

**Physical Abuse  
In Children  
Emergency Department Management  
Clinical Practice Guideline**

**Clinical Practice Guideline**

**Protocol Approved by: Division of Pediatric Emergency Medicine**

**Date(s) of Approval: 10/15**

## **SUSPECTED CHILD ABUSE CLINICAL PRACTICE GUIDELINE (CPG)**

Injuries from child abuse account for significant morbidity and mortality in the pediatric population. It also accounts for long term disability when these children become adults. Despite best efforts to intervene, abuse still goes unrecognized and misdiagnosed. In one study on abusive head trauma, 30% of the infants were misdiagnosed the first time they sought medical care. In order to reduce this risk we must have a high index of suspicion in the right clinical situation and have a strong assessment tool to evaluate these children.

The first step in the assessment is a detailed and thorough history for the event. A member of the ED team should take this history. Consult services will obtain their own history but their histories usually are not as detailed as an ED history and may not include PMD, family and medical histories, etc. These details are very important to distinguish abuse from accidental injury. Secondly, social work should be consulted on all patients where there is a concern for abuse. The social worker will perform an assessment of the social situation (i.e. family dynamics), who lives in the home, the number of children, history of domestic violence, drug or alcohol issues, history of Missouri Children's Division or DCFS involvement, etc. Social workers do not obtain a medical history.

The appropriate studies and consults are ordered at the discretion of the ED attending. Once preliminary results are obtained, it is the responsibility of the ED attending to make the determination as to whether the injury is suspicious for abuse or not. If the injury is deemed concerning for abuse, then the social worker will make the report to Children's Division or the Division of Children and Family Services and also contact the appropriate Law Enforcement. All victims of child abuse who are being admitted to the hospital, even if for non-medical reasons, i.e. for social reasons, must have a Trauma Consult.

The following is a clinical pathway to aid in the evaluation of an infant or child who is suspected to be the victim of physical<sup>1-17</sup> abuse. As always, Advanced Trauma Life Support (ATLS) guidelines should be followed.

### **References**

1. Diagnostic imaging of child abuse. *Pediatrics*. 2000;105(6):1345-1348.
2. Laskey AL, Stump TE, Hicks RA, Smith JL. Yield of skeletal surveys in children <math>\leq</math> 18 months of age presenting with isolated skull fractures. *The Journal of pediatrics*. 2013;162(1):86-89.
3. Harper NS, Eddleman S, Lindberg DM, Ex SI. The utility of follow-up skeletal surveys in child abuse. *Pediatrics*. 2013;131(3):e672-678.
4. Hicks RA, Stolfi A. Skeletal surveys in children with burns caused by child abuse. *Pediatric emergency care*. 2007;23(5):308-313.

5. Merten DF, Radkowski MA, Leonidas JC. The abused child: a radiological reappraisal. *Radiology*. 1983;146(2):377-381.
6. Duffy SO, Squires J, Fromkin JB, Berger RP. Use of skeletal surveys to evaluate for physical abuse: analysis of 703 consecutive skeletal surveys. *Pediatrics*. 2011;127(1):e47-52.
7. Lindberg DM, Shapiro RA, Laskey AL, et al. Prevalence of abusive injuries in siblings and household contacts of physically abused children. *Pediatrics*. 2012;130(2):193-201.
8. American College of Radiology: ACR Practice Guidelines for Skeletal Surveys in Children. [http://www.acr.org/~media/ACR/Documents/PGTS/guidelines/Skeletal\\_Surveys.pdf](http://www.acr.org/~media/ACR/Documents/PGTS/guidelines/Skeletal_Surveys.pdf). 2013.
9. Levin AV, Christian CW, Committee on Child A, Neglect SoO. The eye examination in the evaluation of child abuse. *Pediatrics*. 2010;126(2):376-380.
10. Levin AV. Retinal hemorrhage in abusive head trauma. *Pediatrics*. 2010;126(5):961-970.
11. Lindberg D, Makoroff K, Harper N, et al. Utility of hepatic transaminases to recognize abuse in children. *Pediatrics*. 2009;124(2):509-516.
12. Kellogg ND, American Academy of Pediatrics Committee on Child A, Neglect. Evaluation of suspected child physical abuse. *Pediatrics*. 2007;119(6):1232-1241.
13. Degraw M, Hicks RA, Lindberg D, Using Liver Transaminases to Recognize Abuse Study I. Incidence of fractures among children with burns with concern regarding abuse. *Pediatrics*. 2010;125(2):e295-299.
14. Flaherty EG, Thompson R, Litrownik AJ, et al. Adverse childhood exposures and reported child health at age 12. *Academic pediatrics*. 2009;9(3):150-156.
15. Corso PS, Edwards VJ, Fang X, Mercy JA. Health-related quality of life among adults who experienced maltreatment during childhood. *American journal of public health*. 2008;98(6):1094-1100.
16. Jenny C, Hymel KP, Ritzen A, Reinert SE, Hay TC. Analysis of missed cases of abusive head trauma. *JAMA*. 1999;281(7):621-626.
17. Christian CW, Committee on Child A, Neglect AAoP. The evaluation of suspected child physical abuse. *Pediatrics*. 2015;135(5):e1337-1354.
18. Kellogg N, American Academy of Pediatrics Committee on Child A, Neglect. The evaluation of sexual abuse in children. *Pediatrics*. 2005;116(2):506-512.
19. Adams JA, Kellogg ND, Farst KJ, et al. Updated Guidelines for the Medical Assessment and Care of Children Who May Have Been Sexually Abused. *J Pediatr Adolesc Gynecol*. 2015.

