

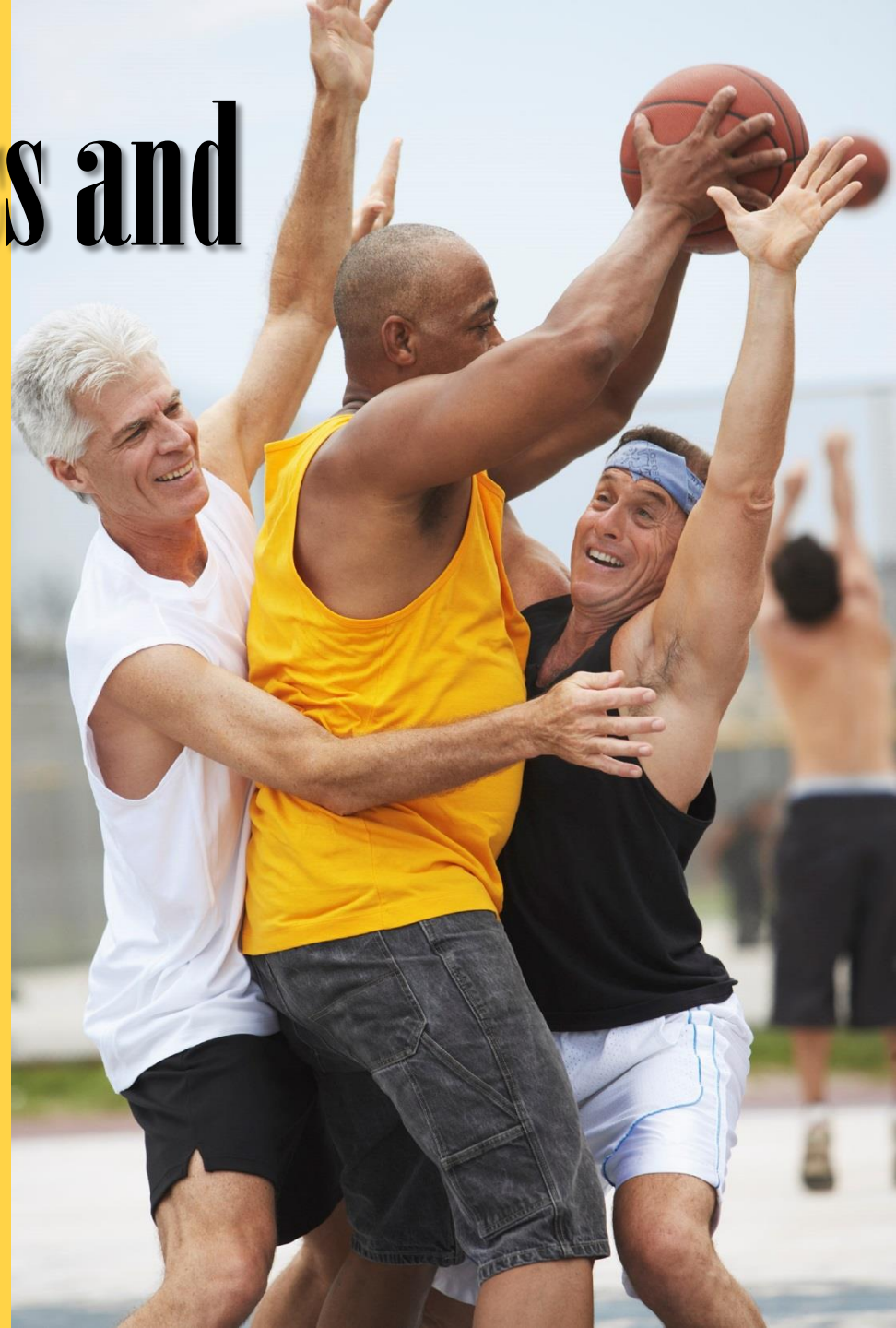
Orthopedics and Vein Disease

LEG PAIN

Symptoms of chronic venous disease are highly variable. Patients report a spectrum of lower extremity discomfort ranging from fullness or heaviness, dragging or aching, to frank pain. Occasionally, **throbbing, burning and/or itching** may occur. Patients may have one or all of these symptoms. The symptoms are exacerbated by standing, are progressive throughout the day, are typically felt in the muscles in the calf or thigh, and are helped by ambulation and reduced by limb elevation.

