

## 發紺

定義:靜脈與毛細管內有過量青紫色的物質而導致皮膚或黏膜成青紫色  
導致發紺的青紫色物質:

- Unsaturated hemoglobin - 最常見
- Methemoglobin (Fe 卅 hemoglobin)
- Sulfhemoglobin

以 unsaturated Hb 為例，毛細管血中 unsaturated Hb > 5 gm/dl 則出現 cyanosis

分類:

1.中心性發紺 (Central cyanosis): 血質不好(其單位體積含氧量不夠)

1-1)動脈血 pO<sub>2</sub> 下降(hypoxemia)但流量夠(手腳不冰冷)

1-1.1 Cyanotic heart disease with right to left shunt:

1-1.11: Eisenmenger's syndrome with ASD/ VSD / PDA

1-1.12: Cyanosis with increased vascularity: Transposition of great vessels, TAPVC(Total anomalous pulmonary vein connection),truncus arteriosus

1-1.13Cyanosis with normal or decreased vascularity: TOF(Tetralogy of Fallot), Tricuspid atresia, Ebstein's anomaly

1-1.2 V/Q mismatch

1-1.21 COPD(esp. blue bloater type, chronic bronchitis), asthma

1-1.22 pulmonary embolism

1-1.23 pulmonary edema, pneumonia

1-1.3 High altitude

1-1.4 Hypoventilation

1-1.5 ILD

1-2)Met/Sulf-hemoglobinemia: no respiratory/cardiac disorder; normal arterial pO<sub>2</sub>

2.末梢性發紺 (Peripheral cyanosis): 血流量下降(手腳冰冷)

發生機轉:

2-1) 機能性血管收縮 (正常生理反應或病態反應)，例如：緊張、天冷、sympathetic tone 上升。

2-1.1) Raynaud's phenomenon : finger/toe : white -> blue -> red

2-2) 器質性血管阻塞，例如：動脈或靜脈阻塞。

2-2.1)Acute artery occlusion : 5 個 P (pain /pallor /pulselessness /paresthesia /paralysis),2 個 C (cool/cyanosis)

2-2.2 )PAOD (peripheral artery occlusive disease):

Symptoms according to Fontaine grading:

Grad I : limb numbness/cool/cold,

Grade II: intermittent claudication

Grad III: rest ischemic pain

Grad IV : tissue ulcer/gangrene

ABI: (ankle brachial index ) which is a measure of the fall in blood pressure in the arteries supplying the legs. A reduced ABI (less than 0.9) is consistent with PAOD. Values of ABPI below 0.8 indicate moderate disease and below 0.5 severe disease.

3.混合型發紺 (Mixed type) : 以上兩者合併出現, ex. Low C.O.