Child Abuse:

Who, What, When, Where, but Why?

COLLEGE OF MEDICINE
The UNIVERSITY *of* OKLAHOMA HEALTH SCIENCES

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Disclosure of Financial Relationships

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I have no financial relationships or affiliations with ineligible companies to disclose.

Objectives

- List the different forms of child maltreatment and define their epidemiology.
- Describe each form of child abuse and neglect
- Recognize and appropriately diagnose and treat the various kinds of child abuse and neglect
- Conduct a thorough investigation of maltreatment in patients suspected of abuse or neglect

Child abuse crosses all socioeconomic and educational levels, religions, and ethnic and cultural groups.

Let's Define Abuse

Any recent act or failure to act on the part of a parent or caretaker which results in death, serious physical or emotional harm, sexual abuse or exploitation; or an act or failure to act, which presents an imminent risk of serious harm.

The Child Abuse Prevention and Treatment Act (CAPTA), (P.L. 100–294), as amended by the CAPTA Reauthorization Act of 2010 (P.L. 111–320)

By the numbers

What were the most common types of Maltreatment?

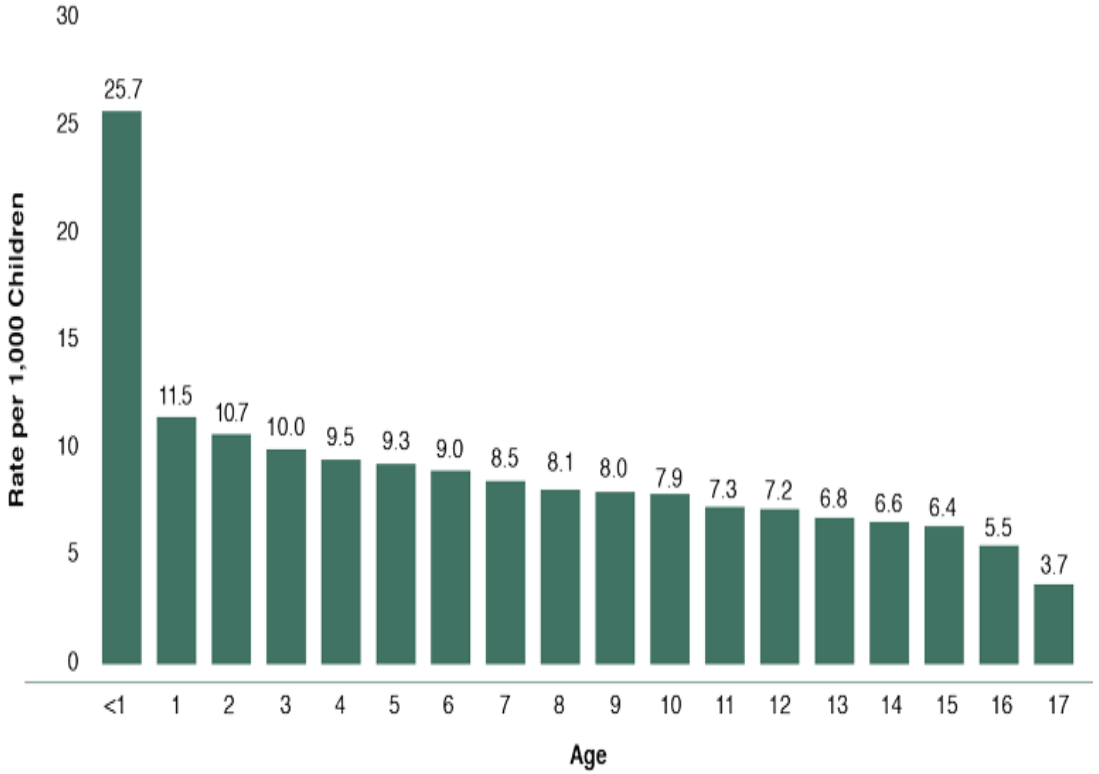
	Medical Neglect	Neglect	Physical Abuse	Psychological Maltreatment	Sexual Abuse	Sex Trafficking	Other
TOTAL	2.3	74.9	17.5	6.1	9.3	0.1	6.8
Only	0.9	61.0	10.3	2.4	7.2	0.1	2.7

- Two Types:
  - Neglect and Physical Abuse were the most common combination
- Three Types:
  - Neglect, Physical Abuse, and Psychological Maltreatment most common

