



ATRIAL SEPTAL DEFECT "ASD"

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Outlines

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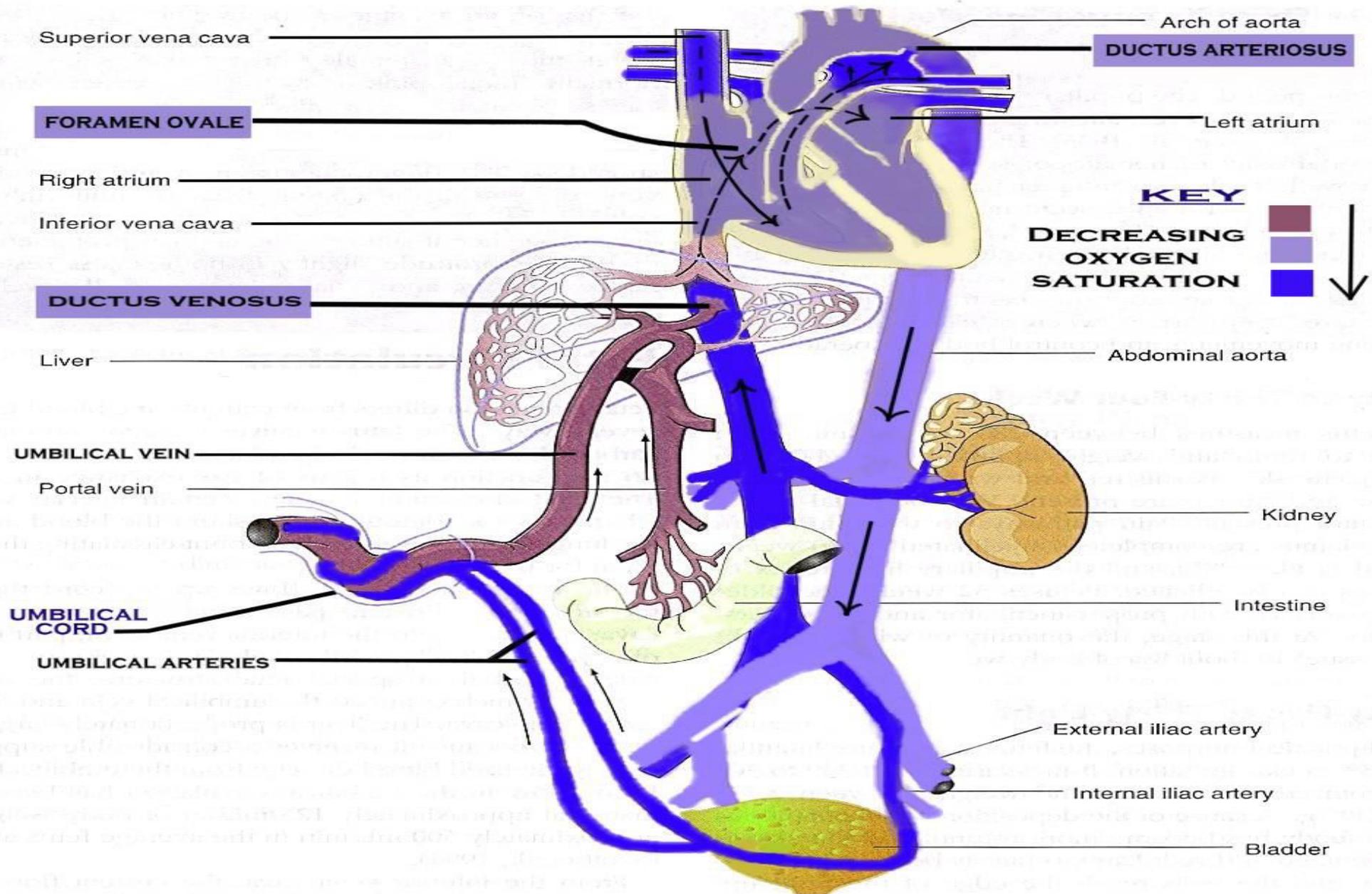
Introduction

Every child is born with an opening between the upper heart chambers. It's a normal fetal opening that allows blood to detour away from the lungs before birth.

