Physical Abuse In Children
Emergency Department
Management Clinical Practice
Guideline

Clinical Practice Guideline
Protocol Approved by: Division of Pediatric Emergency Medicine
Revised: 12/2020
**ED Management of Physical Abuse in Children II**

Children in Emergency Department with Suspected Physical Abuse

- No injuries indicative of abuse
- No historical indicators
- Exam findings explained by history
- No Social Work Consult

- No CPS report indicated
- Follow up with CPS

**CPS report and consider:**
1. Child abuse consult
2. Admission for safety & treatment

**CPS report and consider:**
1. Child abuse consult
2. Police report
3. Admission for safety & treatment

- No occult injury
- Plausible history
- Social Work consult reassuring

- Exam findings suggestive of abuse
- Occult injuries present

Consider other children at risk. Any child who resides in a home with a child who has suspected abusive injuries should have a full, age-appropriate screening for occult injuries.

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**References**

1. SSMHealth Cardinal Glennon CPG Home
2. Resources  
3. Links
   - Children Presenting with Physical Abuse Concerns (p. 2)
   - Rapid Assessment (p. 2)
   - History (p. 3)
   - Physical Findings Suggesting of Abuse (p. 4)
   - Other Injuries Suggestive of Abuse and Neglect (p. 4)
   - Skeletal Survey Recommendations (p. 5)
   - Consults to Consider and Disposition (p. 6)
   - Imaging (p. 6)
   - Screen for Occult Injuries and Medical Conditions (p. 7)
   - Laboratory Testing for Occult Injuries and Medical Conditions (p. 8)

**Supplemental Links**

- Evaluation for Bleeding Disorders in Suspected Child Abuse
- The Evaluation of Suspected Child Physical Abuse
- Are there patterns of bruising in childhood which are diagnostic or suggestive of abuse?
- Incidence of Fractures Attributable to Abuse in Young Hospitalized Children
- Analysis of Missed Cases of Abusive Head Trauma
- Occult Head Injury in High-Risk Abused Children
- Diagnostic Imaging of Child Abuse
- Utility of Hepatic Transaminases to Recognize Abuse in Children
- Abdominal and pelvic CT in cases of suspected abuse: can clinical and laboratory findings guide its use?
- Evaluating Children with Fractures for Child Physical Abuse
- Bruises in Infants and Toddlers: Those Who Don't Cruise Rarely Bruise
- Sentinel injuries: subtle findings of physical abuse

Owner - Department and Physician  
Approved by CGCH MEC CPG date

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CHILDREN PRESENTING WITH PHYSICAL ABUSE CONCERNS

1. All children < 5 years old presenting with injury
2. Infants*:
   - Irritable infants < 6 months without fever or other identifiable cause
   - BRUE’s
   - Altered mental status
   - Seizures
   - Respiratory distress
   - Unexplained vomiting
   - Unexplained bruising

*Non-accidental trauma is difficult to detect in infants. Many present with non-specific symptoms such as irritability, BRUE, altered mental status or unexplained vomiting.

RAPID ASSESSMENT

1. General
   - Review VS, place on CR monitor per policy
   - Notify attending if concerned about patient’s appearance
   - Remove clothing and place child into gown
   - Assess need for analgesia, notify MD
   - For patients with likely need for OR, reinforce NPO status

2. Details of Injury
   - Time
   - Mechanism
   - Initial manifestations
   - Neurologic symptoms
   - Physical Exam
   - Brief neurologic exam
   - Focused exam of injury, notify attending regarding need for X-ray
HISTORY

HPI
• Onset of symptoms, activity at symptom onset
• Nature of symptoms
• Alleviating/exacerbating factors
• Feeding: duration, frequency of feed, intake over past 24 hours
• Presence of fever
• Details of Injury
• Time
• Mechanism
• Initial manifestations
• Neurologic symptoms
• Supervision at time of injury
• If delay in seeking care, reason for the delay

PMH
• Birth history
• Prior ED visits
• Prior hospitalization
• Primary care MD-date of last visit
• Immunization status
• Development
• Normal vs abnormal
• Physical Exam
• Review VS
• Neurologic exam
• Thorough skin exam
• Assess injury if present
HISTORICAL INDICATORS OF ABUSE

- No vague explanation for a significant injury
- Important detail of the explanation changes dramatically
- Explanation given is inconsistent with the child's physical and/or developmental capabilities
- Different witnesses provide different explanations
- Delay in seeking medical care without reasonable explanation
- Children with injuries resulting from family/domestic violence incident
- Previous history of inflicted injury
- Witnessed inappropriate behavior to a child placing them at risk for non-accidental trauma

