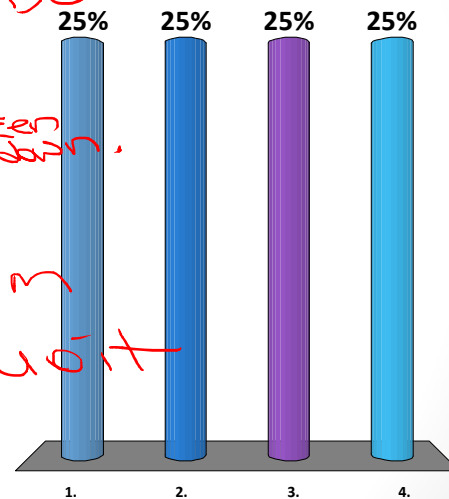


___ is not part of the development process of atherosclerotic plaque.

1. Oxidation of LDL
- ✓ 2. Complement activation
- ✓ 3. Decreased thrombolytics
4. Smooth muscle proliferation

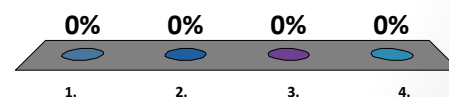
once LDL enter into endothelium.
cells are broken down.
intima interna.

rwpoll.com
ID: elitapuoit



What is the most common site of a myocardial infarction?

1. Left atrial wall
- ✓ 2. Left ventricular wall
3. Right ventricular wall
4. Interventricular septum



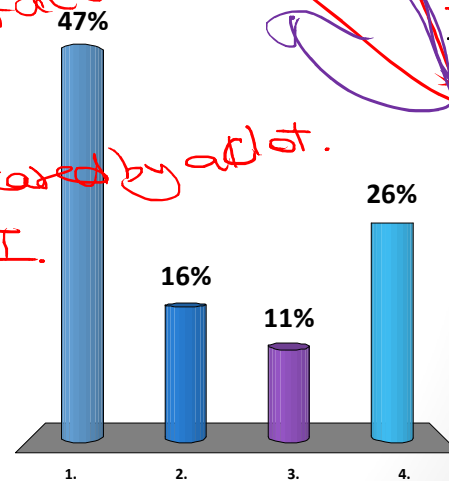
What is the most frequent **cause of death** within the first **24 hours** of a myocardial infarction?

1. Congestive heart failure
- ✓ 2. Arrhythmias
3. Cerebrovascular accident
4. Thromboembolism

not acute.

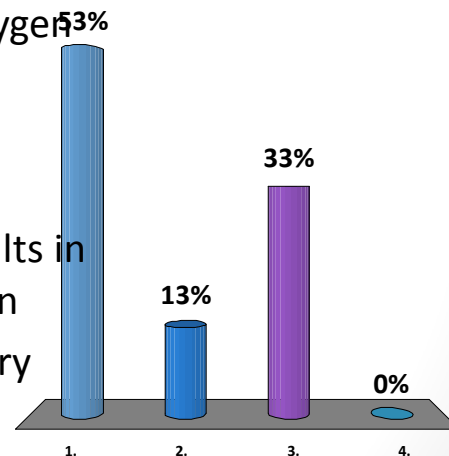
commonly caused by a clot.

a common cause of MI.



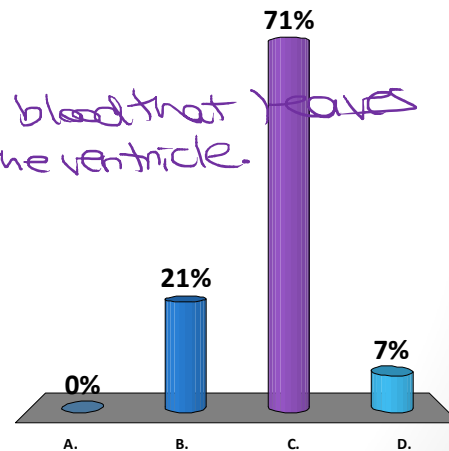
The underlying pathology involved in angina pectoris is

- ✓ 1. Myocardial oxygen demand exceed the myocardium's oxygen supply
2. At least one coronary artery becomes totally occluded
3. Impaired cardiac output results in decreased coronary perfusion
4. Hypotension reduces coronary perfusion



Which is NOT a functional change expected from acute myocardial infarction?