Did you know...Individuals who have had trauma to the leg through injury, surgery, or previous blood clots are also more likely to develop chronic venous disease? Did you know... **chronic ankle swelling** can be a leading symptom of venous reflux disease, also called venous insufficiency?

The vast majority of millions of Americans suffering from chronic venous disease remain undiagnosed and untreated. If left untreated, chronic venous disease can progress to a more serious form of disease. Symptoms include **skin damage, joint and leg swelling, severe leg pain and skin ulcers**. The disease itself is associated with significant morbidity, loss of productivity, and reduced quality of life.
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JOINT PAIN

Joint changes are an inevitable result of venous insufficiency. Joint pain and swelling, as well as functional restriction of mobility of both the ankle joint (most commonly) and knee joint can be a significant manifestation of chronic venous disease. Progressive subcutaneous scarring can extend into the subcutaneous tissue around the joint, restricting ankle movement, reducing calf pump efficiency, and exacerbating the venous hypertension. If untreated, fibrous ankylosis can fix the ankle joint with scar tissue. Likewise, progressively worsening venous disease that involves vessels posterior to the knee joint can cause joint pain and stiffness.

FIXED PLANTAR FLEXION

Chronic pain of acute lipodermatosclerosis or an ulcer may result in abnormal weight bearing. This compensatory behavior can eventually result in ankle stiffening and shortening of the Achilles tendon thus producing biomechanical gait abnormalities.



PERIOSTITIS

Long-standing inflammation in soft tissues promotes hyperemia in the underlying periosteum, which can then produce new subperiosteal bone. This chronic inflammatory condition causes tenderness and swelling of the bone and a continuous aching pain.



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Podiatry and Vein Disease

The American Podiatric Medical Association, the nation's leading professional organization for podiatrists, has fully endorsed the “Rethink Varicose Veins Campaign” and continues to support the educational movement that strongly believes varicose veins and chronic venous disease is a health concern worthy of medical diagnosis and treatment.

The vast majority of the millions of Americans suffering from venous disease remain undiagnosed and untreated. If left untreated, varicose veins can progress to a more serious form of disease called chronic venous insufficiency (CVI). Symptoms of CVI include **skin damage, swelling, severe pain, and ulcers**, and the disease itself is associated with significant morbidity, loss of productivity, and reduced quality of life.

Untreated venous insufficiency results not only in a gradual loss of cosmesis but also in a variety of complications including persistent pain and discomfort, hemorrhage, superficial thrombophlebitis, and progressive skin changes that may ultimately lead to ulceration. Eventually, chronic soft tissue changes may lead to stiffness of the ankle joint, fixed plantar flexion, periostitis and skin ulceration.

Did you know... **chronic ankle swelling** can be a leading symptom of venous reflux disease, also called venous insufficiency?

ANKLE JOINT CHANGES

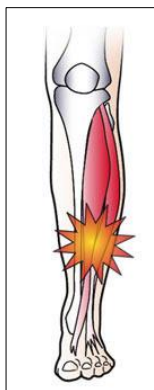
Joint changes are an inevitable result of venous insufficiency. Ankle swelling, itching and pain can all develop. Ankle edema associated with uncomplicated varicose veins is usually mild and becomes more noticeable as the day progresses. *(continued on back)*



Overlying skin changes including eczema, hyperpigmentation and ulceration can develop if untreated. In addition to concerns for cosmesis, this may interfere with the fitting of footwear.

Progressive subcutaneous scarring can extend into the subcutaneous tissue around the ankle joint, restricting ankle movement, reducing calf-pump efficiency, and exacerbating the venous hypertension. The initially pain-induced, functional, restricted mobility of the ankle joint, which is subsequently fixed by capsular shrinkage, is of particular significance. Fibrous ankylosis may eventually “fix” the ankle joint with scar tissue and cause an adverse effect on walking.

Once chronic venous congestion has resulted in joint capsule atrophy, stiffening of the ankle and muscular atrophy in the lower leg, expensive therapeutic measures involving professional physiotherapeutic care become unavoidable.



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PERIOSTITIS

Long-standing inflammation in soft tissues promotes hyperemia in the underlying periosteum, which can then produce new subperiosteal bone. This chronic inflammatory condition causes tenderness and swelling of the bone and a continuous aching pain.

ULCERS

Current estimates show that approximately 70% of leg ulcers in the United States are venous ulcers or of mixed-arterial/venous etiology. Chronic wound healing can be limited until the underlying cause is treated. Ulcers that are not aggressively treated and become secondarily infected may progress to expose tendons and periosteum. Very rarely, this may result in a need for amputation.



