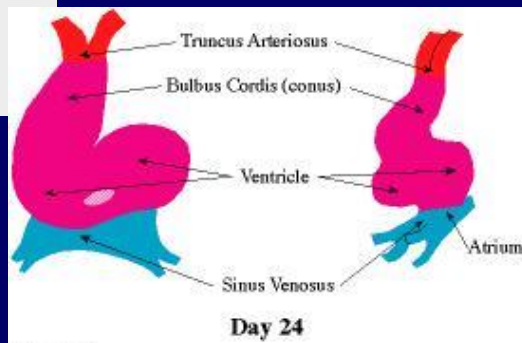
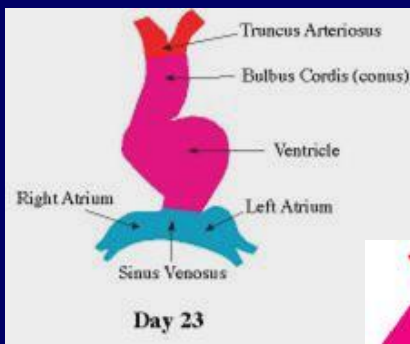


Cardiac surgery – Congenital heart disease in the adult

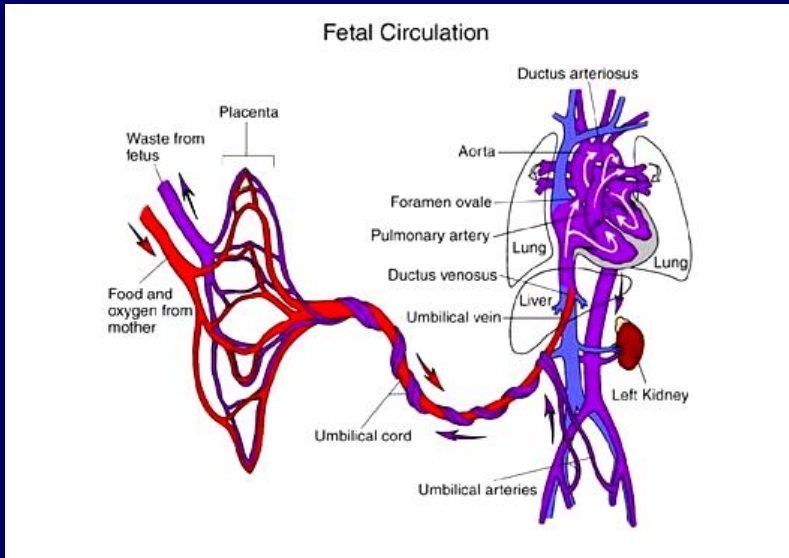


University of Pecs, Medical Faculty
Heart Institute

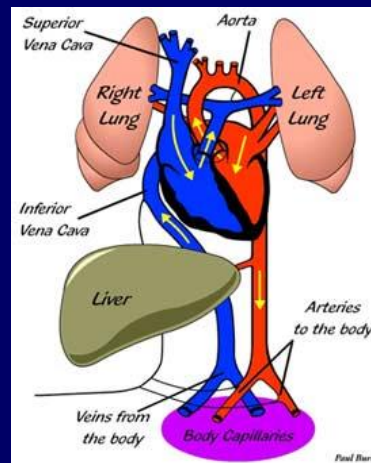
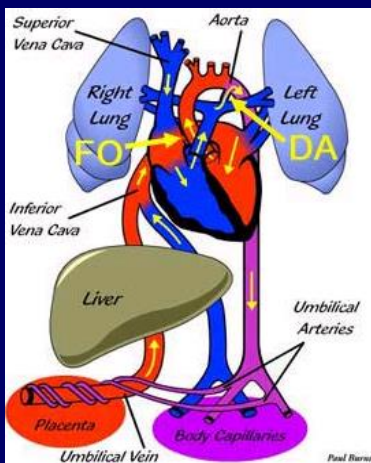
Embryogenesis of the heart



The fetal circulation



Transformation of the fetal circulation



Classification of congenital heart diseases

Left-to-right shunt

- atrial septal defect
- ventricular septal defect
- persistent ductus arteriosus
- atrioventricular septal defect
- partial transposition of pulmonary veins

Obstructive

- aorta stenosis
- pulmonary stenosis
- coarctation of aorta

Cyanotic (right-to-left shunt)