## Age 0 - 2

### Concern for Physical Abuse

- **Abuse suspected by history, or**
- **Injury pattern is suspicious for abuse including:**
  - Bruising, particularly in a non-ambulatory child
  - Burns
  - Fracture in non-ambulatory child
  - Long bone fracture inconsistent with the reported mechanism
  - Abusive Head Injury or Skull Fracture
  - Intra-abdominal injury
  - Socially isolated



### Physical Abuse Suspected

- Social Work Consult
- Skeletal Survey
- Labs: CBC, CMP, Lipase, Bag UA



### As Clinically Indicated

- **Additional Lab Studies**
  - PT/PTT INR, Urine Tox Screen, Type and Screen
- **Ophthalmology Consult**
- **Head, C-spine, Abd CT**
- **Trauma Consult**
- **Hematology Consult**

# Age 0 - 2

## Skeletal Surveys

- **Complete Skeletal Survey (preferably at a Pediatric facility) Indicated when:**
  - Abuse suspected by history, or
  - Injury pattern is suspicious for abuse including:
    - Bruising, particularly in a non-ambulatory child
    - Burns
    - Fracture in non-ambulatory child
    - Long bone fracture inconsistent with the reported mechanism
    - Abusive Head Injury or skull fracture
    - Intra-abdominal injury
    - Socially isolated
- **Repeat Survey is Indicated In 3 Weeks whenever:**
  - Abuse is still suspected after initial evaluation
- **Complete Skeletal Survey Indicated for Sibling when:**
  - Sibling is twin of primary patient
  - Sibling is < 1 year old

## CT

- **Head and C-spine CT Indicated when:**
  - Intracranial injury suspected by history (e.g. apnea, seizures) or physical findings (e.g. facial bruising, scalp swelling, abnormal neuro exam)
  - Posterior rib fractures or metaphyseal fractures
- **Abdominal CT Indicated (in consultation with the trauma service) for:**
  - Clinical signs of intra-abdominal trauma
  - Elevated Lipase or LFT's (AST or ALT > 80)

## Ophthalmologic Studies

- **Ophthalmologic Consult with Indirect Ophthalmoscopic Exam Indicated when:**
  - Abusive head trauma is suspected by history or physical exam or studies (e.g. cerebral edema, intracranial hemorrhage, skull fracture)
  - Injury pattern includes multiple fractures or multiple system injuries

## Lab Studies

- **Suspected child abuse with blunt trauma (e.g. intra-abdominal injury, head injury, or fracture suspicious for abuse)**
  - CBC, CMP, Lipase, Bag UA
  - If head injury is suspected, add PT/PTT/INR and Type & Screen
- **Suspected child abuse with isolated cutaneous injuries (e.g. bruising)**
  - CBC, PT/PTT, INR
  - If extensive hematoma's, consider UA, myoglobin, CPK, renal panel

## Consultations

- **Ophthalmology (as clinically indicated, as above)**
- **Neurosurgery (if abnormal head CT or skull fracture)**
- **Orthopaedics (for all fractures)**
- **Trauma Surgery (for all admissions and as clinically indicated)**
- **Hematology (when clotting abnormality suspected)**
- **Social Work for all evaluations**

