

Physical Abuse & Neglect in Young Children: *The pediatrician's perspective*

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Objectives

Discuss how medical providers identify and diagnose physical abuse and neglect

Understand why child abuse pediatrics requires a multidisciplinary team to arrive at the correct diagnosis

A dark red, geometric shape, resembling a trapezoid or a parallelogram, is positioned on the right side of the image. It has a white background to its left and top, and a dark red fill. The text "Now What?" is centered within this red area.

Now What?

NC Child Abuse Reporting Statutes: social services

- **§ 7B-301. Duty to report abuse, neglect, dependency, or death due to maltreatment.**

Any person or institution who has **cause to suspect** that any juvenile is abused, neglected, or dependent, as defined by G.S. 7B-101, or has died as the result of maltreatment, shall report the case of that juvenile to the director of the department of social services in the county where the juvenile resides or is found. The report may be made orally, by telephone, or in writing.

A grayscale photograph of a female doctor in a white lab coat examining a young child's chest with a stethoscope. The doctor is on the right, looking towards the child on the left. The child is sitting up and looking towards the doctor. The background is a plain, light color. The entire image is overlaid with a semi-transparent blue filter.

What influences a medical provider to make a report to CPS?

- Education and training
- Relationship/Perception of family function
- Race/ethnicity of family
- Type of maltreatment concern
- Prior experience with CPS and other related systems

Are these Findings Physical Abuse,
Neglect or Something Else?

What raises a concern for child abuse/neglect?

- Physical abuse
 - Concerning History
 - Injury patterns and injury types
 - Extent of findings
 - Statement(s) made by the child
- Neglect
 - Failure to seek appropriate care
 - Failure to provide appropriate care
 - Failure to provide appropriate supervision

Physical Abuse



Assessing
Injuries:
*Medical
Provider*

Recognition

Medical Evaluation

**Role of Child Medical
Evaluation (CME)**

Assessing
Injuries:
*Medical
Provider*

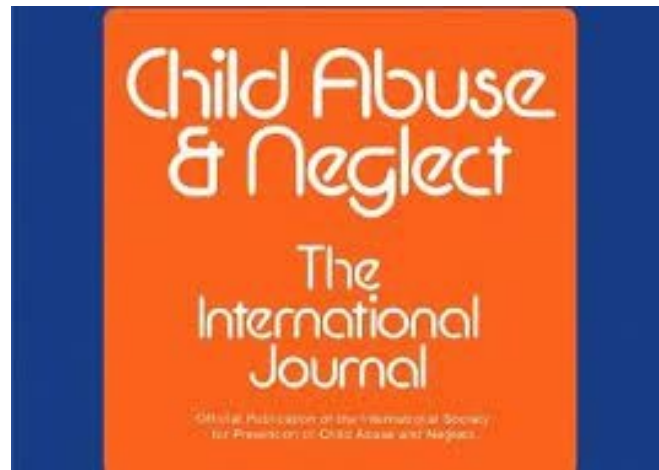
Recognition

Medical Evaluation

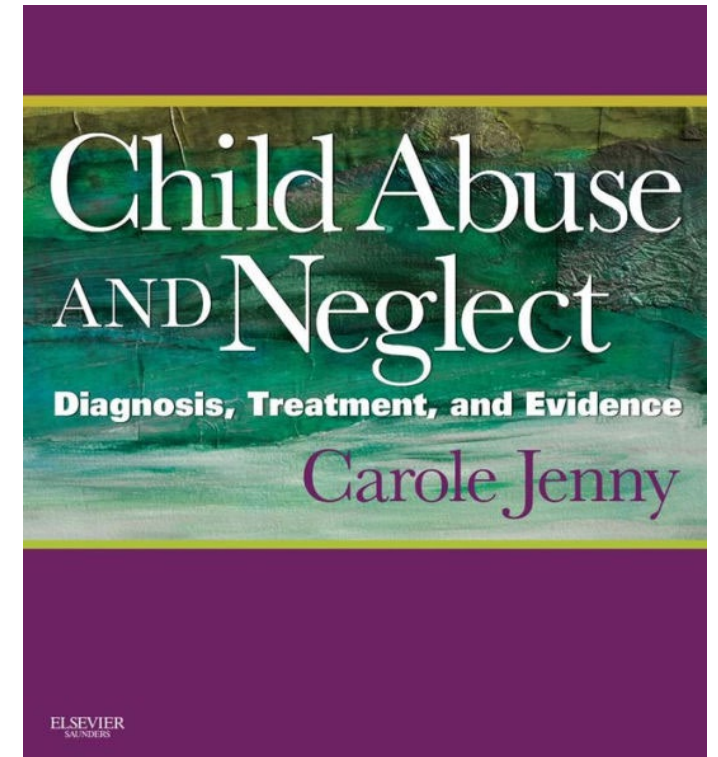
**Role of Child Medical
Evaluation (CME)**