- A. Decreased contractility
- B. Decreased stroke volume
- ✓ C. Increased ejection fraction ↓ % blood that leaves the ventricle.
- D. Decreased left ventricular compliance



Unit 7: Vasculature 3

Vascular disorders

Why do varicose veins happen?

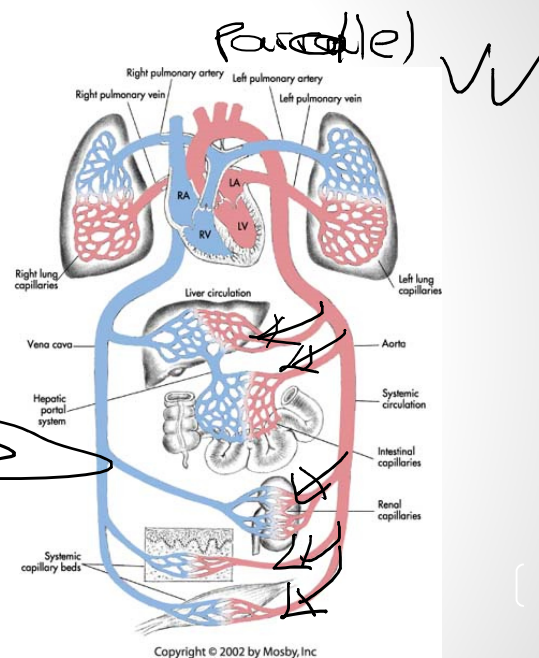
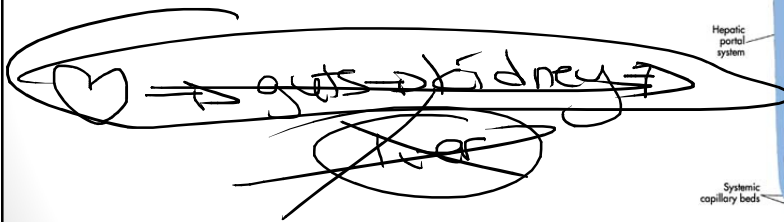
Superior Vena Cava syndrome

What are thrombi? Why do they form?

What is deep venous thrombosis?