1Christian CW, Committee on Child Abuse and Neglect, The Evaluation of Suspected Child Physical Abuse, Pediatr 2015;135(5);e1337-e1354

PHYSICAL EXAM FINDINGS SUGGESTIVE OF ABUSE

1. BRUISING

- Bruises in infants < 6 months of age or non-ambulatory infants
- Bruising in unusual locations in any age child. Examples include:
  a. Ear pinna
  b. Neck, under chin
  c. Torso, buttocks
  d. Patterned bruises
  e. Loop marks
  f. Hand print

2. Remember TEN-4-FACESp Bruising Clinical Decision Rule (96% sensitive 87% specific for predicting abuse in children). If these criteria for bruising are met, have a clinical concern for abuse:

- **TEN**: Any bruising on Torso (chest, abdomen, back, buttocks, genitourinary region, and hip), Ears, Neck in children < 4 years of age or
- Any bruising present in infants 4 months old and younger And
- No confirmed accident in a public setting that accounts for bruising in TEN region or infant < 4 months
- **FACES** bruising on **Frenulum**, **Angle of jaw**, **Cheek**, **Eyelids**, **Subconjunctivae**
- **p** - patterned:
  - Bite marks = semi-circular/oval patch. May have associated bruising
  - Burns - Patterned contact burns with insufficient injury; Cigarette butt; Stocking, glove pattern; Mirror image burns of the extremities; Symmetric burns on buttocks; Immersion burn; Multiple burn sites
  - Facial Injury - Unexplained torn frenulum in non-ambulatory child; Unexplained oral injury; Ear injury; Unexplained facial bruising in non-ambulatory child; Neck bruising
- **Eye** - Retinal hemorrhage
- **Abrasion** - Abdominal exam without sufficient history e.g. bruising, tenderness or distension
- **Skeleton** - Tenderness without sufficient history; Limited ROM in an extremity, and favoring other side.

3. OTHER INJURIES SUGGESTING ABUSE AND NEGLECT

Multi-organ system trauma without sufficient history e.g. abdomen or skeletal

**Skeleton**
- Rib fractures
- Multiple fractures
- Long bone fractures in children < 6 months
- Any fracture (including femur) in non-ambulatory child
- Metaphyseal fractures
- Scapular fractures
- Vertebral fractures
- Sternum fractures
- Fractures of hands and feet
- Facial fractures

**Head**
- Subdural hematoma with or without skull fracture
- Unexplained intracranial injury
- Note: Infants with intracranial injury frequently have no or non-specific symptoms

**Poisoning**
- Any illegal drug exposure, prescribed controlled substances, ethanol or marijuana
SKELETAL SURVEY IS RECOMMENDED IN THE FOLLOWING

Children 0-23 months if ANY concerns for child abuse or ANY of the following features are present:

- History of:
  - Confessed abuse
  - Injury occurring during domestic violence
  - Impact from toy/object causing fracture
  - Delay in seeking care > 24 hours in child with signs of distress
  - Additional injuries unrelated to fracture (i.e. bruising, burns)

No History of trauma to explain fracture EXCEPT for the following fracture types in ambulatory patients > 12 months:

- Distal buckle fracture of radius/ulna
- Distal spiral or buckle fracture of the tibia/fibula

ALL children 0-11 months with ANY type of fracture EXCEPT in the following cases with no other clinical concerns:

- Distal radial / ulna buckle fracture or spiral fracture of the tibia / fibula (toddler fracture) in a cruising child > 9 months with history of a fall
- Linear, unilateral skull fracture in child > 6 months with history of significant fall (i.e. height > 3 feet or fall with caregiver landing on child)
- Clavicle fracture likely attributed to birth (acute fracture in infants < 22 days old or healing fracture in infants < 30 days old)

Children 12-23 months with any of the following fracture types:

- Rib fracture
- Classic metaphyseal fracture
- Complex or ping pong skull fracture
- Humeral fracture with epiphyseal separation attributed to short fall (< 3 feet)
- Femur diaphyseal fracture attributed to fall from any height

SKELETAL SURVEY SHOULD NOT BE ROUTINELY PERFORMED IN THE FOLLOWING CASES IF THERE ARE NO OTHER CLINICAL CONCERNS FOR ABUSE:

- Children 12 – 23 months who are ambulatory with the following:
  1. Distal spiral fractures of the tibia / fibula with a history of a fall while walking/running
  2. Distal radial/ulna buckle fracture with a history of a fall on to an outstretched hand

CONSULTS TO CONSIDER AND DISPOSITION:

- Consult Trauma Surgery for all cases of suspected physical abuse if the child will be admitted.

