

P R O M I S E 2

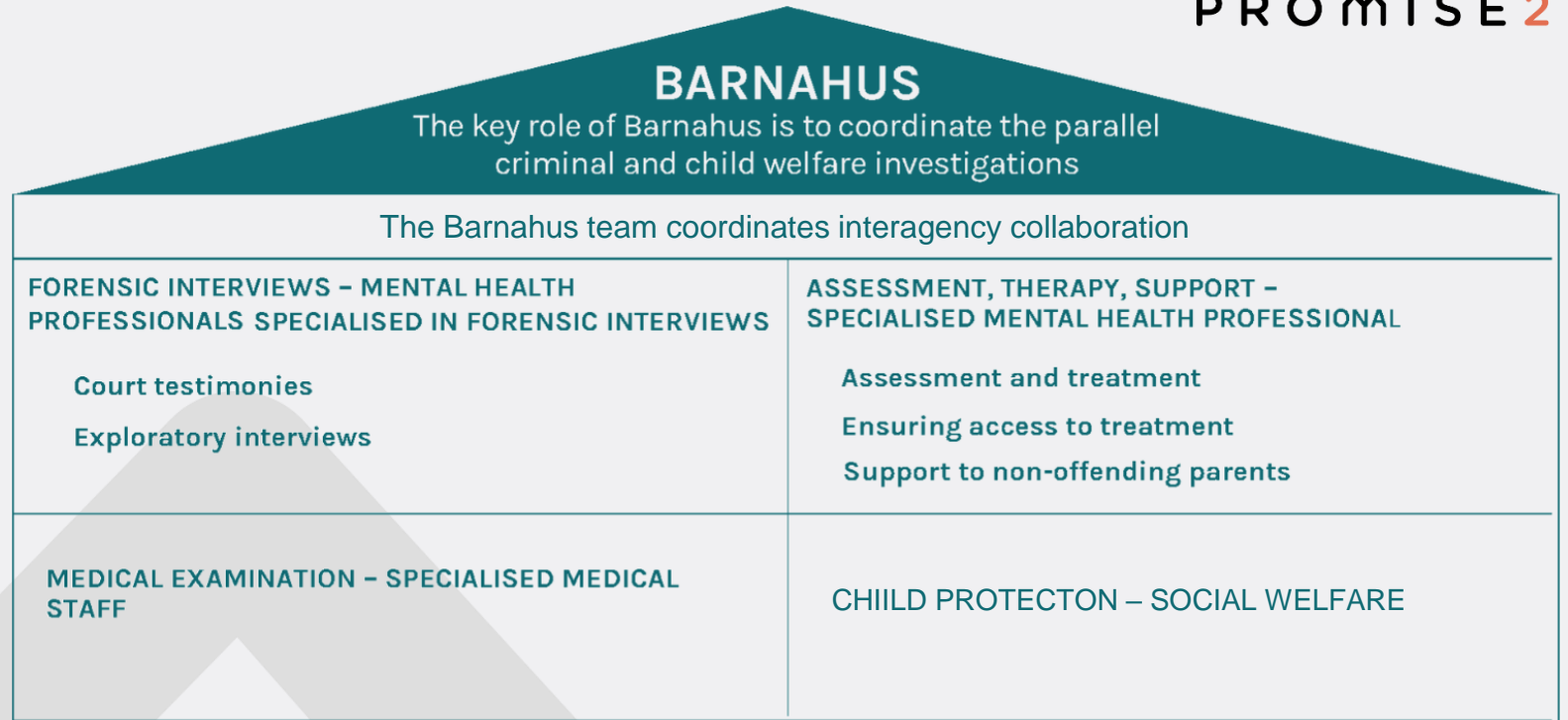
MEDICAL  
EVALUATION  
MINI-SERIES



CO-FUNDED BY THE EUROPEAN UNION



# PROMISE: SUPPORTING THE BARNAHUS MODEL



*NB: Based on Icelandic model, not necessarily representative of other established MD/IA services*

The Barnahus model offers the child victim/witness of violence a **child-friendly, safe and professional environment to disclose** – which is fundamental to the criminal investigation, the judicial process and the follow up of the child. Interview is recorded and used as evidence in court.

Relevant disciplines and agencies are **gathered under one roof**, providing a multidisciplinary, including medical examination, mental health examination and treatment, response to each child.

*The model is integrated into the national social welfare, health, and/or justice systems in most countries.*

## FROM 0 TO BARNAHUS

- PROMISE 1 explored the criteria for Barnahus and similar models in depth and developed standard setting publications
- Select professionals from around Europe were invited
- PROMISE 2 *From 0 to Barnahus* is an open invitation to join the discussions within the European Barnahus Movement.
- Key principles, standards, and challenges to consider when opening and operating a multi-disciplinary and interagency collaboration for child victims and witnesses of violence.

PROMISE  
PROJECT SERIES

## Barnahus Quality Standards Summary

Guidance for Multidisciplinary and Interagency Response to Child Victims and Witnesses of Violence

PROMISE  
PROJECT SERIES

## Barnahus Quality Standards

Guidance for Multidisciplinary and Interagency Response to Child Victims and Witnesses of Violence

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## Promoting Progress on Barnahus in Europe

Advocacy Guidance

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## The PROMISE Tracking Tool

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## Enabling Child-Sensitive Justice

The Success Story of the Barnahus Model and its Expansion in Europe

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## PROMISE Compendium of Law and Guidance

European and International Instruments concerning Child Victims and Witnesses of Violence

# PROMISE 2

[www.childrenatrisk.eu/promise/publications](http://www.childrenatrisk.eu/promise/publications)



# PART 2: PHYSICAL ABUSE DIAGNOSTIC WORKUP AND DECISION-MAKING

## FEATURING RESMIYE ORAL

PROFESSOR OF PAEDIATRICS, DIRECTOR OF THE CHILD PROTECTION PROGRAM AT THE UNIVERSITY OF IOWA, USA

## CONTRIBUTING SPEAKERS:

### **Stefan Rune**

Consultant Paediatrician at  
Karolinska University Hospital, Sweden

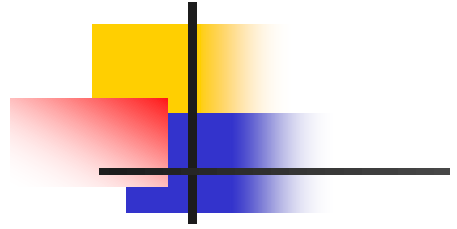
Watch his webinar now:

Part 1: Framework for medical standards

### **Andrea Goddard**

Consultant Paediatrician and Paediatric Lead, The Havens  
Sexual Assault Referral Centre, Kings College Hospital  
NHS Foundation Trust, London UK

Join her webinar 19 November 2018 15:00 CEST, Sexual  
abuse diagnostic workup and decision-making



# **How to Do Medical Evaluation for Child Victims of Physical Violence Consistent with BARNAHUS Standards**

2018

RESMIYE ORAL, MD  
UNIVERSITY OF IOWA

[resmiye-oral@uiowa.edu](mailto:resmiye-oral@uiowa.edu)

# Yellowstone Ntl Park, WY





# Learning objectives

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- Know importance of coordinated, collaborative interagency response in medical evaluation
- Understand required facility characteristics
- Understand why medical evaluation is needed
- Understand required staffing and competencies
- **Learn steps of diagnostic work up for PA and SA**
- **Recognize physical indicators of PA and SA**
- **Develop diagnostic interpretation pathways to PA and SA**
- Treatment for STIs in SA



# VICTIMS OF PHYSICAL VIOLENCE



Mild,  
medically stable

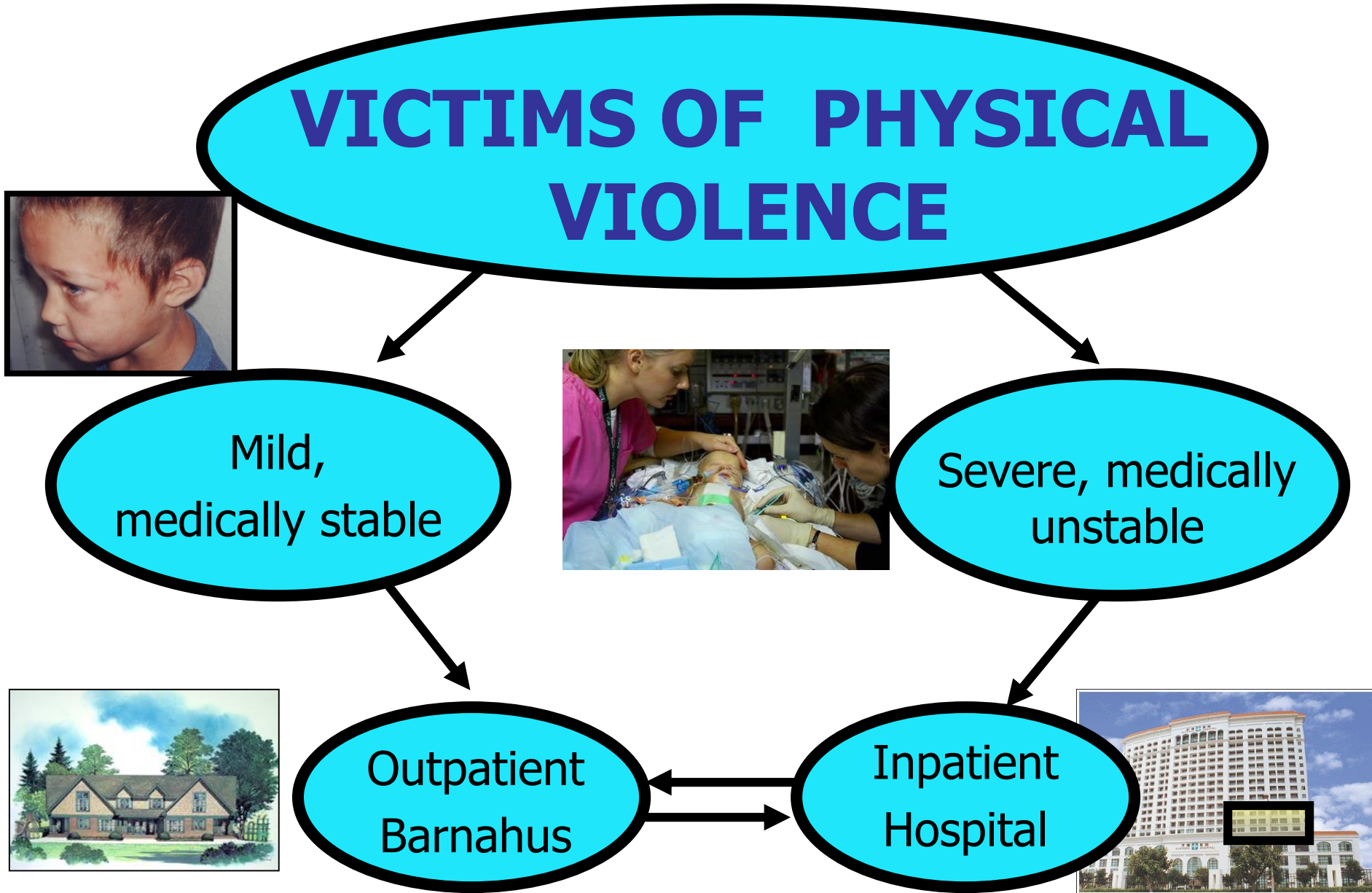


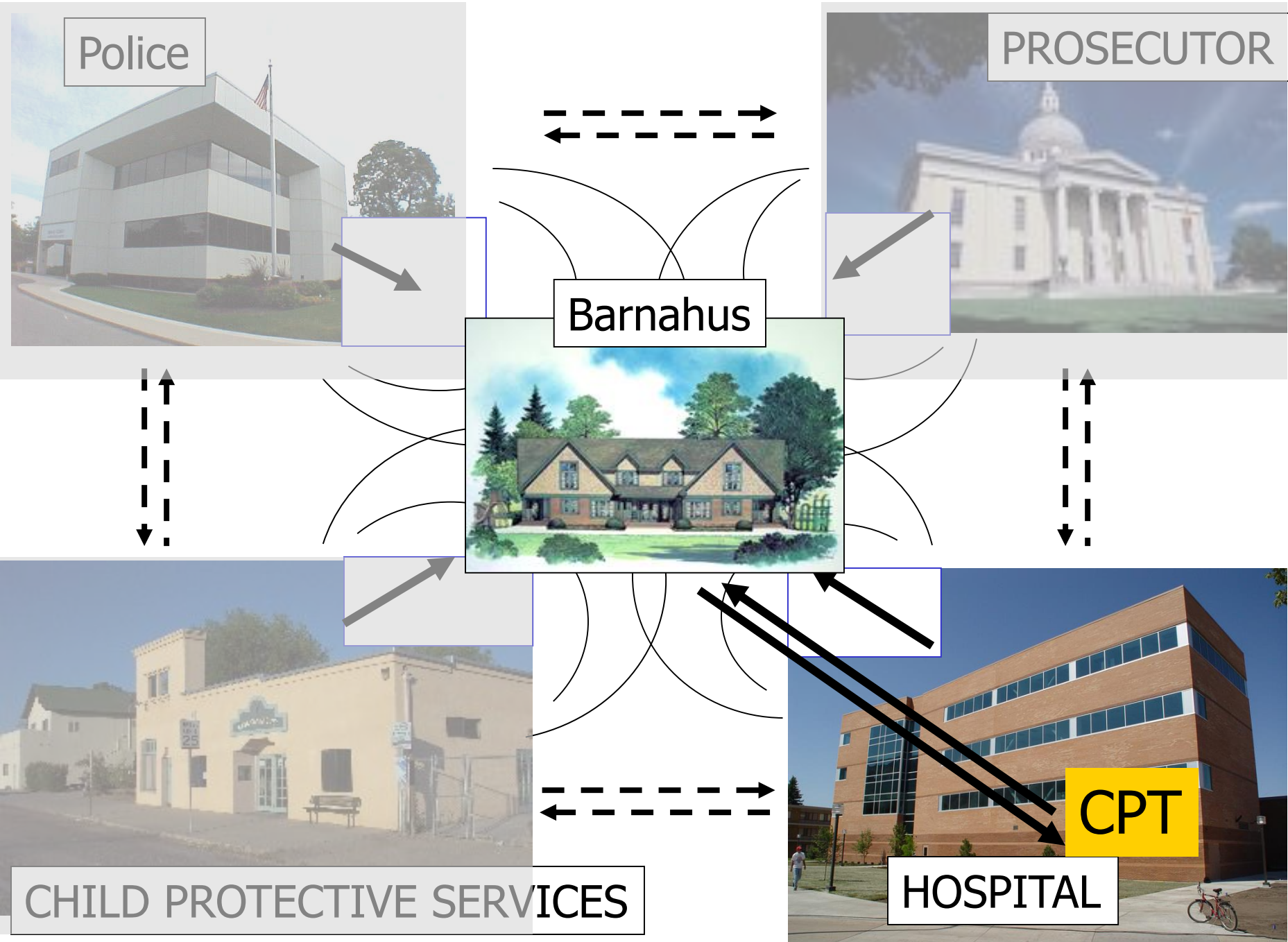
Severe, medically  
unstable

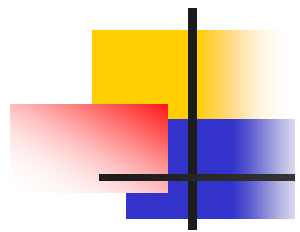


Outpatient  
Barnahus

Inpatient  
Hospital

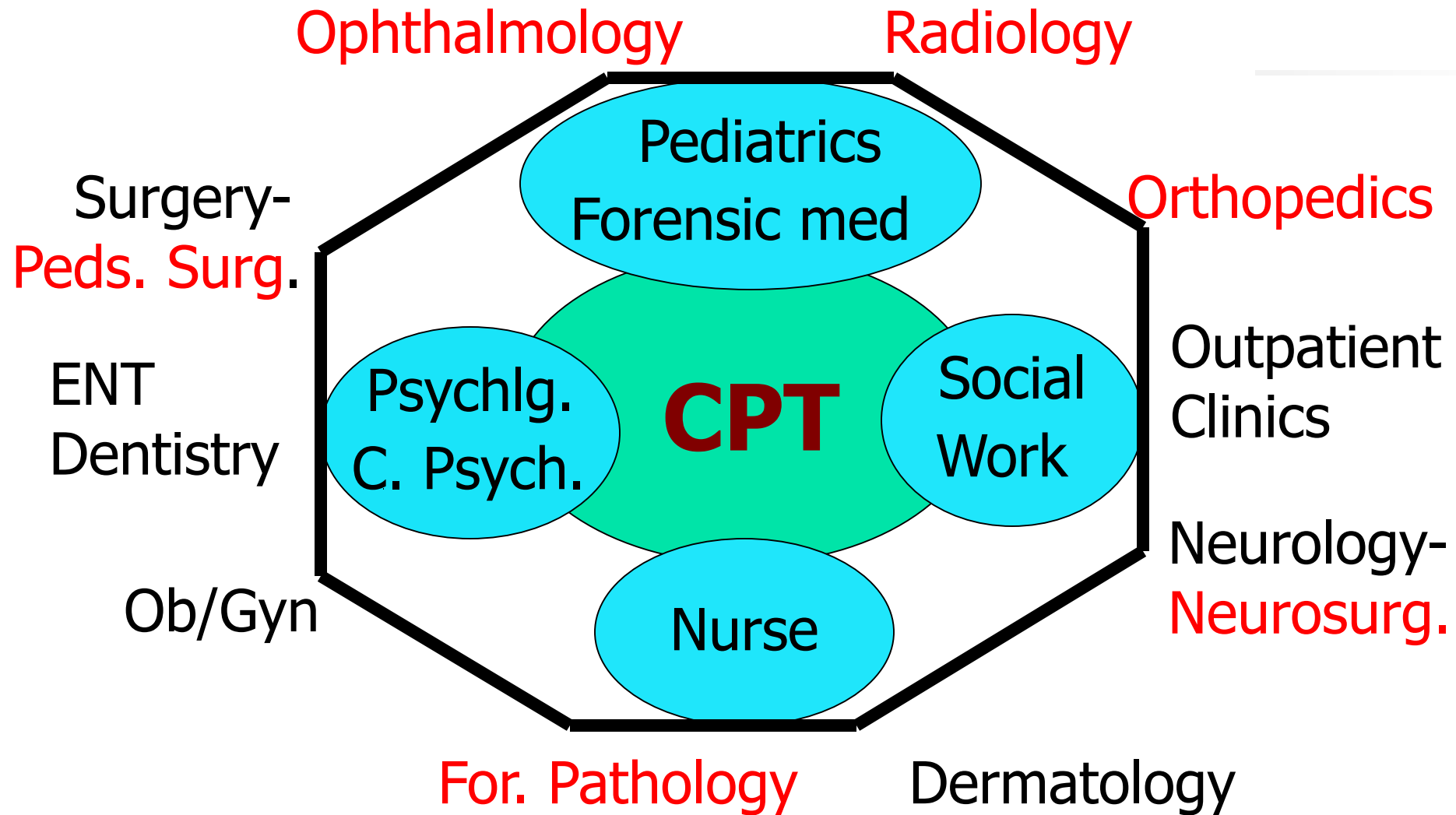






**POLL: DO YOU ALREADY  
WORK FOR A BARNAHUS?**

# Hospital CPT Organization





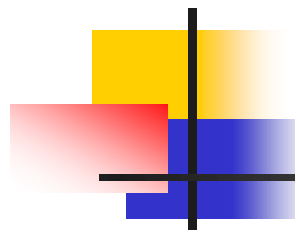
**POLL: DO YOU ALREADY WORK FOR  
A HOSPITAL WITH PEDIATRIC  
INPATIENT UNITS?**



# Stake-holders Planning Meeting

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- Which cases will warrant a CPT consultation
- How will the consultation system operate
- How will Barnahus and hospital handle bilateral referrals