- great vessel transposition
- tetralogy of Fallot
- tricuspid atresia
- pulmonary atresia
- Ebstein-anomaly
- total transposition of pulmonary veins
- persistent truncus arteriosus
- univentricular heart

Operative management

- Why operate? symptoms of circulatory failure, frequent airway infections, retardation in growth, Eisenmenger syndrome
- Earlier: several-stage operations starting with palliation
- Nowadays primary total anatomical reconstruction even in newborns
- Reduced mortality recently
- Less demanding for the society and for the family
- Diagnostics: mainly echocardiography, less angiocardiology (X-ray, contrast agent!), cardiac MRI

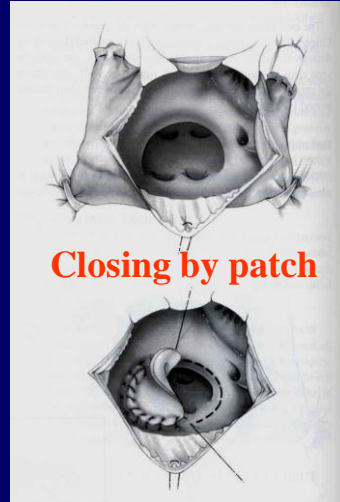
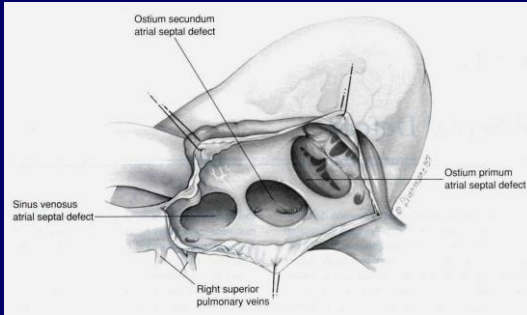
Postoperative follow-up

- Regular follow-up is necessary in most cases
- (Elective multistage operations to the strength of the child)
- Redo operations (adhesions!): graft replacement for a bigger one, calcified homograft, late complications
- Endocarditis prophylaxis (in case of residue)
- Physical education/load according to capacity
- Psychological/mental guidance

GUCH (Grown-up congenital heart) disease

- 80-85% of patients born with congenital heart disease survive to adulthood
- Relatively small population, but complex and variable pathology
- Special follow-up: cardiology, intensive care, anesthesia, pregnancy
- 40% simple or cured disease – no specialist, 35-40% – access to expert consultation, 20-25% – life long expert supervision
- Pediatric cardiologist and cardiac surgeon ↔ Adult cardiologist and cardiac surgeon

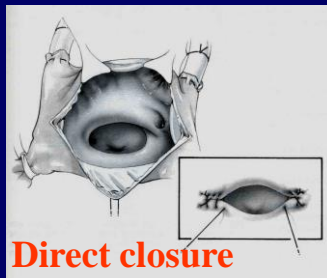
Atrial septal defect (ASD)



Closing by patch

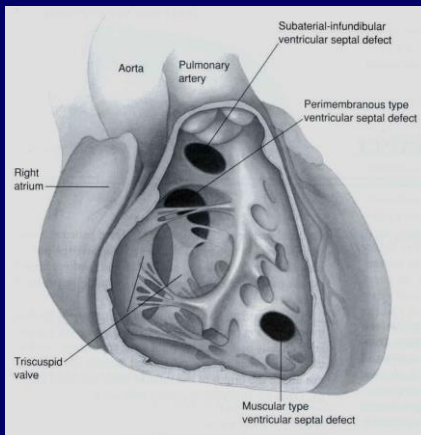
Op.:
 $Q_p/Q_s > 2.0$

Paradoxical emb.

