previous history of venous thromboembolism, chronic venous stasis, obesity, pregnancy, and a history of cancer. Some studies show that 3 to 10% of these patients with risk factors will develop clots in the leg veins, although most do not show symptoms. Risk factors of long distance air travel include prolonged immobility, possible concentration or “thickening” of the blood due to dehydration, and increased clotting due to reduced oxygen levels in the cabin.

**What are appropriate preventive measures?** For most people, the risk for clots appears to be low, so reasonable steps of prevention include drinking plenty of non-alcoholic drinks to avoid dehydration. Stretching and flexing the leg muscles, moving the feet and walking in the isles during a long flight is encouraged. Compression stockings are helpful to decrease leg swelling and help the venous circulation to return blood to the heart. For those with risk factors for known DVT (mentioned in the previous paragraph), especially with flights of more than about 3000 miles, it would be wise to consult with a physician. Your physician may recommend an injection of a dose of blood thinner before a long flight.

Medical experts and the international airlines at a recent session by the World Health Organization have recognized the need for further studies in this area. Already some airlines give written warnings to their passengers, and some airlines have a video to teach passengers how to stretch their legs. Future studies into travel-related blood clots may take years to complete, but researchers are hopeful that many of the important questions will be answered, including how travel-related DVT can be prevented.

**About the Author:** Alex C Spyropoulos, MD, FACP, is the Medical Director of the Clinical Thrombosis Center, Lovelace Health Systems in Albuquerque, NM. Dr. Spyropoulos is a national investigator and sits on the steering committee for research studies on thromboembolic disease.



## TIPS TO REDUCE YOUR RISK FOR DVT'S WHEN FLYING

- Drink plenty of water before and during the flight.
- Avoid alcohol during the flight.
- Flex and stretch your leg muscles while seated. With your legs stretched in front of you, point your toes for a few seconds. Then, pull toes up and back as hard as you can for a few seconds. You should feel your calf muscle stretching. Repeat this 4 more times. Try to do this series of stretches and flexions at least once every hour.
- Walk and move about when possible.
- Use graduated compression stockings.

## Discount Drug Program for VDF Friends and Families!

The Vascular Disease Foundation announces an opportunity for you to purchase discounted medications through a mail service of Quality Pharmaceutical Services, Inc. (QPS). You can save up to 30% off retail prices of brand name pharmaceuticals and even greater savings on generic medications. This program is totally free. There are no costs, enrollment fees, annual fees, shipping fees or handling fees. In addition, a special Retail Pharmacy Discount Card, honored at 50,000 pharmacies nationwide, is offered as well. For free price quotes and enrollment, call QPS toll-free at 1-866-500-3680. Be sure to say you're with the Vascular Disease Foundation.

## LETTERS TO THE EDITOR

*"I have shared my copy of "Keeping in Circulation" with the Montrose, Colorado, Senior Aquatic Class over the last few years. It answers questions concerning leg cramps of all kinds, where to seek out information, and what questions to ask their doctor. Thank you very much for your informative newsletter. We look forward to future publications." — T Alford, Instructor, Montrose Recreation District.*

*"Thanks for the newsletter. It is a great help in trying to understand the complexities of PAD. It is great that you are educating the public and the medical community about this serious problem. I have not seen any discussion on the use or effectiveness of blood stickiness reducers such as Plavix or Plator." —H. Fries*

Thanks for the suggestion for an article topic. We will take your suggestion to our editorial committee for consideration.

### ABOUT YOUR SUBSCRIPTION TO KEEPING IN CIRCULATION

Many of you have contacted us to say that you want to continue receiving your free subscription. If you are receiving your copy through the mail, then you will continue to receive each issue, unless you request us to stop sending it to you. However if you have picked up a copy in a doctor's waiting room or at a health fair, then you will need to call us to receive your own copy.

Many of you may wonder how you got on our mailing list in the first place. Typically we have received your name when:

1. You contacted us after seeing our newsletter in a waiting room.
2. You called our toll free number wanting further information on vascular disease as a response to a magazine article you saw.
3. You filled out a postcard at a Legs For Life Screening.
4. You responded to our online survey and checked to be on our mailing list.
5. You stopped by one of our booths at a health fair, AARP Convention, or professional exhibit and signed up, or were signed up by a relative or friend.

