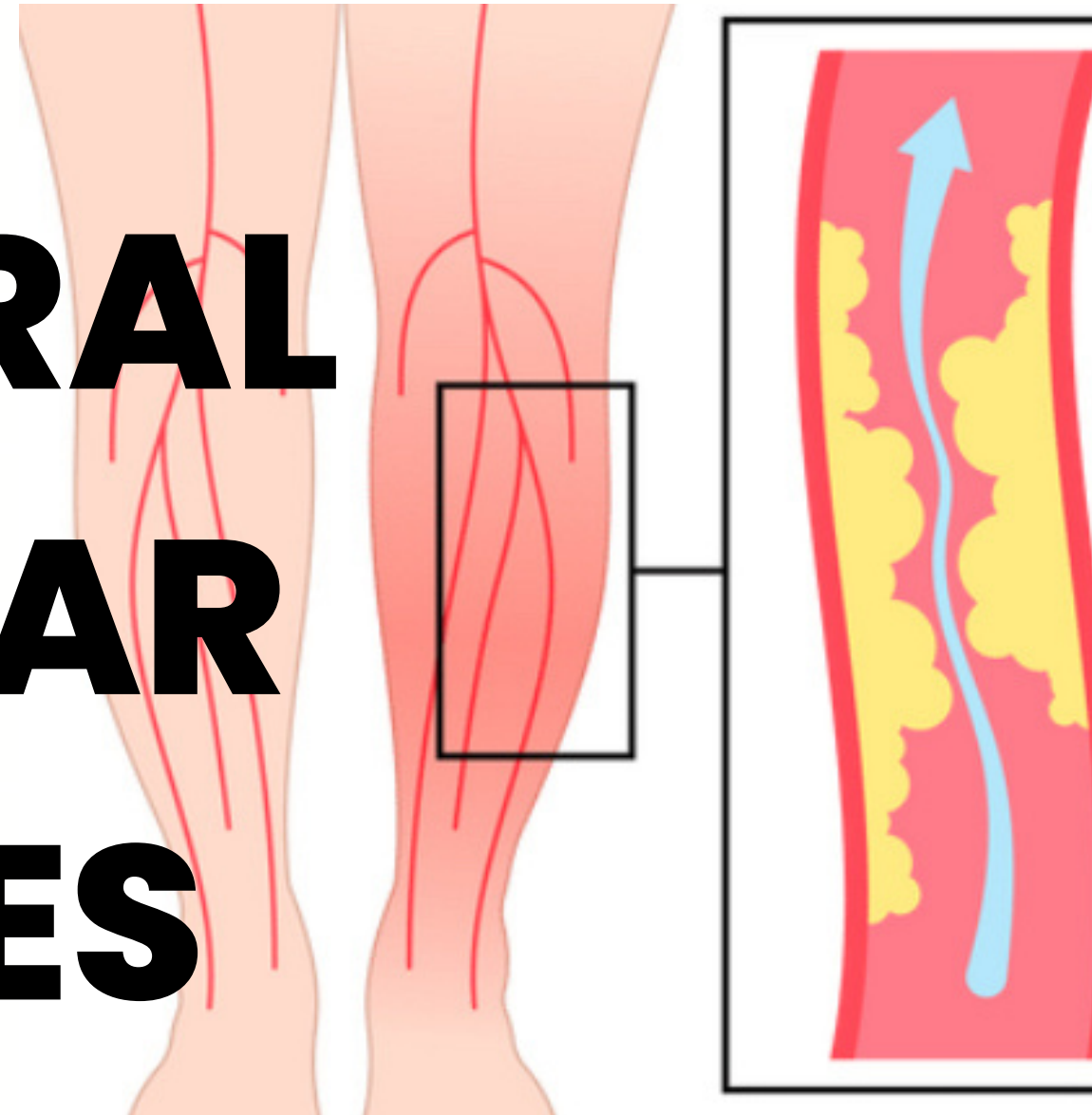


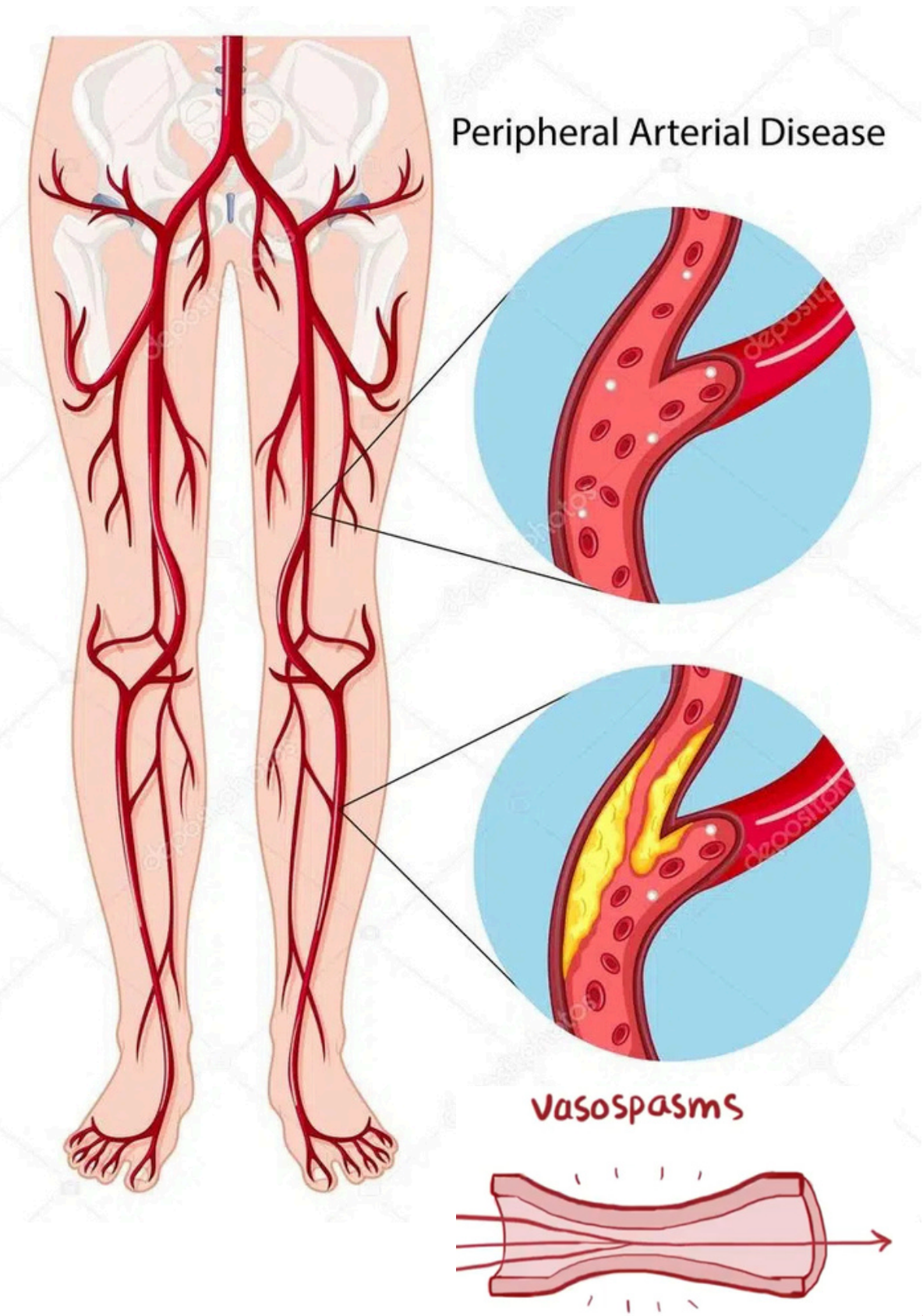
# PERIPHERAL VASCULAR DISEASES



*Our team :*  
Salsabeel almtour  
Shefaa almaaitah  
Safaa alkhawaja  
Tasneem alhiary  
Zaid Alzaghatet

# DEFINITION

- Peripheral vascular disease (PVD) is a slow and progressive circulation disorder. Narrowing, blockage, or spasms in a blood vessel can cause PVD.
- PVD may affect any blood vessel outside of the heart including the arteries, veins. Organs supplied by these vessels, such as the brain, and legs, may not get enough blood flow for proper function. However, the legs and feet are most commonly affected.
- Peripheral vascular disease is also called peripheral arterial disease.



# **SYMPTOMS**

depend on:

- what artery is affected
  - how severely the blood flow is reduced
1. Claudication
  2. Numbness or tingling in leg, foot or toes
  3. Changes in skin color (pale, bluish or reddish discoloration)
  4. Changes in skin temperature
  5. Infection/sores that do not heal
  6. Ulceration or gangrene
  7. Uncontrolled hypertension
  8. Renal failure

# Claudication

Claudication is pain in your thigh, calf, or buttocks that happens when you walk. It may be a symptom of peripheral artery disease (PAD). This is when narrowed or blocked arteries reduce the blood flow to your legs.

At first, claudication pain occurs when you walk a certain distance and goes away when you rest. But as the disease gets worse, the pain can occur when you walk shorter distances. Over time, you may no longer be able to walk because the pain is so severe.