Recognition





A screenshot of the ChildProtector mobile app interface. At the top, the status bar shows 4G LTE, 100% battery, and 9:08 AM. The app header is blue with a hand icon and the text "ChildProtector". Below the header is a search bar with the placeholder text "search all content". The main content area has a light blue background and asks "What type of an injury are you interested in?". Below this is a horizontal scroll bar with the text "< Side-scroll to see all options >". The scroll bar shows several circular images, with the largest one in the center showing a child's head in profile. Below the scroll bar, the selected category "Bruising/Skin Injuries" is highlighted. Underneath, there is a short description: "Some short description about this section, like brain dysfunction caused by an outside force, usually a violent blow to the head." At the bottom, there are two blue buttons: "Learn more:", "Forensic Decision-Making Tools", and "Browse Table of Contents".



TEN-4-FACESp

Bruising Clinical Decision Rule for Children < 4 Years of Age

When is bruising concerning for abuse in children < 4 years of age?
If bruising in any of the three components (Regions, Infants, Patterns) is present without a reasonable explanation, strongly consider evaluating for child abuse and/or consulting with an expert in child abuse.

TEN

Torso | Ears | Neck



FACES

Frenulum
Angle of Jaw
Cheeks (*fleshy part*)
Eyelids
Subconjunctivae

REGIONS

4 months and younger



Any bruise, anywhere

INFANTS

Patterned bruising



Bruises in specific patterns like slap, grab or loop marks

PATTERNS

See the signs

Unexplained bruises in these areas most often result from physical assault. TEN-4-FACESp is not to diagnose abuse but to function as a screening tool to improve the recognition of potentially abused children with bruising who require further evaluation.

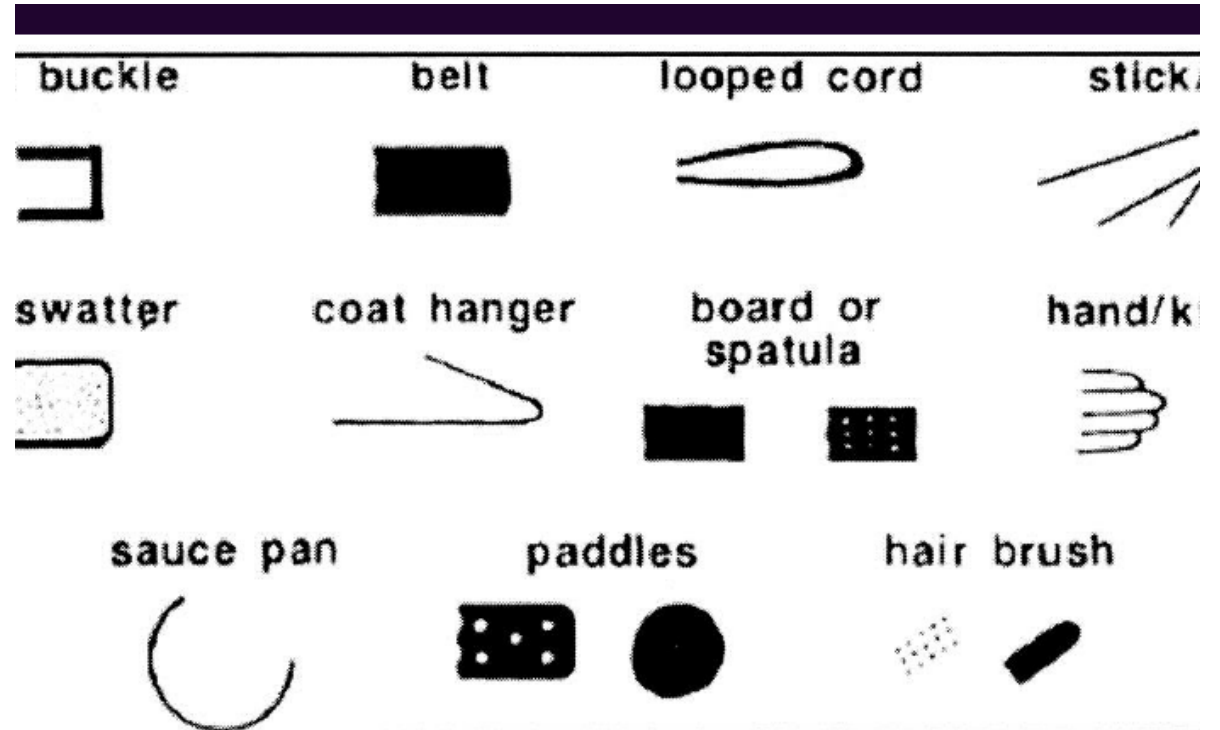
 Ann & Robert H. Lurie
Children's Hospital of Chicago