We do not sell or share our public mailing list with other organizations. If you get duplicate copies, or you no longer wish to be on our mail list, please let us know. You can help us continue this helpful free service with a yearly (or when you can) contribution to VDF.

## A DAILY DOSE OF WALKING: IT'S GOOD MEDICINE

Some tips to help you improve your vascular health through exercise.

1. Find different places to walk to add variety: the zoo, a nature trail, a different neighborhood or park or lake.
2. Sunrise....sunset. Just like finding a different place to walk, experimenting with a different time of day for your walk may give you new inspiration. Anyone for a moonlight stroll?
3. Once begun....half done. Make a pact with yourself. When your will power is down, promise yourself that you aren't allowed to decide about walking until you are dressed and out the door and have started your walk. Half the battle is usually getting out the door. Once you've put forth the effort to get out the door, you might as well keep walking.



*Author, Mitzi Ekers, MS, ARNP, is a nurse practitioner who has been working with vascular patients for more than 30 years. She is Director of Vascular Services at the Heart and Vascular Institute of Florida in St. Petersburg. She helped start both the Society for Vascular Nursing and the Society for Vascular Ultrasound.*

# Deep Vein Thrombosis continued from page 1

purple or blue. These signs and symptoms may appear suddenly or may steadily develop over a short time. If you observe these signs or symptoms, you should contact your doctor immediately. Symptoms are quite different if the clot breaks loose and travels to the lungs, causing a pulmonary embolism. The symptoms of PE include chest pain, shortness of breath, rapid pulse, or a cough. There may be a feeling of apprehension, sweating, or fainting. Such symptoms are not specific to a PE, and can occur with pneumonia, heart attack, and other important medical conditions. These are therefore always critical symptoms, which demand immediate medical attention.

## How is DVT Diagnosed?

A suspicion of DVT is raised after a clinical exam and by identifying the associated risk factors, but a definite diagnosis of DVT, enough to guide treatment, cannot be accurately made without additional testing. An ultrasound scan of the legs is usually ordered, because it is highly accurate, non-invasive and painless. During the ultrasound scan, any blood clots in the vein are displayed on a monitor. A blood test may be performed to measure “D-dimer” as a sign of recent clotting anywhere in the body. When this test is negative, it is very unlikely that you may have suffered a DVT.

However, even with these excellent tests, there are occasions requiring more accurate information for a diagnosis. A “venogram”, a test in which dye is injected into a vein in the foot and an X-ray is taken, might be performed to most clearly view the blood flow within the leg veins. Venograms are rarely ordered today, but are helpful when deep vein thromboses are severe and when there may be a need to consider use of clot dissolving therapies or surgical therapies, as discussed below.

## How is DVT Treated?

For most DVT's, physicians recommend wearing elastic compressive stockings, elevating the leg, and taking anticoagulant medications to prevent blood clotting. Anticoagulant therapy prevents further clots from forming and diminishes the risk of a pulmonary embolus. It consists of heparin, which may be given intravenously or, more frequently, by subcutaneous injection, followed by warfarin, which can be given orally and continued on an outpatient basis, usually for several months. In severe cases, the physician may recommend thrombolysis, which is the use of an intravenous medication that dissolves clots. With this procedure, a catheter is threaded up through the vein to the clot, and a clot-dissolving drug is injected to dissolve it. The clotbuster is injected slowly through a catheter with many tiny holes into the area of the DVT, much like a soaker hose. Sometimes a tiny vacuum cleaner is used to suck the softened clot out. Once the clot is gone, balloon angioplasty or stenting may be necessary to open the narrowed vein, but this is common only in the iliac veins, located in the pelvic area. With this approach, the patient will also need anticoagulant medication (heparin and warfarin) to prevent new blood clot formation. For a few patients who have valid reasons for clot removal but for whom clot-dissolving drugs cannot be used, extraction of the clot, through a small incision at the groin, may be recommended. Both approaches are designed to remove the clot and restore the venous blood flow but involve additional risk and expense and therefore are applied selectively by the appropriate vascular specialist. Clot removal, by either technique, is usually only recommended for major clots higher up in the leg, and particularly in active, healthy patients without any serious associated diseases. It can significantly reduce the serious consequences of DVT, such as chronic leg swelling, discoloration and, ultimately, ankle ulcers, but they do so at an increased risk of serious bleeding and are more expensive than anticoagulant therapy.

