Physical Assessment in Children: Performing

What Is Involved in Physical Assessment of Children?

› A physical assessment (often referred to as a head-to-toe assessment) is a noninvasive physical examination that is performed to obtain preliminary information on a patient’s body system function, mental/behavioral status, and overall health

- **What**: A head-to-toe physical assessment involves systematically evaluating each of the patient’s body systems. The purpose of the assessment is to identify abnormal findings that signal the presence of an underlying disease or a change in the patient’s condition.

- **How**: Head-to-toe assessment involves direct patient contact and is typical of the physical assessment that is performed by nursing staff once per shift, as needed when a patient’s condition changes, and to assess the effect of therapeutic interventions

- **Where**: Physical assessment is performed in all healthcare settings, including the inpatient, outpatient, or home care settings

- **Who**: Head-to-toe physical assessments are performed by nurses, physicians, and emergency medical staff, and should not be delegated to assistive medical personnel. It is common and appropriate for a family member, typically a parent, to be present during the physical assessment of a child, although adolescents might prefer that the procedure be performed privately

What Is the Desired Outcome of Physical Assessment in Children?

› The purpose of the physical assessment is to gather preliminary information about the child’s physical condition in order to identify abnormalities that warrant further evaluation and/or intervention

Why Is Physical Assessment of Children Important?

› In children, screening head-to-toe assessments are often performed more frequently than in adults due to the need to closely monitor the child’s rapid physical growth and cognitive development, and to identify potential developmental abnormalities. Detection of physiologic abnormalities indicates the need for more in-depth examination of the affected body system (e.g., if physical assessment shows that a child is underweight or overweight, the treating clinician will assess the child’s nutritional intake and metabolic functioning)

- Assessing the child’s general appearance is important to gather information regarding posture, hygiene, and types of body movements (e.g., tilting of head to hear or see better). Noticing the child’s behavior, activity levels, speech, and degree of alertness during a physical assessment can provide key information for development and/or mental health disorders

› If the physical assessment is performed on a child who is conscious, the assessment can serve as a means to identify the presence of physical pain or a psychological condition. If pain or cognitive/behavioral disturbance (e.g., lack of eye contact, aggression) is identified, additional evaluation is indicated to determine the cause

Facts and Figures

› In children as well as in adults, psychiatric disorders can cause physical signs and symptoms. Investigators in a large-scale population survey that was conducted in...
New York and Puerto Rico determined that among children who were 5–13 years of age, anxiety disorders, depression, parental psychopathology, and stress related to acculturation contributed to signs and symptoms of asthma, abdominal pain, and headache (Feldman et al., 2010).

Screening for asymptomatic hypertension is as important in children as in adults. The results of various studies indicate that hypertension occurs in 2–5% of children and adolescents (Andrade et al., 2010). However, investigators in a study in Japan found that the prevalence of hypertension might be higher than previously thought. They reported that systolic hypertension occurred in up to 7% of the school-aged children in the study. Obesity coexisted in 10.5% of hypertensive girls and 13.9% of hypertensive boys (Akgun et al., 2010).

Tympanic thermometers are less accurate than rectal thermometers and should not replace rectal thermometers in a clinical setting where accurate temperature measurement is key to treating febrile illnesses in children (Zhen et al., 2014). The Massachusetts Health Quality Partners (MHQP) released the Pediatric Preventive Care Guidelines in 2017. These guidelines recommend best practices in well visits and annual check-ups. A complete version of the guidelines is accessible here http://www.mhq.org/EmailLinks/MHQP%20Pediatric%20Preventative%20Care%20Guidelines%202017.pdf (MHQP, 2017).

What You Need to Know Before Performing a Physical Assessment in Children

Knowledge of normal anatomy and physiology and variations in physical appearance among children of different age groups is important

- Pediatric growth charts can be used to compare the child’s height and weight with established reference values. The Centers for Disease Control and Prevention (CDC) growth charts can be found at http://www.cdc.gov/growthcharts/cdc_charts.htm

An understanding of what is involved in the performance of a physical assessment is essential

- The physical assessment is performed regularly during outpatient sick- and well-child visits. In the inpatient setting, physical assessments are performed by nurses during each 4-, 8- or 12-hour shift depending on the level of care, the patient’s condition, and facility protocol. During the head-to-toe physical assessment, the clinician uses inspection, auscultation, palpation, and percussion to identify physiologic abnormalities.
  - Inspection is often described as the most important assessment technique because it begins immediately on meeting the patient and is continued during the head-to-toe physical assessment; inspection helps guide the clinician’s attention to abnormalities.

