

Introduction to pediatric cardiology



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1. Do not touch!!! Listen!! Ask!!

Family history

Perinatal history

Development (growth retardation?)

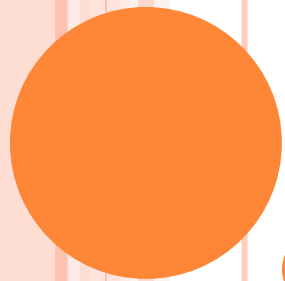
Complains

2. Do not touch!! Look!! Listen (without touching)!!

Dysmorphism?

Skin?

Breathing?





CHD can be related to genetic disorders, syndromes

Down syndrome

Turner syndrome

Marfan syndrome

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Perioral cyanosis is not a sign of a heart disease

Acrocyanosis of the newborn can be physiological

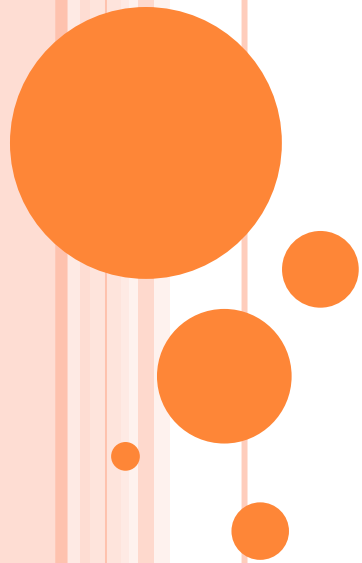
Oral cyanosis can be a real sign of cyanotic CHD

- TOF
- TGA
- TA
- PA

Breathing: dyspnea, tachypnea can be a sign of cardiac heart failure



. 3. Touch!! Listen/Auscultate!!



Touch:

- skin (cold/hot; wet/dry)
- pulses (femoral!!) - regular?, heart rate
- chest (precordial
- abdomen: hepatomegaly?

Listen:

- heart rate (regular/irregular? tachycardia/bradycardia?)
- heart murmur (systolic/diastolic? silent/loud?)

Measure:

- oxygen saturation
- blood pressure





Normal Heart Rates for Children of Different Ages

TABLE 5-9 Normal Heart Rates for Children of Different Ages

| Age | Heart Rate Range (beats/min) | Average Heart Rate (beats/min) |
|--------------------|------------------------------|--------------------------------|
| Newborns | 100–170 | 120 |
| Infants to 2 years | 80–130 | 110 |
| 2–6 years | 70–120 | 100 |
| 6–10 years | 60–110 | 90 |
| 10–16 years | 60–100 | 80 |

Table 161. Blood Pressure Cuff Size in Children

| Cuff | Bladder Width (cm) | Bladder Length (cm) |
|-------------|--------------------|---------------------|
| Neonate | 2.5-4.0 | 5.0-9.0 |
| Infant | 4.0-6.0 | 11.5-18.0 |
| Child | 7.5-9.0 | 17.0-19.0 |
| Adult | 11.5-13.0 | 22.0-26.0 |
| Large adult | 14.0-15.0 | 30.5-33.0 |
| Thigh | 18.0-19.0 | 36.0-38.0 |

From the Task Force on Blood Pressure Control in Children.⁵⁶⁷ Reproduced with permission.

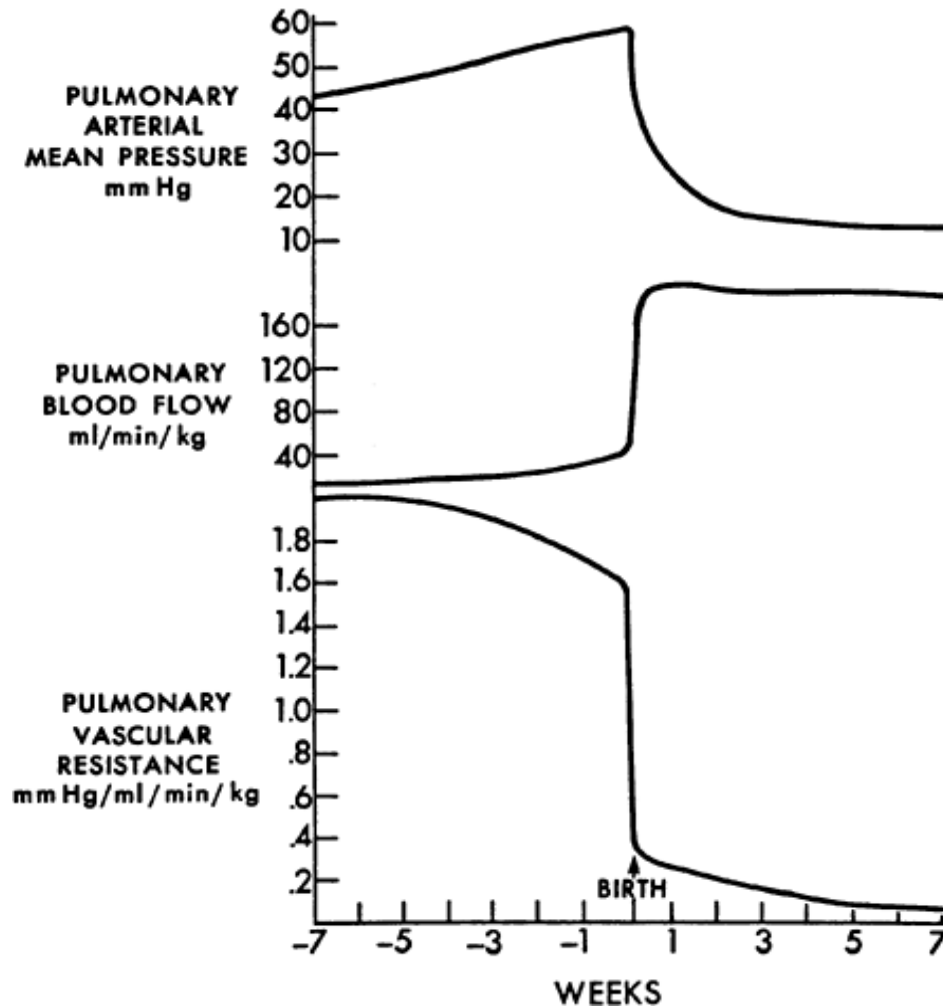


Questions

- **Even serious CHD-s can be „silent” in the first days/weeks of life – why?**
- **In most of cases we don't hear the heart murmur of a CHD on the first week/weeks – why?**



Postnatal changes in the pulmonary vascular resistance



Changes in Circulation after Birth

- The PVR is as high as the SVR near or at term
- Lung expansion results reduction of PVR, increase in pulmonary blood flow and fall in PA pressure
- Even serious CHD-s can be „silent” in the first days/weeks of life
- Even in the presence of large VSD in a newborn, the PVR remains elevated, and therefore a large shunt does not occur, until the infant reaches 6 to 8 weeks of age when the PVR decreases, the shunt increases and CHF may develop



Take home message

- „Ask and look” before the physical examination!
- Check the femoral pulses!
- Perioral cyanosis is not a sign of cardiac disease
- Even serious CHD-s can be „silent” in the first days/weeks of life
- First clinical sign of the cardiological problems can be the feeding difficulty, the growth retardation
- CHF signs in infants: tachydyspnea + hepatomegaly (right- and left sided failure)



Thank You for Your attention!