After birth, the opening is no longer needed and usually closes or becomes very small within several weeks or months.

Sometimes the opening is larger than normal and doesn't close after birth. In most children the cause isn't known. Some children can have other heart defects along with ASD.

Fetal Circulation



Changes at Birth:

After the umbilical cord has been cut, the newborn must adapt to receive oxygen from the lungs.

- When the first breath, the lungs are expanded and increased oxygen causes pulmonary vasodilation.
- Pulmonary pressure starts to fall as systemic pressures, given the removal of the placenta, start to rise.

Conti...Changes at Birth:

- Increased pressure in the Left Atrium (LA) stimulates the closure of Foramen Ovale (FO).
- The Ducts Arteriosus (DA), responding to higher oxygen saturation, normally constricts and closes within 10-15 hours after birth. Permanent closure occurs by 10-21 days after birth, unless oxygen saturation remains low.

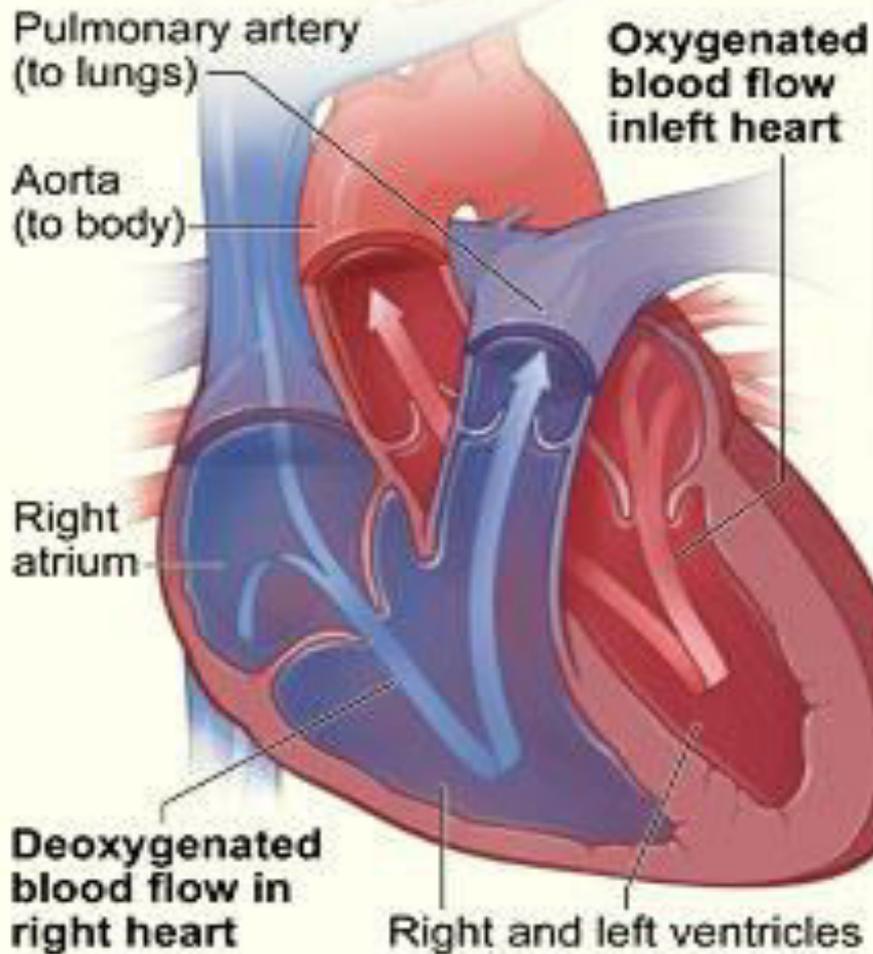
Definition of Atrial Septal Defect

“ASD”