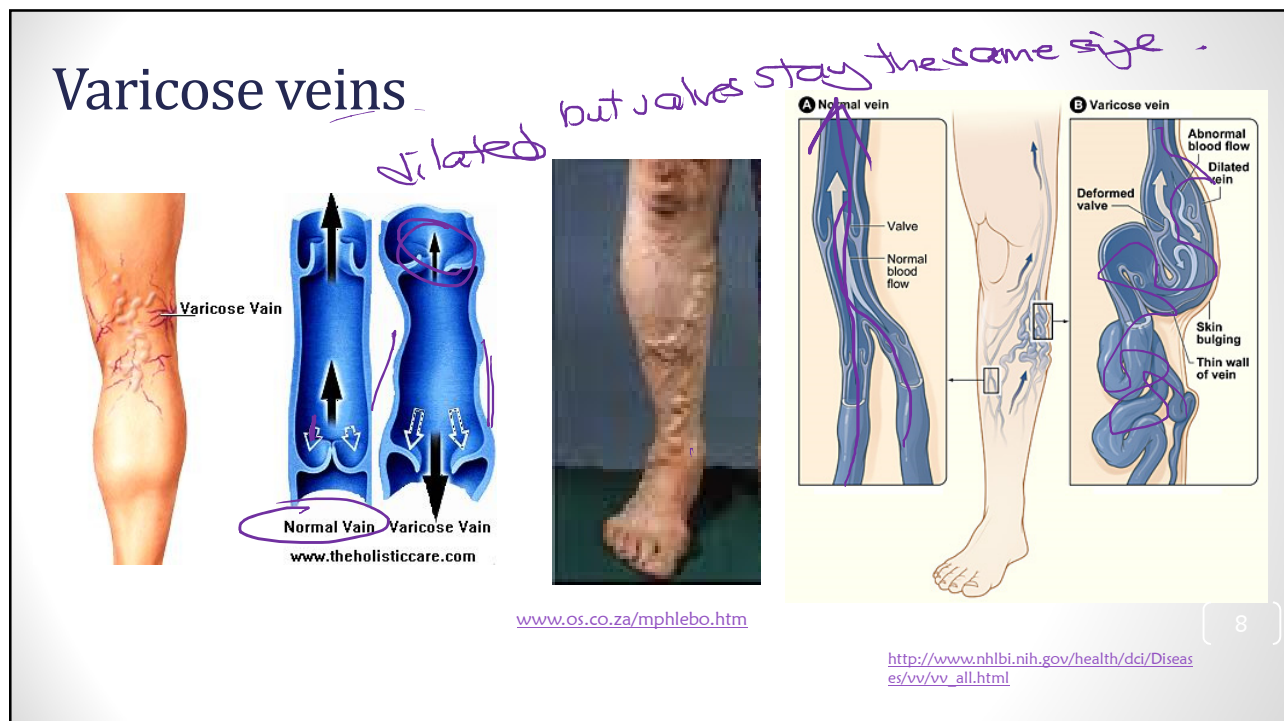
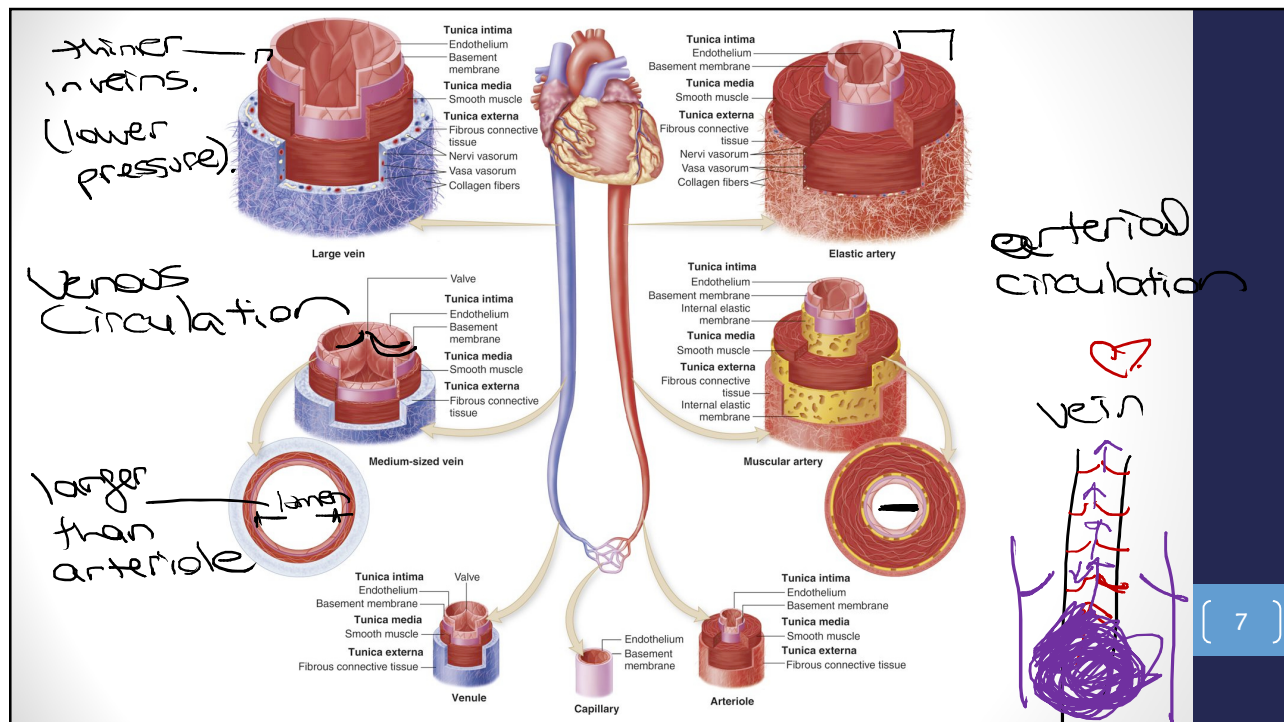
What are emboli? What types are there?

Aneurysms

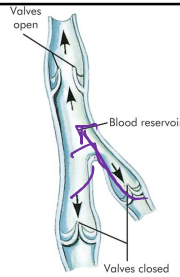


[6]

