

# **PEDIATRIC HISTORY & PHYSICAL EXAM**

## **(CHILDREN ARE NOT JUST LITTLE ADULTS)**

### **-HISTORY-**

#### ***Learning Objectives:***

1. To understand the content differences in obtaining a medical history on a pediatric patient compared to an adult.
  1. To understand how the age of the child has an impact on obtaining an appropriate medical history.
2. To understand all the ramifications of the parent as historian in obtaining a medical history in a pediatric patient.
3. To understand the appropriate wording of open-ended and directed questions, and appropriate use of each type of question.
4. To develop an awareness of which clinical settings it is appropriate to obtain a complete medical history compared to a more limited, focused history.

#### ***Competencies:***

1. To obtain an accurate and complete history of a pediatric patient in different age groups (<1 year; 1-5 years; > 5 years).

#### ***Differences of a Pediatric History Compared to an Adult History:***

- I. Content Differences
  - A. Prenatal and birth history
  - B. Developmental history
  - C. Social history of family - environmental risks
  - D. Immunization history
- II. Parent as Historian
  - A. Parent's interpretation of signs, symptoms
    1. Children above the age of 4 may be able to provide some of their own history
    2. Reliability of parents' observations varies
    3. Adjust wording of questions - "When did you first notice Hassan was limping"? instead of "When did Hassan's hip pain start"?
  - B. Observation of parent-child interactions
    1. Distractions to parents may interfere with history taking
    2. Quality of relationship
  - C. Parental behaviors/emotions are important
    1. Parental guilt - nonjudgmental/reassurance
    2. The irate parent: causes

***Outline of the Pediatric History:***

- I. Chief Complaint
  - A. Brief statement of primary problem (including duration) that caused family to seek medical attention
  
- II. History of Present Illness
  - A. Initial statement identifying the historian, that person's relationship to patient and their reliability
  - B. Age, sex, race, and other important identifying information about patient
  - C. Concise chronological account of the illness, including any previous treatment with full description of symptoms (pertinent positives) and pertinent negatives. It belongs here if it relates to the differential diagnosis for the chief complaint.
  
- III. Past Medical History
  - A. Major medical illnesses
  - B. Major surgical illnesses-list operations and dates
  - C. Trauma-fractures, lacerations
  - D. Previous hospital admissions with dates and diagnoses
  - E. Current medications
  - F. Known allergies (not just drugs)
  - G. Immunization status - be specific, not just up to date
  
- IV. Pregnancy and Birth History
  - A. Maternal health during pregnancy: bleeding, trauma, hypertension, fevers, infectious illnesses, medications, drugs, alcohol, smoking, rupture of membranes
  - B. Gestational age at delivery
  - C. Labor and delivery - length of labor, fetal distress, type of delivery (vaginal, cesarean section), use of forceps, anesthesia, breech delivery
  - D. Neonatal period - Apgar scores, breathing problems, use of oxygen, need for intensive care, hyperbilirubinemia, birth injuries, feeding problems, length of stay, birth weight
  
- V. Developmental History
  - A. Ages at which milestones were achieved and current developmental abilities - smiling, rolling, sitting alone, crawling, walking, running, 1st word, toilet training, riding tricycle.
  - B. School-present grade, specific problems, interaction with peers
  - C. Behavior - enuresis, temper tantrums, thumb sucking, pica, nightmares etc.
  
- VI. Feeding History
  - A. Breast or bottle fed, types of formula, frequency and amount, reasons for any changes in formula
  - B. Solids - when introduced, problems created by specific types
  - C. Fluoride use