TEN-4-FACESp was developed and validated by Dr. Mary-Clyde Pierce and colleagues. It is published and available for FREE download at luriechildrens.org/ten-4-facesp

Patterned Injuries

It's not just the bruise or mark, it's also the appearance

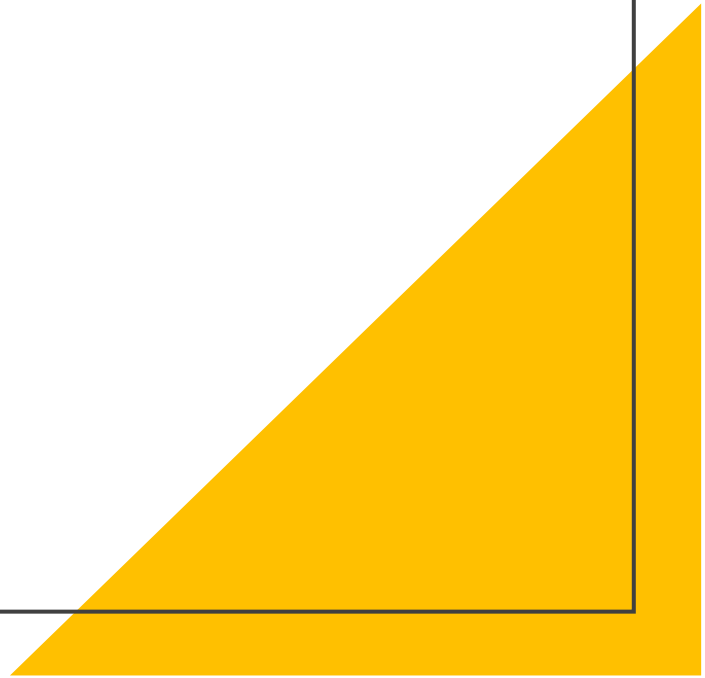


Shwayder 2006: *Pediatric Dermatology* 23 (4) 311-320

Recognition of Abuse/Neglect

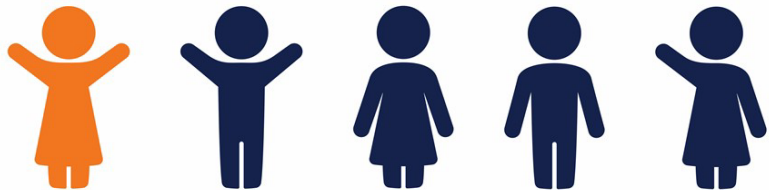
Concerning features when interviewing caregivers

- Changing story



Recognition of Abuse/Neglect

1 in 5 North Carolina kids are living in poverty.