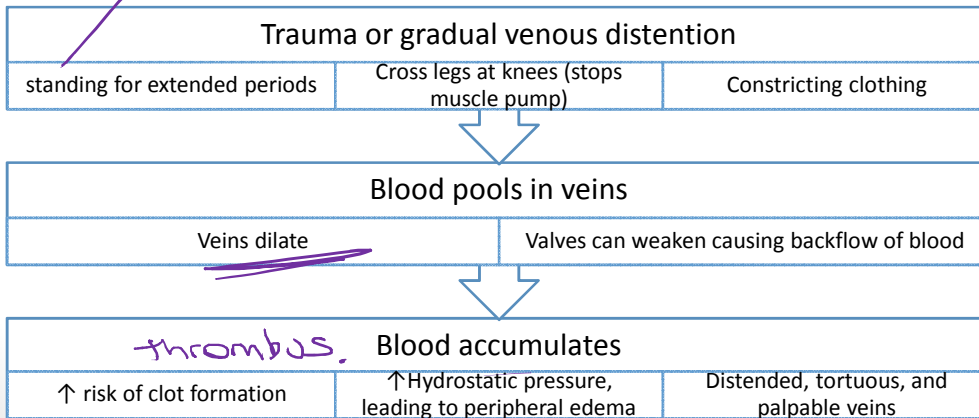
Copyright © 2002 by Mosby, Inc.



Varicose veins



shopkeeper's vein.



[9]

Progression of varicose veins

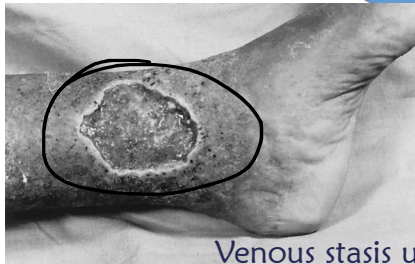
60% of blood is the venous system normal. Main reservoir of blood.

Varicose veins

Chronic venous insufficiency (Inadequate venous return over a long period due to varicose veins or valvular incompetence)

Venous stasis ulcers (found in skin. Chronic condition, difficult to heal (lack of blood supply))

DVT



Venous stasis ulcers



deep ven thrombosis. blood in veins is stagnant.

<http://www.vein-treatment.com/venous-ulcers.php>

[10]

Superior vena cava syndrome

trans

NORMAL Function of superior vena cava

- return blood from upper extremities to heart for oxygenation → brain | heart

Common cause

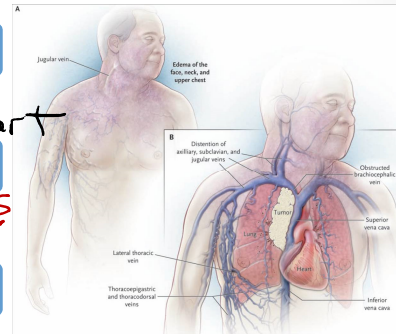
- lung cancer, — gradual disorders
- lymphomas

What happens

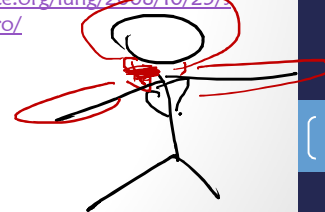
- Progressive occlusion of the superior vena cava that leads to venous distention of upper extremities and head

Symptoms

- facial edema of the face, arms and chest,
- jugular vein distension



<http://cancergrace.org/lung/2008/10/25/vc-syndrome-intro/>



11

Thrombus, thrombosis & thromboembolism

- A. 4 Thrombus
 B. 3 Thrombosis
 C. 1 Thrombophlebitis
 D. 2 Thromboembolus



1. Thrombosis + inflammation in veins
2. Detached blood clot
3. Intravascular activation of coagulation cascade (without damage to vessel wall)
4. Blood clot inside a blood vessel

pulmonary circ
 arterial diameter
 gets ↓ + ↓.

12

Cause of thrombosis

Atherosclerosis

- most common

Blood stasis (pooling), e.g. aneurysms, atrial fibrillation, long periods of inactivity

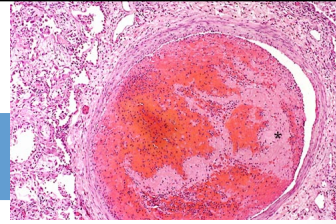
- increase risk of clotting

Vessel wall inflammation or "vasculitis"

- any immune response coming from the plaque will promote blood clotting *can include platelet activation*