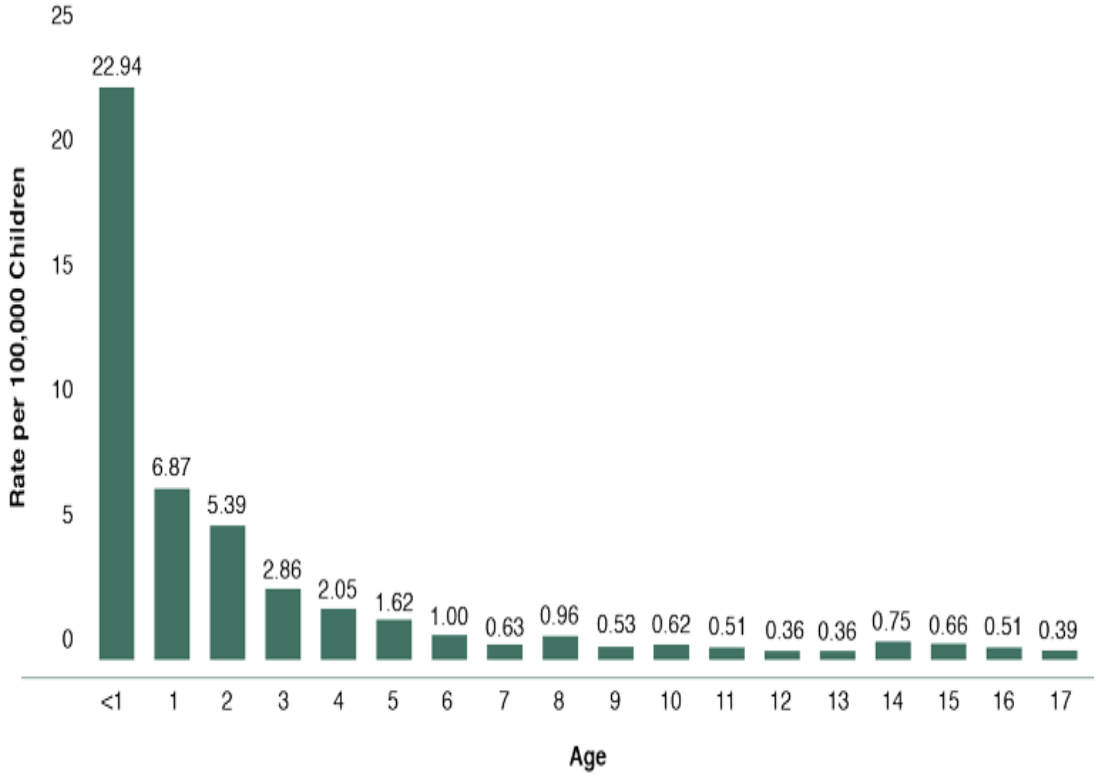
Types of Maltreatment

	Medical Neglect		Neglect		Physical Abuse		Psychological Maltreatment		Sexual Abuse	
Age	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
<1–2	5,212	34.6	159,753	30.1	28,565	24.0	12,946	21.3	1,650	2.7
3–5	2,313	15.3	110,335	20.8	19,394	16.3	11,767	19.3	8,585	14.0
6–8	2,046	13.6	86,282	16.2	19,644	16.5	10,787	17.7	9,978	16.2
9–11	1,820	12.1	68,212	12.8	16,779	14.1	9,782	16.1	11,347	18.5
12–14	1,965	13.0	58,603	11.0	18,207	15.3	8,976	14.8	16,178	26.3
15–17	1,695	11.2	46,660	8.8	15,579	13.1	6,377	10.5	13,411	21.8
Unborn, Unknown, and 18–21	23	0.2	1,568	0.3	657	0.6	204	0.3	323	0.5
Total	**15,074**		**531,413**		**118,825**		**60,839**		**61,472**	
Percent		**100.0**		**100.0**		**100.0**		**100.0**		**100.0**

Comparison: victims vs. fatalities by age



Victimization Rate



Fatality Rate

Characteristics

- Compared to children living with married, biological parents, those whose single parent had a live–in partner had more than 8 times the rate of maltreatment overall, over 10 times the rate of abuse, and more than 6 times the rate of neglect.

Characteristics

- One study found that children living in households with unrelated adults were approximately 50 times more likely to die of inflicted injuries than were children residing with 2 biological parents.

Schnitzer PG, Ewigman BG. Child deaths resulting from inflicted injuries: household risk factors and perpetrator characteristics. *Pediatrics*. 2005;116(5).

Who abused and neglected the Children?
Relationship to their perpetrators

NONPARENT	-	Reported Relationship	Reported Relationships Percent
Child Daycare Provider	-	2,574	0.4
Foster Parent(s)	-	2,070	0.3
Friend(s) and Neighbor(s)	-	5,745	0.9
Group Home and Residential Facility Staff	-	891	0.1
Legal Guardian(s)	-	1,728	0.3
Other(s)	-	20,800	3.2
Other Professional(s)	-	1,597	0.2
Relative(s)	-	34,452	5.3
Unmarried Partner(s) of Parent	-	19,528	3.0
More Than One Nonparental Perpetrator	-	2,611	0.4
Total Nonparents	**-**	**91,996**	**14.2**
UNkNOWN	**-**	**17,021**	**2.6**

Who abused and neglected the Children? Relationship to their perpetrators

Perpetrator	Victims	Reported Relationships	Reported Relationships Percent
PARENT	-	-	-
Father Only	-	146,369	22.6
Father and Nonparent	-	7,381	1.1
Mother Only	-	252,324	39.0
Mother and Nonparent	-	41,349	6.4
Two Parents of Known Sex	-	136,122	21.0
Three Parents of Known Sex	-	1,143	0.2
Two Parents of Known Sex and Nonparent	-	5,829	0.9
One or More Parents of Unknown Sex	-	1,431	0.2
Total Parents	**-**	**591,948**	**91.4**
National	**647,802**	**700,965**	**-**

Red flags

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.

