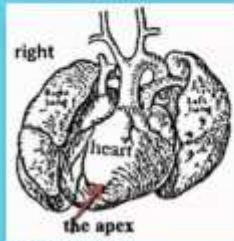


XV. Diseases of the Cardiovascular System

Congenital abnormalities of heart:



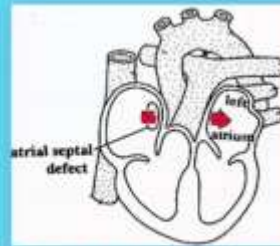
Congenital anomalies heart



1. **Dextrocardia**
-The apex of the heart is directed to the right



3. **Ventricular septal defect**
-It occurs in the membranous part of the interventricular septum



2. **Atrial septal defect (patent foramen ovale)**
-An opening remains between the right and left atria
-It is due to underdevelopment of septum secundum or excessive absorption of septum primum.



4. **Transposition of the ascending aorta and pulmonary trunk**

N.B. 1

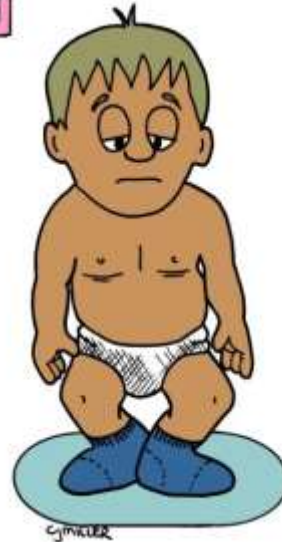
- This is a congenital abnormality associated with:
 - **Marked cyanosis,**
 - **Dyspnea,**
 - **Clubbing of fingers and**
 - **Compensatory polycythemia.**

ACYANOTIC CONGENITAL ♥ DEFECTS

L → R SHUNT

Example:
Patent Ductus Arteriosus
(PDA)
Atrial Septal Defect
(ASD)
Ventricular Septal Defect
(VSD)

- ↑ Fatigue
- ♥ Murmur
- ↑ Risk Endocarditis
- CHF
- Growth Retardation



Causes & Risks Factors



- Maternal smoking/Exposure to second hand smoke during the first trimester of pregnancy.
- **Maternal Binge Drinking.**
- Gestational Diabetes Mellitus.
- **Obesity in Mother.**
- Folate Deficiency.
- **Having a parent with CHD.**

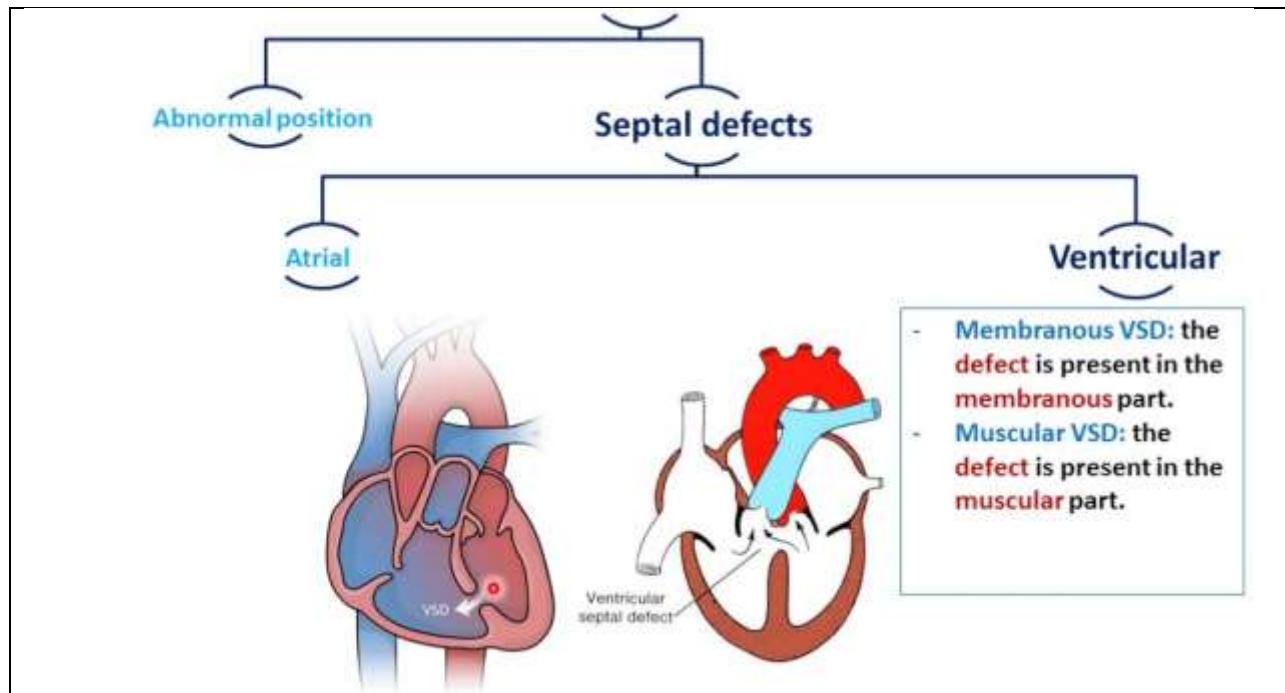
Congenital abnormalities of heart:

- *Most of these defects or anomalies are dependent upon variations in the formation of the septum which divides the heart into left and right sides.*

The anomalies may be in the heart or blood vessels:

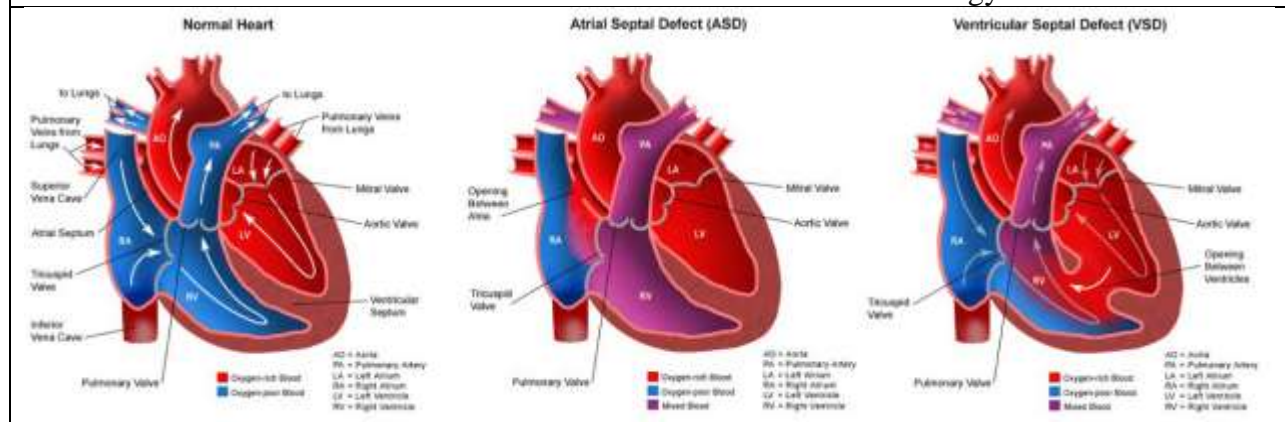
1. Position

- Displacement;
- Rotation;
- Dextro-cardia;
- Situs inversus.