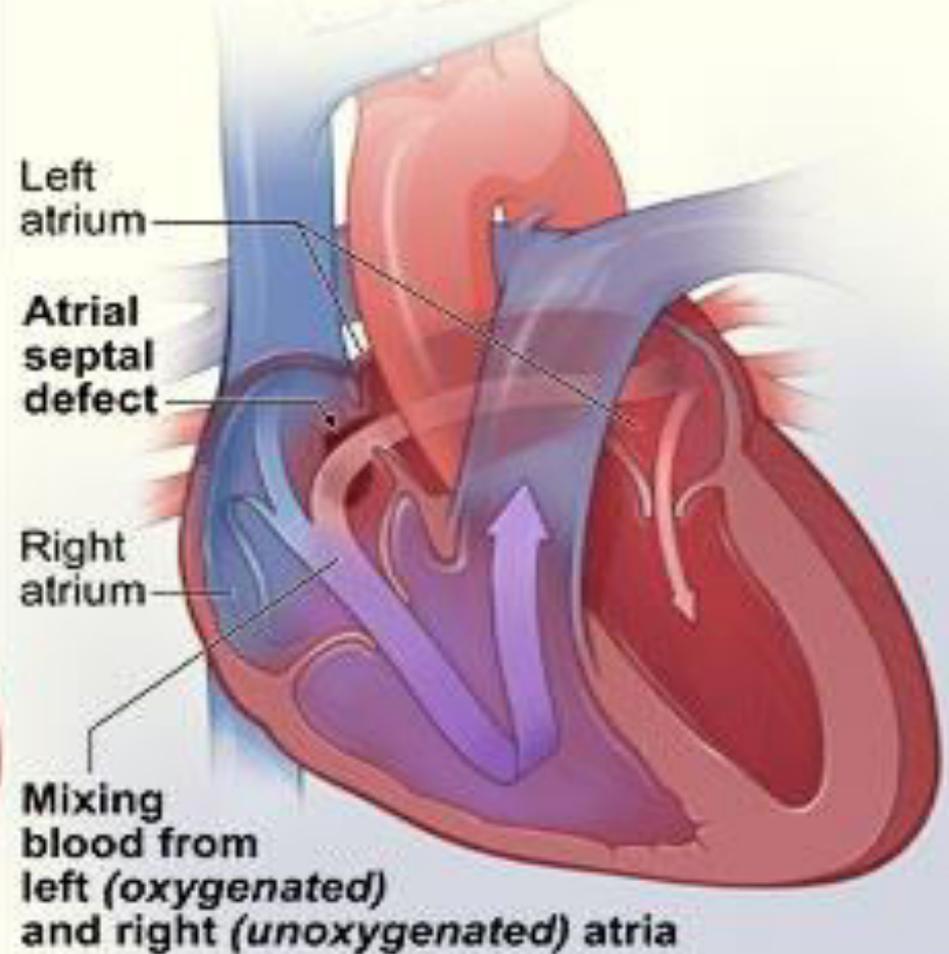
- ❑ It is the presence of abnormal opening between atrial, allowing blood to flow from the higher-pressure left atrium to the lower-pressure right atrium.
- ❑ The opening may be small, as when Foramen Ovale fails to close, or large, as when the septum may be completely absent.
- ❑ ASD is acyanotic congenital heart diseases and that cause increased pulmonary blood flow