REGIONS

TEN

Torso | **E**ars | **N**eck

FACES

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

INFANTS

4 months and younger

Any bruise, anywhere

PATTERNS

Patterned bruising

Bruises in specific patterns like slap, grab or loop marks

LOCATION–EARS

Studies of normal children reveal the ear is very rarely bruised: < 0.2 % of examinations

Ear bruising is associated with abuse in comparative studies

Kemp AM, et al. *Arch Dis Child* 2015; Jan 14;.
Kemp AM, et al. *Arch Dis Child* 2014; Feb;99(2):108-13.

Ear Pinna Bruise

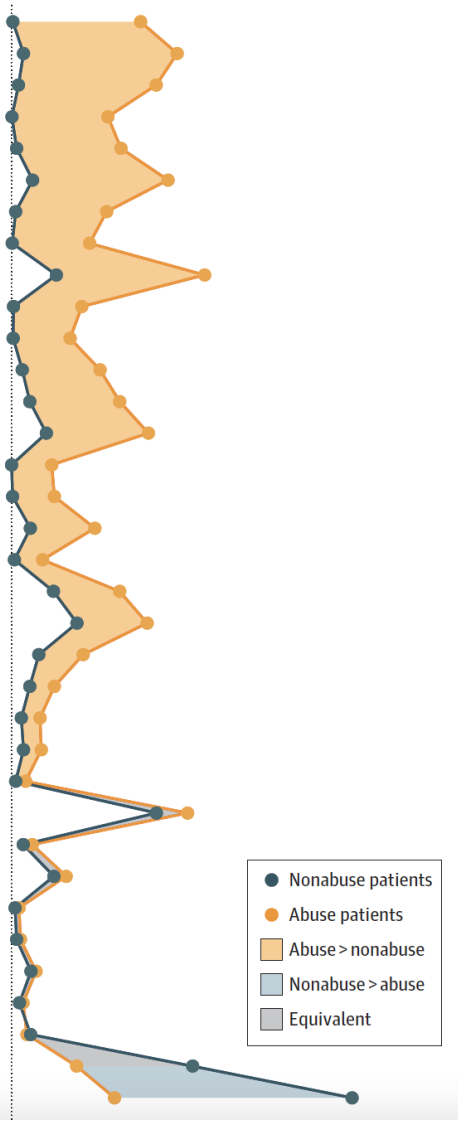
This pattern reflects crushing of ear by impact against the bony skull

Feldman KW. *Pediatrics* 1992; Oct;90(4):633-6.

Subconjuctival Hemorrhage

Subconjunctival hemorrhage, of "unknown" etiology, in the right eye of a 5 month old child. Note the bilateral periorbital petechiae. The child also had an occipital skull fracture. No retinal hemorrhages were noted on indirect ophthalmoscopy.

Region	No. (%) of children		
	Abuse (n = 410)	Nonabuse (n = 1713)	Signed χ^2 statistic
Buttocks	99 (24)	5 (0)	399.0
Cheek (fleshy)	127 (31)	39 (2)	374.1
Ear	111 (27)	23 (1)	366.0
Angle of jaw	74 (18)	2 (0)	303.0
Chest	84 (20)	17 (1)	273.2
Back	120 (29)	68 (4)	259.2
Abdomen	73 (18)	14 (1)	238.6
Neck	60 (15)	3 (0)	235.2
Zygoma	148 (36)	144 (8)	211.5
Preauricular	54 (13)	7 (0)	188.5
Mastoid	45 (11)	6 (0)	154.8
Upper arm/shoulder	68 (17)	35 (2)	148.4
Eyelid	83 (20)	59 (3)	146.9
Temporal or parietal	105 (26)	112 (7)	129.1
Subconjunctival hemorrhage	31 (8)	1 (0)	120.4
GU or anal	33 (8)	4 (0)	113.5
Spinous process	64 (16)	61 (4)	84.5
Frenulum	24 (6)	10 (1)	55.0
Orbital rim	83 (20)	135 (8)	53.5
Upper leg	104 (25)	210 (12)	44.1
Nose	55 (13)	88 (5)	34.8
Elbow	33 (8)	59 (3)	15.8
Lip	22 (5)	32 (2)	14.9
Occiput	23 (6)	39 (2)	11.8
Ankle	11 (3)	14 (1)	8.4
Forehead	135 (33)	464 (27)	5.3
Chin	16 (4)	38 (2)	3.1
Lower arm	42 (10)	136 (8)	2.0
Top of head	6 (1)	12 (1)	1.5
Mouth	7 (2)	17 (1)	0.9
Foot	19 (5)	63 (4)	0.6
Philtrum (per Webster)	9 (2)	26 (2)	0.6
Hand	12 (3)	62 (4)	-0.3
Knee	50 (12)	580 (34)	-73.4
Lower leg	79 (19)	1090 (64)	-261.3