- VII. Review of Systems: (usually very abbreviated for infants and younger children)
- A. Weight - recent changes, weight at birth
  - B. Skin and Lymph - rashes, adenopathy, lumps, bruising and bleeding, pigmentation changes
  - C. HEENT - headaches, concussions, unusual head shape, strabismus, conjunctivitis, visual problems, hearing, ear infections, draining ears, cold and sore throats, tonsillitis, mouth breathing, snoring, apnea, oral thrush, epistaxis, caries
  - D. Cardiac - cyanosis and dyspnea, heart murmurs, exercise tolerance, squatting, chest pain, palpitations
  - E. Respiratory - pneumonia, bronchiolitis, wheezing, chronic cough, sputum, hemoptysis, TB
  - F. GI - stool color and character, diarrhea, constipation, vomiting, hematemesis, jaundice, abdominal pain, colic, appetite
  - G. GU - frequency, dysuria, hematuria, discharge, abdominal pains, quality of urinary stream, polyuria, previous infections, facial edema
  - H. Musculoskeletal - joint pains or swelling, fevers, scoliosis, myalgia or weakness, injuries, gait changes
  - I. Pubertal - secondary sexual characteristics, menses and menstrual problems
  - J. Allergy - urticaria, hay fever, allergic rhinitis, asthma, eczema, drug reactions

VIII. Family History

- A. Illnesses - cardiac disease, hypertension, stroke, diabetes, cancer, abnormal bleeding, allergy and asthma, epilepsy
- B. Mental retardation, congenital anomalies, chromosomal problems, growth problems, consanguinity, ethnic background

IX. Social

- A. Living situation and conditions - daycare, safety issues
- B. Composition of family
- C. Occupation of parents

## **-PHYSICAL EXAMINATION-**

### ***Objectives***

1. To understand how the general approach to the physical examination of the child will be different compared to that of an adult patient, and will vary according to the age of the patient.
2. To observe and demonstrate physical findings unique to the pediatric population, and to understand how these findings may change depending upon the age of the child.

### ***Competencies***

1. To obtain accurate vital signs (Temperature, HR, RR, BP) in a pediatric patient in **different age groups** and to be able to evaluate these vital signs compared to age-adjusted normals. To understand the normal variation in temperature depending on the **route of measurement**.

2. To complete a thorough physical examination on a pediatric patients in different age groups.

***Differences in Performing A Pediatric Physical Examination Compared to an Adult:***

- I. General Approach
  - A. Gather as much data as possible by observation first
  - B. Position of child: parent's lap vs. exam table
  - C. Stay at the child's level as much as possible. Do not tower!!
  - D. Order of exam: least distressing to most distressing
  - E. Rapport with child
    1. Include child - explain to the child's level
    2. Distraction is a valuable tool
  - F. Examine painful area last-get general impression of overall attitude
  - G. Be honest. If something is going to hurt, tell parents/child that in a calm fashion. Don't lie or you lose credibility!
  - H. Understand developmental stages' impact on child's response. For example, stranger anxiety is a normal stage of development, which tends to make examining a previously cooperative child more difficult.
  
- II. Vital signs
  - A. Normals differ from adults, and vary according to age
  - B. Temperature
    1. Tympanic vs. oral vs. axillary vs. rectal
  - C. Heart rate
    1. Auscultate or palpate apical pulse or palpate femoral pulse in infant
    2. Palpate antecubital or radial pulse in older child
  - D. Respiratory rate -Observe for a minute. Infants normally have periodic breathing so that observing for only 15 seconds will result in a skewed number.
  - E. Blood pressure
    1. Appropriate size cuff - 2/3 width of upper arm
    2. Site
  - F. Growth parameters - must plot on appropriate growth curve
    1. Weight
    2. Height/length
    3. OFC: Across frontal-occipital prominence so greatest diameter (Occipital Frontal Circumference)
  
- III. Unique findings in pediatric patients (See outline below)

***Outline of a Pediatric Physical Examination***

- I. Vitals - see above
  
- II. General
  - A. Statement about striking and/or important features. Nutritional status, level of consciousness, toxic or distressed, cyanosis, cooperation, hydration, dysmorphology, mental state
  - B. Obtain accurate weight, height and OFC
  
- III. Skin and Lymphatics

- A. Birthmarks - nevi, hemangiomas, mongolian spots etc
- B. Rashes, petechiae, desquamation, pigmentation, jaundice, texture, turgor
- C. Lymph node enlargement, location, mobility, consistency
- D. Scars or injuries, especially in patterns suggestive of abuse

#### IV. Head

- A. Size and shape
- B. Fontanelle(s)
  - 1. Size
  - 2. Tension - calm and in the sitting up position
- C. Sutures - overriding
- D. Scalp and hair