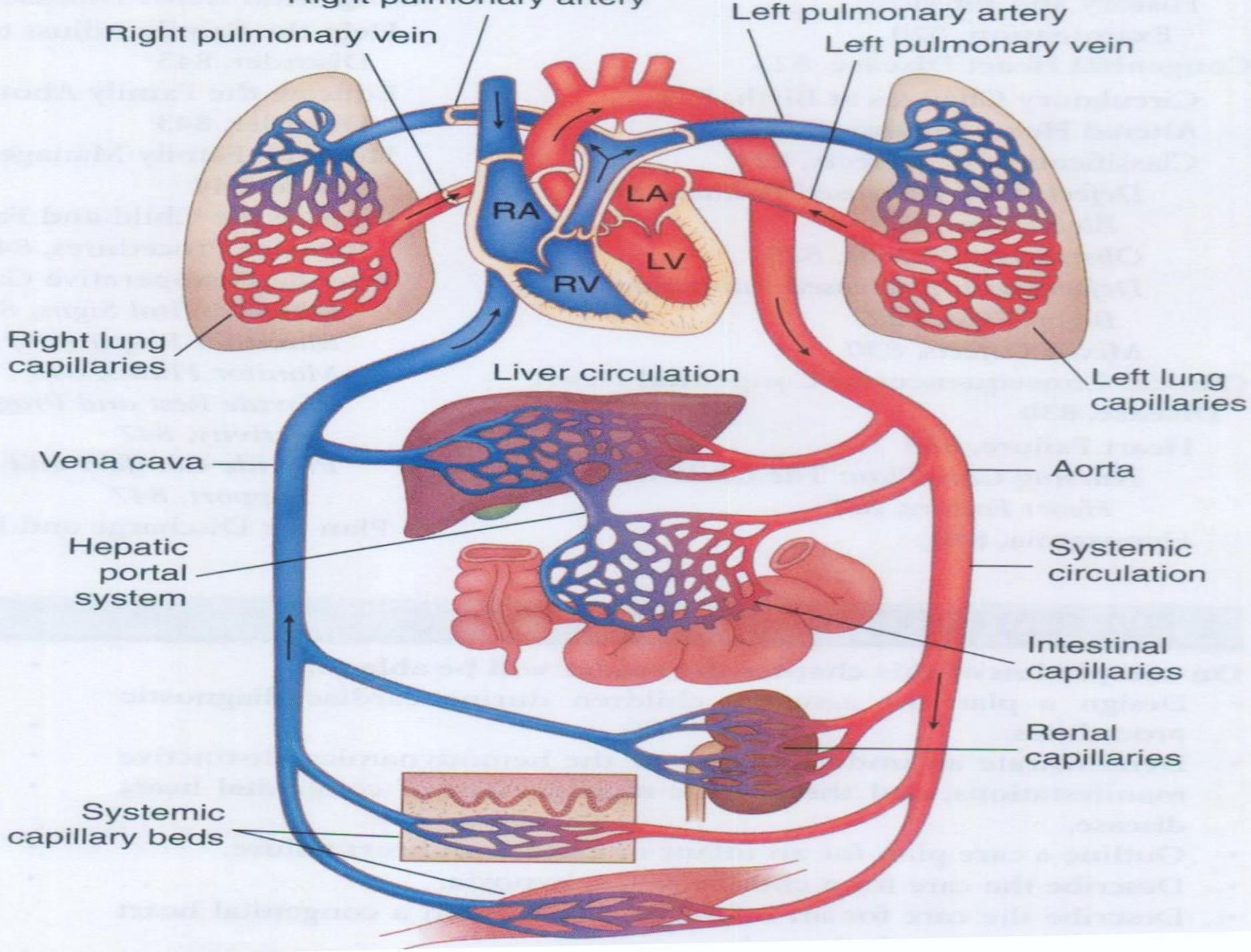
Pathophysiology:

A Normal heart



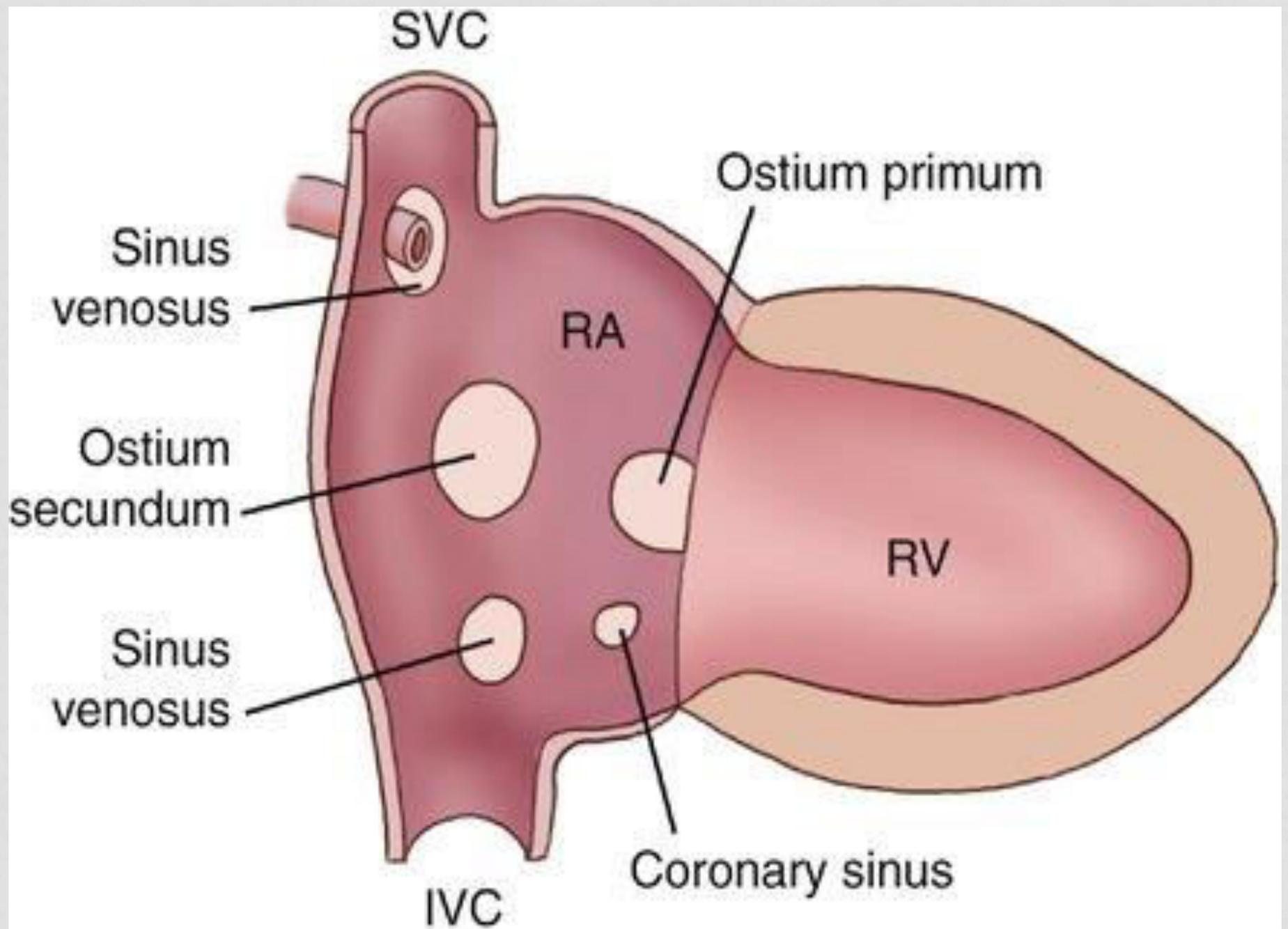
B Heart with atrial septal defect





TYPES OF ASD

- **Ostium Primum (ASD 1):** the opening here is located at the lower end of septum, and might be associated with mitral valve abnormalities.
- **Ostium Secundum (ASD 2):** the opening is located near the center of septum.
- **Sinus venosus atrial septal defect:** This defect occurs at the junction of the superior vena cava and right atrium, where the pulmonary veins enter the heart atrium.
- **Coronary sinus atrial septal defect:** This defect is located within the coronary sinus.



Clinical manifestation:

- Patient may be asymptomatic, they may develop congestive heart failure, and there is a characteristics murmur, patient at risk of arterial dysrhythmia, and pulmonary vascular obstructive disease, and emboli formation later in the life from increased pulmonary blood flow.