Bruise Count

	Overall	Abuse	Nonabuse	Indeterminate
All ages	3 (1-6)	7 (3-11)	3 (1-5)	2.5 (2-5)
Age 0-0.99 Y	2 (1-5)	5 (3-10)	1 (1-2)	2 (1-2)
Age 1-1.99Y	2 (1-4)	6 (3-11)	2 (1-4)	3 (3-6)
Age 2-2.99 Y	3 (2-6)	8 (5-14)	3 (2-5)	2 (1-2)
Age 3-3.99 Y	4 (2-7)	9 (4-14)	4 (2-6)	4.5 (2-8)

Human Bite Mark on Face

Idiopathic Thrombocytopenic Purpura

Henoch-Schönlein Purpura

Systemic vasculitides may also present with skin lesions that look like bruises

Acute Hemorrhagic Disease of Infancy

Trauma

Child Abuse Vs. Unintentional Injuries

	ABUSED	UNINTENTIONAL
INTRACRANIAL INJURY	42.2%	14.1%
THORACIC INJURY	12.5%	4.5%
ABDOMINAL INJURY	11.4%	6.8%
VERY SEVERE INJURIES	22.6%	6.3%
ADMITTED TO ICU	42.5%	26.9%
MEAN LOS	9.3 days	3.8 days
Survival to DC	87.3%	97.3%

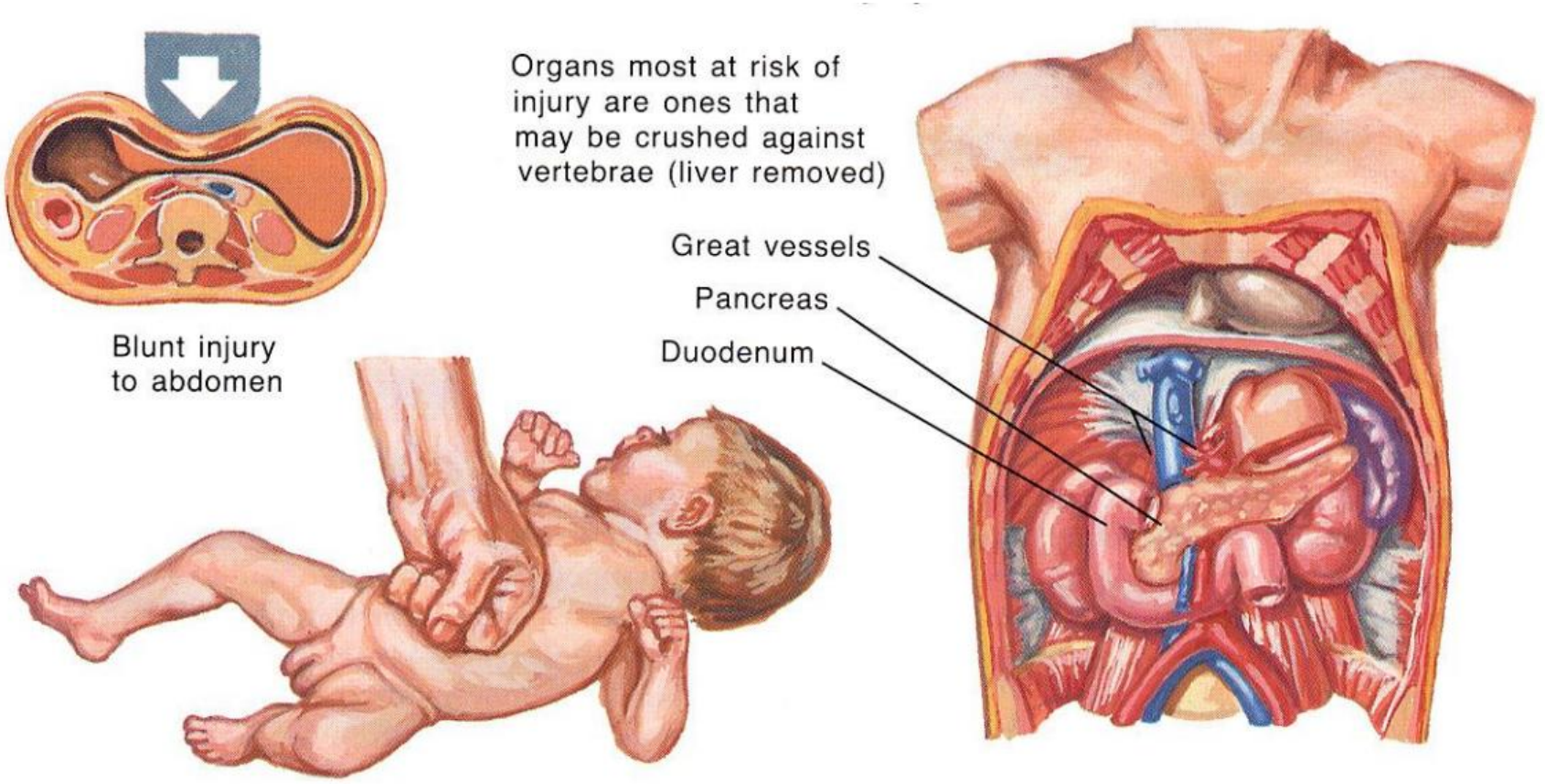
DiScala C et al, Child Abuse and Unintentional Injuries: A 10 year retrospective, Arch Pediatr Med. 2000;154:16-22

