CHAPTER 3

Performing a Physical Examination

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I. INTRODUCTION

A. Pediatric physical assessment is a continual process that includes interviews, inspection, observation of children.
B. Physical growth, motor skills, cognitive, and social development change as the child matures.
C. The assessment of the pediatric patient must include what is considered to be normal within the child's age limits.
D. Children will differ among themselves at various stages of development.
E. The following is an outline that can be used as a guide in doing a comprehensive physical assessment.

II. PEDIATRIC PHYSICAL EXAMINATION

A. Growth measurements.
   1. Length/height.
      a. Recumbent (2 years).
      b. Standing height.
   2. Weight.
   3. Head circumference (occipital frontal circumference [OFC]).
   4. Chest circumference (up to 1 year).
   5. Skinfold thickness.
B. Vital signs.
   1. Temperature, heart rate, respirations, blood pressure.
C. General appearance.
   1. Cleanliness, posture, hygiene.
   2. Nutrition.

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3. Behavior, ability to cooperate.
4. Development.
5. Alertness.

D. Skin.
1. Color: pallor, cyanosis, erythema, ecchymosis, petechiae, jaundice.
2. Texture.
3. Temperature.
4. Turgor.
5. Describe size, shape, and location of rashes, eruptions, and lesions.
6. Sweating.

E. Hair: color, texture, quantity, distribution, infestations (nits).

F. Nails.
1. Inspect color, texture, quality, distribution, hygiene.
2. Observe for nail biting.

G. Hands and feet.
1. Observe flexion crease on palm.
2. Assess for foot and ankle deformities.

H. Lymph nodes.
1. Palpate for nodes in following areas:
   a. Submaxillary.
   b. Cervical.
   c. Axillary.
   d. Inguinal.
2. Note size, mobility, or tenderness of any enlarged node.

I. Head.
1. Assess shape and symmetry.
2. Assess head control; should be well established by 6 months of age.
3. Palpate skull.
   a. Fontanels (2 years of age).
   b. Suture ridges and grooves (up to 6 months of age).
   c. Nodes.
   d. Any swelling.
4. Examine scalp for hygiene, lesions, signs of trauma, loss of hair, or discoloration.
5. Percuss frontal sinuses (children 7 years of age).

J. Neck.
1. Palpate trachea for deviation.
2. Palpate thyroid, noting size, shape, symmetry, tenderness, or nodules.
3. Palpate carotid arteries.
4. Palpate neck structure.

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   a. Pain or tenderness.
   b. Enlargement of parotid gland.
   c. Web like tissue.

K. Eyes.
1. Check peripheral vision.
2. Check visual acuity.
   a. Snellen E chart.
   b. Allen test.
3. Note whether eyelashes curl away from eye.
4. Note whether eyebrows are above eye and do not meet at midline.
5. Test for any strabismus.
   a. Hirschberg test.
   b. Cover–uncover test.
6. Observe for nystagmus or ptosis.
7. Inspect conjunctiva for drainage, redness, swelling, pain.
8. Inspect sclera, cornea, iris.
9. Check: pupils equal, round, react to light.
10. Examine with ophthalmoscope.
    a. Optic disk, macula, arteriole/vein, fovea centralis, red reflex.
11. Inspect lachrymal ducts: tears, drainage.
12. Inspect placement, alignment of outer eye: palpebral slant, epicanthus, lids.

L. Ears.
1. Inspect placement and alignment of pinna.
2. Inspect auditory canal: color, cerumen, patency.
3. Observe for skin tags and hygiene.
4. Examine middle ear with otoscope.
   a. Color of tympanic membrane, light reflex, bony landmarks.
5. Check hearing.
   a. Rinne test.
   b. Weber test.

M. Nose.
1. Observe mucosal lining for color, discharge, patency.
2. Observe color of the turbinates and meatus.
3. Note if septum is midline.

N. Mouth and throat.
1. Observe internal structures.
   a. Hard and soft palate, palatoglossal arch, palatine tonsil, tongue, oropharynx, palatopharyngeal arch, uvula.
2. Palpate ethmoid, frontal, and maxillary sinuses.
3. Observe lip edges.

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4. Observe eruption of teeth.
   a. Number appropriate for age.
   b. Color and hygiene.
   c. Occlusion of upper and lower jaw.
5. Check salivation.
6. Check drooling.
7. Check swallowing reflex.
8. Note color, texture, or any lesions of the lips.
9. Observe gingiva and mucous membranes for color, texture, moistness.

O. Tongue.
1. Observe for smoothness, fissuring, coating, or redness.
2. Tongue able to extend forward to lips?
3. Tongue interfere with speech?

P. Chest.
1. Observe shape of thorax.
2. Check costal angles; should be between 45 and 50°.
3. Check that points of attachments between ribs and costal cartilage are smooth.
4. Check movement.
   a. Inspiration: chest expands, costal angle increases, diaphragm descends.
   b. Expiration: reverse occurs.