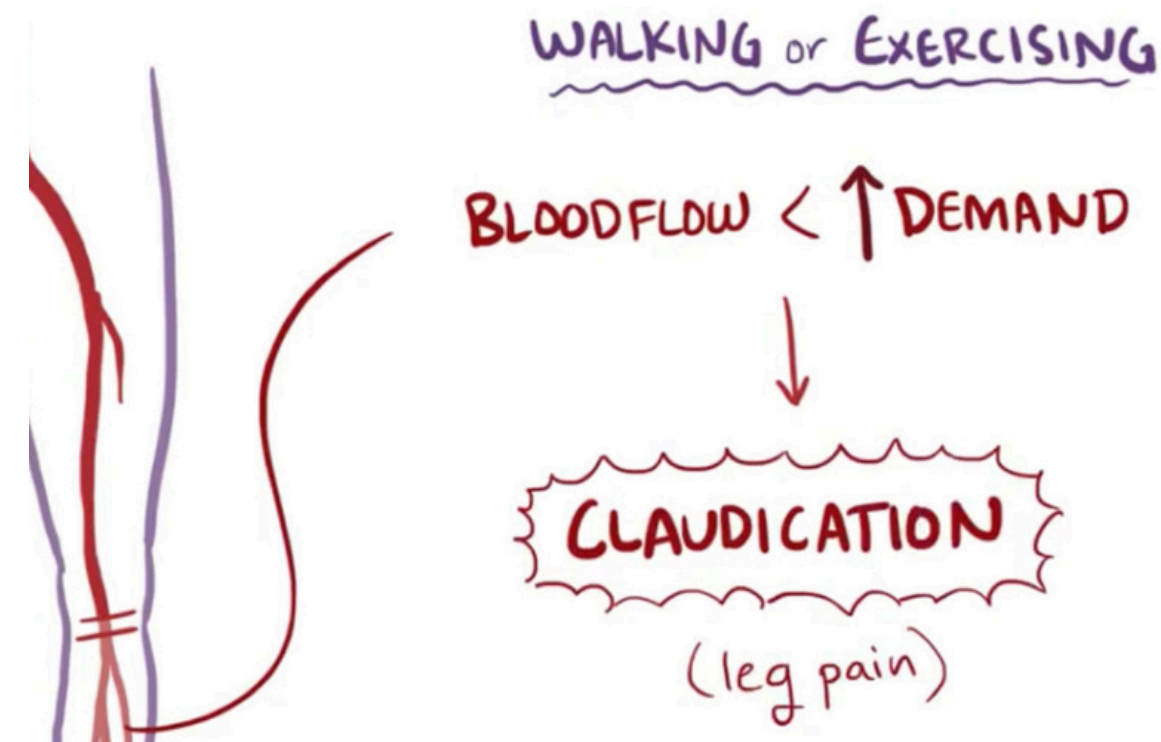
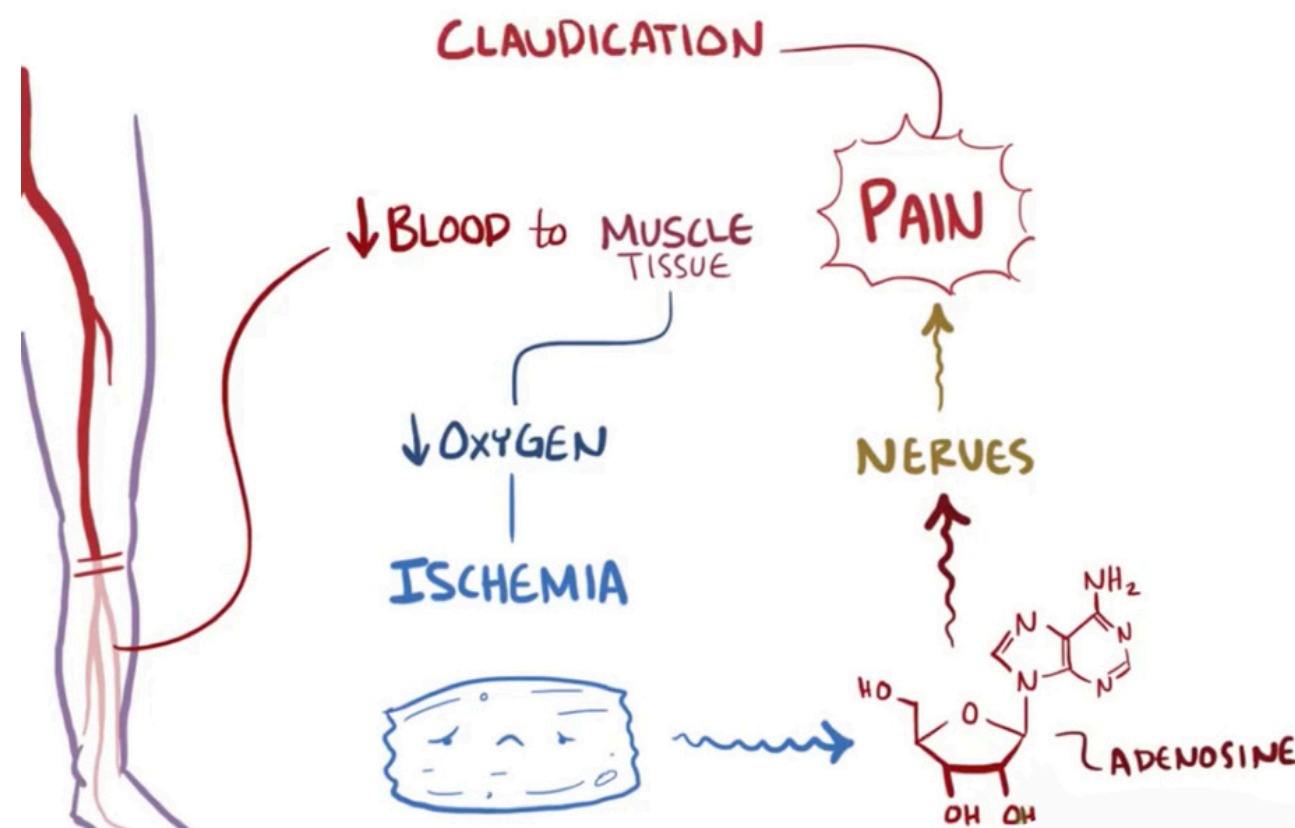
