

# DISORDERS OF BLOOD VESSEL

## HYPERREACTIVITY 🌡️

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These disorders are characterized by inappropriate or exaggerated vasoconstriction of blood vessels, usually triggered by environmental or emotional stimuli.

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### Raynaud Phenomenon 🖐️

#### Definition

Raynaud phenomenon is an exaggerated vasoconstrictive response of small arteries and arterioles to cold exposure or emotional stress, most commonly affecting the fingers and toes, and less commonly the nose, earlobes, or lips.

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# Pathophysiology

Trigger (cold temperature / emotional stress) → Intense vasoconstriction of digital arteries and arterioles → Reduced blood flow → Tissue ischemia and anoxia → Subsequent reperfusion with warming

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## Color Changes (Triphasic Response)

- In fair-skinned individuals:

Vasoconstriction → White (pallor)

Anoxia → Blue (cyanosis)

Reperfusion → Red (hyperemia)

- In darker-skinned individuals:

Vasoconstriction → Pallor

Anoxia → Purple discoloration

Reperfusion → Pink to dull red

(Color change sequence reflects vascular physiology rather than skin color itself.)

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## Types of Raynaud Phenomenon

### 1. Primary Raynaud Phenomenon 🌸

Definition:

Occurs in the absence of any underlying disease.

Epidemiology:

- Affects 3-5% of the general population
- Predominantly young women

Clinical course:

Benign and episodic → Recurrent vasospastic attacks →

Usually no permanent tissue damage

Chronic cases may show:

Repeated ischemia → Atrophy of skin → Loss of subcutaneous tissue → Muscle wasting

Ulceration and gangrene → Rare

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## 2. Secondary Raynaud Phenomenon ⚠️

Definition:

Occurs secondary to underlying arterial or connective tissue disease, causing true vascular insufficiency.

Associated conditions include:

- Systemic lupus erythematosus
- Scleroderma
- Thromboangiitis obliterans
- Atherosclerosis

Mechanism:

Underlying disease → Structural arterial damage or inflammation → Exaggerated vasospasm → Critical ischemia

Clinical significance:

Raynaud phenomenon → May be the first manifestation of a serious systemic disease

Therefore:

Presence of Raynaud phenomenon → Mandatory evaluation for secondary causes

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Key Exam Pearls 

- Primary Raynaud = functional vasospasm, benign course
  - Secondary Raynaud = structural vascular disease, risk of ischemic damage
  - Gangrene and ulceration suggest secondary, not primary, Raynaud
  - Always investigate Raynaud in adults, especially males or late onset
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