

Unite content in Matriculum

1) Infant physical development coefficient (Q)

Step 1. To define the proper weight of a child according to an empiric formula according to the age of a child.

Step 2. To assess child physical development coefficient according to the formula (child current weight (kg) / normal body weight (kg))*100.

Step 3. To make a conclusion about child physical development.

2) Assessment of body mass index (BMI)

Step 1. To take the latest accurate anthropometric data (weight and height) of a child.

Step 2. To assess the body mass index (BMI) or Quetelet index using the formula: body mass in kilograms divided by the square of the body height in meters (it is universally expressed in units of kg/m²).

Step 3. To compare the given data with normal indexes for the age and make a conclusion (normal weight, underweight, overweight, obesity)

3) Assessment of infant neurological and psychical development

Step 1 .To collect anamnestic data taking into consideration models of communication

Complaints and anamnesis collection

1. friendly facial expression and smile.

2. gentle tone of speech

3. greeting and introducing.

3 .using games contact with a child.

5 .tactful and calm conversation with the parents of a sick child.

6 .explanation of future steps concerning the child (hospitalization , some methods of examination ,etc)

7. conversation accomplishment.

4 Infant congenital conditioned reflexes assessment

i) Meningeal Signs :

- Neck Mobility: positive / negative

- Brudzinski's Sign: positive / negative

- Kernig's Sign: positive / negative

- If newborns / infants
- d) Primitive reflexes
 - Babinski reflex: positive / negative
 - Blinking: positive / negative
 - Grasping: positive / negative
 - Moro: positive / negative
 - Rooting: positive / negative
 - Stepping reflex: positive / negative
 - Sucking reflex: positive / negative
 - Tonic neck reflex: positive / negative

5 Assessment of infant muscular tonus and strength

The muscles are inspected bilaterally can be tested systematically usually beginning with the face and neck then the arms and finally the legs.

- a) Muscle Tone: atonia / hypertonia(=spasticity) / hypotonia (=flaccidity) / dystonia.
- b) Range of motions: the movement in full volume / the movement is limited / the movement is absent.
- c) Strength of major muscle groups: (A five-point scale)

0 - No movement

1 - Flicker of movement

2 - Movement with gravity eliminated

3 - Movement against gravity

4 - Movement against resistance but incomplete

5 - Normal power for age & sex

6 Examination of infant skin and rash

Step 1. Position of a student according to a patient.

Step 2. To assess the localization, form and kind, color, spreading, dynamics of development of rash.

Step 3. Palpation to assess consistency, tenderness, character and size according to the surface of the skin. Skin assessment should be based on a comprehensive head-to-toe assessment.

Continue your assessment of the skin like you examine the other body regions.

Rashes in children can be divided into 'blanching' and 'non-blanching'.

The group called 'blanching' disappears when you press it.

The group called 'non-blanching' doesn't disappear and confirms hemorrhagic rash.

Step 4. To assess the result of palpation.

7 **Assessment of subcutaneous fat tissue sickness and presence of edema of puffiness in infants**

Step 1 . Position of student according to the patient.

Step 2. To assess the thickness of subcutaneous tissue on abdomen.

Step 3. To assess the subcutaneous tissue on-the-spot front thorax.

Step 4. To assess the subcutaneous tissue under the corners of shoulder-blades.

Step 5. To assess the subcutaneous tissue on extremities.

Step 6. To assess the subcutaneous tissue on face.

Step 7. To assess the results according to the norm.

8 **Assessment of child`s bearing in the case of spinal cord deformations**

Spine column:

Step 1 . Position of a student according to a patient.

Step 2. To assess symmetrical location of shoulders, collar-bone, shoulder-blades, level of articulation of shoulder-blades to the thorax, symmetry of triangles of waist.

Step 3. To assess the thorax.

Step 4. To examine the physiological curves of spine and define the form of the back.

Step 5. To find out the lateral rachiocampsis (kyphosis, scoliosis).

• Pathological curves: kyphosis / lordosis / scoliosis (their intensity, location) • Posture: normal / flat / round / concave

10 **Comparative and topographic percussion of a child`s chest**

Step 1. Position of a student according to a patient.

Step 2. Position the child in the supine or sitting position

Step 3. In comparative percussing the chest, the anterior lung is percussed from apex to base

Step 4. Each side of the chest is percussed in sequence in order to compare the sounds

Step 5. Dullness is heard beginning at the fifth interspace in the right midclavicular line.

Step 6. Side of the chest is percussed in sequence in order to compare the sounds,

Step 7. At the base of the lungs dullness is heard as the diaphragm is percussed.