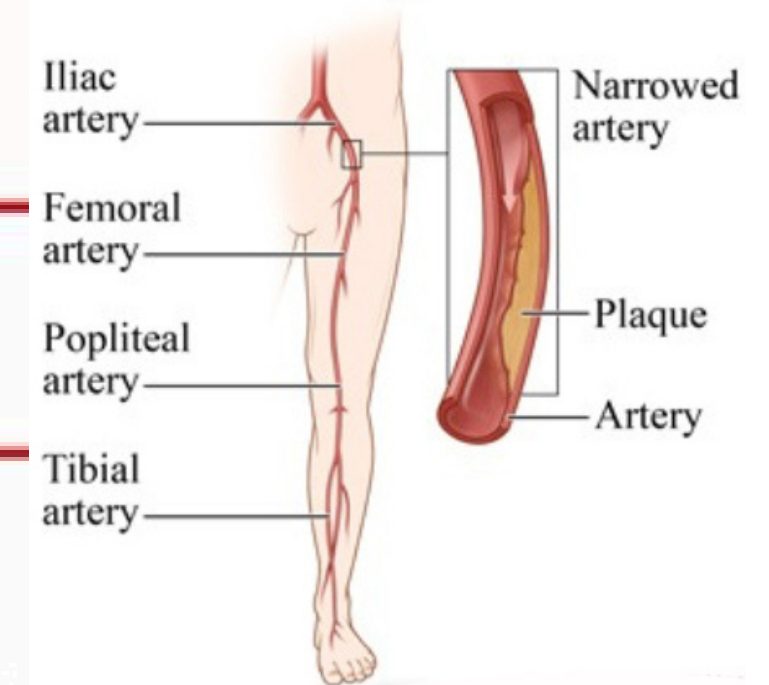
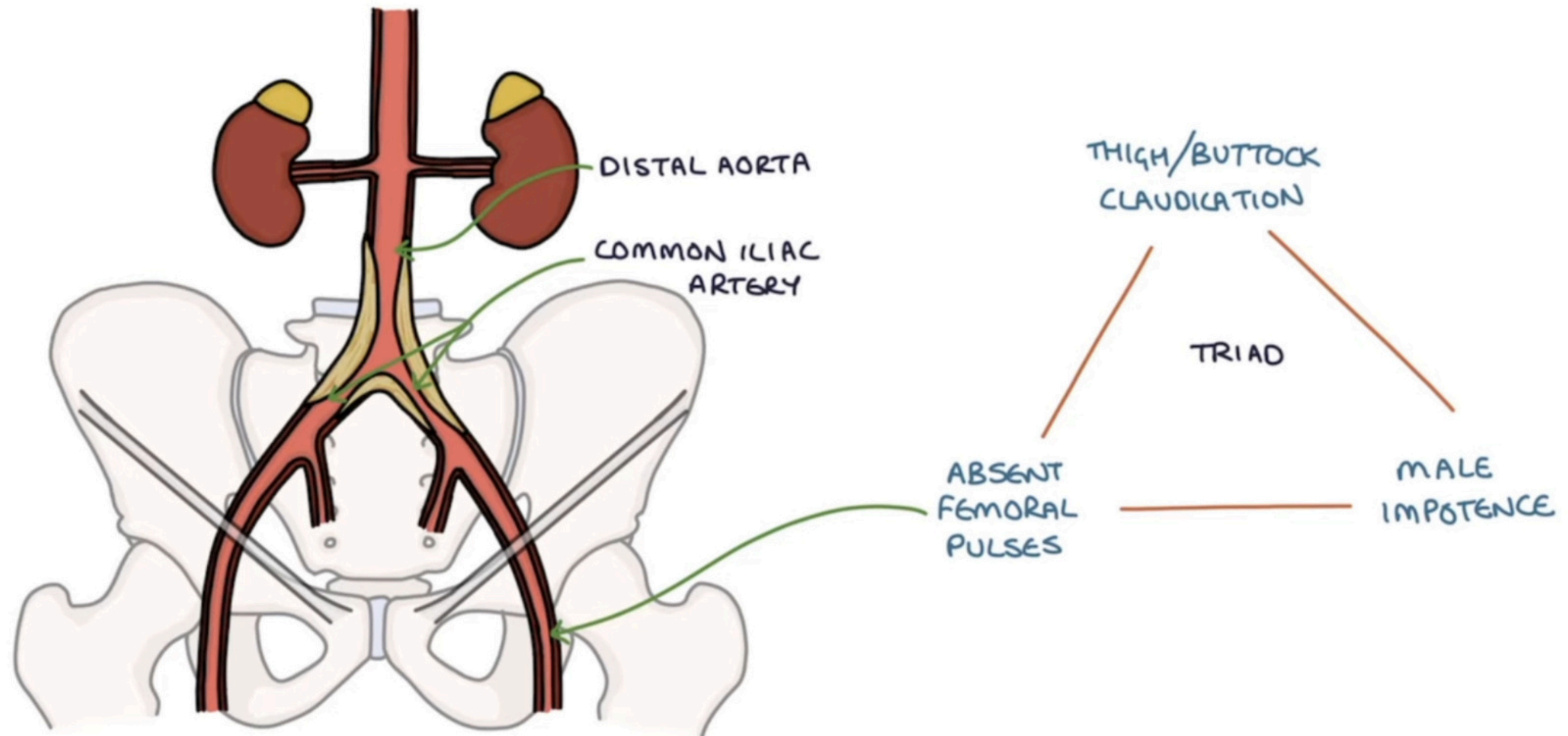