Conditional Consults:

- Orthopedics for all cases of fractures
- Neurosurgery for all cases where intracranial bleed or evidence of Abusive Head Trauma (AHT) is present e.g. abnormal CT or skull fracture,
- Neurology suspected seizures from AHT
- Ophthalmology in cases where intracranial bleed or evidence of AHT is present, for a diluted fundoscopic exam, once hemodynamically stable (ideally within 24-48 hrs of presentation)
- Hematology, if there are concerns of abnormal coagulation profile.
- Child Abuse Team

If injuries require admission for surgical specialty care, admit to appropriate service.

1. Consider the need for PICU admission for:
   - Any child with intracranial injury/bleed or skull fracture(s) identified on CT
   - Any child with normal head CT, no seizures but GCS <15

2. If patient is being admitted for reasons other than injury, then admission may be to the Peds team for further evaluation/care pending safety evaluation.

3. Child abuse hotline report is made through SW department, if anyone on the care team deems such referral necessary.

4. Admit team ensures work-up above has been completed in ED.

5. Child abuse hotline report does not mandate admission. Social work can request safety disposition from ED if needed.

6. PCP receives ED H&P and/or hospital DC summary, with DC instructions.
<table>
<thead>
<tr>
<th></th>
<th>Head CT or MRI</th>
<th>Skeletal Survey</th>
<th>Abdominal &amp; Pelvic CT</th>
<th>Cervical Spine MRI</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-12</td>
<td>Obtain CT if symptomatic</td>
<td>Yes</td>
<td>Obtain if symptomatic or suggested by physical exam</td>
<td>Consider if concern for AHT.</td>
</tr>
<tr>
<td>months</td>
<td>Consider CT if evidence of CHI on PE</td>
<td></td>
<td>Consult trauma for imaging recommendations if only finding is elevated enzymes (an ALT or AST &gt;80IU/L; Amylase or lipase &gt; 100 U/L)</td>
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</tr>
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<td></td>
<td>Schedule MRI for asymptomatic infants &amp; admit for MRI</td>
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<tr>
<td>12-24</td>
<td>Consider</td>
<td>Yes</td>
<td></td>
<td>Discuss with radiology in cases of AHT or severe injuries</td>
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<tr>
<td>months</td>
<td></td>
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<tr>
<td>2-6 years</td>
<td>No</td>
<td>No*</td>
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<td>7-18 years</td>
<td>No</td>
<td>No</td>
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CHI: closed head injury; PE: physical exam; AHT: abusive head trauma.

*In rare cases, skeletal survey may be recommended in children aged >2 years.

Cervical spine MRI should be considered in patients with AHT. Discuss need with child protection team and Trauma after admission.
**Screen for Occult Injuries and Medical Conditions**

Conditions mistaken for bruising
- Mongolian spots
- Coining
- Erythema nodosum
- Ink, paint, dye
- Cupping
- Phytophotodermatitis

**Conditions that May Predispose a Child to Bruising**
- HSP
- ITP
- Leukemia
- DIC
- Hemophilia
- Ehlers-Danlos
- Hemangioma
- Vitamin K deficiency
- Inherited coagulopathies

**Conditions Mistaken for Burns**
- Impetigo
- Severe diaper rash
- Frostbite
- Chemical burns
- Epidermolysis bullosa
- Phyto-photodermatitis
- Ingestion of ex-lax causing buttock “burns”
- Moxibustion

Conditions that May Predispose a Child to Intracranial Hemorrhage
- Glutaric aciduria type 1 (associated findings: macrocranium, subdural hematomas, retinal hemorrhages, frontotemporal atrophy)
- Hemorrhagic disease of the newborn
- Inherited coagulopathies
- Acquired coagulopathies
- Arteriovenous malformation

Conditions that May Predispose a Child to Fractures
- Osteogenesis Imperfecta (variable associated findings: blue sclera, ligamentous laxity, wormian skull bones, hearing loss. Usually inheritance is autosomal dominant)
- Osteopenia of prematurity
- Florid rickets (vitamin D (25 OH) <10 and radiographic findings of rickets)
<table>
<thead>
<tr>
<th>Laboratory Study</th>
<th>Comments</th>
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<tbody>
<tr>
<td>CBC, CMP, Lipase, UA</td>
<td>All patients less than 7 yrs; greater than 7 years if clinically indicated</td>
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<tr>
<td>Add Ca, Mg, Phos, Alk Phos, intact PTH</td>
<td>For fractures, excluding skull fractures</td>
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<tr>
<td>PT/PTT</td>
<td>For bruising or intracranial hemorrhage</td>
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<tr>
<td>Add vWF antigen and activity, Factor VIII and IX levels if patient requires blood products</td>
<td></td>
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</tbody>
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**Drug Screening**

| Urine Tox Screen including comprehensive drug screen | Concern for drug ingestion or exposure             |