#### V. Eyes

- A. General
  - 1. Strabismus
  - 2. Slant of palpebral fissures
  - 3. Hypertelorism or telecanthus
- B. EOM (Extraocular muscles)
- C. Pupils
- D. Conjunctiva, sclera, cornea
- E. Plugging of nasolacrimal ducts
- F. Red reflex
- G. Visual fields - gross exam

#### VI. Ears

- A. Position of ears
  - 1. Observe from front and draw line from inner canthi to occiput
- B. Tympanic membranes
- C. Hearing - Gross assessment only usually

#### V. Nose

- A. Nasal septum
- B. Mucosa (color, polyps)
- C. Sinus tenderness
- D. Discharge

#### VI. Mouth and Throat

- A. Lips (colors, fissures)
- B. Buccal mucosa (color, vesicles, moist or dry)
- C. Tongue (color, papillae, position, tremors)
- D. Teeth and gums (number, condition)
- E. Palate (intact, arch)
- F. Tonsils (size, color, exudates)
- G. Posterior pharyngeal wall (color, lymph hyperplasia, bulging)
- H. Gag reflex

#### V. Neck

- A. Thyroid
- B. Trachea position
- C. Masses (cysts, nodes)
- D. Presence or absence of nuchal rigidity

## VI. Lungs/Thorax

- A. Inspection
  - 1. Pattern of breathing
    - a. Abdominal breathing is normal in infants
    - b. Period breathing is normal in infants (pause < 15 seconds)
  - 2. Respiratory rate
  - 3. Use of accessory muscles: retraction location, degree/flaring
  - 4. Chest wall configuration
- B. Auscultation
  - 1. Equality of breath sounds
  - 2. Rales, wheezes, rhochi
  - 3. Upper airway noise
- C. Percussion and palpation often not possible and rarely helpful

## VII. Cardiovascular

- A. Auscultation
  - 1. Rhythm
  - 2. Murmurs
  - 3. Quality of heart sounds
- B. Pulses
  - 1. Quality in upper and lower extremities

## VIII. Abdomen

- A. Inspection
  - 1. Shape
    - a. Infants usually have protuberant abdomens
    - b. Becomes more scaphoid as child matures
  - 2. Umbilicus (infection, hernias)
  - 3. Muscular integrity (diasthesis recti)
- B. Auscultation
- C. Palpation
  - 1. Tenderness - avoid tender area until end of exam
  - 2. Liver, spleen, kidneys
- A. May be palpable in normal newborn
  - 3. Rebound, guarding
- B. Have child blow up belly to touch your hand

## IX. Musculoskeletal

- A. Back
  - 1. Sacral dimple
  - 2. Kyphosis, lordosis or scoliosis
- B. Joints (motion, stability, swelling, tenderness)
- C. Muscles
- D. Extremities

1. Deformity
  2. Symmetry
  3. Edema
  4. Clubbing
- E. Gait
1. In-toeing, out-toeing
  2. Bow legs, knock knee
    - a. “Physiologic” bowing is frequently seen under 2 years of age and will spontaneously resolve
  3. Limp
- F. Hips
1. Ortolani’s and Barlow’s signs

X. Neurologic - most accomplished through observation alone

- A. Cranial nerves
- B. Sensation
- C. Cerebellum
- D. Muscle tone and strength
- E. Reflexes
  1. DTR (Deep tendon reflexes)
  2. Superficial (abdominal and cremasteric)
  3. Neonatal primitive

XI. GU

- A. External genitalia
- B. Hernias and Hydrocoeles
  1. Almost all hernias are indirect
  2. Can gently palpate; do not poke finger into the inguinal canal
- C. Cryptorchidism
  1. Distinguish from hyper-retractile testis
  2. Most will spontaneously descend by several months of life
- D. Tanner staging in adolescents - See Tanner Staging handouts
- E. Rectal and pelvic exam not done routinely - special indications may exist

References

1. Uniformed Services University of the Health Sciences.
2. Pediatric Clerkship, University of Chicago.
3. Feinberg, School of Medicine