**TABLE 2. Symptoms According to the Area of Arterial Lesion**

| Area of Lesion  | Clinical Picture                                                                                              |
|-----------------|---------------------------------------------------------------------------------------------------------------|
| Aortoiliac      | Buttock-thigh-calf claudication<br>Impotency in a man (if bilateral involvement is present): Leriche syndrome |
| Femoropopliteal | Calf claudication with/without plantar claudication                                                           |
| Infrapopliteal  | Plantar claudication                                                                                          |

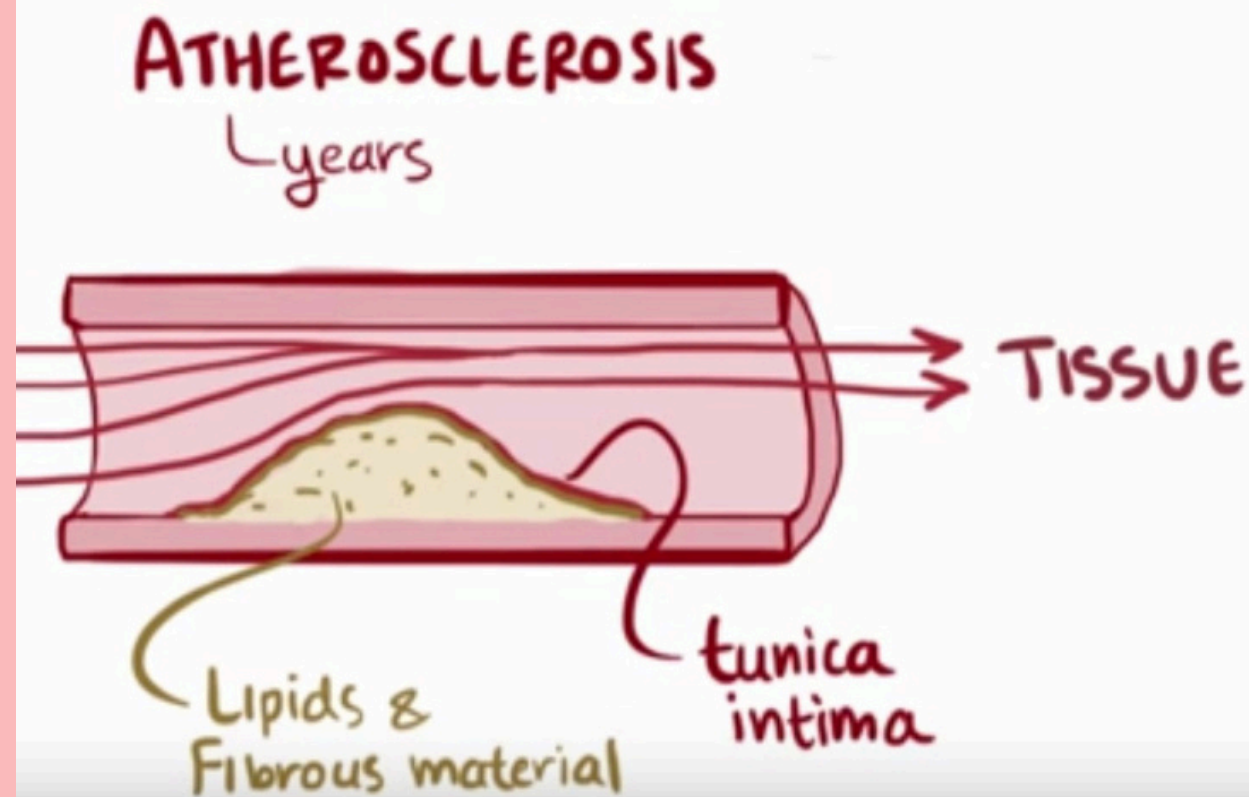


## LERICHE SYNDROME

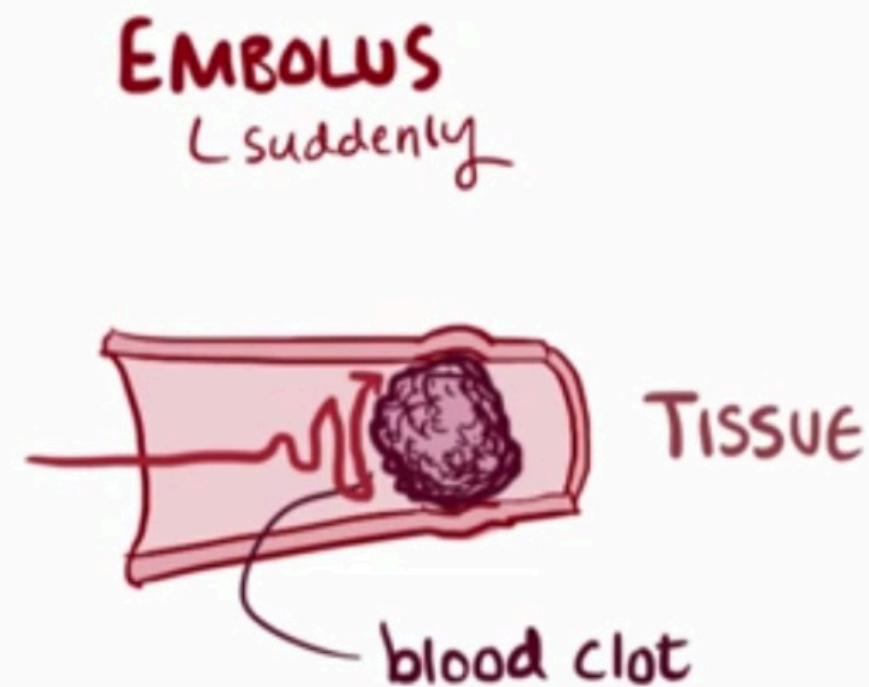


# causes

## 1. ATHEROSCLEROSIS (THE MOST COMMON CAUSE)



## 2. BLOOD CLOT (THROMBUS/EMBOLI)



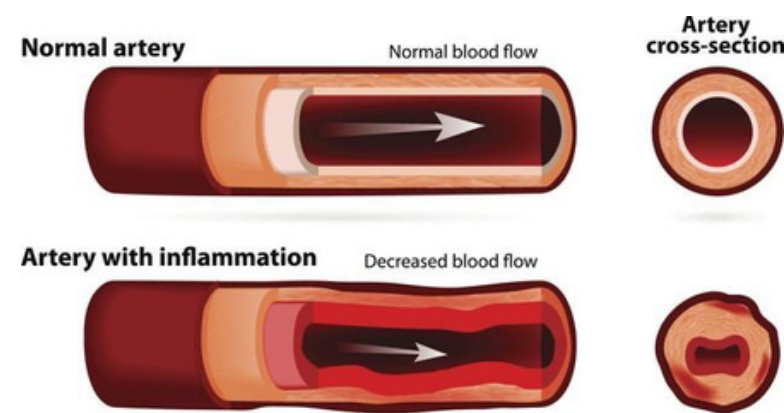
## 3. DIABETES

- High Blood Sugar level damages blood vessels and make them more likely to become narrow or weaken.
- People with diabetes often have high blood pressure and high level of fats in the blood. Both can accelerate atherosclerosis development.

## 4. Inflammation of the arteries

-arteritis can cause narrowing or weakening of arteries

Some autoimmune conditions lead to vasculitis.