- Assessment of vital signs is a key part of the physical assessment. The clinician should possess understanding of normal vital sign parameters in the pediatric population. Identification of childhood hypertension is particularly important, which is defined as blood pressure above the 95th percentile according to age, gender, and height. For more information, see
  - Nursing Practice & Skill ... Blood Pressure Reading, Indirect: Taking in a Pediatric Patient
  - Nursing Practice & Skill ... Arterial (Radial) Pulse: Taking
  - Nursing Practice & Skill ... Oral temperature: Taking
  - Nursing Practice & Skill ... Respiratory Rate Assessment: Performing in Infants and Children

Understanding of techniques that are used to complete the physical assessment in children of different developmental age groups is important

- The value of the patient’s responses is based on age and developmental stage. Younger children can be less capable of understanding or cooperating with the physical assessment. In these patients, the nurse should recognize the importance of remaining flexible with how the assessment is conducted because a systematic approach to assessment is not always possible.
- Completing the physical assessment in children can variably include
  - progressing from the least intrusive to the more intrusive parts of the assessment
  - using play during the assessment when possible
  - allowing the child to make choices such as what to examine first (e.g., the ears or the mouth)
  - permitting the child to choose comfortable positions whenever possible (e.g., in a parent’s lap)
  - reducing the child’s anxiety by encouraging him/her to see and touch examination equipment (e.g., stethoscope, otoscope, reflex hammer)
  - involving the parents in the physical assessment because they are most familiar with the child and can be the most important source of information

Competence in pain assessment of children and familiarity with facility pain assessment tool(s) is important

- Pain is often referred to as the “fifth vital sign.” Patients should be evaluated for the presence of pain and level of pain intensity during every physical assessment and after administration of treatment for pain.
• The clinician should ask patients whether or not they feel pain and monitor their body language and vital signs throughout the procedure for indications of pain (e.g., flinching, guarding, increased heart rate, increased respiratory rate)
• Whenever possible, a facility-approved, age-appropriate pain scale should be used to measure the patient’s pain

Preliminary steps that should be performed before conducting the physical assessment of a child include the following:
• Review the facility/unit-specific protocol for physical assessment of a child, if one is available
  – If in an inpatient setting, review unit-specific guidelines for the frequency of physical assessment and how to notify the treating clinician of abnormalities that are detected
• Review the treating clinician’s order for the physical assessment, if one exists, although it is generally not necessary to obtain a physician’s order as the head-to-toe assessment is a standard part of nursing duties
• Review the manufacturer’s instructions for all equipment to be used and verify that the equipment is in good working order
• Verify completion of facility informed consent documents
  – Typically, the general consent for treatment that is executed by parents at the outset of admission of a child to a healthcare facility includes standard provisions that encompass the physical assessment
• Review the patient’s medical record/medical history for any allergies (e.g., to latex, medications, or other substances); use alternative materials, as appropriate

Gather necessary supplies, which typically include the following:
• Nonsterile gloves; additional personal protective equipment (PPE; e.g., gown, mask, eye protection) might be needed if exposure to body fluids is anticipated
• Oral, axillary, rectal, or tympanic thermometer
• Stethoscope
• Penlight
• Sphygmomanometer
• Floor or bed scale
• Measuring tape
• Facility-approved, age-appropriate pain assessment tool
• Pediatric growth chart
• Additional supplies for well-patient physical assessment if a more detailed assessment is to be performed by an advanced practice nurse, physician assistant, or physician assisted by a nurse, including
  – Otoscope/ophthalmoscope
  – Reflex hammer
  – Other supplies as indicated
• Written information, if available, to reinforce verbal education

