

Abuse in the Neonate

WI CAN Educational Series 6.21.19
Lynn K. Sheets, MD, FAAP
Medical Director - Child Advocacy and Protection Services - CHW
Professor - Medical College of Wisconsin

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Speaker Biography – Dr. Sheets

Lynn K. Sheets, MD, FAAP is a Professor and Section Chief in the Department of Pediatrics at the Medical College of Wisconsin (MCW) and Medical Director of Children's Hospital Wisconsin's (CHW) Child Advocacy and Protection Services (CAPS). Her career began in 1988 as the medical director of the child abuse program at the University of Kansas Medical Center where she co-founded the first Child Advocacy Center in Kansas and led development of a joint nursing and medical student elective in family violence. Dr. Sheets has led the CAPS program at CHW since 2006 and was instrumental in developing the accredited child abuse pediatrics fellowship at MCW which was one of the first in the nation. She is board certified in pediatrics and child abuse pediatrics. In addition to providing clinical services, educating others and leading research, she is the Chair of the Wisconsin Child Death Review Executive Council, and cofounded the Wisconsin Child Abuse Network (WI CAN). Dr. Sheets served on the Wisconsin American Academy of Pediatrics Board of Directors. In 2013, she received the prestigious Ray E. Helfer MD Award from the National Alliance of Children's Trust and Prevention Funds and the American Academy of Pediatrics. In 2014, the Legal Aid Society of Milwaukee awarded Dr. Sheets the Equal Justice Medal for her work in advocating for poor and vulnerable children and families. She has a strong commitment to the prevention of child maltreatment and the development of trauma-informed approaches to improve child, family, workforce and community resilience.

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Disclaimers:

- This lecture is not intended as legal advice and should not replace legal consultation
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- Cases have been de-identified

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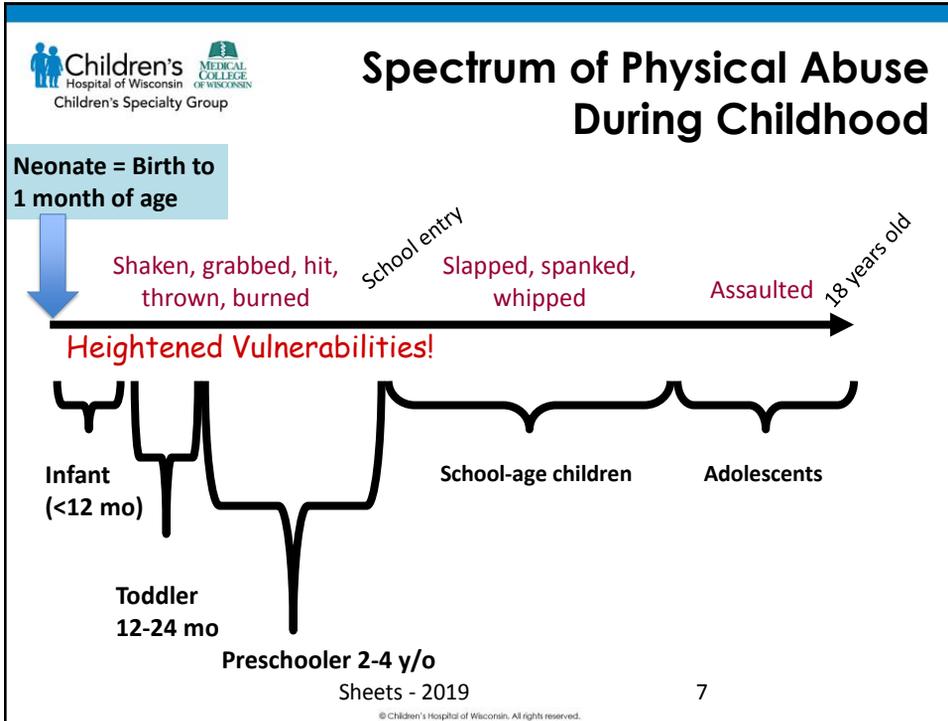
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Learning Objectives

- Describe risk factors for abuse of a neonate
- List neonatal skin findings that could raise concerns for child physical abuse
- List skin findings that could be confused with abusive injuries

Outline

- Cognitive errors as a barrier to recognition
- Overview of birth injuries – Skin findings are the focus of this lecture (this is not a review of all birth injuries)
- Bruises and skin findings – when to worry



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Why Discuss Neonatal Abuse?