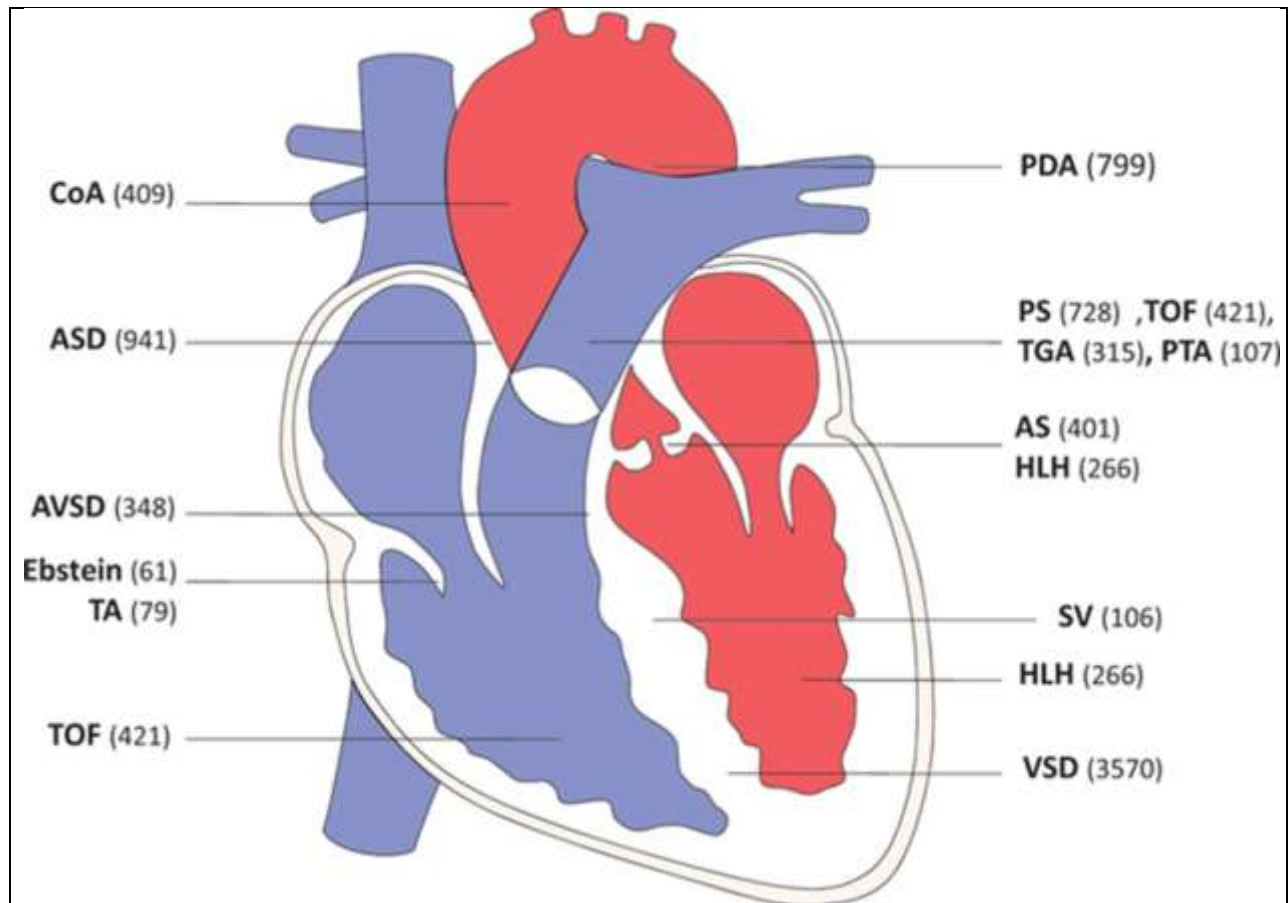
2. Chambers

- **Auricular**
 - Septal defects;
 - Patent foramen ovale;
 - Inter-auricular septal defect associated with mitral stenosis);
- **Ventricular**
 - Septal defect alone or
 - In association with OLE abnormalities as in Fallot's tetralogy.



3. Myocardium

- Hypertrophy;
- Atrophy.



4. Endocardium and valves (cusps and openings).

These include:

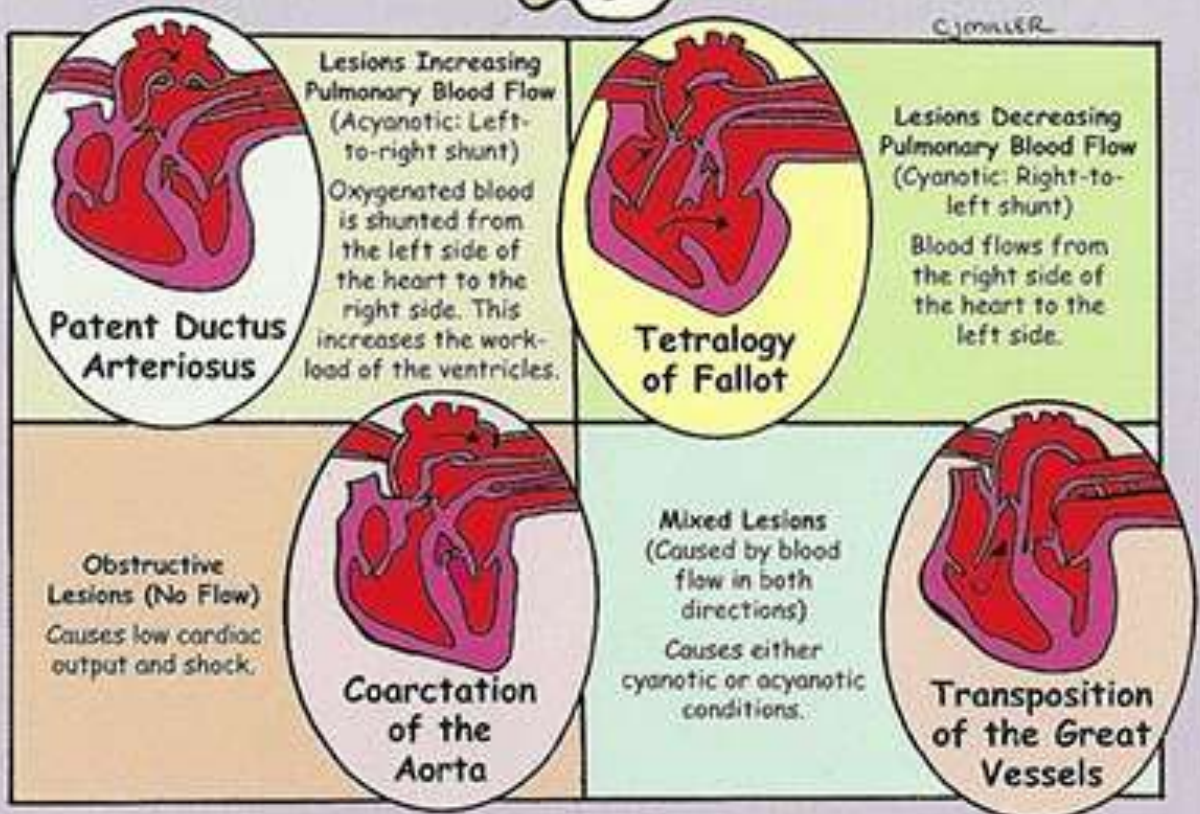
- (a) Stenosis (pulmonary stenosis which may be valvular, pre-valvular or arterial; aortic; tricuspid; mitral).
- (b) Atresia.
- (c) Incompetence.
- (d) Increase or decrease in number of cusps.
- (e) Foetal endocarditis.