- Forms to be used during the consult
- Documentation devices and system
- Reporting
- Post-consultation procedures
- Staff education plan



**POLL: DO YOU ALREADY HAVE  
A HOSPITAL BASED MDT**



# Temple of Apollo, Turkey





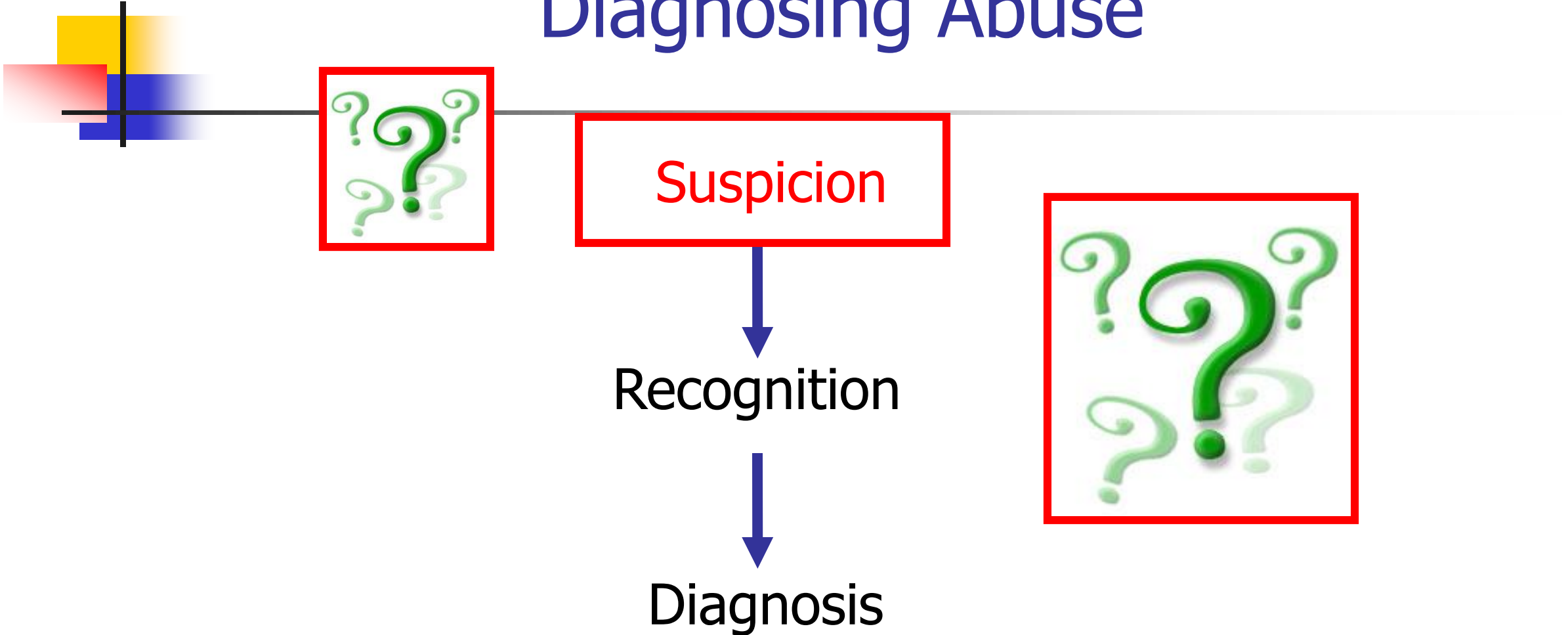


# Hospital staff education plan

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- Create a written protocol on how to recognize, evaluate, and manage physical abuse
- Train all relevant staff on protocol
- Place protocol on your hospital's website on a password protected page.
- Educate all staff on how to access this web page/protocol on the web.

# Diagnosing Abuse



# Suspecting Abuse

## Knowing the risk factors

### Child Risk Factors

- **Developmentally disabled**
- **Premature, physical illness**
- **Dysmorphic features**
- **Behavioral problems**
- **Unloved/unwanted**
- **Runaway**
- **Previous abuse in index child / sibling**

