Physical Assessment for the School Nurse – Part I

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Disclosure

Planner, Presenter, Author Disclosures

Lisa Minor and Cindy Crews
I/we disclose the absence of personal financial relationships with commercial interests relevant to this educational activity within the past 12 months.
Objectives

▪ At the conclusion of the session, Participants will be able to describe the four basic techniques of a head to toe physical assessment of the school age child
▪ Differentiate abnormal from normal physical assessment findings.
▪ Will be able to demonstrate a head-to-toe assessment of the school age child.
Part One

Things to be covered:
- General Assessment
- EENT
- Head and Neuro
- Cardiac
- Respiratory
What is Assessment?

Assessment: The collection of data to make a judgment or diagnosis

- Subjective
- Objective
What tools are needed?
Keys to Assessment

- Inspection
- Palpation
- Percussion
- Auscultation
Physical Assessment

• Approach is:
  • Orderly
  • Systematic
  • Head-to-toe

• Flexibility is essential with children, be kind and gentle, but firm and direct
General Assessment

• General Physical Appearance
  • Muscle tone and Posture
  • Nutritional status
  • Hygiene
• Behavior/Interactions
  • Personality
  • Facial expressions and eye contact
  • Activity level / alertness
• Speech, language, and motor skills age appropriate
• Growth (ht, wt, BMI)
# Expected Vital Signs

<table>
<thead>
<tr>
<th>Age</th>
<th>Pulse</th>
<th>Resp</th>
<th>Temp</th>
<th>Blood Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-6</td>
<td>60-110</td>
<td>21-25</td>
<td>98.6 – 99.0 F</td>
<td>SBP 86-117 DBP 44-75</td>
</tr>
<tr>
<td>6-10</td>
<td>60-110</td>
<td>19-21</td>
<td>98.1 - 98.2 F</td>
<td>SBP 91-122 DBP 54-84</td>
</tr>
<tr>
<td>10 – 12</td>
<td>50-90</td>
<td>19-21</td>
<td>97.9 – 98.1 F</td>
<td>SBP 98-127 DBP 58 -90</td>
</tr>
<tr>
<td>12 and older</td>
<td>50-90</td>
<td>16-19</td>
<td>97.9 – 98.6</td>
<td>SBP 108-140 DBP 64-94</td>
</tr>
</tbody>
</table>

Remember the 5th Vital Sign is PAIN assessment
Eyes

- Inspect –
  - Symmetry
  - Structures
  - Pupil response-PERRL

- Vision Testing:
  - Visual Acuity:
    - Grades K, 3, 7, & 10
    - Snellen or Symbol Chart
  - Peripheral Visual Fields
  - Ocular Alignment
Ears

Inspect and Palpate
Inspection with Otoscope
Testing Hearing Acuity

http://internetmedicine.com/iphone-otoscope/
Subjective Questions:
- Discharge or history of frequent colds
- Sinus pain
- Trauma
- Epistaxis (nosebleeds)
- Allergies (seasonal rhinitis); Alteration in smell

Inspect and Palpate
- The External Nose for symmetry, lesions, or pain
- Test for nasal patency (presence of a sniff)
- Using a speculum attached to the otoscope inspect the vestibule of each nare:
  - noting obstructions
  - color of membranes
  - nasal septum deviations
  - turbinates
- Palpate sinus area:
  - Frontal and maxillary sinuses for tenderness
  - Transilluminate sinus area if inflammation is suspected
Mouth and Throat:
- Sores or lesions on or in oral cavity
- Sore throat, difficulty swallowing, or hoarseness
- Bleeding gums or toothache
- Smoking or alcohol behaviors
- Self care behaviors (dental checkups; dentures; etc)

Inspect Mouth
- Lips for color, moisture, cracking or lesions
- Teeth and gums
- Tongue for color and surface characteristics
- Buccal mucosa: color, moisture; nodules or lesions
- Palates: hard and soft for intactness, lesions, etc.
Neck

- Palpate
  - Lymph nodes
  - Masses
- Assess ROM
- Inspect and palpate: trachea and thyroid should be mid-line
Head and Neuro

• Head should be symmetric
• Face should be symmetrical in appearance and movement
• Pupils should be round, reactive to light and equal in size (deviation from this could be a neurological problem)
A type of traumatic brain injury that is caused by a blow to the head or body, a fall, or another injury that jars or shakes the brain inside the skull. Although there may be cuts or bruises on the head or face, there may be no other visible signs of a brain injury. Seizures can occur with this.
### Symptoms of Concussion

<table>
<thead>
<tr>
<th>Physical symptoms of a concussion:</th>
<th>Mental symptoms of a concussion:</th>
<th>Sleep symptoms of a concussion:</th>
<th>Emotional symptoms of a concussion:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dizziness</td>
<td>Difficulty remembering</td>
<td>Sleeping more than usual</td>
<td>Easily angered or upset</td>
</tr>
<tr>
<td>Problems with balance</td>
<td>Confusion</td>
<td>Unable to fall asleep</td>
<td>Feeling nervous or anxious</td>
</tr>
<tr>
<td>Nausea and/or vomiting</td>
<td>Inability to concentrate</td>
<td>Sleeping less than usual</td>
<td>Feelings of sadness</td>
</tr>
<tr>
<td>Balance problems</td>
<td>Inability to think clearly</td>
<td></td>
<td>Crying more than usual</td>
</tr>
<tr>
<td>Sensitivity to noise</td>
<td>Mental fogginess</td>
<td></td>
<td>Lack of interest in usual activities</td>
</tr>
<tr>
<td>Sensitivity to light</td>
<td>Inability to remember new information</td>
<td></td>
<td>Depression</td>
</tr>
<tr>
<td>Blurred vision</td>
<td>Trouble paying attention</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Headache</td>
<td>Loss of focus</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low energy level</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unequal pupils</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seeing flashing lights</td>
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<td></td>
<td></td>
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</tbody>
</table>
Concussion Policies and Return to Play

Concussion Policies

Below is a breakdown of NCAA concussion guidelines. Click bulleted items for thoughts from coaches and trainers. Click tabs below for a comparison of NCAA and Ivy League football policies on concussions, and more thoughts from coaches.