CONGENITAL HEART DEFECTS

There are 35 different types of congenital heart defects, all of which fall into 4 categories.



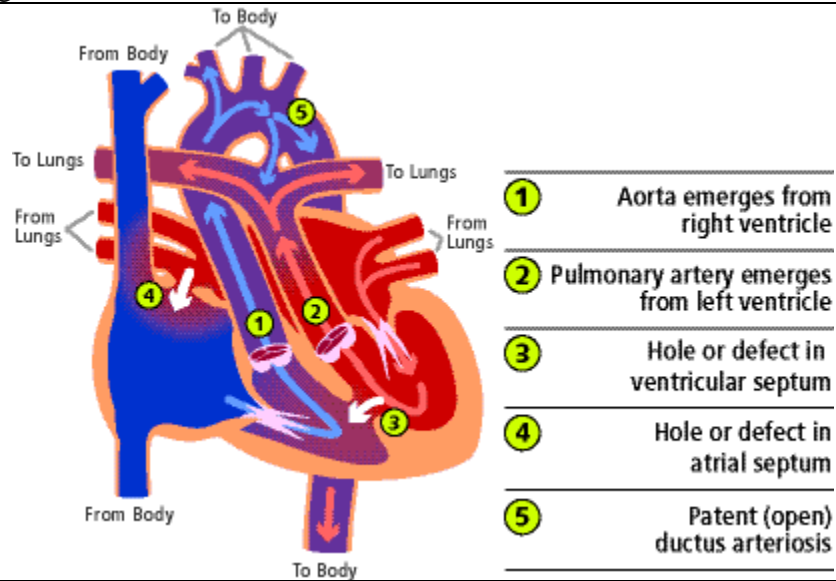
Really? I didn't know that.



5. *Pericardium* (absence; deficiency; presence of a diverticulum).

6. Aorta

- Diminution in size;
- Stenosis;
- Coarctation whether infantile or adult type;
- Transposition of aorta and pulmonary artery;
- Double arch of aorta;
- Patent ductus arteriosus between the aorta and the pulmonary;
- Congenital dilatation.