TESTS THAT MAY DONE INCLUDE:

- Cardiac catheterization
- Chest x-ray
- Coronary angiography (for patients over 35 years old)
- Doppler study of the heart
- ECG
- Echocardiography
- Heart MRI
- Transesophageal echocardiography (TEE)

NURSING ASSESSMENT FOR ASD

1. Perform a physical examination with a detailed examination of the heart.
 - Pulmonary artery pulse can be felt in the chest.
 - Examination with a stethoscope shows an abnormal heart sound.
 - Audible murmur due to increased blood flow through the pulmonary valve.
 - The signs of heart failure.

CONTI...NURSING ASSESSMENT FOR ASD



2. Perform vital signs measurement.
3. Assist with diagnostic procedures and tests - eg, ECG, radiography, echocardiography, fluoroscopy, ultrasonography, angiography, blood analysis (blood count, hemoglobin, blood cell volume, blood gases), cardiac catheterization.
4. Assess the general appearance, behavior, and function: **Inspection, tach and auscultation**

CONTI...NURSING ASSESSMENT FOR ASD

Inspection

- Nutritional status and failure to thrive or poor weight gain associated with heart disease.
- Color - Cyanosis is a general description of congenital heart disease, while the pale-related anemia, which often accompanies heart disease.
- Deformity of the chest - heart enlargement sometimes change the configuration of the chest.

CONTI...NURSING ASSESSMENT FOR ASD

Conti..Inspection

- Respiratory excursion - Breathing easy or difficult (eg, Tachypnoea, dyspnea, the presence of expiratory snoring.)
- Conduct - Choosing a knee chest position or squatting are characteristic of some types of heart disease.



CONTI...NURSING ASSESSMENT FOR ASD

Tach

- Chest - Helping to see the difference between heart size and other characteristics (such as Thrill-vibrilasi examiner felt when mampalpasi)
- Abdomen - hepatomegaly and / or splenomegaly may be seen.
- Peripheral pulse - frequency, regularity, and amplitude (strength) may indicate incompatibility.



CONTI...NURSING ASSESSMENT FOR ASD

Auscultation

- Heart - Detecting the presence of heart murmurs. Frequency and rhythm of the heart - Indicates deviation and intensity of heart sounds that help to localize the heart defect.
- The lungs - Indicates dry coarse rhonchi, wheezing.
- Blood pressure - Irregularities occur in some heart conditions (eg mismatch between the upper and lower extremities)



Treatment

- Surgical patch closure is done for moderate and large ASDs when significant increased pulmonary blood flow cause CHF, or when spontaneous closure has not occurred by the age of 4 years.
- Non-surgical treatment: ASD 2 can be closed by trans-catheter device (septal occluder) during cardiac catheterization.

NURSING DIAGNOSIS FOR ASD

- Risk for Decreased Cardiac Output related to the defect structure
- Activity Intolerance related to the disturbance of oxygen transport system
- Altered Growth and Development related to inadequate oxygen and nutrients to the tissues; social isolation.



NURSING DIAGNOSIS FOR ASD

- Risk for Infection related to the physical status of the weak.
- Risk for Injury (complications) related to heart conditions and therapies
- Altered Family Processes related to having children with heart disease (ASD)



EXAMPLE NURSING CARE PLAN FOR ASD

Nursing Diagnosis :

Activity Intolerance related to disruption of oxygen transport system

Goal:

Clients maintain adequate energy levels without additional stress.

Expected results:

- Children identify and conduct activities in accordance with ability.
- Children get a break / sleep right.



CONTI...EXAMPLE NURSING CARE PLAN FOR ASD

1. Provide frequent rest periods and sleep periods without interruption.
2. Encourage quiet games and activities.
3. Help child choose activities according to age, condition and capability.
4. Avoid extreme temperature environments due to hyperthermia or hypothermia increases oxygen demand.
5. Implement measures to reduce anxiety.
6. Respond immediately to the cry or other expressions of distress.

Thank you