## 5. infection

causes inflammation and scarring which can block, narrow, or weaken blood vessels.

Example: salmonellosis and syphilis are traditionally known to infect and damage blood vessels.

## 6. injury

such as a car wreck or a bad fall

## 7. Structural defects

Defects in the structure of a blood vessel can cause narrowing mostly acquired at birth.

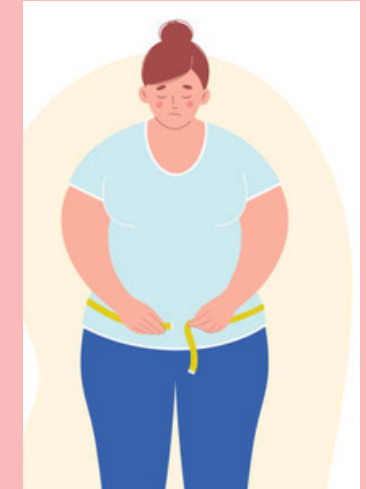
- the cause remains unknown

# **Risk factors:**

→ Family history of premature heart attacks or stroke

→ Older than 50 years

→ Overweight or obesity



→ Inactive (sedentary) lifestyle

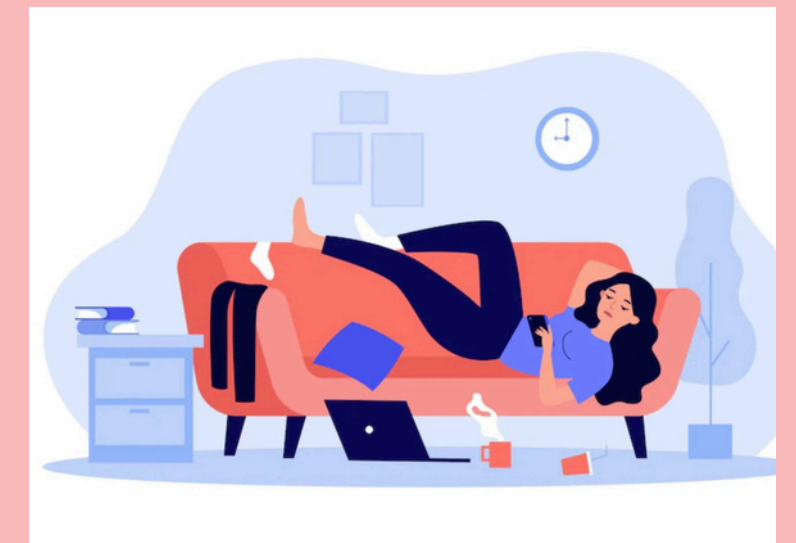
→ Smoking



→ diabetes

→ High blood pressure

→ High cholesterol or LDL, plus high triglycerides and low HDL



# Epidemiology/Statistics

PVD affects :

**15-20%** of persons **older than 70s**

10-15% of general population

Approximately **50%** are ***Asymptomatic***

# 4 stages of severity of PVD

## [Lerichie - Fontaine]

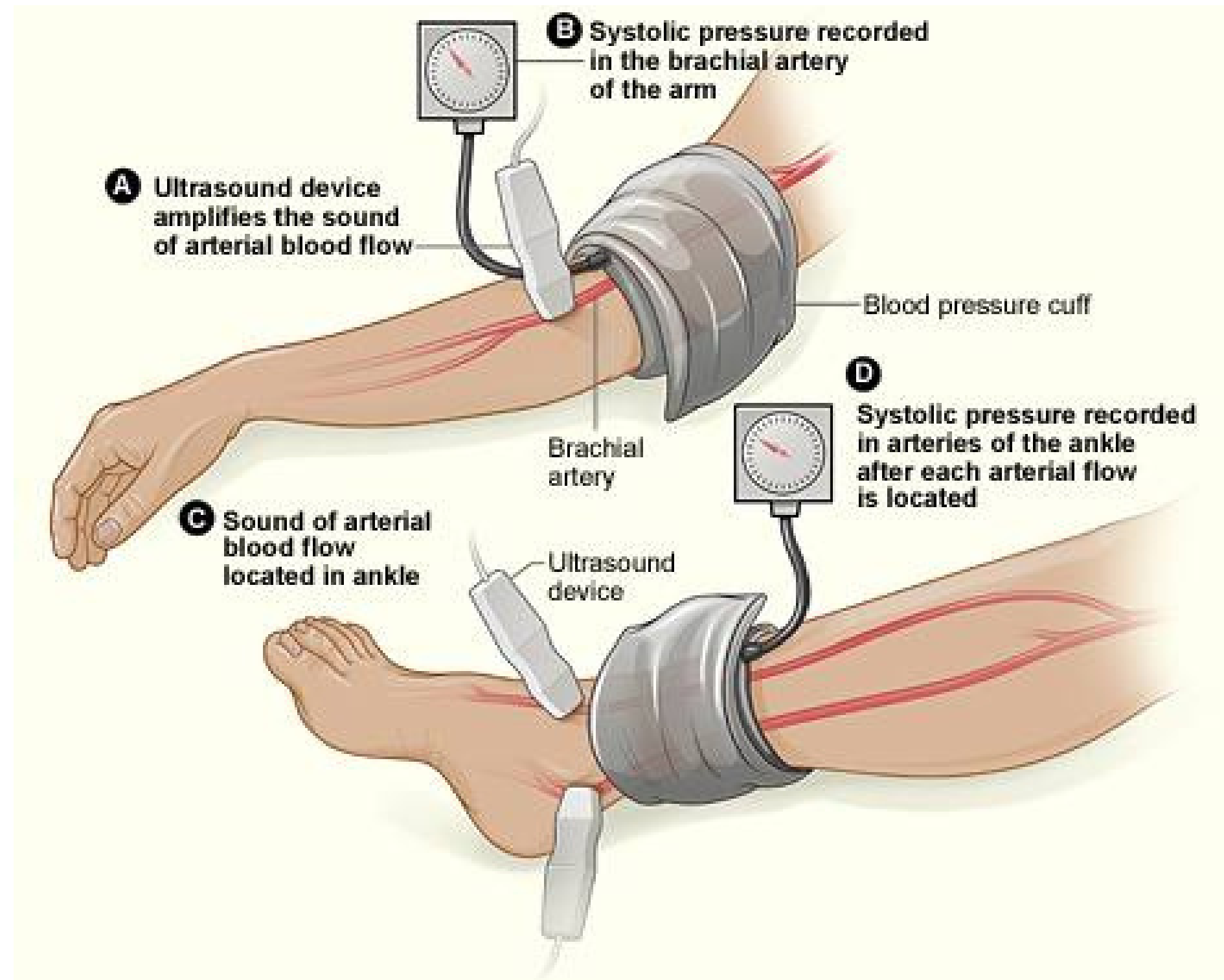
**TABLE 1. Fontaine's Clinical Classification**