- Neonatal abuse – likely under-recognized
- Can happen in a home or hospital setting
- Many newborn skin mimics
- Much of abuse is preventable – recognize risk factors and help parents prevent

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Risk Indicators for Abuse

- Child
 - Prematurity
 - Temperament—colic, fussy
 - Chronic illness
 - Developmental disability
 - Unwanted
 - Multiple gestation

Risk Indicators for Abuse

(continued)

- Parent
 - Young
 - Mental health condition
 - Substance abuse
 - Poor impulse control
 - History of abuse as a child
 - Lack of social support
 - Poor knowledge of normal child development
 - Major stress

Risk Indicators for Abuse (continued)

- Family
 - Intimate partner violence
 - Single parent
 - Poverty
 - Unemployment
 - Nonbiologically related adult living in the home
 - Mental health or substance abuse problems

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Risk Indicators for Abuse (continued)

- Community/society
 - Community violence
 - Lack of affordable, quality child care
 - Absence of community activities
 - Lack of government support for social welfare programs

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Risk factors + Trigger → Infant Abuse

Infant Crying!



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Crying Curve



<http://purplecrying.info/sub-pages/crying/why-does-my-baby-cry-so-much.php>

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Infant crying

- Normal developmental stage – peaks around 6 weeks of age (Hunziker, U. A., & Barr, R. G. (1986). Increased carrying reduces infant crying: A randomized controlled trial. *Pediatrics*, 77, 641–648)
 - May indicate something is wrong but not always
 - Opioid crisis – neonatal abstinence and crying
 - Causes stress and anxiety for caregivers- feelings of frustration, inadequacy, anger
 - Abusive caregivers – unable to regulate the stress that is elicited by infant crying (McCanne, T. R., & Hagstrom, A. H. (1996). Physiological hyperreactivity to stressors in physical child abusers and individuals at risk for being physically abusive. *Aggression and Violent Behavior*, 1, 345–358.)
 - 89% of parents contacted the PCP because of excessive crying prior to AHT (Talvik, I., Alexander, R. C., & Talvik, T. (2008). Shaken baby syndrome and a baby's cry. *Acta Paediatrica*, 97, 782–785)
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Risk! Opioid Crisis and NAS

- Neonatal Abstinence Syndrome (NAS)
 - Tremors
 - **Excessive or high-pitched crying, irritability, yawning, stuffy nose, sneezing, sleep disturbances**
 - **Poor feeding and sucking, vomiting, loose stools, dehydration**
 - **May seem sick** with fever, sweating

Hudak ML, Tan RC, Committee on Drugs, et al. *Pediatrics*. 2012;129:e540-60.

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Common Land Mines in Recognition of Abuse

- Human nature dictates that unintentional injury is the most likely diagnosis. All of us have an inherent COI – our work is easier if it is not abuse.
- Even if aware of your own biases, it is challenging to resist their influence. (“Nice family”)
- The human mind has a tendency to fill in gaps in the history and make assumptions. (“I could see how that could happen”)

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“ABA” Bias – Anything But Abuse

- Abuse should be considered in any injury of a child
- **Pay attention** to the fleeting thought that injury is unexpected!
- Consult a colleague to check your thinking
- Consult a child abuse expert early if unsure
- If suspicion for abuse or neglect, report!

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Neonatal Injuries

- What is a “neonate” Newborn less than 4 weeks old
- Birth injuries vs. unintentional injury vs. abuse vs. condition that can be confused with injury
- Birth injuries common
- Increase risk:

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Birth – A High-Risk Journey!

- Common birth injuries (partial list)
 - Nasal septum (bony/cartilaginous) ⁽¹⁹⁵⁵⁾
Kirchner, AMA J of ENT)
 - Caput – swelling of the presenting part
 - Cephalohematoma – bleeding under one of the bony plate membranes
 - Subconjunctival hemorrhage
 - Bruising from instrumentation – vacuum, forceps
 - Fractures – clavicle, other
 - Nerve injury – associated with shoulder dystocia

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Birth Injuries

- Range from minor to severe
- Causes can be from the birth process to instrumentation to medical care at birth
- Risk factors – macrosomia (large baby), instrumentation (forceps or vacuum increase birth injury risk by 3-4x), scalp electrode)

