# Venous Disorders Cheat Sheet

by happyfeet2020 via cheatography.com/144934/cs/31157/

## Venous Anatomy

Blood from skin and SubQ tissue in legs flows into the superficial veins, then deep veins then to heart

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|---|---|
| Superficial Veins: | Great saphenous, lesser saphenous |
| Deep veins | Inferior vena cava -> right common iliac -> internal iliac and external iliac -> femoral -> popliteal -> peroneal -> anterior and posterior tibial |

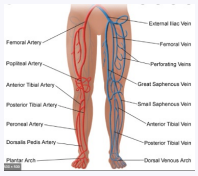
Leg muscles assist with return of blood (muscle pump action)

Venous valves prevent retrograde flow of blood

## Venous Disease Classification

| CEAP classification | |
|---|---|
| Clinical classification | |
| C0 | No visible or palpable signs of disease |
| C1 | Telangiectasias or reticular veins |
| C2 | Varicose veins |
| C3 | Edema |
| C4a | Pigmentation or eczema |
| C4b | Lipodermatosclerosis or atrophic blanche |
| C5 | Healed venous ulcer |
| C6 | Active venous ulcer |
| S | Symptomatic, including ache, pain, tightness, skin irritation, heaviness, muscle cramps, and other complaints attributable to venous dysfunction |
| A | Asymptomatic |
| Etiologic classification | |
| Ec | Congenital |
| Ep | Primary |
| Es | Secondary (post-thrombotic) |
| En | No venous cause identified |
| Anatomic classification | |
| As | Superficial veins |
| Ap | Perforator veins |
| Ad | Deep veins |
| An | No venous location identified |
| Pathophysiologic | |
| Pr | Reflux |
| Po | Obstruction |
| Pr, o | Reflux and obstruction |
| Pn | No venous pathophysiology identifiable |

## Venous Anatomy




## History and Clinical Appearance

| | |
|---|---|
| History | Medications- side effects of swelling? |
| | Previous history of DVT, congenital valve weakness, ulcers, edema, prolonged standing, trauma, vein stripping or other procedures |
| Chief Complaint | Sense of tiredness, fatigue, heaviness in feet, night leg cramps (relief by walking or massage) |
| Signs of Venous Insufficiency | Varicose veins, telangiectasia, pitting edema, stasis dermatitis, hemosiderosis (brown iron complexes of hemosiderin often deposited into the tissue due to increased hydrostatic pressure forcing blood components to escape, brown staining results) |
| Chronic Insufficiency | Atrophie blanche, lipodermatosclerosis, venous ulcers |

## History and Clinical Appearance (cont)

| | |
|---|---|
| Testing for Venous Disease | Brodie-Trendelenburg test, hand held doppler constant sound, photocell or air plethysmography, ambulatory venous pressure testing, venography |

Venous stasis can occur from:
-secondary to obstruction or insufficiency
-thrombophlebitis may block venous drainage
-valve damage contribute to incompetence
-veins may be compressed due to tumour or fibrosis

## Venous Disorders

| | |
|---|---|
| **Superficial Thrombophelbitis** | Occurs when there is inflammation and thrombus within the superficial vein |
| | Can occur following an infection, trauma, hypercoagulable stagtes, oral contraceptives, procoagulant factors |
| | *Risk factors*: prior history of superficial phlebitis, DVT, PE, recent surgery or pregnancy, prolonged immobilization, malignancy |

## Venous Disorders (cont)

| | |
|---|---|
| | *Signs and Symptoms*: Redness and warmth associated with vein, pain over vein, diffuse leg pain, edema, fever |
| | *Differentials*: Baker's cyst, soft tissue injury, cellulitis, MSK pain, lymphangitis, neuritis, ruptured head of gastroc |
| | *Treatment*: prevent progression into deep venous system, NSAIDs (for pain), anticoagulants(heparin), increase ambulation, gradient compression stockings(30-40-mmHg) |
| **Deep Vein Thrombosis** | Development of thrombus in the deep veins |
| | Want to detect early to prevent fatal PE |
| | If thrombus partially or completely blocks the flow of blood through the vein, blood begins to pool and build up venous hypertension |