|                     |                                                                 |
|---------------------|-----------------------------------------------------------------|
| Grade I             | Asymptomatic. Detectable by ankle-arm index $<0.9$              |
| Grade IIa           | Intermittent claudication not limiting the patient's life style |
| Grade IIb           | Intermittent claudication limiting for the patient              |
| Grade III           | Pain or paresthesias at rest                                    |
| Grade IV            | Established gangrene. Trophic lesions                           |
| Grade III and/or IV | Critical ischemia. Threat of loss of limb                       |

# Diagnostic procedures

- \* **Ankle Brachial Index ( ABI )** -> 1.0-1.4 normal
- \* **Ultrasound Doppler Test** -> evaluate blood flow (decreased)
- \* **Angiogram** -> (catheter inserted in artery and contrast dye injected through it , the Narrowing or blockage of artery can be seen )

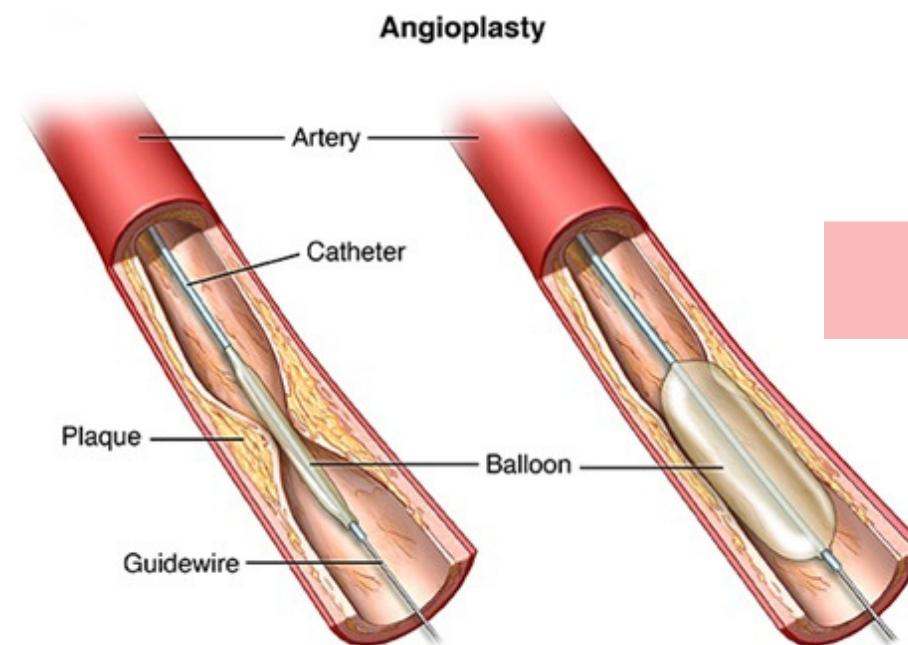
# ANKLE BRACHIAL INDEX (ABI)



# Treatment :

## INVASIVE TREATMENT:

**1-Angioplasty and Stents:**  
is a minimally invasive endovascular procedure used to widen narrowed or obstructed arteries or veins

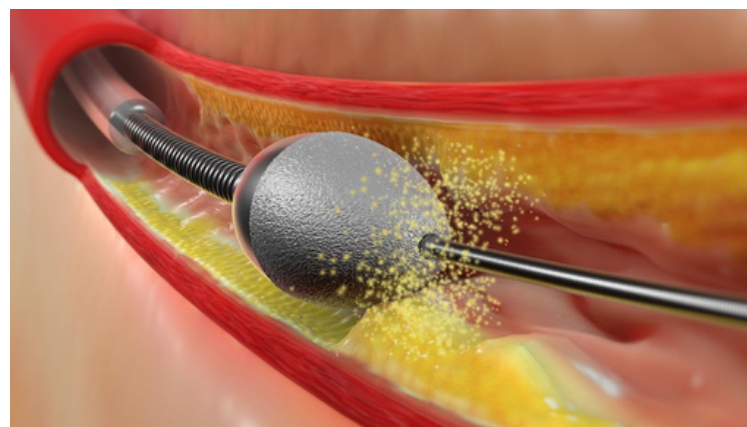


## Purpose of the procedures:

- removes plaque
- compresses plaque
- displacing of plaque

## 2-Atherectomy:

- a minimally invasive intervention procedure
- excision and removal of blockages by catheters with miniature cutting systems.