Concerning features when interviewing caregivers

- Changing story
- Delay in seeking care

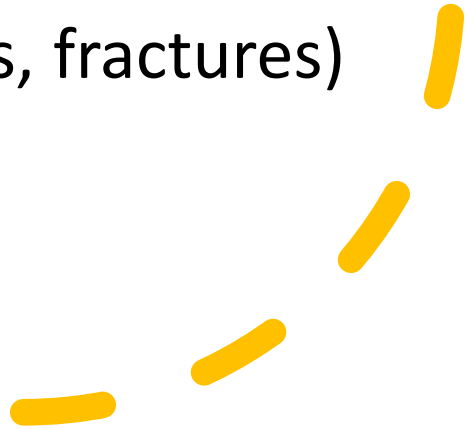
Recognition of Abuse/Neglect

Concerning features when interviewing caregivers

- Changing story
- Delay in seeking care
- Developmental skills described are inconsistent with child's age

Recognition of Abuse/Neglect

Concerning features when interviewing caregivers

- Changing story
 - Delay in seeking care
 - Developmental skills described are inconsistent with child's age
 - History doesn't explain injuries
 - Absence of a history
 - Multiple injuries (e.g.; poisonings, fractures)
 - Sibling blamed for injuries
- 

Assessing
Injuries:
*Medical
Provider*

Recognition

Medical Evaluation

**Role of Child Medical
Evaluation (CME)**



Medical Evaluation



The history is critical



History Taking

- Determining when the child was last well
 - *“Tell me the last time you saw your baby acting normally”*
 - *“When was the last time your child was acting and feeding without any problems?”*
- Documenting Immediately
 - Put relevant statements in quotes
 - Document what’s different from other histories
- Using "teach-back" and other methods to confirm information with families
 - Repeat back your understanding of information to families



Components of History in Abuse/Neglect

Components

Identify source of information

Identify the mental status/condition of the caregivers for the child at the time of child's injury and/or ill symptom appearance

Determine if the injurious event was witnessed, heard but not witnessed, or not witnessed and not heard by the historian

Identify the last witness to well/asymptomatic behavior

Identify the last location where the child was well/asymptomatic

Identify the last point in time when the child was well/asymptomatic

Identify specific location where injury occurred

Identify the timing of injurious event

Identify who heard or saw injurious event and position/location of those individuals

Identify the position/location of child immediately prior to injurious event

Identify the activity of child immediately prior to injurious event

Identify mechanics of injurious event

Identify surfaces/objects potentially impacted during injurious event

Identify specific body part(s) impacted during injurious event

Identify the child's physical position after the injurious event

Ask witnesses to reenact mechanism

Identify the nature of the child's first symptoms/reaction to injurious event

Determine the first person that identified the child's symptoms/reaction to injurious event

Identify the order of appearance of ill symptoms

Identify the duration of ill symptoms

Identify clothing worn at time of injurious event

Identify last witness to well/asymptomatic behavior

Identify who was present when injury was recognized and what was their response

Identify location of child when found, clothing worn, position of child, etc.

Details, details details!

"My child stepped on the stove"

Implicit Bias

Implicit bias is the process of unconscious societal attitudes affecting our individual understanding, actions and decisions, thus leading to assumptions about groups



*By Nick Youngson, CC BY-SA 3.0,
<http://thebluediamondgallery.com/b/bias>*

*Jeanette Schrierle, **Implicit Bias: What Every Pediatrician Should Know About the Effect of Bias on Health and Future Directions***

"My child stepped on the stove"



Multidisciplinary Assessment Information

Specificity of abuse by fracture type

Kleinman, 1998

| Specificity of Abuse | Type of Fracture |
|----------------------|------------------------------------------------------------------------------------|
| High | Classic metaphyseal lesion Rib fractures |
| Medium | Complex skull fractures |
| Low | Subperiosteal new bone formation Clavicular fractures Linear skull fractures |

Type of fracture AND location of fracture alone does not = abuse

A diagnosis is made on the history, physical findings, laboratory and radiologic findings.