NCAA General Guidelines

Outline signs and symptoms of mild traumatic brain injury (MTBI)
Mandate that each school have a concussion management plan:
- Educate athletes on signs and symptoms of concussions
- Remove athletes who show signs and symptoms of concussions from play
- Emphasize the importance that athletes report concussions

Provide guidelines on how schools should handle athletes showing symptoms of concussions:
- Sideline tests: neurological, mental status examination, brief neurocognitive testing
- Recommendation for imaging to assess intracranial bleeding
- Grading system for return to play
- Recommendation for baseline assessments, monitoring throughout

General Guidelines  Football Policies  Additional Thoughts
Cardiac Assessment: Overview of Heart

There are 4 chambers of the heart

- 2 Atria
  (Right & Left)
- 2 Ventricles (Right & Left)
Cardiac Assessment

Assess:

- Level of alertness, activity, tone
- Chest symmetry
- Cap refill (should be less than 3 secs)-prolonged indicates poor cardiac output
- Clubbing
- Peripheral edema
- Color and temperature of extremities
Objective Assessment

Auscultation:

- Auscultate all areas with patient sitting, leaning forward, supine, and on left side.
- Begin with the diaphragm and then the bell in all 5 areas
- Describe rate, rhythm, duration of cycle, timing, intensity, frequency, splitting or murmurs, and quality
Listening to Heart Sounds

5 AREAS FOR LISTENING TO THE HEART

- **AORTIC**
  Right 2nd Intercostal Space

- **PULMONIC**
  Left 2nd Intercostal Space

- **ERB’S POINT**
  (5, 5) Left 3rd Intercostal Space

- **TRICUSPID**
  Lower Left Sternal Border 4th Intercostal

- **MITRAL**
  Left 5th Intercostal, Medial to Midclavicular Line

All People Enjoy Time Magazine

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Auscultation of the heart includes two main things:
Rate:

<table>
<thead>
<tr>
<th>Age (yr)</th>
<th>Heart Rate (beats/min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;1</td>
<td>100-160</td>
</tr>
<tr>
<td>1-2</td>
<td>90-150</td>
</tr>
<tr>
<td>2-5</td>
<td>80-140</td>
</tr>
<tr>
<td>6-12</td>
<td>70-120</td>
</tr>
<tr>
<td>&gt;12</td>
<td>60-100</td>
</tr>
</tbody>
</table>

Rhythm (S1 and S2) and listening for abnormal rhythms
Listening to Heart Sounds

HEART SOUNDS

S₁
Tricuspid & Mitral Valves Close
Beginning of Systole

S₂
Aortic & Pulmonic Valves Close
End of Systole/Beginning of Diastole
Common childhood conditions affecting the heart

Acquired heart diseases are most often due to:
- Cardiomyopathy
- Infections (Rheumatic Fever)
- Autoimmune factors
- Genetic Factors
- Teratogens

Chest pain is rare in pediatrics: if a child experiences chest pain it is usually related to other conditions such as costochondritis; musculoskeletal discomforts; skin conditions, or pleural pain.
Lungs

- Assess Respiratory Rate and Rhythm
- Check oxygen saturation
- Inspect-
  - Skin color and nailbeds
  - Shape, size, symmetry
  - Breast development
  - Bony landmarks
- Palpate and Percuss anteriorly and posteriorly
- Auscultate lung sounds
Respiratory Patterns

- Tachypnea
- Bradypnea
- Dyspnea
- Apnea
- Hypoventilation
- Hyperventilation
- Kussmaul Respirations
- Cheyne-Stokes respirations
- Seesaw respirations
- Agonal

https://www.youtube.com/watch?v=TG0vpKae3Js
Lung Sounds

- Auscultation:
  - Compare both sides
  - Equality of breath sounds
  - Diminished
  - Presence of cough
  - Abnormal breath sounds
    - Crackles
    - Wheezes
    - Rhonchi (sonorous, course)
    - Stridor
Common Childhood Conditions Affecting the Respiratory System

- Bronchitis
- Pneumonia
- Foreign Body Obstruction
- Asthma
- Cystic Fibrosis
Respiratory Distress

- Signs & Symptoms:
  - Cyanosis, pallor, or mottling
  - Increased work of breathing
  - Tachypnea
  - Retractions
  - Nasal Flaring
  - Grunting
  - Stridor
  - Adventitious sounds
Life Threatening Allergic Reactions

- **Face** – itchiness, redness, swelling of face and tongue
- **Airway** – trouble breathing, swallowing, or speaking
- **Stomach** – pain, vomiting, diarrhea
- **Total Body** – rash, itchiness, swelling, weakness, paleness, sense of doom, loss of consciousness.

- Give Epi Call 911
Scenario

Location: School Clinic          Time: 10:00 am
Student Name: Joseph A. Garner  
Gender: Male
Age: 8          DOB: 12/3/2010
Race: African American
Weight: 60 lbs          Height: 48”
Allergies: Sulfa          Immunizations: UTD
Grade: 3rd
Homeroom Teacher: Miss Mary Burch
Primary Physician: Dr. Samantha King
Past Medical History: Epilepsy
Medications: Keppra
History of Present Illness: Teacher calls clinic for nurse to come to room immediately for possible seizure.