Step 8. To assess the height of apexes of lungs in front and back.

Step 9. To assess the lower edges of right and left lungs.

Step 10. To assess the width of the Kernig's fields.

Step 11. To assess the mobility of lower edge of lungs.

Step 12. To assess the received results.

- a) Comparative percussion: resonant / dull / tympanic (name localization of described sites)
- b) Topographic percussion = inferior borders of the lung (is used only for children above 7 years old):
 - Right lung: midclavicular, midaxillar, scapular lines
 - Left lung: midaxillar, scapular lines
- c) Crenig's areas width (for above 10 year old children) (in cm)

11 Auscultation of lungs of children of different age

Step 1. Position of student by the patient.

Step 2. Create an appropriate environment;

Step 3. Warm and disinfect the diaphragm of stethoscope

Step 4. Proceed auscultation of the lungs in a over 5 general areas on the chest:

-anterior

-posterior

-axillary region

Step 5. Compare breathing in lungs on the symmetric areas of thorax.

12 Determination of absolute and relative cardiac dullness borders of infants

Steps of examination

1) stage Position the child properly, he/she is in vertical position;

The doctor stands to the right side of the patient.

2) stage Determining of the right border:

first, place the plessimeter-finger into the right II-III intercostal intervals parallel to the ribs.

The inferior border of the right lung is found by percussion from the top to the bottom along the medioclavicular line.

3) stage Rising one intercostal interval above and having placed the finger parallel to right border of heart (i.e. perpendicular to the ribs), percussion is performed from outside inwards as the sound changes from vesicular resonance to decrease in resonance

4) stage Percussion stops and the border of heart is marked on the external edge of the finger.(relative border), and internal edge of the finger (absolute border)

5) stage Assessment of the upper border: the plessimeter-finger is placed in the first intercostal interval parallel to the ribs along the medioclavicular line of young children and on the parasternal line of older children.

Percussion is carried out from the top to the bottom till the decrease in resonance appears. The border of a heart is marked above upper edge of the finger.

6) stage. Assessment of the left border: first the location of apex beat is defined by palpating, the finger is moved along the same intercostal interval to the anterior axillary line and percussion is carried out in the same intercostal interval.

If the apex beat is not found by palpation, percussion is carried out in the intercostal interval where the beat should be situated depending on the age — IV or V.

13 Auscultation of a heart of children of different age

Steps of examination

1 stage. To place a child properly;

Explain the procedure in an age-appropriate manner.

2 stage. To create an appropriate environment;

To warm and disinfect the diaphragm of stethoscope.

3 stage. Proceed auscultation of the heart in a logical manner (MALTA) over 5 general areas on the anterior chest:

- Mitral region (near the apex of the heard between the 5th and 6th intercostal spaces in the mid-clavicular line) (apex of the heart).

- Aortic region (between the 2nd and 3rd intercostal spaces at the right sternal border) (RUSB – right upper sternal border).

- Pulmonic region (between the 2nd and 3rd intercostal spaces at the left sternal border) (LUSB – left upper sternal border).

- Tricuspid region (between the 3rd, 4th, 5th, and 6th intercostal spaces at the left sternal border) (LLSB – left lower sternal border).

- Erb's point (the third intercostal space on the left sternal border).

4 stage. To record and interpret the findings:

- rate and rhythm;
- heart sounds (S1 and S2, i.e. where it is heard louder);
- extra sounds such as clicks, murmurs, thrills, split heart sounds or friction rubs.

5 stage. In describing and documenting a murmur, characterize 4 properties of an “abnormal” heart sound:

- The location of the heart sound on the chest (i.e. where it is heard loudest and where you can not hear the sound at all).
- The timing of the heart sound (i.e. early diastolic, pan systolic, etc.)
- The grade or intensity of the heart sound (i.e.1-6 (see table below))
- The quality and shape of the heart sound (i.e. musical crescendo, harsh snap, etc.)

14 .Palpation of peripheral lymph nodes:

To place a child properly;

Step 1 . Position of a student according to a patient .

Step 2. Position of student hands during the palpation of different groups of lymph nodes

3 To assess the size, amount, form, consistency, mobility, painfulness, localization, surface and lymph nodes.

- occipital,
- preauricular, postauricular,
- submandibular, submental
- anterior cervical, posterior cervical,
- supraclavicular, subclavicular,
- axillar,

- thoracic
- cubital,
- inguinal (groin),
- popliteal.