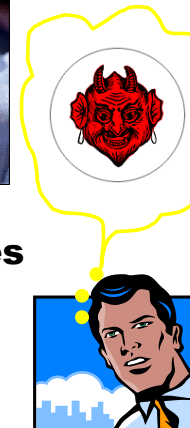


### Caretaker Risk Factors

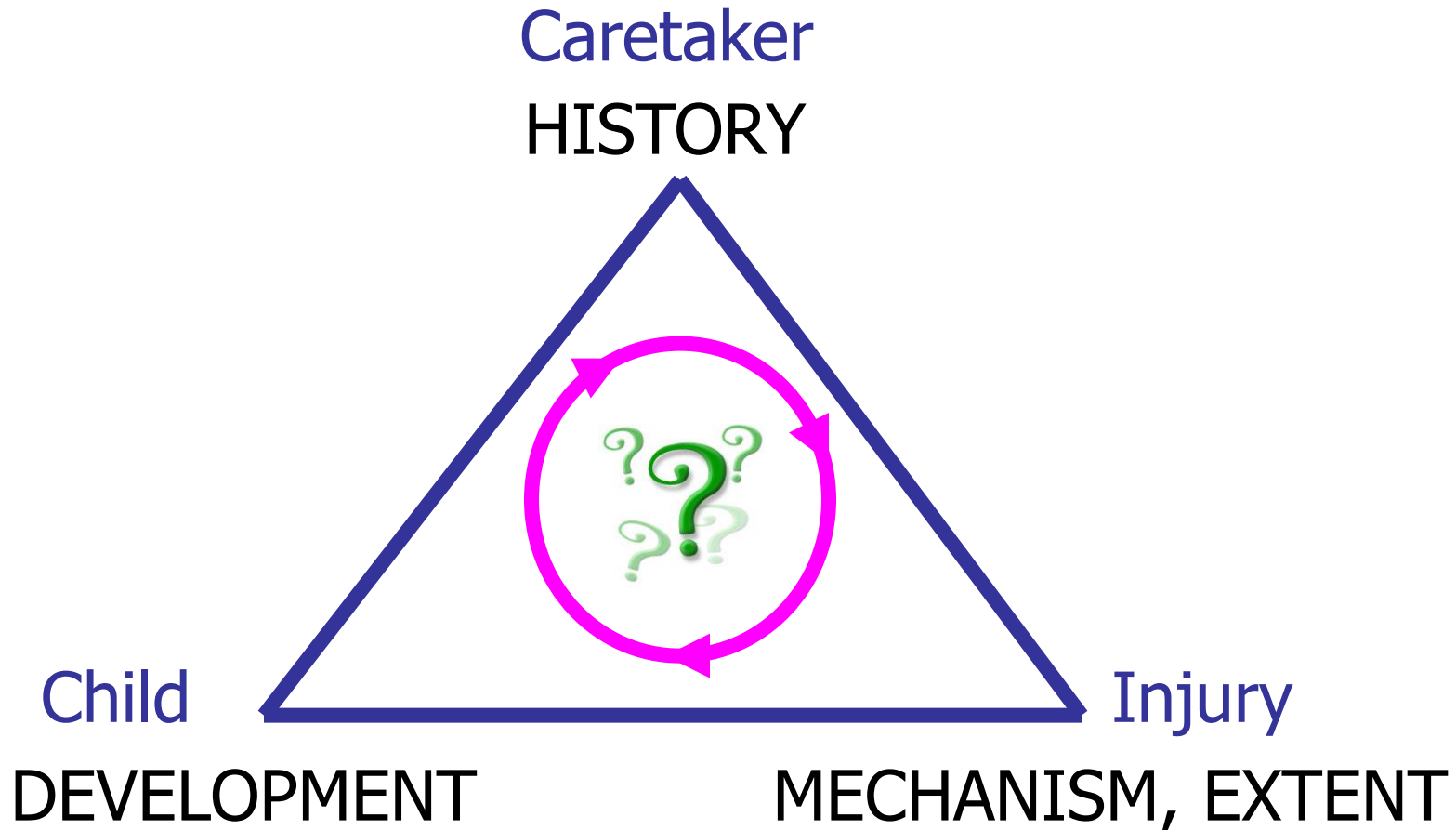
- **Mother/father unavailable (Dead, depressive)**
- **Family disruption**
- **Substance abuse**
- **Live in boyfriend**
- **Single / teenage parent**
- **Childhood abuse experiences**
- **Unrealistic expectations**
- **Perceptions of the child**

### Environment Risk Factors

- **Poverty, unemployment**
- **Social isolation**
- **Pedophilia, internet**
- **Community and domestic violence**
- **Substance abuse**

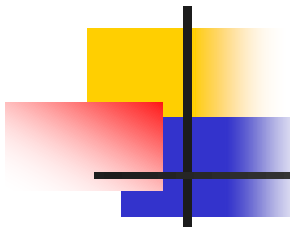


# Do they make sense together? Oral's Triangle



# TIMELINE

- Birth → Date, BW, delivery
- Hospitalizations → Dates, duration, cause
- Illnesses → Dates, cause
- ER visits → Date, time
- Last seen normal → Caretakers involved  
Triggers for abuse  
Events
- Hospital presentation → Deterioration time  
Interventions



# Everglades Natl Park, FL





# Behavioral indicators of physical abuse

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- **Extremes** of behaviors
  - Withdrawn or aggressive
  - Polite or rude
  - Compulsively neat or messy
  - Obedient or resistant
  - Friendly/affectionate or hostile
  - Dependent or role reversal



# Behavioral indicators of physical abuse

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- Wary of adult contact/touches
- Complains of soreness, moves uncomfortably
- Refuses to go home
- Poor self-esteem, self-destructive
- Antisocial, runaway, delinquent





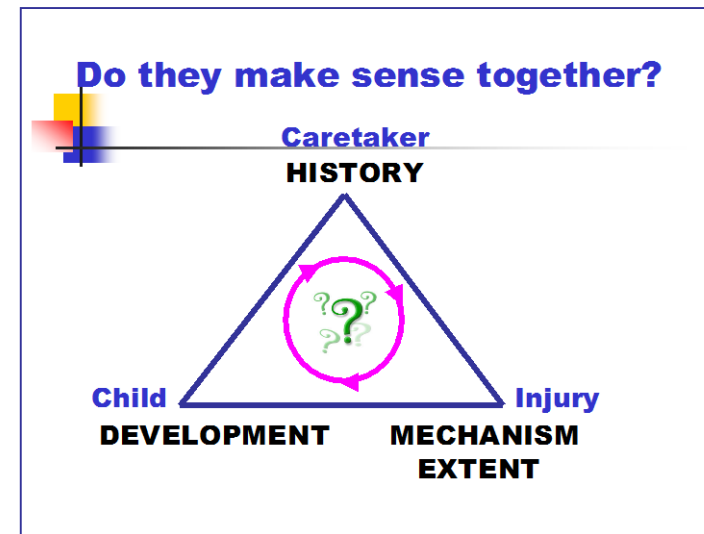
# Observations

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- Hostile parent/child or parent/parent interactions
- Child fearful of caretaker
- Caretaker too defensive or aggressive
- ? Caretaker covering up