Q. Lungs.
1. Evaluate respiratory movement: rate, rhythm, depth, quality, character.
2. Auscultate breath sounds.
   a. Vesicular breath sounds.
   b. Bronchovesicular breath sounds.
   c. Bronchial breath sounds.
3. Note adventitious breath sounds.
   a. Crackles, wheezes, stridor, pleural friction rub.
4. Check for cough.
   a. Productive/nonproductive.
   b. Color of secretions.
5. Check retractions.
6. Check abdominal breathing.
7. Check thoracic expansion.
8. Palpate tactile fremitus.

R. Heart.
1. Auscultate heart sounds.
   a. Aortic area, pulmonic area, Erb's point, tricuspid area, mitral or apical area.

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2. Check S1–S2.
3. Palpate for thrill.
4. Record murmurs.
   a. Area best heard.
   b. Timing within S1–S2 cycle.
   c. Change with position.
   d. Loudness and quality.
   e. Grade intensity of murmur.

S. Vascular.
1. Assess capillary refill; should occur in 1–2 seconds.
2. Assess circulation.
   a. Color and texture of skin.
   b. Nail and hair distribution.
3. Assess perfusion.
   a. Edema.
   b. Pulses (4–0).
4. Assess collateral circulation.

T. Abdomen.
1. Inspect contour and size of abdomen.
2. Note condition of skin.
3. Inspect umbilicus for hernias, fistula, discharge.
4. Auscultate bowel sounds.
5. Auscultate for any aortic pulsations.
6. Percuss abdomen.
7. Palpate outer edge of liver.
8. Palpate spleen.
9. Elicit abdominal reflux.
10. Palpate femoral pulses.

U. Neurologic.
1. Observe behavior, mood, affect, interaction with environment, level of activity, positioning, level of consciousness, orientation to surroundings.
2. Check reflexes of the infant.
   a. Rooting (present birth to 6 months of age).
   b. Sucking (present birth to 10 months of age).
   c. Palmer grasp (present birth to 4 months of age).
   d. Tonic neck (present at 6–8 weeks of age and lasts until 6 months).
   e. Stepping (present birth to 3 months of age).
   f. Plantar grasp (present birth to 8 months of age).
   g. Moro (present birth to 4–6 months of age).

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h. Babinski (child 15–18 months of age normally fans toes outward and dorsiflexes greater toe).
i. Galant (present birth to 1–2 months of age).
j. Placing (lack of response is abnormal).
k. Landau (present 3 months to 2 years of age).

3. Test cranial nerves.
   a. I: Olfactory.
   b. II: Optic.
   c. III: Oculomotor.
   d. IV: Trochlear.
   e. V: Trigeminal.
   f. VI: Abducens.
   g. VII: Facial.
   h. VIII: Acoustic.
   i. IX: Glossopharyngeal.
   j. X: Vagus.
   k. XI: Spinal accessory.
   l. XII: Hypoglossal.
4. Test cerebellar functioning: finger-to-nose test, heel-to-shin test, Romberg.
5. Test deep tendon reflexes (grading 4–0): biceps, triceps, brachioradialis, patellar, Achilles.
6. Check sensory functioning: pain, temperature, touch.

V. Musculoskeletal.
1. Inspect curvature and symmetry of spine.
2. Test for scoliosis.
3. Inspect all joints for size, temperature, color, tenderness, mobility.
4. Test for developmental dysplasia of the hips (DDH).
   a. Ortolani maneuver (evaluate up to 12 months of age).
   b. Barlow's maneuver.
   c. Trendelenburg's test (used after child is walking).
5. Examine tibiofemoral bones: knock knee, bow legs.
6. Inspect gait: waddling gait (DDH), scissor (cerebral palsy [CP]), toeing-in.
7. Note flexibility and range of motion of joints.
8. Elicit planter reflex.
9. Test motor strength of arms, legs, hands, feet (grading 4–0).

W. Breast.
1. Pigmentation.

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   2. Location.
   3. Tanner stages (sexual maturity rating).

X. Genitalia.
   1. Male.
      a. Inspect size of penis.
      b. Inspect glands and shaft for swelling, skin lesions, inflammation.
      c. Inspect uncircumcised male: prepuce.
      d. Inspect location of urethral meatus, note any discharge.
      e. Inspect scrotum for size, location, skin, and hair distribution.
      f. Palpate each scrotal sac for testes.
      g. Tanner stages (sexual maturing rating).
   2. Female.
      a. Palpate genitalia for any masses, cysts.
      b. Observe for any venereal warts.
      c. Inspect for location of urethral meatus, Skene glands, mons pubis, Bartholin gland, clitoris, labia majora, labia minora.
      d. Note any discharge: color and odor.
      e. Tanner stages (sexual maturity rating).

Y. Anus.
   1. Inspect anal area for firmness and condition of skin.
   2. Elicit anal reflex.

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