## What Are the Late Effects of DVT's?

Smaller blood clots in the leg veins may dissolve without serious later consequences. However, larger blood clots, especially those located in the upper thigh and pelvic areas, are more likely to contribute to significant, long-term leg symptoms. The long-term consequences of a vein blood clot can persist even when the use of medications has, in the short-term, been “successful”. For example, the leg veins can remain obstructed by remaining clot or scar tissue, or the valves in the vein may be damaged and not function properly. This may result in chronic swelling, skin discoloration, and ultimately, the development of chronic skin ulcers near the ankle. These problems can be diminished, if the individual who suffered a DVT will faithfully wear compressive leg stockings and elevate the legs periodically during the day. Anticoagulant medications will reduce the risk of future DVT and PE's, these medications cannot prevent the long-term tendency for leg swelling, discomfort, and skin changes, commonly called the “post-thrombotic syndrome” (PTS). These post-thrombotic symptoms are best treated by lifelong use of compressive leg garments. Unfortunately, it is not often appreciated that in some individuals, persistent leg swelling or discomfort may contribute to a real decrease in quality of life and even disable some individuals.

## Can DVT's Be Prevented?

Regular exercise will decrease the risk of DVT. Persons who undergo major surgery are at risk to develop DVT, therefore calf and leg exercises before surgery and resuming physical activity as soon as possible after the surgery will decrease the risk for DVT. Preventing a DVT is the major reason why hospitals have patients up and walking as soon as possible after surgery. Regular stretching and leg movement are important for individuals who sit at a desk all day or are traveling on long trips, particularly air travel. As always, it is important to stop smoking, as smoking increases the tendency of the blood to clot and avoid wearing tight garments that produce constrictions below the waist.

# Early DVT Diagnosis Gives Nurse “A Leg Up”



One Wisconsin winter evening after returning home from an outing, Cathy experienced a sudden sharp pain in her left calf. She remembers reaching down, rubbing her calf, and telling a friend that it hurt and felt like a vessel spasm.

The next morning at work she continued to experience the discomfort in her calf. Cathy is 48 years old and works as a surgical nurse in an operating room of a busy hospital. The idea of a deep vein thrombosis, or DVT, crossed her mind. She knew many of the symptoms of a DVT—a warm and tender area, redness or swelling, but she had none of these. She experienced a slight discomfort in her calf, which sometimes would intensify if she tried to stretch her calf by pointing her toes toward her head. Plus, she’s active, young and she didn’t think she had the other risk factors for developing a DVT.

Although her discomfort was mild, it did not go away and she also noticed swelling of her ankle. Around noon, she discussed it with a colleague in the emergency department. It was recommended that the Vascular Lab technician conduct a duplex ultrasound to be sure she didn’t have blood clots in her leg veins.

Cathy was soon given the news that she had a DVT in her knee and calf veins. She was kept overnight in the hospital to start heparin treatment and was discharged the next day as her further treatment could be done as an out-patient. She was given subcutaneous heparin for five days and was also started on a blood thinner pill, warfarin. She was advised to elevate the leg frequently during the day and wear elastic stockings. She needed regular blood tests to manage the dose of warfarin she was taking and was kept on blood thinners for 6 months. After six months, her doctor prescribed a daily baby aspirin.

Cathy was able to return to work after just three weeks since she “caught” the DVT early. She continues to have mild swelling in the left leg and some pain from time to time. She has noticed lots of superficial “spider veins”. She also wears compression stockings.

Since her initial DVT, she has had two more ultrasounds to rule out another DVT. Although a “small remnant clot” remains, it is the scar tissue within the vein from her original clot and poses no additional danger. Cathy is still baffled that she had a DVT. “I had no previous injury or surgery. My doctor thought that since I am on estrogen replacement therapy, this might be a contributing factor.” Cathy was fortunate that she knew enough about DVT’s to seek early diagnosis and treatment and to avoid life threatening complications.

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### Did You Know?

60,000 people die each year from pulmonary embolism, or blood clots, that travel to the lung.

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