## **Treatment: (cont .)**

### **■ Surgery:**

- **If blockage is extremely long**
  - **If blockage has become very hard and calcified with time.**
  - **If blockage may be resistant to atherectomy or angioplasty and stents.**
- 

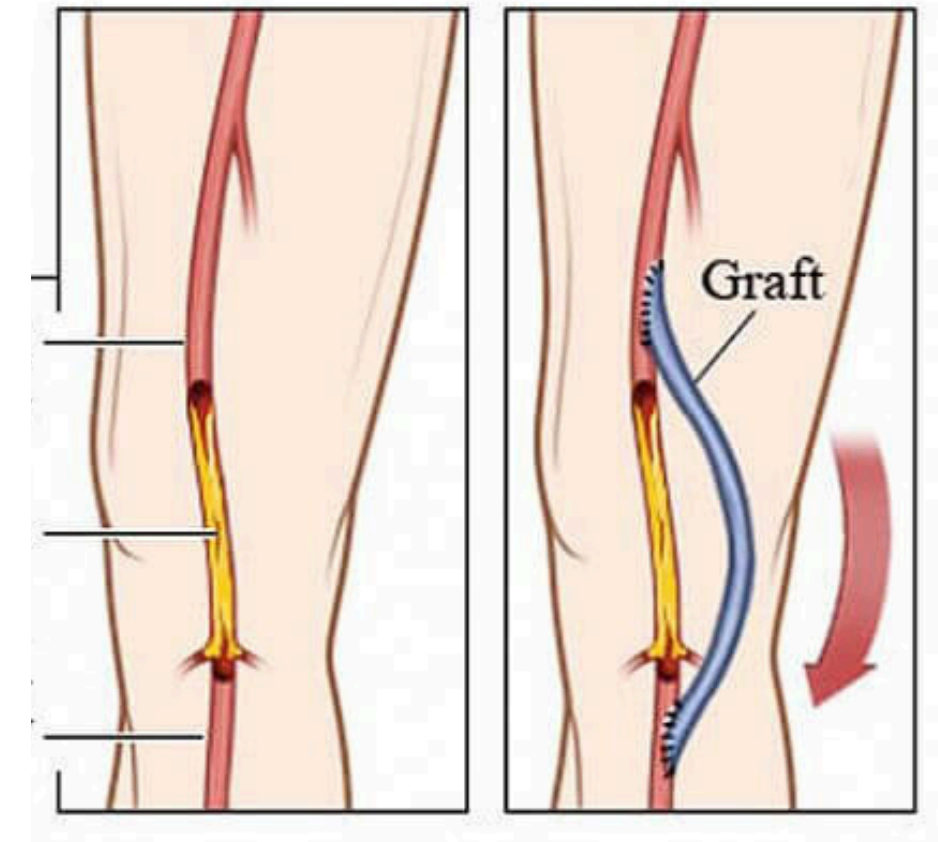
# Treatment:(cont.)

- **Peripheral artery bypass:**

is surgery to reroute the blood supply around a blocked artery in one of the legs

- **Amputation:**

If the vascular damage is unreconstructable



Gangrene



# Treatment: (cont.)

## Non-invasive interventions

### 1. Exercise

### 2. Positioning

- avoid crossing of legs (interferes blood flow)
- elevate feet at rest (manages swelling)
  - \* not above the heart level
  - \* extreme elevation slows arterial blood flow to the feet





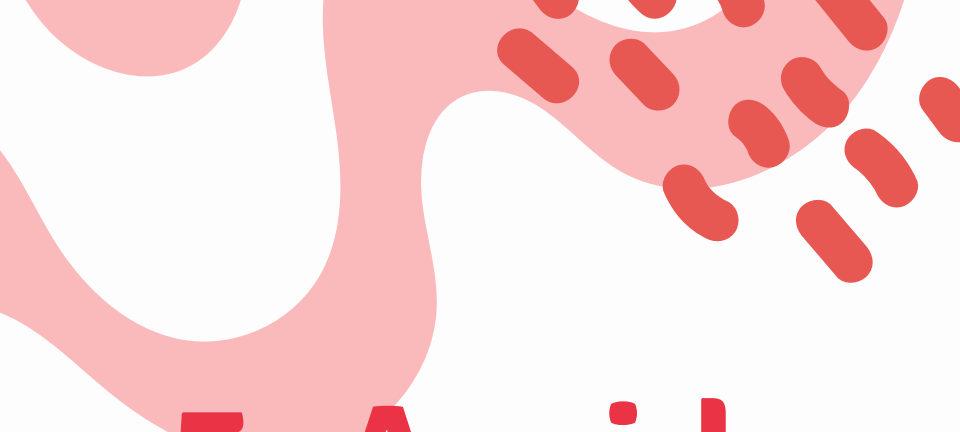
### 3. Promoting vasodilation

- provision of warmth to the affected extremity
- maintain a warm environment at home
- wear socks or insulated shoes at all times
- Never apply direct heat to the limb (heating pad or extremely hot water) to reduce the risk of burns

### 4. Stop Smoking

Smoking causes vasoconstriction





**5. Avoid exposure to cold temperatures**

**6. Avoid or limit intake of caffeine**

causes vasoconstriction.

## **7. Medications**

given to patients with chronic PVD —> Antiplatelet medications  
(such as Aspirin and Plavix)



## **8. Rolling Hypertension**

Controlling high blood pressure can improve blood flow  
through the blood vessels and reduce the constriction





**Which of the following is a sign that PAD is worsening?**

- A. Increase in the distance that can be walked without pain**
- B. Decrease in the distance that can be walked without pain**
- C. Pain at rest that is eased when the legs are elevated**
- D. Peripheral pulses that can be palpated**

**The answer is B**

**A: This choice would be a sign of improvement.**

**C: Pain at rest actually worsens when the legs are elevated above heart level.**

**D: is not in itself a sign of worsening PAD.**



**THANK  
YOU**