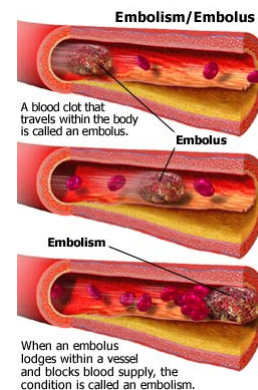
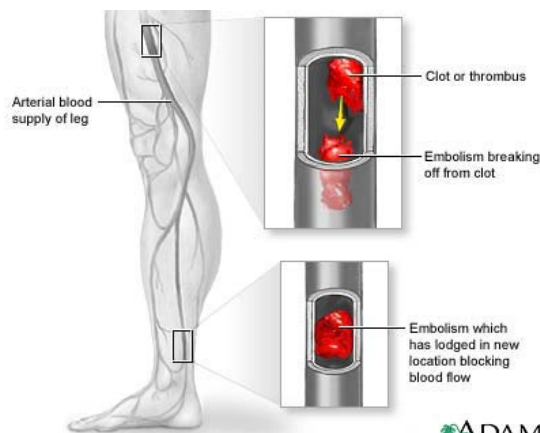
Endothelial wall infections, e.g. bacterial "vegetations" in the heart

- clumps of bacteria and clotting factors *- activated to form a clot.*



13

From Thrombus to Embolus



<http://healthforworld.blogspot.com/2008/11/embolism.html>

14

Embolus

Definition

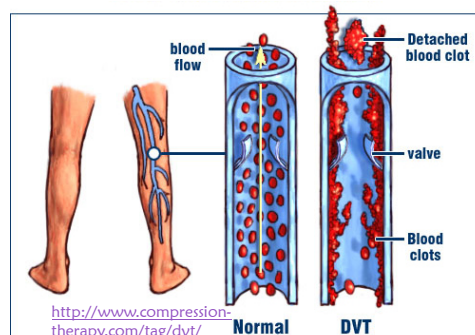
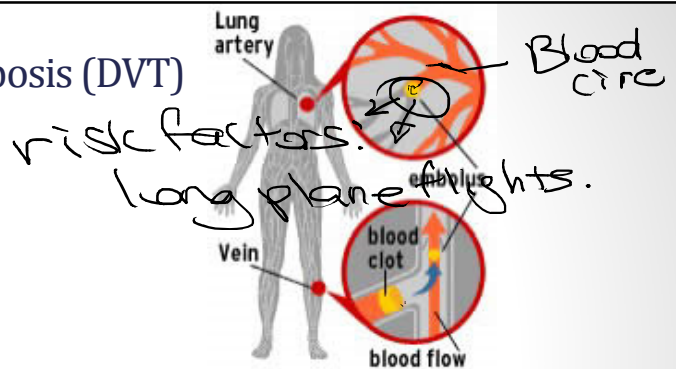
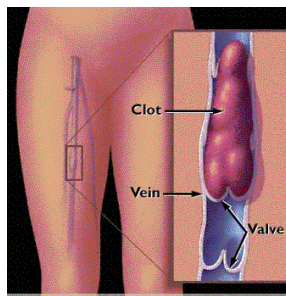
- Bolus of matter that is circulation in the bloodstream with a tendency to block blood vessels

Embolus can be made from different substances

- Dislodged thrombus (pulmonary thromboembolus: most common): piece breaks off of thrombus and lodges in lung
- Secondary to atrial fibrillation: arrhythmia. Secondary to atrial fibrillation: blood pools, clots and forms embolus
- Claudication secondary to (abdominal) aortic aneurysm: unable to walk due to blockage of femoral & iliac artery. blockages of the muscle, pain upon exercise. result of emboli in the legs
- Fat embolism: post-femoral ("hip") fracture causes release of yellow (fat) marrow into blood stream
- Air embolism (undissolved gas): diver's bends. room air enters vasculature
- Amniotic fluid: enter maternal circulation to cause pulm embolism
- Bacteria: – infection which enters blood, clumps
- Foreign substance: via IV injection

[15]

Deep venous thrombosis (DVT)



[16]

Deep venous thrombosis (DVT)

Cause

- Obstruction of venous flow leading to \uparrow venous pressure

Factors

- Venous stasis –pooling
- Venous endothelial damage – coagulation cascade
- Hypercoagulable states

Risk factors

- Major surgery
- Immobility (in hospital and long travel)
- Recent injury
- Increased estrogen: birth control pills, pregnancy, and HRT
- Certain chronic medical illnesses (heart disease and cancer)
- Age
- Obesity
- Smoking

[17]

