

# Periods of the children's life

# Pediatrics studies

- ❑ The laws of a child's development
- ❑ Rules of child's feeding
- ❑ Etiology and pathogenesis of children's diseases
- ❑ Ways of their diagnostic, treatment and prophylaxis

# Proupaedeutics studies

- The features of growth, development, and formation all systems of child's organism in different period of life
- Methods of examination, palpation, percussion, auscultation of internal organs and systems of healthy or sick children
- Semiotics of lesion of different organs and systems
- Clinical processing of data obtained after general and additional examination of patients

# Periods of the children's life

- Intrauterine period
- Extra uterine period
  - Breast – feeding (infancy) period
  - Pre-preschool period
  - Preschool period
  - Junior school period
  - Senior school period

# Intrauterine period

**Continues** from fertilization up until birth of child - 270 days (in practice - first day of the last menstrual cycle of the mother- 280 days (40 weeks))

**Subdivided** into following phases

- 1) Embryonal growth phases
- 2) Placental growth phases

# Embryonal growth phases

is characterized by organogenesis,  
highest rate of tissue differentiation  
formation of almost all internal organs of future  
child

This period is critical stage of human  
development and contains the maximum risk of  
the developing embryopathies (severe anatomical  
defects)

# Unfavorable factor

- Exogenous
- Endogenous (genetic)
- Combination of exogenous and endogenous

# Unfavorable factor during the pregnancy

- Non adequacy fetal nutrition
- Acute diseases and reactivation diseases of mother
- Mother's heavy physical activity
- Professional hazards of mother
- Alcohol intake and smoking habits of parents
- Bad socio-economic conditions



# Teratogenic agents

- Infection rubella virus, the cytomegaly virus and the toxoplasmosis parasite (toxoplasma gondii).
- chemical substance
- ionizing radiation
- **trauma** (amniotic bands, which led to an amputation of upper extremities or lower extremities )

# Embryopathies

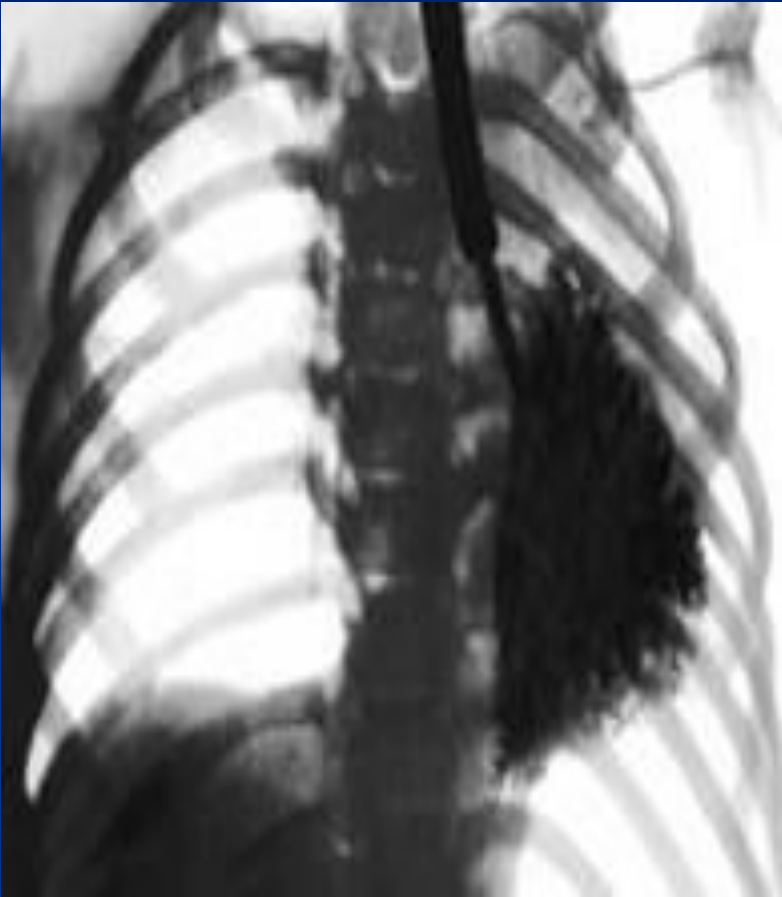
## Agenesis:

The absence of organ

Defect in the structure of the organ or part of organ or anomaly in its development

- Cleft lip
- Congenital heart defect
- Cephalocele
- Congenital esophageal obstruction

- Agenesis of lung





- Pelvic agenesis

# Agenesis upper extrimites



# Agenesis lower extrimities



# Cleft palate

■ Cleft palate



# Cleft lip





# Placental growth phases

is characterized by

**maturation** of all systems and organs,

**increase of body length and weight** of fetus,

divided into two periods

**early fetal period** – from beginning of the 9-th week up to the end of 28-th week

**Late fetal period** – after the 28-th week until the child's birth

# Early fetal period

- Is characterized by **intensive development of body and differentiation of fetal organs and systems**

Unfavorable factors can slow down the development of the organs and tissue differentiation

This period are called **early fetopathy** (minor anomalies and physiological defects)

# Early fetopathy

- Hypoplasia of organs

- **Dysplasia:**

Abnormal organization of the cells in a tissue (e.g., **osteogenesis imperfecta**

a hereditary disease, characterised by fragility of the skeleton which results in fractures and deformities

Also called: brittle bone syndrome

Numerous dysplasias are genetically caused (e.g., **achondroplasia**)

# Late fetopathy

- Intrauterine fetal hypotrophy
- Fetal hypoxia
- Fibroelastosis of myocard
- Diabetic fetopathy
- Fetal alcohol syndrome
- Infectious fetopathy

# Late fetal period

- Pathological factors do not affect the already formed fetal organs, but could cause **early deliveries** and **birth of the pre-mature babies with low body mass** – **late fetopathies**

# Late fetopathy

- Intrauterine fetal hypotrophy
- Fetal hypoxia
- Fibroelastosis of myocard
- Diabetic fetopathy
- Fetal alcohol syndrome
- Infectious fetopathy



- A six year-old girl with several skeletal deformities and cutaneous lesions



- Fetal alcohol syndrome





- Fetal alcohol syndrome

# babies with Down syndrome people funny





Детища з токсоплазмозом

# Congenital generalization cytomegaly infection



# Congenital generalization cytomegaly infection





- A six year-old girl with several skeletal deformities and cutaneous lesions

# Intra – natal period

- **Lasts** (from the uterine contractions till clamping of the umbilical cord, from 2-4 hours to 18 -20 hours)

- **Dangers of this period**

Central and peripheral nervous system trauma

Disturbances in umbilical blood supply

Respiratory disorders

# Extra uterine period

Neonatal period

Early – first 7 days

Late – 8 – 28 days

Breast-feeding period (from 29 day to 1 year of life)

Pre-preschool period ( 1 -3 year of life)

Preschool period (from the 4-th till 6-th year of life)

Junior school period ( 6-10 years – girls, 6-12 years – boys)

Senior school period ( from 12- th year to 18 - th year of life)



# Adolescence

■ Prepubescent	10-12 years girl
	12 – 14 years boys
Pubescent	12 – 14 years girl
	14 -16 years boys
Postpubescent	14 – 18 years girl
	16-20 years boys

# In practice used

- Antenatal period (whole period of pregnancy)
- Perinatal period (from the 28-th week of intrauterine development till the 7-th day of life)
- Postnatal period (from birth to 18 years of age)

# Neonatal period

## basic physiological features

- The main characteristic of this period – it is **period of adaptation** to out uterine conditions of life.
- The newborn makes **first his breath**. The air fills his lungs.
- The **pulmonary circulation** begins its **action**. The hole between right and left atrium became closed.
- Just the same the **duct of Batallo** is closing after birth.