Physical Abuse: Special Populations



This Photo by Unknown author is licensed under [CC BY-SA](#).

Minor Injuries in Very Young Children (<6 months): *Sentinel Injuries*

Box 1

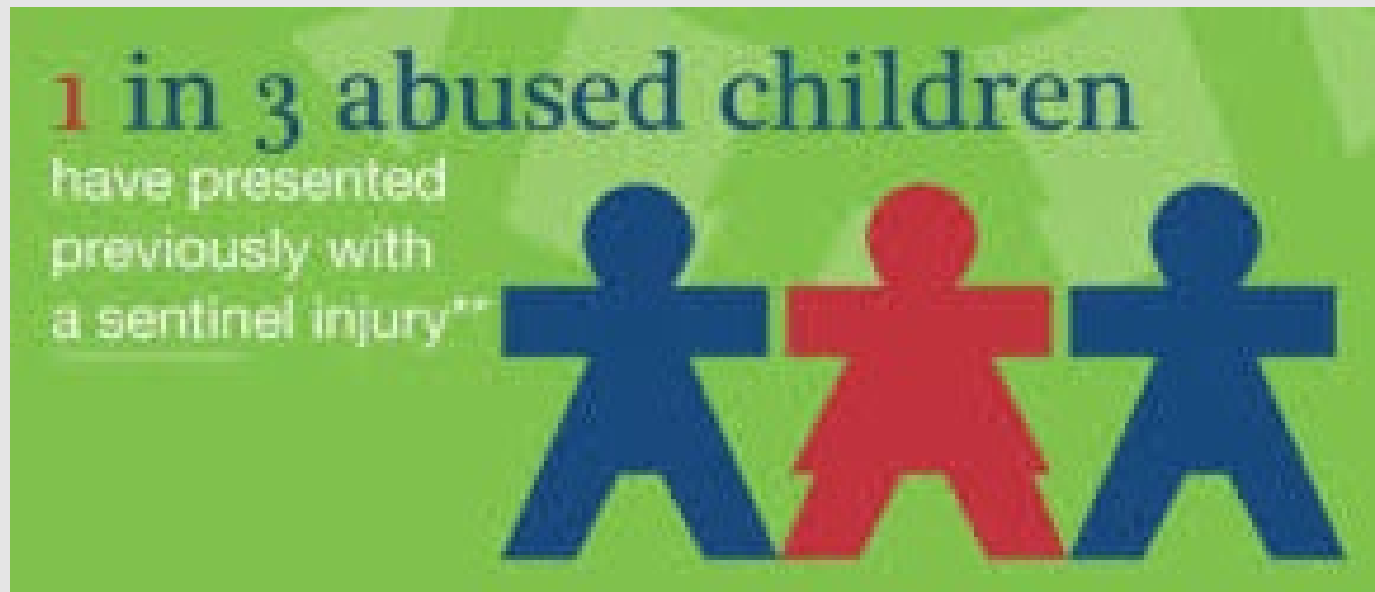
Definition of sentinel injuries

- Minor injuries, such as a bruise or intraoral injury (excluding skin abrasions)
- Precruising infant
- Visible or detectable to a caregiver
- Poorly explained and unexpected



Recognition of Sentinel Injury

Why is this Important?



- Recognition of sentinel injuries may result in prevention of serious physical injuries
- Sentinel injuries preceded serious physical abuse in 27.5% of cases (*Petska and Sheets, 2014*)

Predictors of increasing injury severity

What's known:

- 1/3 of children who are the subject of first maltreatment reports are re-reported within 5 years
- **Risk factors:** young age and “minor injuries”



Medical Evaluation of a Sentinel Injury

Medical guidelines for
evaluation of physical
abuse (<2y)

What's the
general
evaluation
for physical
abuse
($<2y$)?

- Skeletal Survey
- Eye exam
- Imaging of the brain by CT and/or MRI
- Laboratory Evaluation
 - Screening for occult abdominal trauma
 - Urine drug screen
- **Outpatient medical follow-up after discharge if admitted (Typically CME)**
 - Repeat skeletal survey

Screening for Occult Injuries, those not seen on physical exam or identified by physical exam

Screening for Occult Injuries & Medical Mimics

- Occult Injuries: Fractures, Intracranial trauma, Orbital trauma, Abdominal trauma, Ingestion of illicit substances
- Medical mimics: Skeletal abnormalities and conditions, bleeding disorders, genetic/metabolic disorders, etc.