Complications of DVT

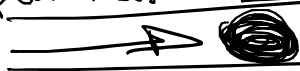
Venous stasis/hypercoagulation
→ DVT

Thromboembolism → Pulmonary emboli

Pulmonary ischemia → pulmonary infarction

Stresses on heart → myocardial ischemia → myocardial infarction

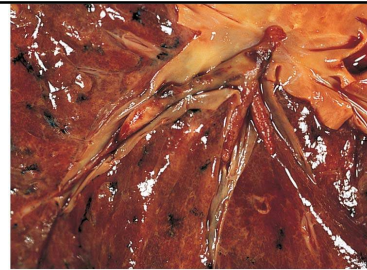
pulm artery



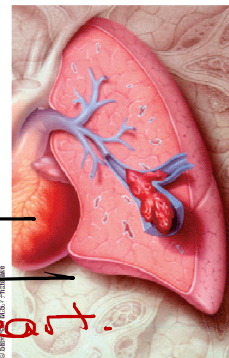
embolus

↓ blood flow to tissues
hypoxia

less O₂ blood entering the heart



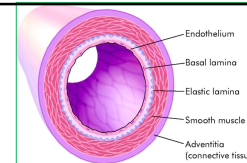
(From Damjanov, Linder, editors: Anderson's pathology, ed 10, St Louis, 1996, Mosby.)



[18]

Aneurysms

- Local dilation or outpouching of a vessel wall or cardiac chamber, often in the elastic layers
- Causes
 - Acquired: via atherosclerosis, high blood pressure
 - congenital (asymptomatic)



weaker



ON

weaker

gym

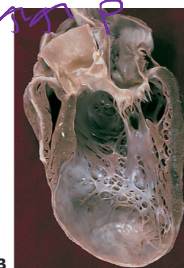
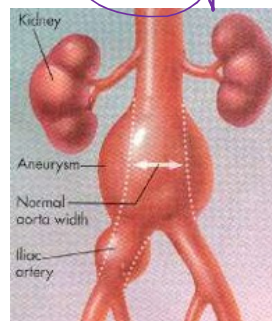
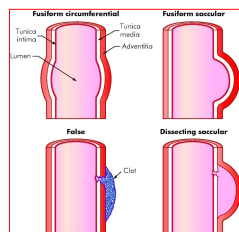


Fig. 23-6. Aneurysms
A, Abdominal aortic atherosclerotic aneurysm. B, In a long-axis view of the left ventricle there is a large, thin-walled apical aneurysm that does not contain thrombus.

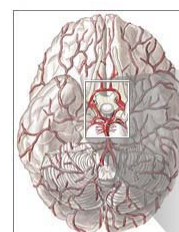
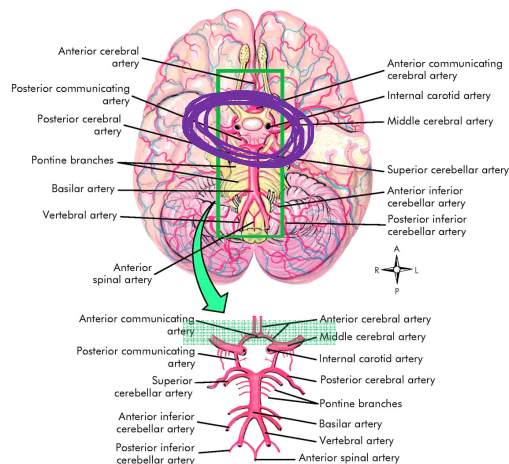
19

Complications of Aneurysms

Circle of Willis

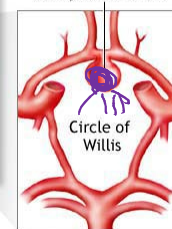
(common site of congenital aneurysms)

Leads to acute subarachnoid hemorrhage



Bottom view of brain and major arteries of the brain

Berry aneurysm on the anterior communicating artery of the brain

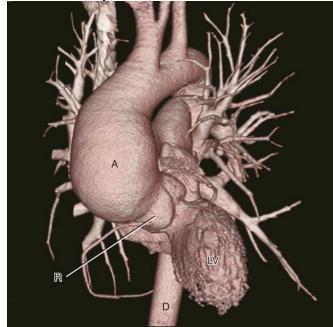


ADAM.