Accidental vs Inflicted Abdominal Trauma

Absence of external bruising is common in both accidental and inflicted abdominal trauma.

Child without symptoms on being brought in to care.

"Nothing" bruise"



Source of picture: Frank H. Netter “Clinical Symposia”; Saunders Publishing

Abdominal Bruising

3 year old male also had a liver laceration and small bowel hematoma

Abdominal lesion

Common Presenting Histories

Non-offending parent may be unaware of trauma.

Partial or misleading histories (details of signs and symptoms not reliable). Or lack of history all-together.

Short, household falls are typical history.

Nonspecific complaints: poor appetite, lethargy, vomiting, respiratory symptoms – may be misinterpreted by non-offending parent as an illness.

Clinical Presentation

Even severe trauma seldom leaves external evidence, such as bruises of the chest or abdominal wall.

Clinically silent injuries are possible.

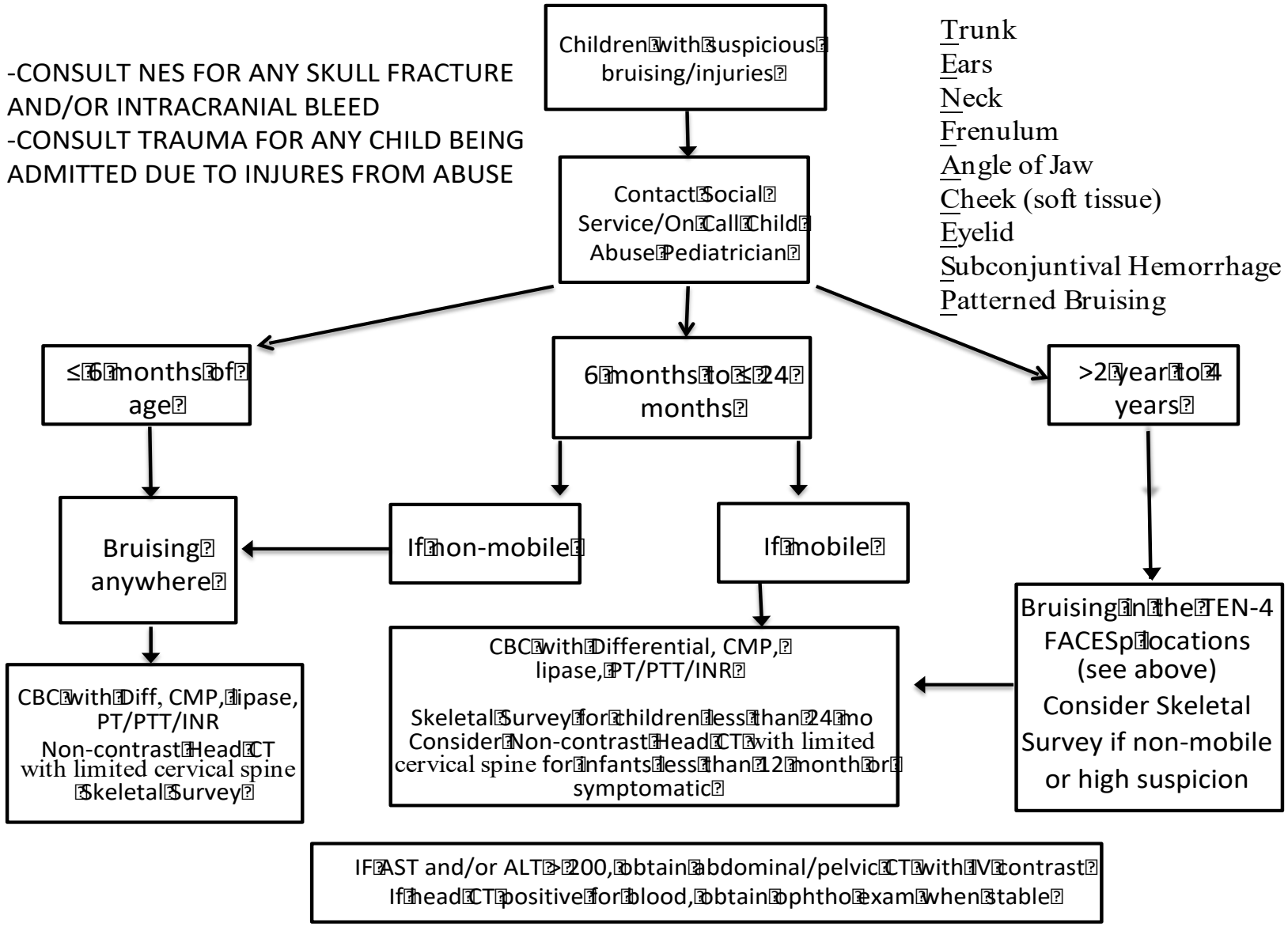
Apnea or seizures may be first symptom, resulting from hypoxia, septic or hypovolemic shock.