Case Example: Abusive Head Trauma (AHT)

History: *4mos Female with a history of feeding problems found to have intracranial hemorrhage/bleeding (subdural hemorrhage). Parents reportedly called EMS after being found unresponsive*

Hospital Course: *Identified as having bilateral retinal hemorrhages*

Diagnosis: *Abusive Head Trauma*

Abusive Head Trauma (2015)

Abusive head trauma (AHT) is a constellation of brain injuries caused by the directed application of force to an infant or young child, resulting in physical injury to the head and/or its contents

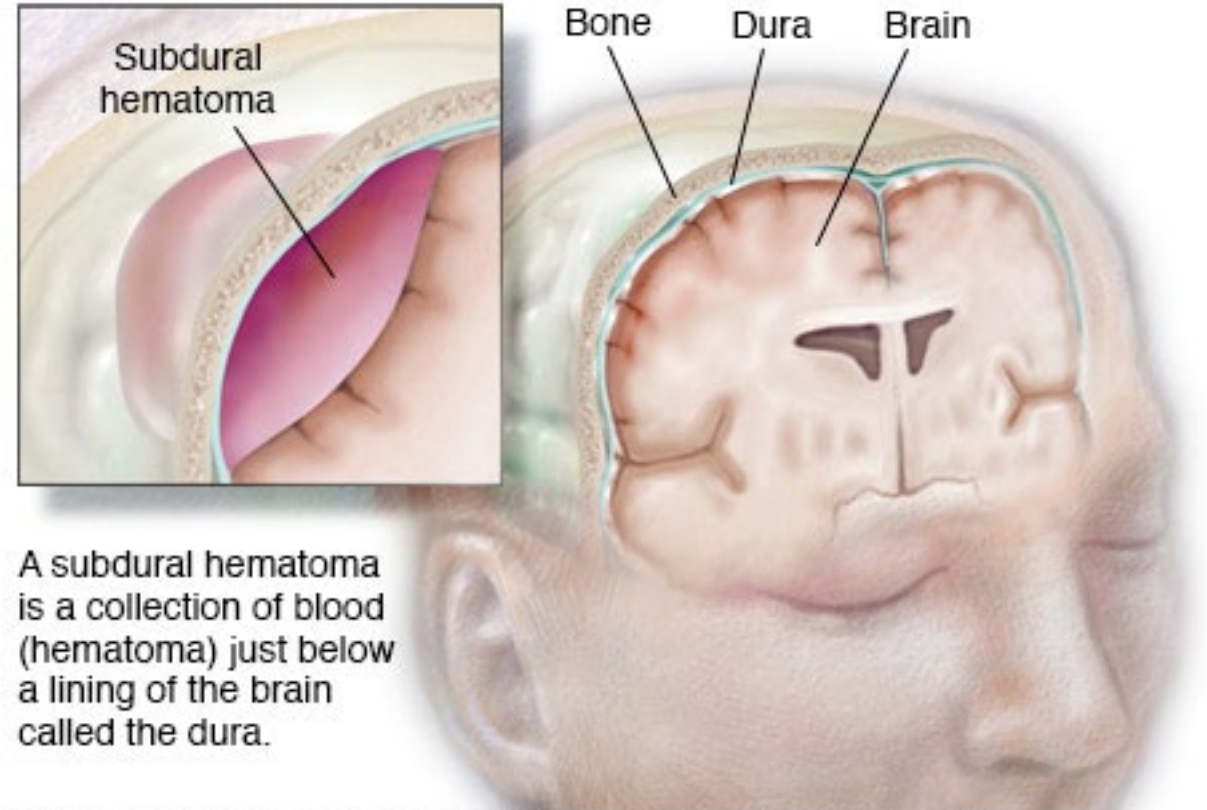


**UNDERSTANDING
ABUSIVE HEAD TRAUMA
IN INFANTS AND CHILDREN**

Answers from America's Pediatricians

Subdural Hematomas

What is a hematoma?