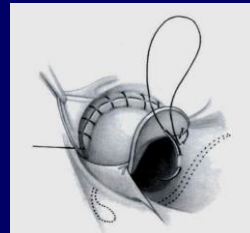


Direct closure

Ventricular septal defect (VSD)

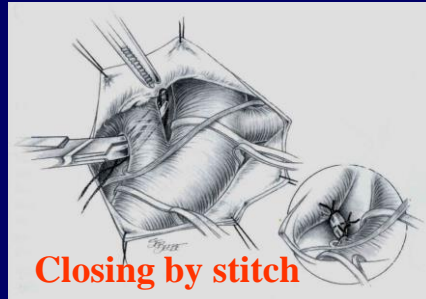
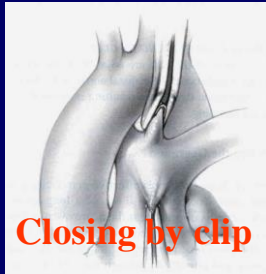


Closing by patch

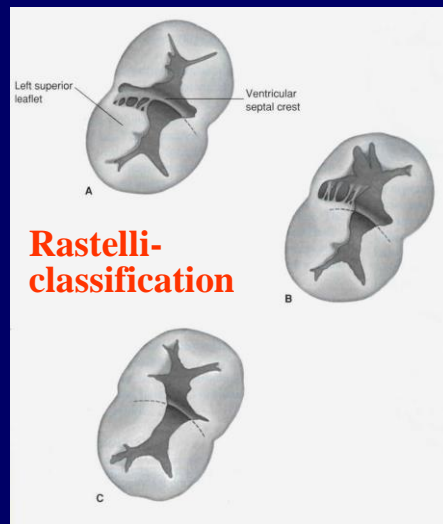
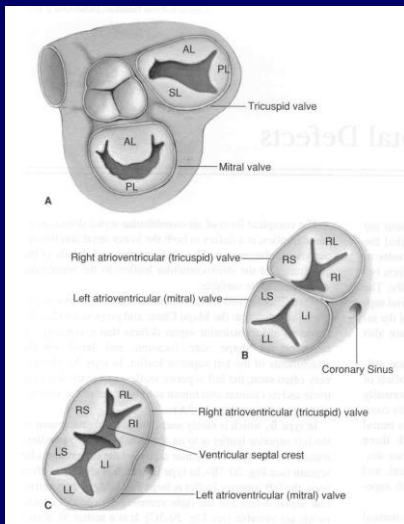


Op.:
 $Q_p/Q_s > 2.0$

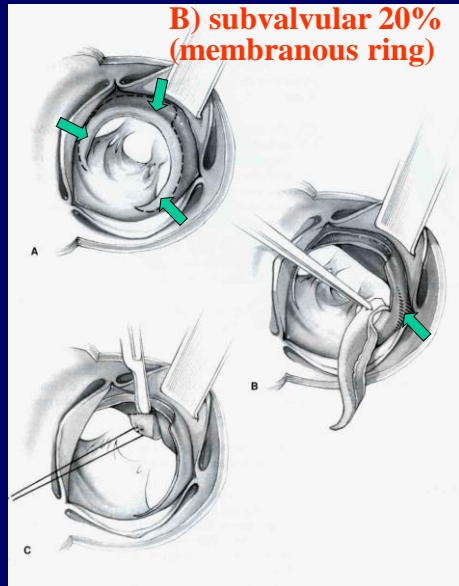
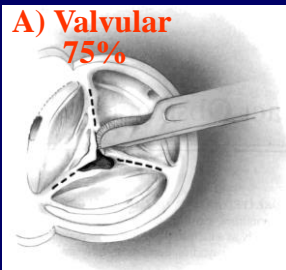
Persistent Ductus Arteriosus (PDA)



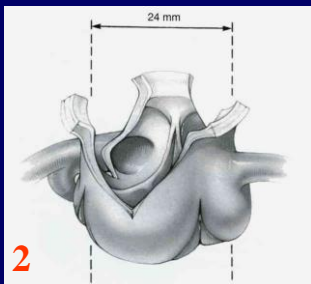
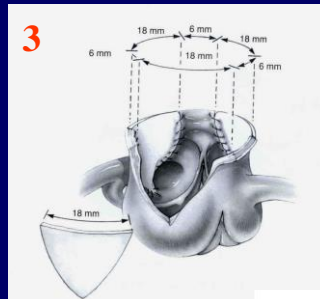
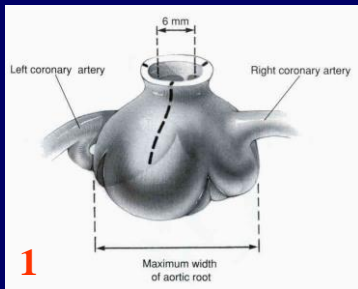
Atrioventricular septal defect, AV-canal, AVSD