# Physical Indicators of Physical Abuse

- **Unexplained !!!**
  - Bruises/welts/burns
  - Fractures/dislocations
  - Brain injuries/SDH/RH
  - Internal organ injuries
- Delay in seeking medical help for injuries





# Recognizing Abuse

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- Inconsistency in description of injury
  - (type, severity, age, mechanism)
- Inconsistency in developmental level of child
- Injuries typical for inflicted injury
- Injuries with no history
- Patterned injuries
- Multiple injuries at various stages of healing

# Samaria Gorge Ntl Park, Greece



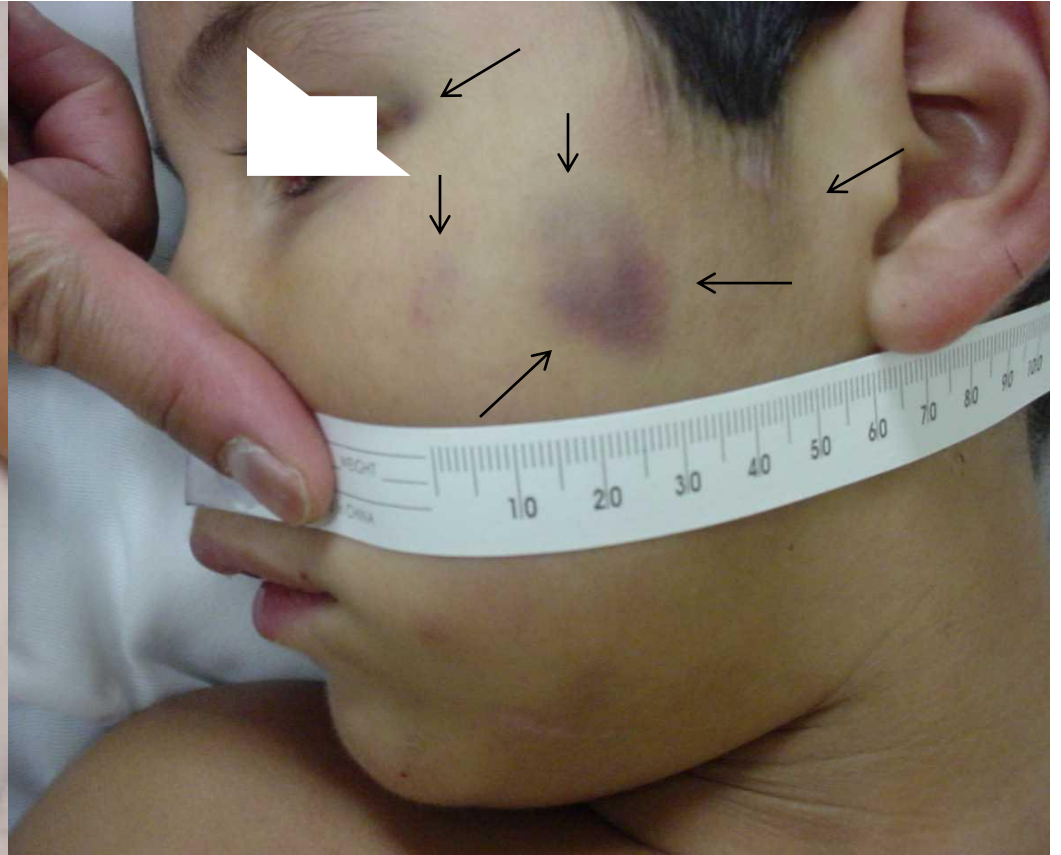
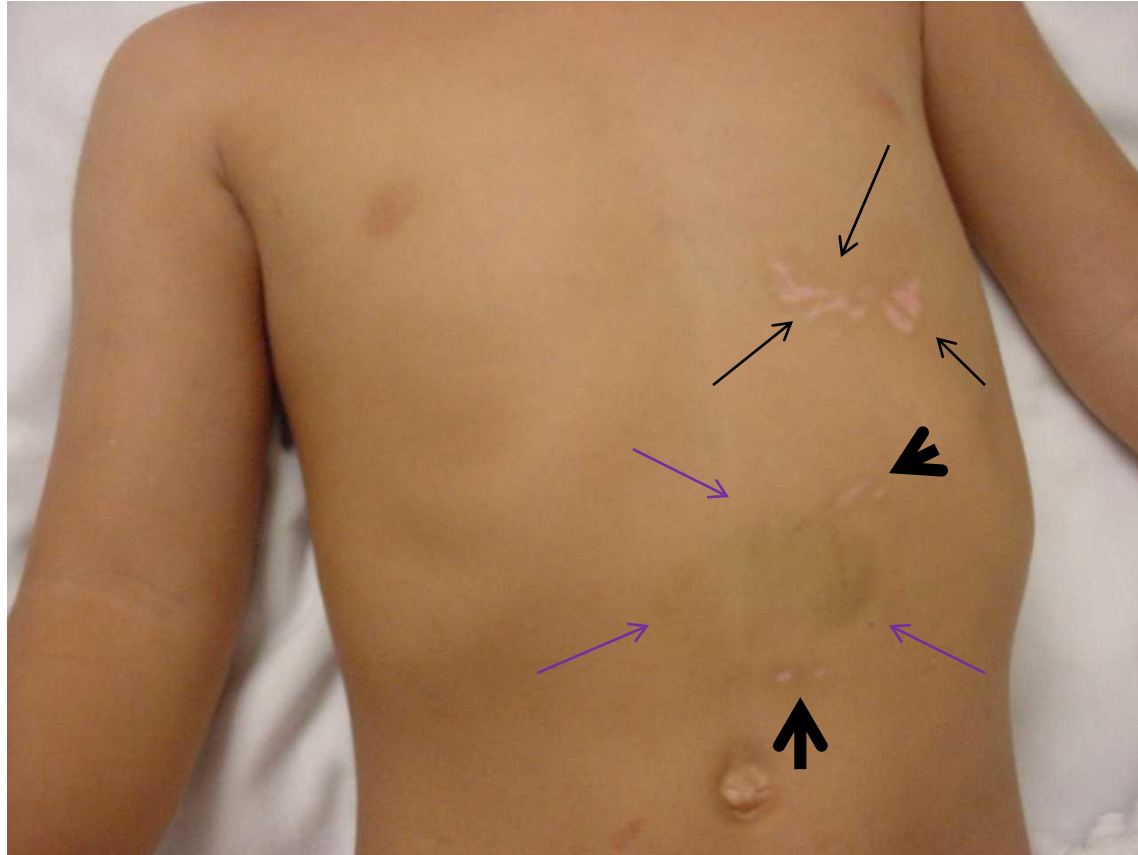