Signs of peritonitis (fever, quiet bowel sounds, distension, tenderness) not always present.

Evaluation

- History, History, History
- Complete physical examination
  - External thoraco-abdominal bruising may not be observed.
- *Evaluate for all forms of child maltreatment*
  - Include careful genital and anal exams

-CONSULT NES FOR ANY SKULL FRACTURE AND/OR INTRACRANIAL BLEED
-CONSULT TRAUMA FOR ANY CHILD BEING ADMITTED DUE TO INJURES FROM ABUSE



Trunk
Ears
Neck
Frenulum
Angle of Jaw
Cheek (soft tissue)
Eyelid
Subconjuntival Hemorrhage
Patterned Bruising

Work–Up: burns

- In children less than 2 years of age with burns that are concerning for physical abuse, it is recommended to obtain a skeletal survey
  - 18–33% of children with burns concerning for inflicted injury had associated skeletal injuries

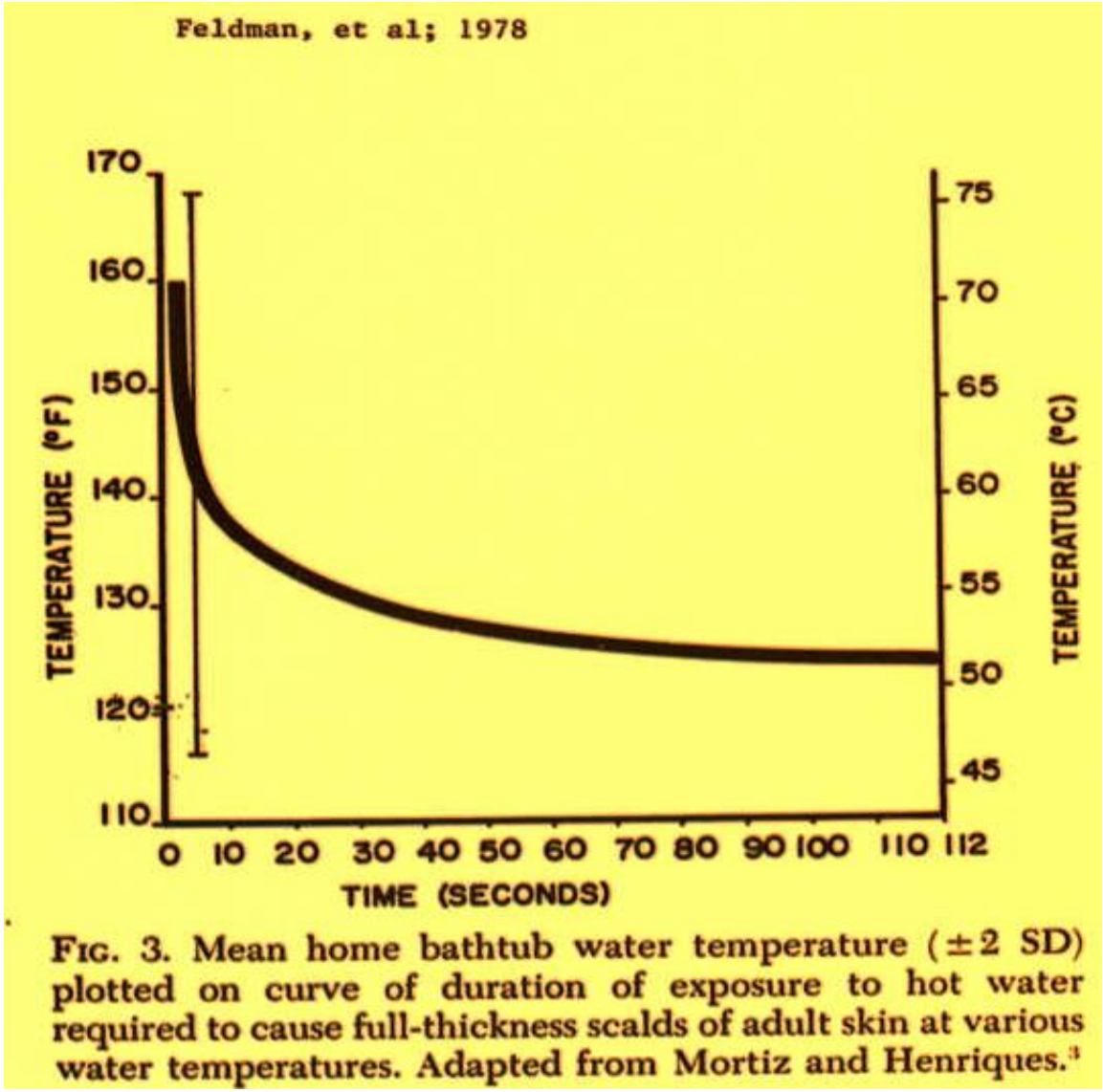


FIG. 3. Mean home bathtub water temperature (±2 SD) plotted on curve of duration of exposure to hot water required to cause full-thickness scalds of adult skin at various water temperatures. Adapted from Mortiz and Henriques.[3]

DeGraw M, Hicks RA, Lindberg D. Pediatrics. 2010;125:e295.

Fagen KE, Shalaby-Rana E, Jackson AM. Pediatr Radiol. 2015;45:396.

Pull down Scalds

Pull Down Burn

Note the “inverted triangle “ shape.

Radiology

LOW	MODERATE	HIGH
Clavicle Fractures	Multiple fractures, esp bilateral	Classica metaphyseal lesions
Long bone shaft fractures	Fractures of different ages	Posterior rib fractures
Linear skull fracture	Epiphyseal separations	Scapular fractures
Subperiosteal new-bone formation	Vertebral body fractures	Spinous process fractures
	Digital fractures	Sternal Fractures
	Complex skull fractures	

Kleinman PK. Diagnostic imaging of child abuse. Baltimore: Williams & Wilkins, 1987: 5-102, 115-199.

Abusive Head Trauma

- *AHT is the third leading cause of head injury in children younger than 5 years, only surpassed by motor vehicle collisions and falls.*
- It is the leading cause of severe head injury in infancy.
- The mortality rate of AHT ranges from 10% to 20%.
- The current incidence of AHT in the United States is estimated at 25 to 35 children per 100 000 annually younger than 1 year of age.
- The Peak incidence is around 2 months of age; the median is at 4 months of age, with decreasing incidence after infancy.

Abusive Head Trauma

- An absent trauma history, in the presence of traumatic findings, has high specificity and positive predictive values for AHT.
- Symptoms of AHT are frequently nonspecific and include vomiting, irritability, and lethargy.