## Age 2 - 5

### Concern for Physical Abuse

- Abuse suspected by history, or
- Abuse suspected by clinical examination

### Physical Abuse Suspected

- Social Work Consult
- Selective Radiologic Studies
  - Complete skeletal survey if disabled or immobilized (e.g. CP, neuromuscular disorders)
- Labs: CBC, CMP, Lipase, UA (Bag UA if not toilet trained)

### As Clinically Indicated

- **Additional Lab Studies**
  - PT/PTT INR, Urine Tox Screen, Type and Screen
- Ophthalmology Consult
- Head, C-spine, Abd CT
- Trauma Consult
- Hematology Consult

# Age 2 - 5

## Radiological Studies

- **Selective Radiologic Studies Indicated when:**
  - Abuse suspected by history, or
  - Abuse suspected by clinical examination
- **Complete Skeletal Survey (preferably at a Pediatric facility) Indicated when:**
  - Child is disabled or immobilized, including children with:
    - CP
    - Neuromuscular disorders
- **Repeat Studies are Indicated In 3 Weeks whenever:**
  - Abuse is still suspected after initial evaluation

## CT

- **Head CT Indicated for**
  - Facial or neck bruising
  - Neurological symptoms upon presentation or by history
- **Abdominal CT Indicated (in consultation with the trauma service) for**
  - Clinical signs of intra-abdominal trauma
  - Elevated Lipase or LFT's (AST or ALT > 80)

## Ophthalmologic Studies

- **Ophthalmologic Consult with Indirect Ophthalmoscopic Exam Indicated when:**
  - A facial or head injury is c/w abuse

## Lab Studies

- **Suspected child abuse with blunt trauma (e.g. intra-abdominal injury, head injury, or fracture suspicious for abuse)**
  - CBC, CMP, Lipase, Bag UA
  - If head injury is suspected add PT/PTT INR
- **Suspected child abuse with isolated cutaneous injuries (e.g. bruising)**
  - CBC, PT/PTT, INR
  - If extensive hematoma's, consider UA, myoglobin, CPK, renal panel

## Consultations

- **Ophthalmology when facial or head injury is c/w abuse**
- **Neurosurgery if abnormal head CT or skull fracture**
- **Orthopaedics for fractures**
- **Trauma Surgery for all admissions**
- **Hematology**
- **Social Work for all evaluations**

**Age >5**

**Concern for Physical Abuse**

- Abuse suspected by history, or
- Abuse suspected by clinical examination



**Physical Abuse Suspected**

- Social Work Consult
- Selective Radiologic Studies
- Labs: CBC, CMP, Lipase, UA



**As Clinically Indicated**

- **Additional Lab Studies**
  - PT/PTT INR, Urine Tox Screen, Type and Screen
- **Ophthalmology Consult**
- **Head, C-spine, Abd CT**
- **Trauma Consult**
- **Hematology Consult**



# Age > 5

## Radiological Studies

- **Selective Radiologic Studies Indicated when:**
  - Abuse suspected by history, or
  - Abuse suspected by clinical examination
- **Repeat Studies are Indicated In 3 Weeks whenever:**
  - Abuse is still suspected after initial evaluation

## CT

- **Head CT Indicated for**
  - Facial or neck bruising
  - Neurological symptoms upon presentation or by history
- **Abdominal CT Indicated (in consultation with the trauma service) for**
  - Clinical signs of intra-abdominal trauma or elevated LFT's
  - Elevated Lipase or LFT's (AST or ALT > 80)

## Ophthalmologic Studies

- **Ophthalmologic Consult with Indirect Ophthalmoscopic Exam Indicated when:**
  - A facial or head injury is c/w abuse

## Lab Studies

- **Suspected child abuse with blunt trauma (e.g. intra-abdominal injury, head injury, or fracture)**
  - CBC, CMP, Lipase, Bag UA
  - If head injury is suspected add PT/PTT INR
- **Suspected child abuse with isolated cutaneous injuries (e.g. bruising)**
  - CBC, PT/PTT, INR
  - If extensive hematoma's, consider UA, myoglobin, CPK, renal panel

## Consultations

- Ophthalmology when facial or head injury is c/w abuse
- Neurosurgery if abnormal head CT or skull fracture
- Orthopaedics for fractures
- Trauma Surgery for all admissions
- Hematology
- Social Work for all evaluations