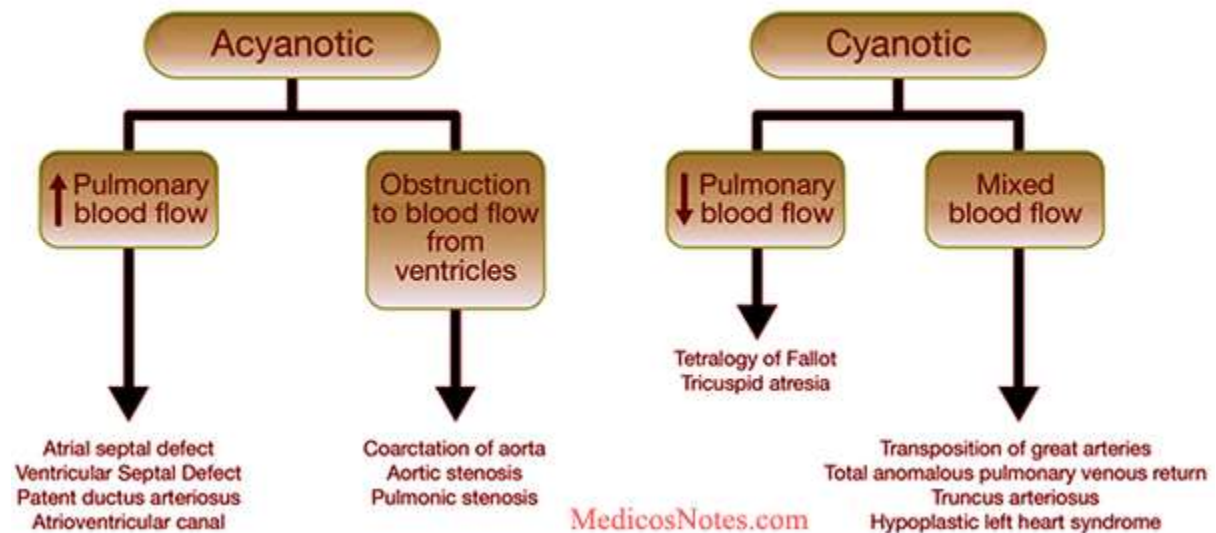


7. Other blood vessels.

Clinically,

- Cardiac anomalies are divided into those associated with **cyanosis** or **otherwise**.

Classification of Congenital Heart Disease



Cyanotic Congenital ♥ Defects

R → L SHUNT

Example:
Tetralogy of Fallot

- Squatting
- Cyanosis
- Clubbing
- Syncope



CONGENITAL ♥ DEFECT SYMPTOMS

- ♥ ↑ Pulse
- ♥ ↑ Respirations
- ♥ Retarded Growth
- ♥ Dyspnea, Orthopnea
- ♥ Fatigue
- ♥ URI



Complications of congenital heart disease:

1. **Predisposition to subacute bacterial endocarditis** such as in:

- Bicuspid aortic valve,
- Stenosed aortic valve,
- Coarctation of aorta or
- Patent ductus arteriosus (at its opening).

2. **Cerebral abscess** as:

- (a) When there is a possibility of a re-circulation of venous blood through the systemic circulation.
- (b) In tetralogy of Fallot.
- (c) In patent inter-atrial septum with left ventricular failure.

N.B. 2

Diseases of the myocardium:

1. - Acute myocarditis:

(a) Bacterial (interstitial):

- Suppurative;
- Rheumatic;
- Syphilitic;
- Tuberculous;
- Sometimes certain drugs.

(b) Toxic (parenchymatous): Diphtheria.

2. Subacute myocarditis: (idiopathic; granulomatous; Fiedler's myocarditis).

3. Chronic myocarditis (chronic interstitial = myocardial scarring):

- A condition of scarring with little or no signs of inflammation.
- Heart becomes fibrosed, firm, rigid and shows white strands at the cut surface especially at the anterior wall of left ventricle near apex or/and the interventricular septum.

Antecedent factors are

- (1) **Coronary artery occlusion** (atheroma; thrombosis on top of atheroma; spasm; syphilitic aortitis sealing opening of mouths of coronaries)
- (2) **Old inflammatory and necrotic foci** (rheumatism; diphtheria; typhoid fever). and
- (3) **Syphilitic myocarditis** (gumma of the myocardium is rare, in the upper part of inter ventricular septum and may cause heart block by interrupting the conduction bundle).

4. Degenerations of myocardium :

- (a) **Albuminous (cloudy swelling).**
- (b) **Hydropic.**
- (c) **Amyloid (primary or secondary).**
- (d) **Fatty degeneration and infiltration.**
- (e) **Glycogen storage disease.**
- (f) **Calcification.**

5. Atrophy and necrosis:

- (a) Brown atrophy and ischaemic (senile) atrophy.
- (b) Coagulation necrosis.

6. Parasitic infection

1. *Malaria,*
2. *Bilharzia and*
3. *Hydatid cyst.*

7. Fungus infection.

8. Fragmentation and segmentation.

9. Tumours.

10. Congenital abnormalities.