- Seizure and apnea are neurologic signs highly, but not exclusively, associated with AHT.
- Determination of "lucidity" in the infant is challenging; reliance on this aspect of patient history for the timing of injuries can be problematic.
- In cases of severe head injury (cerebral edema with acute subdural bleeding), it is unlikely that there is a prolonged period of wellness between the injury and symptom onset.

Abusive Head Trauma

- BRUISES
  - TEN-4-FACESp
- SKULL FRACTURES
  - No skull fracture type is pathognomonic for AHT
- RETINAL HEMORRHAGES
  - Retinal hemorrhages are seen in about 80% (45%–100%) of children with AHT
- RIB FRACTURES
  - Can occur in up to 28% of AHT cases
- LONG BONE FRACTURES
  - Long bone fractures occur in approximately 17% to 36% of AHT cases

Narang, Sandeep K., et al. "Abusive Head Trauma in Infants and Children: Technical Report." *Pediatrics* 155.3 (2025): e2024070457.

Sexual Abuse

Sex Abuse

- A normal exam is consistent with sexual abuse.
- The majority of the time it is someone that is known to the victim
- In Oklahoma, the age of consent is 18

Examples of Sexual Behaviors in Children (ages 2–6 years old)

Normal, Common Behaviors	Less Common Normal Behaviors[a]	Uncommon Behaviors in Normal Children[b]	Rarely Normal[c]
• Touching/masturbating genitals in public/private	• Rubbing body against others	• Asking peer/adult to engage in specific sexual act(s)	• Any sexual behaviors that involve children who are 4 or more years apart
• Viewing/touching peer or new sibling genitals	• Trying to insert tongue in mouth while kissing	• Inserting objects into genitals	• A variety of sexual behaviors displayed on a daily basis
• Showing genitals to peers	• Touching peer/adult genitals	• Explicitly imitating intercourse	• Sexual behavior that results in emotional distress or physical pain
• Standing/sitting too close	• Crude mimicking of movements associated with sexual acts	• Touching animal genitals	• Sexual behaviors associated with other physically aggressive behavior
• Trying to view peer/adult nudity	• Sexual behaviors that are occasionally, but persistently, disruptive to others	• Sexual behaviors that are frequently disruptive to others	• Sexual behaviors that involve coercion
• Behaviors are transient, few, and distractable	• Behaviors are transient and moderately responsive to distraction	• Behaviors are persistent and resistant to parental distraction	• Behaviors are persistent and child becomes angry if distracted

[a] Assessment of situational factors (family nudity, child care, new sibling, etc) contributing to behavior is recommended.