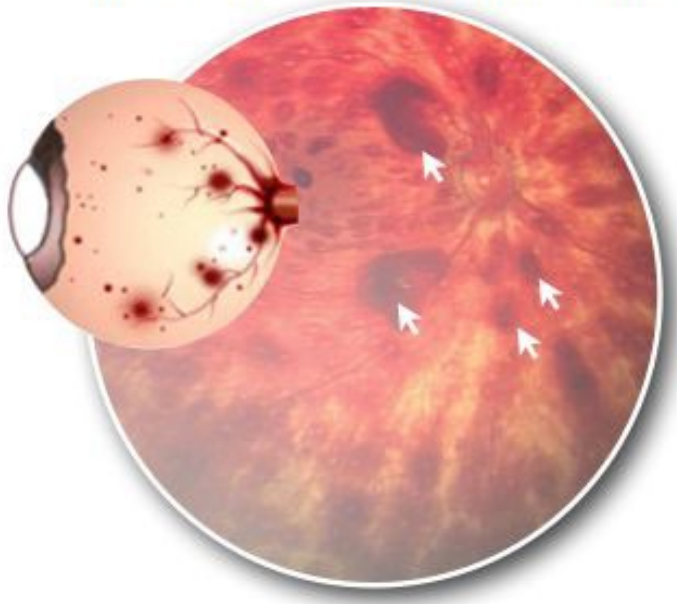
A subdural hematoma is a collection of blood (hematoma) just below a lining of the brain called the dura.

Retinal Hemorrhages

Subconjunctival Hemorrhage

Retinal Hemorrhages

Associated with nonaccidental trauma



AHT: Retinal Hemorrhages

Case Example:

Abusive Head Trauma (AHT)

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Hospital Course: *Identified as having bilateral retinal hemorrhages*

Diagnosis: *Abusive Head Trauma*

Why did this child
sustain AHT?

- Incomplete medical evaluation for physical abuse
- Failure to provide the right safety intervention

Sentinel Injuries: Importance of Recognition

Box 2

Summary of key findings

- A sentinel injury preceded severe abuse in 27.5% of cases
- A history of a sentinel injury is rare in infants evaluated for maltreatment and found to not be abused
- All sentinel injuries were observed by a parent
- Forty-two percent of the sentinel injuries were known to a medical provider but the infants were not protected from further harm
- Recognition of and appropriate response to sentinel injuries could prevent many cases of child physical abuse

Adapted from Sheets LK, Leach ME, Koszewski IJ, et al. Sentinel injuries in infants evaluated for child physical abuse. *Pediatrics* 2013;131:701–7.

A group of colorful human figures representing a diverse team. The figures are in various colors including blue, yellow, green, red, and brown, standing in a line. The background is a soft, out-of-focus gradient.

Importance of Multidisciplinary Teams & Collateral Information



Information should not be used in isolation

- Sharing of information is critical
- Updating with new information is expected
- Understanding information from another discipline

Multidisciplinary information

New information can impact medical opinions

- Temperature of an agent/object
- Type of agent/object
- Interviews with siblings



Do you have all the information?



What caused this mark?

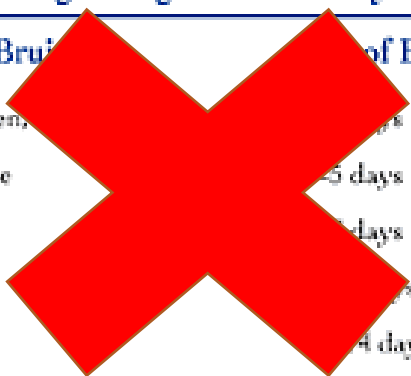
“Buzz words” ≠ Diagnoses

Updating Education

Table 1

Determining the Age of a Bruise by Its Color

| Color of Bruise | Age of Bruise |
|---------------------------------|---------------|
| Red (swollen) | 1-2 days |
| Blue, purple | 3-5 days |
| Green | 5-7 days |
| Yellow | 7-10 days |
| Brown | 10-14 days |
| No further evidence of bruising | 2-4 weeks |