# Neonatal period

## basic physiological features

- Beginning of **alimentary feeding**
- Immaturity of digestive tract, **spreading of microflora** in intestines, feature of stool
- Features of 1-ststage of **nervo –psychological development**( the newborn **period is characterized by some automatic or unconditioned reflexe**).
- Changes in energy exchanges
- Physiological features of blood component
- Urine components and frequency of its evacuation
- Features of thermo-regulation

# What pathology is characteristic for newborn period?

- The first of all it is **intrauterine infections**. Such as citomegalovirus, hepatitis B, viruses rubella, measles, virus flu, toxoplasmosis and some others
- The second. It is **delivery trauma**, especially dangerous is intracranial **delivery trauma**, hypoxemia
- And the third – **anomalies or vices of development** are another kind of pathology in newborn period. It may be congenital anomalies of heart, kidneys, lungs and so on.

# Neonatal period

## Attributes of pathological conditions

- All kinds of fetopathies
- Non-compatibility of maternal and fetal blood
- Immaturity and preterm child
- Congenital hypotrophy
- Hereditary diseases ( Down's syndrome, phenylketonuria)
- Manifestation of pylorospasm, pylorostenosis

# Breast-feeding period

- In this period a child grows as fast as he never does later
- He doubles his weight in six month of age and trebles to an end of first year of age
- He increased increased his length of body on 25 cm
- Formation of skeletal system, eruption of milk teeth

# Breast-feeding period

## basic physiological features

- Obliteration of the closed channels of blood circulation, heart rate, changes in BP
- Features of gastrointestinal tract, dependence of the type feeding
- Physiological features of blood components
- Loss of passive immunity



# Brest-feeding period

## Pathological conditions

- ❑ Disorders of physical development (hypotrophy, hypostature, paratrophy)
- ❑ Disease of the nervous system such as encephalopathy, hydrocephaly, cerebral palsy
- ❑ Appearance of symptom of congenital and hereditary diseases
- ❑ Rickets
- ❑ Atopic dermatitis

# Paratropy



# Hypotrophy



# Rickets



# Atopic dermatitis



# Breast-feeding period

## Pathological conditions

- ❑ Very often **respiratory diseases** of viral and bacterial etiology characterized by fast development and **generalization** of process
- ❑ Very often occurrence of “**false croup**”
- ❑ Purulent illnesses of skin
- ❑ **Pylorospasm, pylorostenosis** which many symptom
- ❑ Inflammatory diseases of digestive system such as **gastroenterocolitis**

## Pre- preschool and preschool periods basic physiological features

- Decrease in speed of the physical development
- Final psychological development, maturity of the upper nervous activity. In this period infant begins to speak, and has very much moving.
- Formation of skeletal system, eruption of milk teeth and growth permanent teeth

## Pre- preschool and preschool periods pathological conditions

- Endocrine disorders of physical development (nanism, obesity)
- Final statement of the diagnosis in the development of psychological disorders
- High frequency of respiratory disorders
- Very often false croup( in the pre-preschool period)



## Pre- preschool and preschool periods pathological conditions

- Very often diseases of allergic origin (obstructive bronchitis, bronchial asthma)
- Among gastrointestinal diseases occur function dyspepsia, biliary dyskinesia
- High frequency of infectious diseases such as chicken pox, measles, rubella

# Chicken pox



# Chicken pox



# Measles



# Mumps



# Mumps



# Junior and senior school periods

## basic physiological features

- The final stage of physical development
- Replacement of milk teeth to permanent ones
- Formation of vegetative nervous system
- Emotional and psychological maturity, formation of personality
- Sexual development
- Features of functions of endocrinal glands

# Adolescence

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	16-20 years boys



# Junior and senior school periods pathological conditions

- Endocrine disorders (obesity, nanism, thyrotoxicosis, disorders of sexual development)
- Disorders of nervous system (central and vegetative)
- Mental [emotional] illnesses
- Skeletal disorders ( caries, scoliosis)
- Gastrointestinal disease ( gastroduodenitis, cholecystitis, peptic ulser)



# Peptic ulcer