20

Frequent complications of aneurysms

- Blood flow turbulence
- Distal ischemia
- Thrombosis in aneurysm walls: due to turbulence with high BP
- Dissection of vessel wall layers
 - Separation of tunica media from tunica intima



Aneurysm of thoracic aorta



Dissection of thoracic aorta

↓ ↓ blood
Ischemia

[21]



Raynaud phenomenon



<http://www.med.wayne.edu/raynauds/>

http://www.healthline.com/health/raynaud_disease/

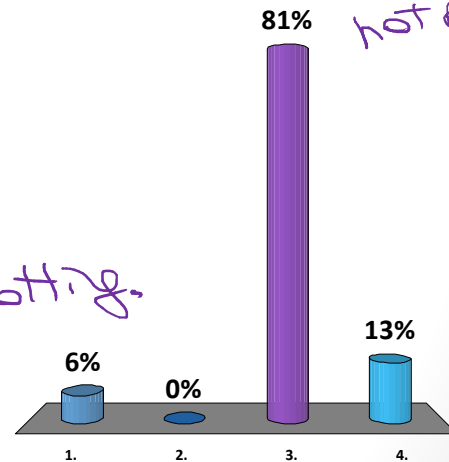
- Definition: Episodic vasospasm in arteries and arterioles of the fingers, less commonly the toes
 - If chronic, may lead to infarct and gangrene
- Raynaud disease: primary vasospastic disorder of unknown origin
- Raynaud phenomenon: secondary to other systemic diseases or conditions
 - Rheumatic disease (scleroderma)
 - Smoking
 - Pulmonary hypertension
 - Environmental factors (cold and prolonged exposure to vibrating machinery)

[22]

_____ does not promote DVT

1. Venous stasis
2. Venous endothelial damage
- ✓ 3. Anemia
4. Hypercoagulable states

platelets
clots (clotting factors)
not RBCs.

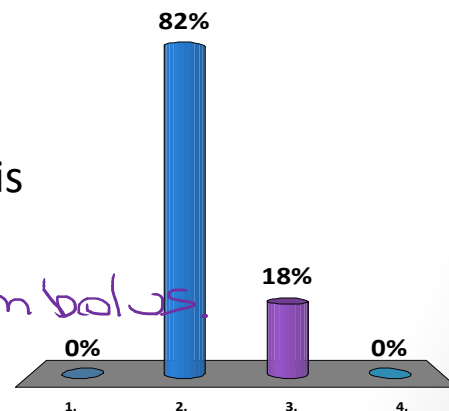


[23]

_____ describes this condition of an occlusion in a blood vessel from a bolus of circulating matter in the bloodstream?

1. Thrombus
- ✓ 2. Embolus
3. Thrombophlebitis
4. Foam cell

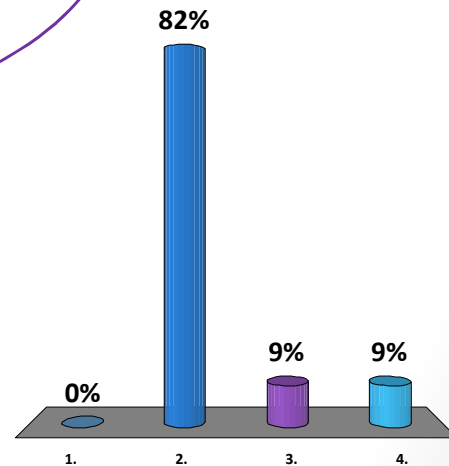
5 thromboembolus.



[24]

_____ is a factor that leads to aortic aneurysm.

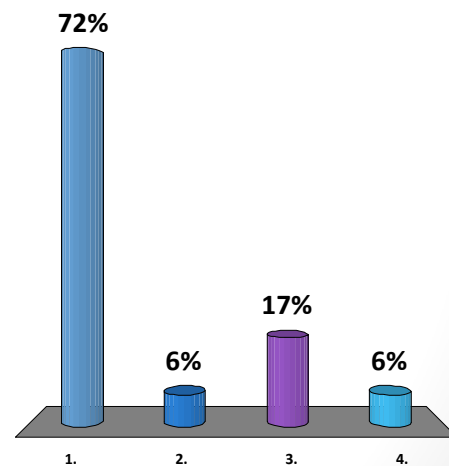
1. Lack of atherosclerosis
- ✓ 2. Deficiencies in wall collagen
3. Excessive elastin
4. Decreased oxygen radicals



[25]

Someone with _____ is likely to have pallor, numbness, and a sensation of cold temperature of her digits (*fingers, toes*).

- ✓ 1. Raynaud phenomenon
2. Thromboangiitis obliterans
3. Peripheral vascular disease
4. Varicose veins



[26]