Congenital aortic stenosis



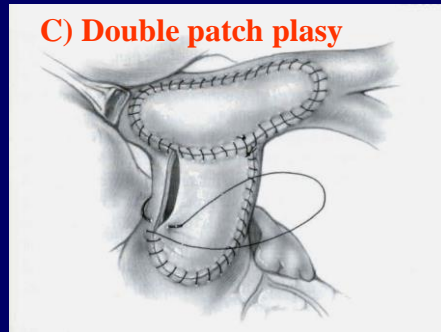
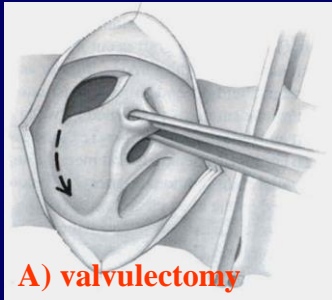
Congenital aortic stenosis



**C) supra-
valvular
5%**

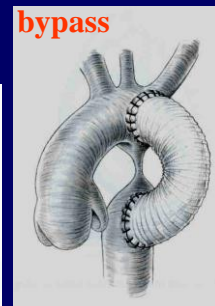
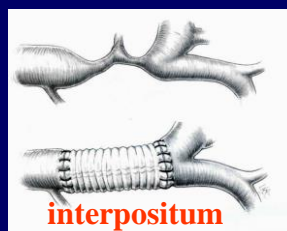
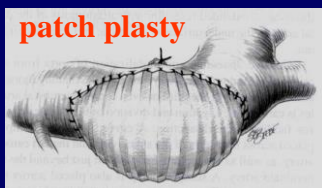
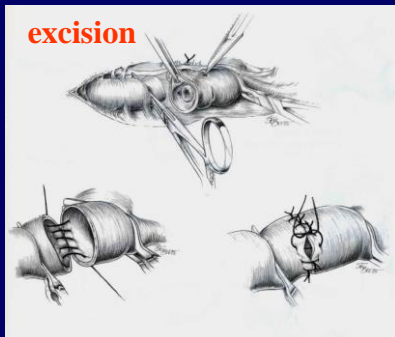


Pulmonary stenosis

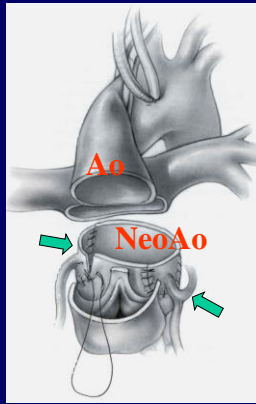
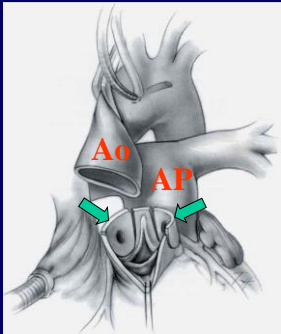


Coarctation of the aorta

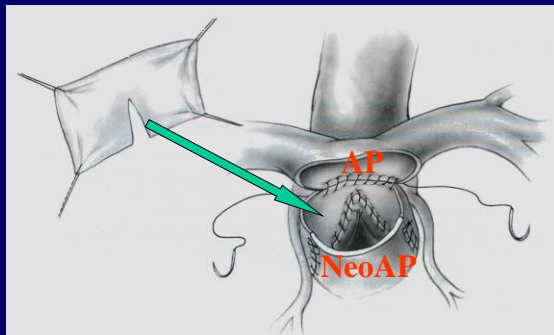
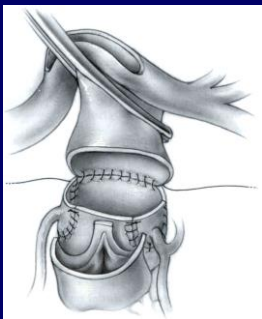
praeductal, postductal type
Op.: sten > 50%, RRdiff > 20-30Hgmm



Transposition of the great vessels



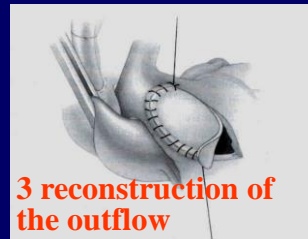
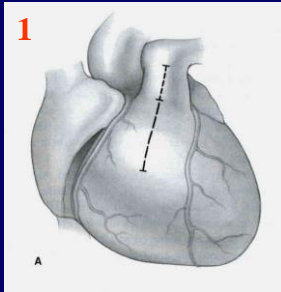
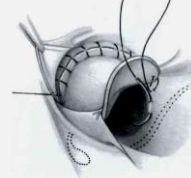
Transposition of the great vessels