PORTABLE

L

LINE







# DIAGNOSTIC WORK-UP

## Physical Abuse/Neglect

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- Skeletal survey : A must < 2 y/o
  - Humeri-upper arms (AP)
  - Forearms (AP)
  - Hands (Oblique, PA)
  - Femurs-thighs (AP)
  - Tibiae/fibulae - shins (AP)
  - Feet (AP)
  - Chest (AP & lateral, if suspicious oblique)



# DIAGNOSTIC WORK-UP

## Physical Abuse/Neglect

---

- Skeletal survey :
  - Pelvis + mid & lower lumbar spine (AP)
  - Lumbar spine (Lateral)
  - Cervical spine (Lateral)
  - Skull (Frontal & lateral, if suspicious oblique)
- In suspicious spots, repeat film with coning and restriction to specific area
- Repeat skeletal survey in 10-14 days

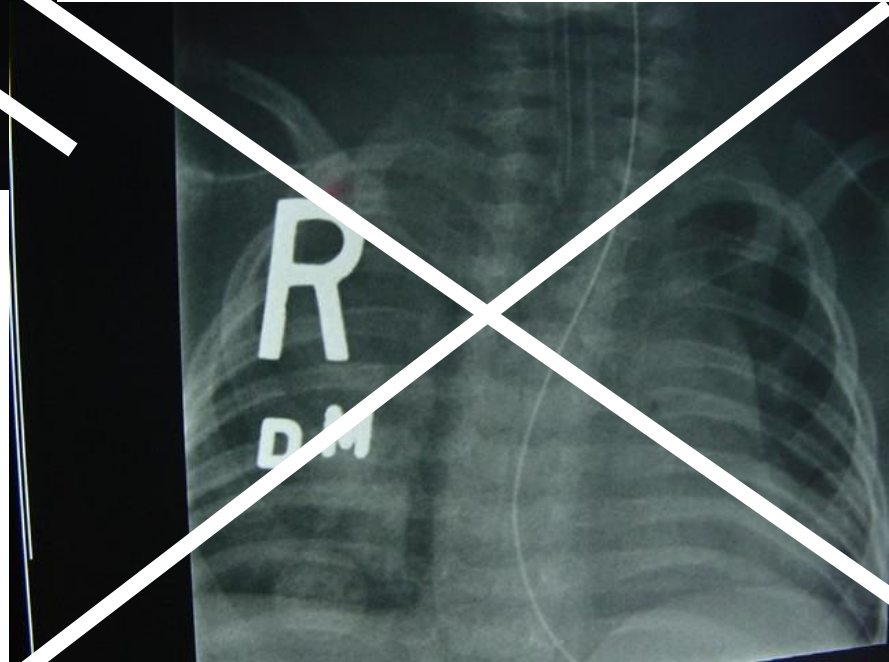
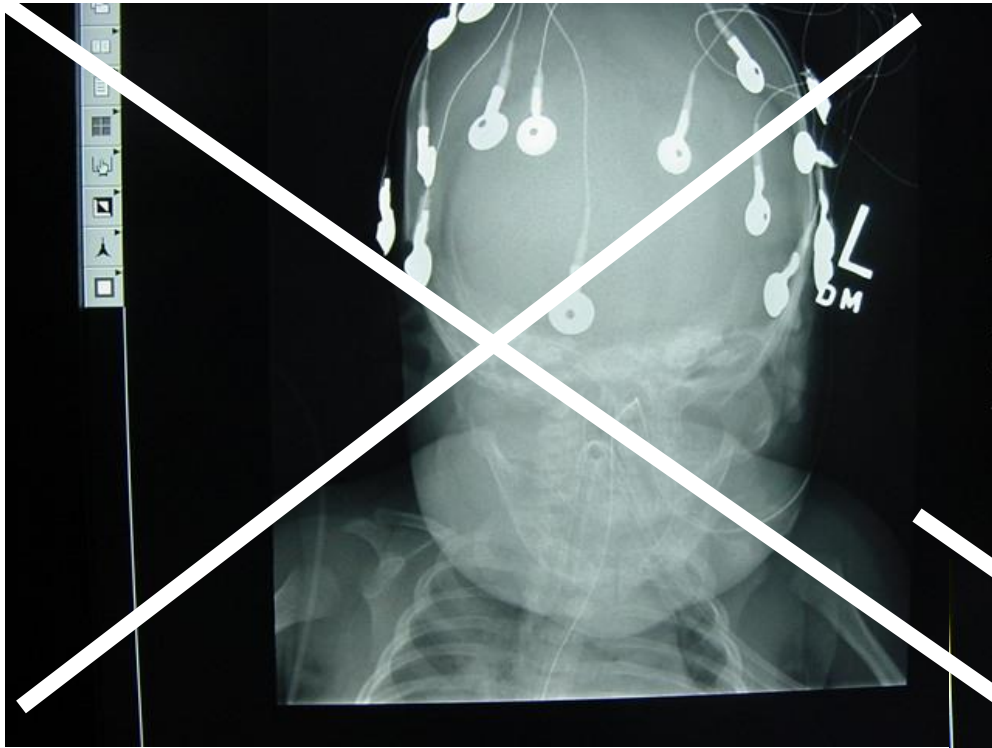






# Yosemite Ntl Park, CA







# DIAGNOSTIC WORK-UP

## Physical Abuse/Neglect

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- Head CT in acute head trauma
  - First week of injury
  - No contrast
- MRI in subacute/chronic phase
  - Follow up of acute injuries
  - Growing head circumference