## Venous Disorders (cont)

*Risk Factors*: Similar to superficial thrombophelbitis but also includes age >60, hypercoagulable states, obesity, history of DVT

*Symptoms*: Common site is the calf (post tib and peroneal veins), silent in 50% cases, progressive pulling sensation at back of leg, pain increases with ambulation, slight fever, swelling occurs distal to site of thrombus, distension of superficial veins, increase in temp distal to clot,

*Causes*: Virchow's triad

*Prevention*: Heparin, NSAIDs, gradient compression hose, increased ambulation

## Venous Disorders (cont)

*Treatment*: if suspected refer to emerg! Bed rest x 1 week with legs elevated which stabilizes clot, elastic stocking to reduce swelling and protect superficial veins, 3-6 months limitation of prolonged standing, medications (fibronolytic agents, anticoagulants, antibiotics)

**Pulmonary Embolism**

Embolus is a blockage in the blood flow to the lungs by blood clot or fat, air or tumor. Very dangerous when thrombus is torn from attachment. May cause pulmonary infarction

*Risk Factors*: same as DVT

*Symptoms*: Sudden, chest pain, shortness of breath, coughing, dizziness, fainting, anxiety/sweating. MEDICAL EMERGENCY

## Venous Disorders (cont)

*Treatment*: Thrombolytics, vein filter (prevents emboli from reaching lungs

**Chronic Venous Insufficiency**

Venous hypertension caused by chronic venous reflux as a result of structural or functional abnormalities of veins

*Leads to*: Edema, protein exudation and deposition to skin, fibrosis and lipodermatosclerosis, stasis dermatitis, tissue hypoxia, leg ulcers

**Venous Ulcer**

Seen in lower third of leg (lateral or medial aspect), surrounding skin has signs of CVI, shallow ulcer, moist granulating base, sloping edges, cyanotic discolouration

## Venous Disorders (cont)

*Treatment*: reduce venous hypertension by walking regimens, limb elevation, local wound care (manage moisture)

**Virchow's Triad**: 1. Stasis of blood 2. Increased blood coagulability 3. Vessel wall injury (alteration to vein wall)

**Causes of Thrombi Formation**: Old age, estrogen use, pregnancy, obesity, malignancy

## Venous Disorder Management

**Conservative**

*Elevation*: Avoid high heels as they reduce venous emptying as muscle pump not activate. Raise feet above heart 15-30 mins several times/day. Place 2-3" block under legs

*Exercise*: Emphasize ankle plantarflexion , activate muscle venous pump. 30-60mins of PA

*Medications*: NSAIDs, vitamin C/E for symptom relief. Pentoxifylline may change course of disease

**Compression Therapy**:

*Benefits*: Reduce diameter of veins, increase flow velocity, decrease chance of thrombosis, improve lymphatic flow

| Venous Disorder Management (cont) | |
|---|---|
| | *Types*: Elastic (stocking or bandaging), inelastic (garments or short stretch bandages), pneumatic compression |
| **Classes**: | *Class 1*: 20-30mmHg for aching, swelling. telangiectasia, varicose veins (to start/asymptomatic) |
| | *Class 2*: 30-40mmHg for symptomatic varicose veins, CVI, post ulcer |
| | *Class 3*: 40-50mmHg for CVI, post ulcer |
| | *Class 4*: 50-60mmHg for CVI, post ulcer, severe CVI not controlled by class 3 |
| **Surgical** | *Sclerotherapy*: remove obliteration of abnormal vessel that carry retrograde flow. |
| | *Other*: Saphenofemoral bypass, prosthetic graft, valvular reconstruction |

| Venous Disorder Management (cont) |
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| *Vein Stripping*: strip varicose veins (only option for saphenous vein) |
| *Elevating legs is contraindicated in CHF, gastroesophageal reflux, pulmonary disease and sleep apnea patients<br>*Compression therapy is contraindicated in patients with an ABI of 0.5 and below |