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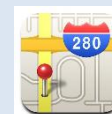
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Skin Changes Due to Vein Disease

SPIDER VEINS

Known as telangiectasias, spider veins in the legs are often related to the presence of elevated venous pressure and chronic venous disease involving the medium and larger sized veins of the leg. Treatment of these superficial dilated blood vessels can be futile if the underlying disease process is not addressed. It is not uncommon for patients who suffer from spider and reticular veins in their legs to have cosmesis concerns and experience **aching, burning and itching** focal to the superficial diseased vessels.

VARICOSE VEINS

If varicose veins are left untreated, they can progress to a more serious form of venous disease. Signs and symptoms of chronic venous disease worsen over time, including **pain, swelling, cramping, restlessness and fatigue** of the legs, as well as, skin damage and ulcers in more advanced cases. Those with the disease may experience symptoms that make walking and everyday tasks difficult.

DERMATITIS

Chronic inflammatory changes within the dermis and subdermis result in deposition of fibrin and hemosiderin with local edema. This can result in either **dry and scaly** or vesicular and **weeping patches of reddened skin** in the lower extremities. This condition is often misdiagnosed as cellulitis. These skin changes are referred to as venous dermatitis or varicose eczema. With progressive loss of epithelium, venous ulceration may develop spontaneously.

LIPODERMATOSCLEROSIS

Fibrosis of the skin and subcutaneous tissues induced by chronic venous hypertension is referred to as lipodermatosclerosis. It is also referred to *(continued on back)*





as necrosis, folliculitis, or chronic cellulitis. The affected skin appears as a **thickened and raised red-brown area**. Acute lipodermatosclerosis is painful and disabling. In addition to **pain and tenderness**, there is a constant **sensation of heat**. This area of **stiff skin** that is fixed, hard, and indurated can cause progressive contraction of the skin and subcutaneous tissues results in shrinking of the gaiter area.

ATROPHIE BLANCHE

Atrophie blanche is the name given to a particular type of scar arising on the lower leg, often due to venous disease. Scars form as tissue replaces areas of **necrotic skin**. These depressed millimeter sized patches of skin are usually gray-white in color. Prominent red dots within the patches are due to enlarged capillary blood vessels. Coalescence of multiple areas may form a large scar, may break down spontaneously, or may eventually form ulcers.



ULCERATION

All the previously described skin changes are preulcerous conditions. If these progressive changes are not reversed, impairment of tissue nutrition and oxygenation progresses to slow tissue death. If there is a supervening injury, ulceration may progress rapidly. Current estimates show that approximately 70 % of leg ulcers in the United States are venous ulcers or of mixed-arterial/ venous etiology. Chronic wound healing can be limited until the underlying cause is treated. Ulcers that are not aggressively treated and become secondarily infected may progress to expose tendons and periosteum. Very rarely, this may result in a need for amputation. Ulcers cause much morbidity from **pain, discomfort, and fluid discharge**. They may result in secondary amyloid disease and can also cause anemia and hypoproteinemia. Rarely, they may undergo malignant change (Marjolin's ulcer). In addition to causing great individual distress, ulcers have serious economic and psychological effects and are a considerable drain on medical resources.

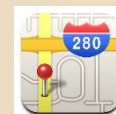


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Internal and Family Medicine

...And vein disease

If chronic venous disease is left untreated, it can progress to a more serious form of venous disease. Signs and symptoms of chronic venous disease worsen over time, including **pain, swelling**, cramping, restlessness and fatigue of the legs, as well as, **skin damage and ulcers** in more severe cases. Those with the disease may experience symptoms that make walking and everyday tasks painful and difficult.

Symptoms of chronic venous disease are highly variable. Patients report a spectrum of symptoms. Most individuals affected have obvious clinical signs that include spider veins, varicose veins, lower extremity edema, skin discoloration and/or ulcerations. Current estimates show that approximately 70% of leg ulcers in the United States are venous ulcers or of mixed-arterial/venous etiology.

However, some patients may have NO clinical signs of chronic venous disease but have symptoms **ONLY** which include **tired, heavy, throbbing legs and/or restless leg, nocturnal cramping or a burning sensation in the extremities**. The pain is typically exacerbated by standing, is progressive throughout the day, is typically felt in the muscles in the calf or thigh, and is made better with walking and limb elevation.