The following parameters should be determined bilaterally:

- size (diameter in cm).
- quantity: single / plural.
- separated or firmly connected with each other and skin upon them
- tenderness during palpation: painful / non-tender.
- shape: round / oval / irregular.
- surface of the node: rough / smooth.
- consistency: soft / elastic / firm.
- mobility: mobile /immobile
- skin above the node: hyperemic/cyanotic / pale / not changed.
- swelling around the node – present/absent.
- fistula / necrosis / abscess / ulcers / scars over the node – present/absent.

15 To assess the results of blood count of children of different age

Step 1 To assess indexes of general blood analysis (CBC) at a new-born child

Step 2. To assess indexes of CBC of an infant.

Step 3. To assess indexes of CBC of a child one to five years old.

Step 4. Estimate indexes of CBC of a child 5 years plus.

16 Performance of control weighting of infants

Step 1. To demand a weight control.

Step 2. To assess the difference of weight during a weight control.

Step 3. To assess an average volume according to results.

17 Composition of menu for infants by a volumetric method

Step 1. Assessment of the proper body weight for a child of different age.

Step 2. Calculation of day's volume of food.

Step 3. Determine the variety of food.

Step 4 Calculation of food volume for one feeding.

Step 5 Weaning of additional feeding and corrections according to the age and type of feeding, estimate its volume.

18 Composition of menu for infants by caloric method

Step 1. Calculation of the proper body weight for a child of different age.

Step 2. Calculation of a day's necessity in calories for a child according to the age.

Step 3. Calculation of a day's volume of food.

Step 4. To determine the variety of food.

Step 5. Calculation of food volume in one feeding.

19 To assess results of blood count of children of different age

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20 Palpation and percussion of a liver (diaphragmatic-inspiratory) bimanual

Step 1 . Position of a student according to a patient.

Step 2. Position of a student's hands during palpation of a liver.

Step 3. Palpation of liver during inhalation.

Step 4. Palpation of liver during exhalation.

Step 5. To assess the border, surface, consistency, painfulness of liver, distance between a rib level and lower border of liver in cm.

- lower edge location (in cm below the right costal margin)
- shape of edge: sharp /rounded /wedge-shaped
- surface of edge: smooth / irregular
- texture: soft / firm
- tenderness: tender / non-tender

21 Palpation of a large intestine of infants by Obratsov and Strazhesko method

Step 1 . Position of a student according to a patient.

Step 2. Position of a student's hands during palpation of different parts of intestine.

Step 3. Palpation of sigmoid colon.

Step 4. Palpation of cecum and ileum.

Step 5. Palpation of colon transversum.

Step 6. Palpation of ascending and descending colon

a) Light palpation of an abdomen:

- abdominal tenderness: localization,
- muscular resistance: soft / hard
- masses:

b) Deep palpation of an abdomen identify the following:

- masses size,
- masses shape,
- masses tenderness,
- symmetry of masses
- mobility of masses,

c) Pulsations of the abdominal aorta.

d) Gallbladder signs:

- Ortner's symptom: positive / negative
- Kehr's symptom: positive / negative
- Mussy's symptom: positive / negative
- Lepine's symptom: positive / negative
- Boas's symptom: positive / negative
- Murphy's sign: positive / negative

e) Pancreatic signs:

- Mayo-Robson symptom: positive / negative
- Desjardin's symptom: positive / negative

f) Peritoneal (Alarm) signs:

- Blumberg's sign (=Rebound tenderness): positive / negative
- McBurney's symptom: positive / negative
- Lant's symptom: positive / negative

22 Palpation of spleen

Step 1. To wash and warm your hands.

Step 2. To place a child properly. To explain the procedure.

Step 3. To palpate the spleen by feeling it between the hand placed against the back and the one palpating the left upper quadrant of the abdomen. The spleen is much smaller than the liver and positioned behind the fundus of the stomach. The tip of the spleen is normally felt during inspiration as it descends within the abdominal cavity. Sometimes it is palpable from 1 to 2 cm below the left costal margin in infants and young children.

Step 4. Make a conclusion (not palpable; normal size; enlarged). A spleen that is readily palpated more than 2 cm below the right costal margin is enlarged and it is always reported for further medical examination

23 To evaluate the results of laboratory analyses of urine (common urine analysis by Nechyporenko's method and by Zimnitsky's method)

Assessment of the indexes of Nechyporenko urine analysis (due to model of communication)

Step 1. To assess the amount of leucocytes.

Step 2. To assess the amount of red cells.

Step 3. To assess the amount of cylinder casts.

Assessment of the indexes of Zimnitsky urine analysis (due to model of communication)

Step 1. To assess the day's volume of urine.

Step 2. To assess correlation between daily and night diuresis.

Step 3. To assess specific gravity of urine.

Step 4. To assess the concentration function of kidney.