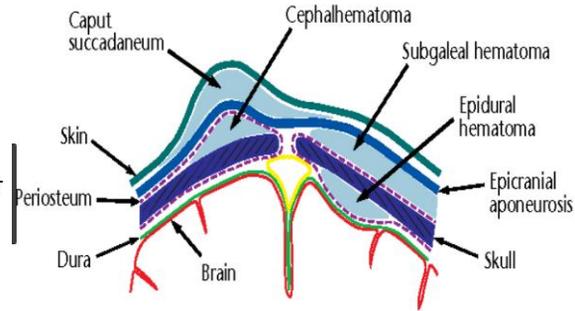
Birth Injuries

TABLE 1. Risk Factors for Birth Trauma and Associated Injury

RISK FACTORS	RELATED INJURIES
Forceps delivery	Facial nerve injuries
Vacuum extraction	Depressed skull fracture, subgaleal hemorrhage
Forceps/vacuum/forceps + vacuum	Cephalohematoma, intracranial hemorrhage, shoulder dystocia, retinal hemorrhages
Breech presentation	Brachial plexus palsy, intracranial hemorrhage, gluteal lacerations, long bone fractures
Macrosomia	Shoulder dystocia, clavicle and rib fractures, cephalohematoma, caput succedaneum
Abnormal presentation (face, brow, transverse, compound)	Excessive bruising, retinal hemorrhage, lacerations
Prematurity	Bruising, intracranial and extracranial hemorrhage
Precipitous delivery	Bruising, intracranial and extracranial hemorrhage, retinal hemorrhage

Battering Ram – Head Injury

- Cephalohematoma – 1-2% of all deliveries
- Subgaleal hemorrhage – relatively rare; higher in vacuum; can be life-threatening with 40% blood volume lost – 14% mortality
- Extra-axial hemorrhage – 25 - 50% of newborns (Rooks 2008 and Looney 2007)



Sheikh, A. M. H. Public domain with credit.

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COMMON SKIN LESIONS PRESENT AT BIRTH

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Birth Injuries

- Common birth injuries include generalized bruising, iatrogenic bruising (forceps, electrodes, vacuum), subconjunctival hemorrhage
- Bruise mimics are also common
- Birth injuries should be documented
- Consider asking to see photos of the newborn if you are unsure

BRUISING – WHEN TO WORRY IN THE NEONATE

Mimic of abuse and demonstration of blanching

- If the lesion won't blanch, it **could** be a bruise or something else
- Non-blanching 'marks'
 - Bruise
 - Dyes (these wipe or wear off unless deep in the skin = tattoo)
 - Skin pigment
 - blue spots of infancy
 - Nevi (moles)
 - Post-inflammatory hyperpigmentation

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Sick Neonates and Bruising

- Expected from medical procedures – extremely premature at highest risk from minor procedures
 - Needle/heel sticks
 - Petechiae from tourniquet
 - Tape
- Bruising in ANY location without a recent medical procedure in that location should raise concerns for abuse
- Bruises cannot be dated with accuracy!

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Location Matters

- Bruises from handling (bumps) of a sick neonate are more likely over bony prominences
- Unexpected or unusual locations include:
 - Palms
 - Soles or heel without a recent needle stick
 - Neck
 - Abdomen
 - Soft, padded areas - buttocks or cheeks
 - Ears

When to Worry

- Bruising is not expected in normal infants until they start to cruise
- Sick neonates - bruise is in an unexpected location, not associated with medical treatments, or has a pattern
- Patterns to know
 - Palms – from fingers 'digging' in when hand is squeezed
 - Squeezing bruises
 - Fingertip contusions or grabbing bruises
 - Bites
 - Pinch

EDUCATE CAREGIVERS AND PROFESSIONALS ABOUT SENTINEL INJURIES

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Sentinel Injuries

- Bruising is **not normal** in healthy, young infants
- Sentinel injuries are unexpected, poorly explained, minor injury in a pre-cruising or young infant concerning for physical abuse
 - Bruise
 - Intra-oral injury such as a frenum injury
 - Subconjunctival hemorrhages
- Injuries other than abrasions are rare in pre-cruising, non-abused infants
- Often precede more serious abuse

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Learn About Sentinel Injuries

- <http://uwm.edu/mcwp/sentinel-injuries/>
- 25-minute module developed in collaboration between CHW, Milwaukee Child Welfare Partnership, WI DCF, CANPB, and UWM Helen Bader School of Social Welfare

Consider Alternatives

- Does it blanch? If so, it is not a bruise!
- Skin erythema due to inflammation – blanches
- Injury from birth
- “Birthmarks”
 - Vascular
 - Benign blue spots of infancy (AKA “Mongolian” spots)
 - Café-au-lait
 - Other
- Other

Documentation

- Avoid words that minimize the injury or lack specificity
 - “Vascular staining”
 - “Bruise-like macules”
 - “Purple macules”
 - “Bruising/abrasion” – which is it?
 - “Bruising erythema”
- If it is a bruise, document that then take appropriate actions. Bruise = contusion

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