How To Perform a Physical Assessment in Children
• Perform hand hygiene and don PPE as appropriate
• Identify the patient according to facility protocol
• Establish privacy by closing the door to the patient’s room and/or drawing the curtain surrounding the patient’s bed
• Introduce yourself to the patient and parent(s), if present; explain your clinical role; assess the child and his/her parents for knowledge deficits and anxiety regarding the physical assessment
  – Determine if the patient/parents requires special considerations regarding communication (e.g., due to illiteracy, language barriers, or deafness); make arrangements to meet these needs if they are present
  – Use professional certified medical interpreters, either in person or via phone, when language barriers exist
• Explain the procedure for physical assessment; answer any questions and provide emotional support as needed
• Approach the child and identify the best method to reduce his/her anxiety before beginning the assessment, which can include the following:
  – Shine your penlight on the fingers of toddlers to show them that the device “doesn’t hurt”
  – Allow children of preschool age to examine your stethoscope while you explain that you will use the “special tool” to listen to their heart; if they wish, allow them to listen to their own heart using the stethoscope
  – Explain to school-age children how long the examination will take and what is involved in it
  – Encourage adolescents to choose whether or not to have a parent remain in the room during the examination
• Begin the physical inspection by asking the child and/or parent about the presence of unusual symptoms. This will provide important preliminary information to guide the physical assessment
• Ask the child how he/she feels and if any physical symptoms have developed or changed recently. Briefly inquire about each of the body systems, including asking about changes in appetite; bowel, bladder, and sleep habits; presence of nausea or vomiting; emotional disturbances; and pain.
• Consider the general appearance of the child while assessing his/her health status. Note restlessness and any indication that the patient is experiencing pain, whether or not the patient verbally reports pain. Observe the patient’s affect and body position, and assess his/her hygiene and grooming. Consider whether or not the patient’s age is congruent with physical appearance.
• Observe the child’s interaction with the parent(s) to assess for relationship or family problems, which can manifest as signs and symptoms of illness.
• Measure the child’s vital signs, including temperature, pulse, respiratory rate, and blood pressure. Compare findings with established reference values that are appropriate to the age of the child to identify abnormalities.
• Assess for pain using an age-appropriate method.
  • Ask the verbal child whether or not he or she has pain, where it is located, and how severe it is; observe for signs and symptoms of pain in the preverbal child and ask his/her parents whether or not they have observed signs of pain.
  • Utilize a facility-approved, age-appropriate pain assessment tool.
• Measure the child’s height (or length in children from birth to 36 months of age), weight, and head circumference (at birth to 36 months of age). Compare these data with established reference values to determine whether or not the child is of normal stature, is underdeveloped, or is under- or overweight.
• Examine each of the following body systems, assessing for abnormalities that warrant further evaluation:
  • Skin
    – Observe the patient’s skin for scars, lesions, wounds, and irritation.
    – Assess skin color, pigmentation, temperature, turgor, and for excessive moisture; assess for abnormalities such as jaundice, erythema, cyanosis, or other indications of illness or injury.
    – Differentiate normal skin variations (e.g., Mongolian spots, café-au-lait spots) from abnormalities or signs of abuse (e.g., bruises, scars). (For more information, see Red Flags, below.)
    – In school-age and older children, inspect for pubertal changes such as development of pubic and axillary hair.
    – Check hair and scalp for nits or lice.
  • Neurologic status
    – Assess level of consciousness, orientation, and for sensory deficits.
    – Assess pupillary size, symmetry, and reaction to light. (Light reaction can be difficult to assess in children because many tend to follow the light with their eyes.)
    – Assess the child’s reflexes. (For details, see Nursing Practice & Skill ... Neurological Assessment: Assessing Reflexes.)
    – Assess fontanels in infants, noting any signs of bulging or depression (bulging fontanels are an indication of increased intracranial pressure; depressed fontanels are an indication of dehydration).
  • Head and neck, including the eyes, ears, nose, and throat
    – Observe the color of sclera and assess moisture and color of mucous membranes.
    – Assess for discharge from eyes, ears, or nose.
    – Perform/assist with examination of the ears using an otoscope.
    – Assess/palpate for swelling, masses, and tenderness in the head, face, or neck.
    – Assess the symmetry of the skull and face.
    – Inspect the teeth for normal development and level of dental care.
    – Inspect the mouth for lesions and assess breath odor (foul odor can indicate poor oral hygiene and/or tooth decay).
  • Respiratory
    – Assess breath sounds in front and back. Evaluate the presence or absence of breath sounds in all lung areas, noting character and quality of sounds.
    – Assess for an elevated respiratory rate, wheezing, and the presence of retractions, which can indicate respiratory illness or distress.
  • Cardiovascular and lymphatic system
    – Assess heart rhythm for regularity (a sinus arrhythmia is normal in children).
    – Evaluate the strength of peripheral pulses.
    – Assess capillary refill time (normal capillary refill time is < 3 seconds).
    – Assess for the presence of edema.
    – Palpate lymph nodes in the neck, supraclavicular, axillary, and femoral areas for tenderness and swelling.
• Abdomen and genitals
  – Make sure the child is lying supine, is calm, and is not crying
  – Listen to bowel sounds over the four abdominal quadrants
  – Palpate for tenderness, distention, and abdominal masses
  – Ask the child or parent about bowel habits, voiding patterns, and characteristics of the stool and urine
  – Check the umbilicus for abnormalities
  – Inspect the female/male genitalia, rectum, and anus for swelling, masses, and other abnormalities (e.g., nondescended testes)
• Musculoskeletal
  – Assess mobility and range of motion
  – Assess for weakness, contractures, and paralysis
  – Assess for pain with movement
  – If assistive devices are used by the child, evaluate if they are working correctly
  – Evaluate the symmetry and strength of extremities, head, and neck
  – Assess head control in infants
  – Assess for problems with speech or swallowing
  › Dispose of used materials in proper receptacles and perform hand hygiene
  › Update the patient’s plan of care, as appropriate, and document the following in the patient’s medical record:
    • Date and time the assessment was completed
    • Patient history findings, including history of subjective complaints (e.g., pain or other discomfort) expressed by the patient or parent
    • Physical abnormalities identified, if present
    • Child’s response to the procedure, including pain, discomfort, or anxiety
    • Any unexpected patient events or outcomes, interventions performed, and whether or not the treating clinician was notified
    • Patient/parent education provided, including topics presented, response to education provided/discussed, plan for follow-up education, and details regarding any barriers to communication and/or techniques that promoted successful communication