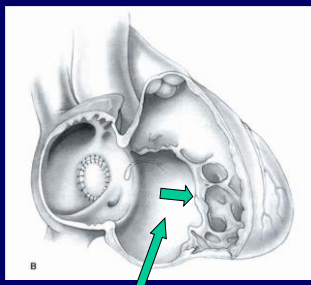
Tetralogy of Fallot

- Pulmonary infundibular stenosis
- VSD
- Overriding aorta
- Right ventricular hypertrophy

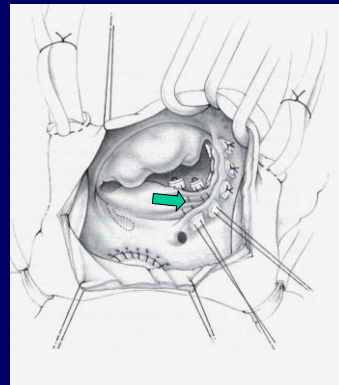
2 closing the septal defect



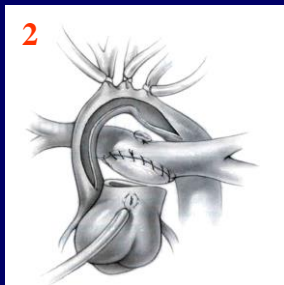
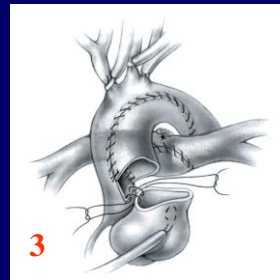
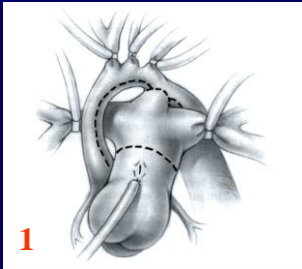
Ebstein-anomaly



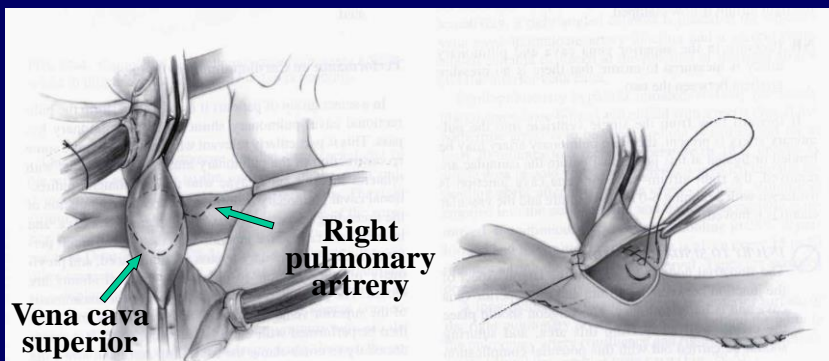
Atrialized right ventricle



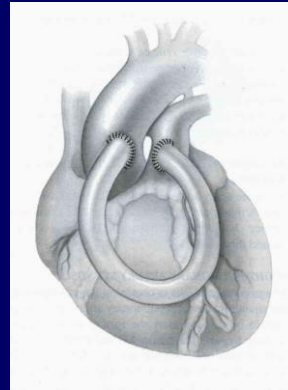
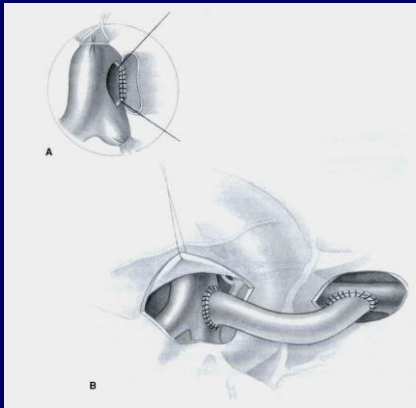
Univentricular heart (<1%)



Bidirectional cavopulmonary anastomosis



Aorto-pulmonary shunts



Central shunt

Reducing pulmonary perfusion

pulmonary artery banding
preventing pulmonary hypertension