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As varicose veins are often misunderstood as a cosmetic problem, many people living with them do not seek treatment. The good news is that there are minimally-invasive treatment options available for varicose veins and chronic venous disease that are covered by many insurance plans. These treatments address the condition before it progresses further, allowing for a short, comfortable recovery and a quick return to everyday activities.

STATISTICS

- Ten times more people suffer from venous insufficiency than peripheral artery disease in the United States. It affects all age groups.
 - More than 24 million Americans have varicose veins and 6 million have skin changes associated with Chronic Venous Insufficiency.
 - Blood clots form in the leg veins of over 2.5 million Americans each year.
 - 10-35% of adults have leg veins that do not work properly.
 - Half a million Americans have ulcers on their legs caused by diseased veins.
- *Statistics provided by the Vascular Disease Foundation, Severna Park, Maryland.*

BENEFITS OF VEIN ABLATION TREATMENT

- Each treatment takes less than an hour.
- Immediate return to normal activity is common with only minor soreness or bruising, which can be treated with over-the-counter pain relievers.
- There are no scars or sutures because the procedure is minimally invasive.
- Success rate is high and recurrence rate is low compared to surgery.
- The success rate for thermal vein ablation is as high as 98%.
- There is no need for general or spinal anesthesia.
- Treatments are considered a medical necessity by most insurance carriers.



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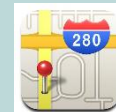
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Pelvic Congestion Syndrome

WHAT IS PELVIC CONGESTION SYNDROME?

Pelvic Congestion Syndrome is an underdiagnosed condition which is associated with varicose veins in the pelvic area, lower abdomen and thighs. Often accompanied by chronic pelvic pain, it is estimated that this condition affects more than one third of all women. Sometimes suffering with this condition for years, many of these women are told the problem is not due to a specific medical cause and may be "all in their head." However, recent advancements have allowed physicians to show that the pelvic pain may be due to varicose vein reflux causing pelvic venous insufficiency.

WHAT ARE SYMPTOMS OF PELVIC CONGESTION SYNDROME?

The symptoms related to Pelvic Congestion Syndrome include **pelvic pain** associated with standing and sitting, which worsens throughout the day. This chronic pain is typically dull and aching in nature. Patients often experience relief from pain when lying flat and when legs are elevated. The symptoms may worsen following intercourse, during menstrual periods, and during pregnancy. Associated symptoms include **heaviness/fatigue/aching** of the legs with varicose veins on the vulva and/or buttocks.

HOW DOES PELVIC CONGESTION SYNDROME OCCUR?

Similar to varicose veins in the legs, the valves in the pelvic veins that
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help return blood to the heart against gravity become weakened and don't close properly. This allows blood to flow backwards and pool in the vein causing pressure and bulging veins. In the pelvis, varicose veins can cause pain, heaviness and affect the uterus, ovaries and vulva.



WHO IS AT RISK TO DEVELOP PELVIC CONGESTION SYNDROME?

Pelvic Congestion Syndrome typically affects women in their child bearing years. As the uterus expands during pregnancy, there is increased pressure exerted on the pelvic floor and veins. Post-partum, the uterus eventually contracts and although the pressure on the pelvic floor is relieved, there is residual damage to the pelvic veins. Therefore, ovarian veins increase in size related to previous pregnancies. Women who've had two or more pregnancies and hormonal increases are at particular risk.

HOW IS PELVIC CONGESTION SYNDROME DIAGNOSED?

Many women with Pelvic Congestion Syndrome spend years trying to get an answer as to why they have this chronic pelvic pain. Living with chronic pelvic pain is difficult and affects not only the woman directly, but also her interactions with her family, friends, and her general outlook on life. To diagnose, patients will undergo a thorough history and physical. Those with a high suspicion may undergo pelvic ultrasound and venography. Thought to be the most accurate method for diagnosis, a venogram is performed by injecting contrast dye in the veins of the pelvic organs to make them visible during an X-ray.

HOW IS PELVIC CONGESTION SYNDROME TREATED?

Once a diagnosis is made by our physician, if the patient is symptomatic, a pelvic venogram with embolization should be done. Embolization is a minimally invasive procedure performed by the Interventional team using imaging for guidance. During the outpatient procedure, the faulty, enlarged veins are sealed in order to relieve the painful pressure. After treatment, patients should expect a low level of pain and to spend a couple of days off their feet.



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