Other Tests, Treatments, or Procedures That Can be Necessary Before or After Performing a Physical Assessment in Children
  › Notify the treating clinician of abnormal findings and/or significant changes from previous assessment so that the treatment plan can be established or modified
  › Reassessment will be conducted in accordance with facility protocol. Reassessment should be conducted more frequently
    • to evaluate the outcome of interventions
    • if the patient’s condition changes
    • if the patient is medically unstable

What to Expect After Performing a Physical Assessment in Children
  › The patient’s physical health, pattern of growth, and cognitive development will be evaluated, abnormalities will be identified if present, and appropriate treatment will be prescribed and administered

Red Flags
  › Obesity in childhood and adolescents—generally defined as body mass index (BMI) ≥ 95th percentile on the CDC BMI-for-age growth charts—is a predictor for hyperlipidemia, metabolic syndrome, impaired vascular function, and hypertension in adulthood (Andrade et al., 2010). As in adults, children with hypertension and their parents should be educated about strategies for weight control, diet control (e.g., low sodium intake), and regular exercise to reduce hypertension and other cardiovascular risk factors. Parents of children with a BMI > 85th percentile should undergo preventive counseling on eating and activity patterns because these children are at increased risk for continued weight gain that leads to overweight and obesity (Nader et al., 2006)
  › If the physical assessment identifies signs and symptoms that suggest child abuse (e.g., multiple wounds or bruises, scars, burns), follow facility protocol to protect the safety of the child and to report findings to the appropriate authorities according to local and state laws. (For more information, see Nursing Practice & Skill ... Child Abuse: Identifying Suggestive Signs and Symptoms)
Large masses noted in a child’s neck require further investigation to verify that the airway is not compromised.

**What Do I Need to Tell the Patient/Patient’s Family?**

- Educate the child and his/her parents about why the physical assessment will be performed and what to expect during and after the procedure.
- Following the physical assessment, provide information about future evaluation or follow-up testing that can be necessary.

**Note**

- Recent review of the literature has found no updated research evidence on this topic since previous publication on May 13, 2016.

**References**