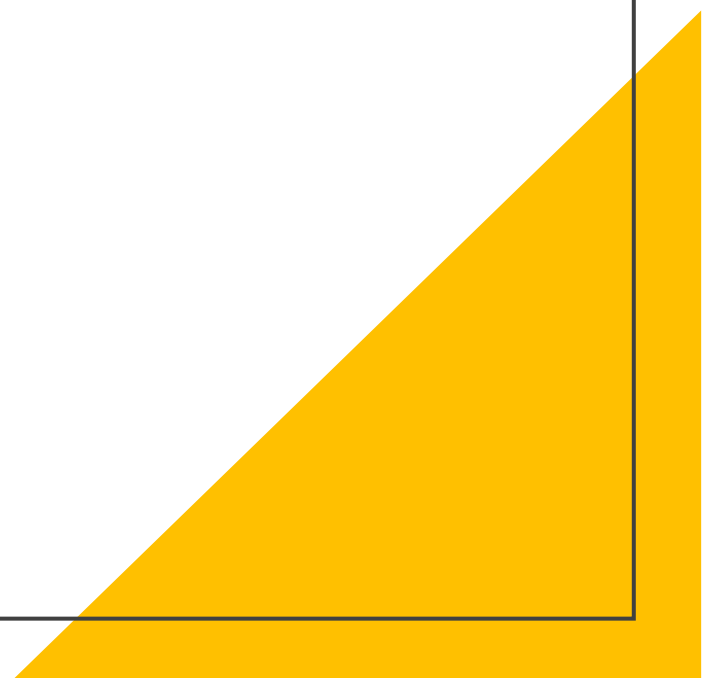
Understanding Future Risk & Treatment :

Importance of the Social history

Social History

- Caregiver age, employment, parenting experience
- Domestic violence exposure
- Caregiver mental health & substance use history
- Other adverse childhood experiences

+Risk factors ≠ Medical diagnosis of abuse



Assessing
Injuries:
*Medical
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**Child Medical Evaluation
(CME)**

Screening for Occult Injuries, those not seen on physical exam or identified by physical exam

**CMEs can be obtained for any
child during an open
CPS assessment**

- *Any age*
- *Any time of maltreatment*

**CHILD MEDICAL EVALUATION
PROGRAM**

CB# 3415

UNC-Chapel Hill Dept. of Pediatrics

Chapel Hill NC 27599-3415

Phone: 919-843-9365

Questions: [✉ cmep@med.unc.edu](mailto:cmep@med.unc.edu)

CPS Policy: Mandatory CMEs

For Children **1 - 3 years old**, the local child welfare agency must refer children with the following four circumstances for a CME.


1. Have a Sentinel Injury (*<1 year*)
2. Upon assessment or as reported by a medical provider, have or have concerns for: *burns, fractures, head trauma, etc.*
3. Who live with a child that has, during the current CPS assessment: obtained a serious injury (including sentinel injuries), died as a result of suspected abuse or neglect, been placed outside of the home due to physical or sexual abuse, tested positive for a sexually transmitted infection (STI)
4. Any child that has suffered a “near fatality” as a result of alleged abuse or neglect (*all ages*)

***some exceptions can be made per CPS Policy: <https://policies.ncdhhs.gov/divisional/social-services/child-welfare/policy-manuals/modified-manual-1/assessments.pdf>*

Physical Abuse & Neglect in Young Children

- Medical providers identify and diagnose physical abuse and/or neglect based on available information
- A complete medical evaluation for abuse/neglect will include the medical provider receiving information from the CPS assessment



A close-up photograph of a person's hands holding a white rectangular sign. The sign has the words "Thank you!" written in a dark blue or black cursive script. The person holding the sign is wearing a bright blue shirt, which is visible at the bottom of the frame. The background is a soft-focus green, suggesting an outdoor setting with foliage. The lighting is bright and even, highlighting the texture of the paper and the person's skin.

Thank
you!