[b] Assessment of situational factors and family characteristics (violence, abuse, neglect) is recommended.

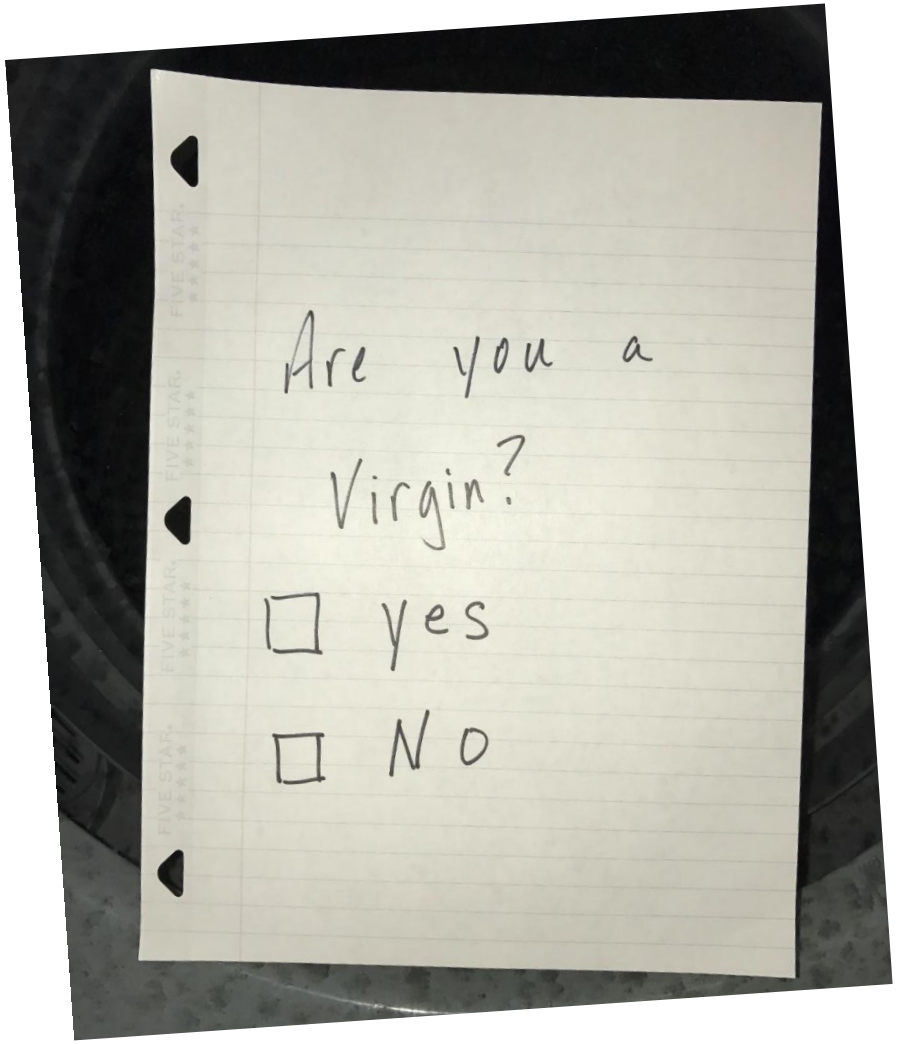
[c] Assessment of all family and environmental factors and report to child protective services is recommended.

Clinical Report : The Evaluation of Sexual Behaviors in Children, Nancy D. Kellogg and Committee on Child Abuse and Neglect, ***Pediatrics*** 2009;124;992-998

Looks can be deceiving!

- 95% of physical exams are normal–even in cases where known sexual abuse has occurred!
- 2/3 of the remaining 5%–the evidence is found on the clothing
- Most DNA evidence must be collected within 72 hours of incident

Virginity Test



Molluscum Contagiosum

Perineal Injuries

- Normal can be normal
  - OR ABUSE
- "Red Down There" is a diaper rash
- Constipation causes more anal fissures and tears than abuse

INGESTIONS

- THC HAS BEEN ON THE RISE
- CALL POISON CONTROL(1-800-222-1222)
- NOTIFY SOCIAL SERVICES AND POLICE IF THE SUBSTANCE IS ILLEGAL

Conclusions

- You are protected!

QUESTIONS?

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