# CT images

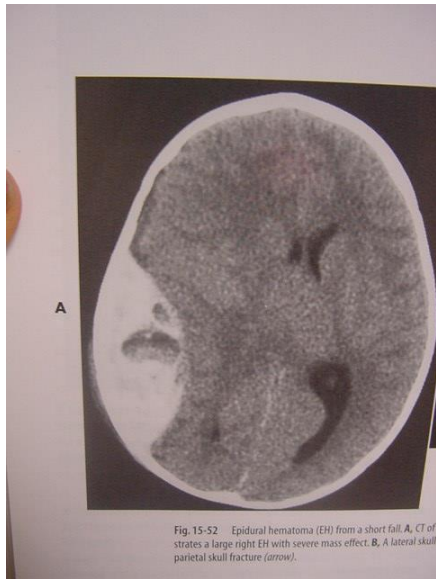
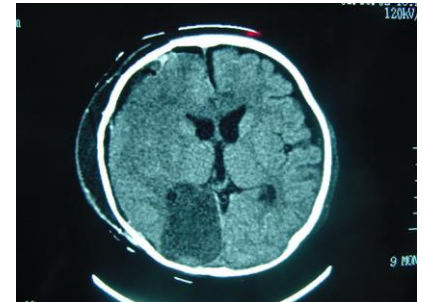
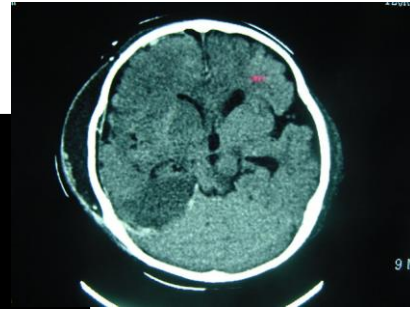
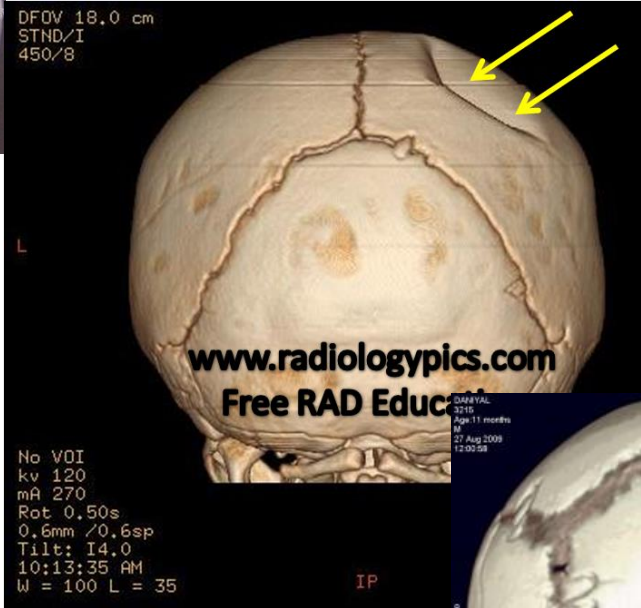
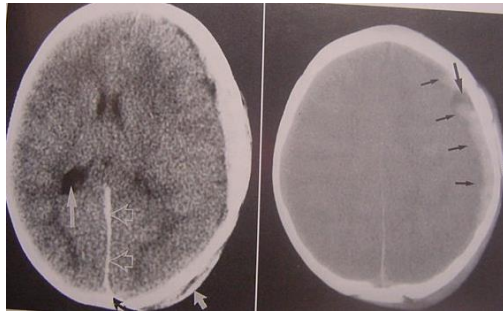
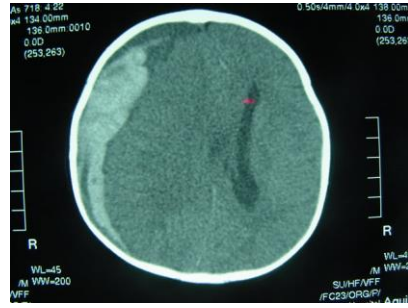
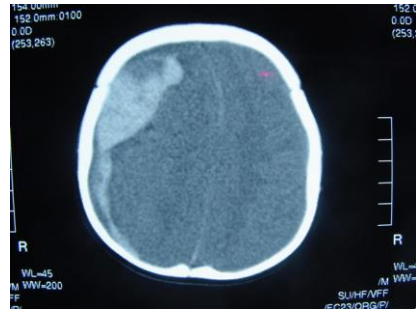
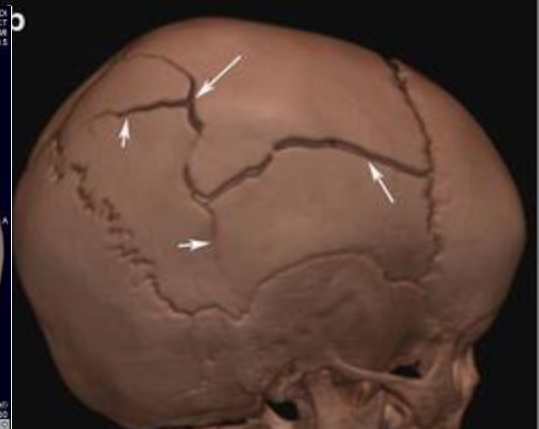
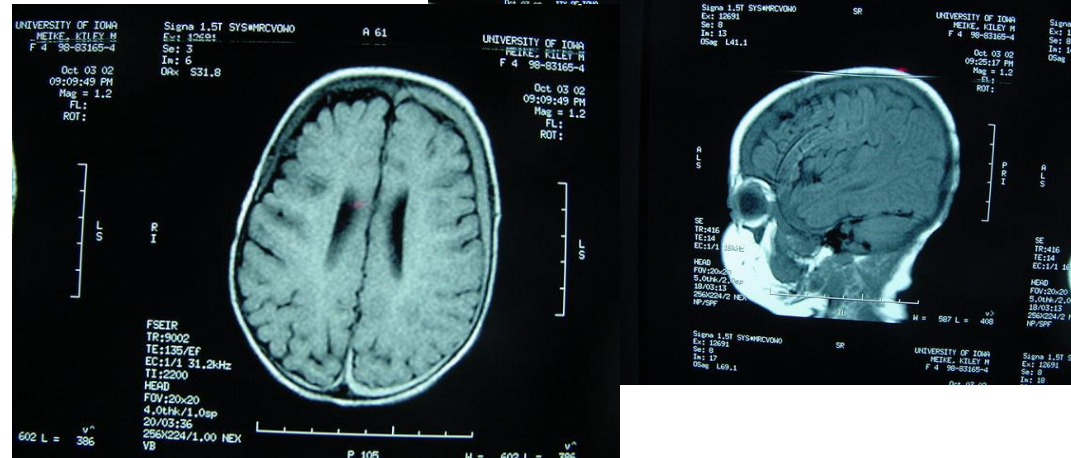
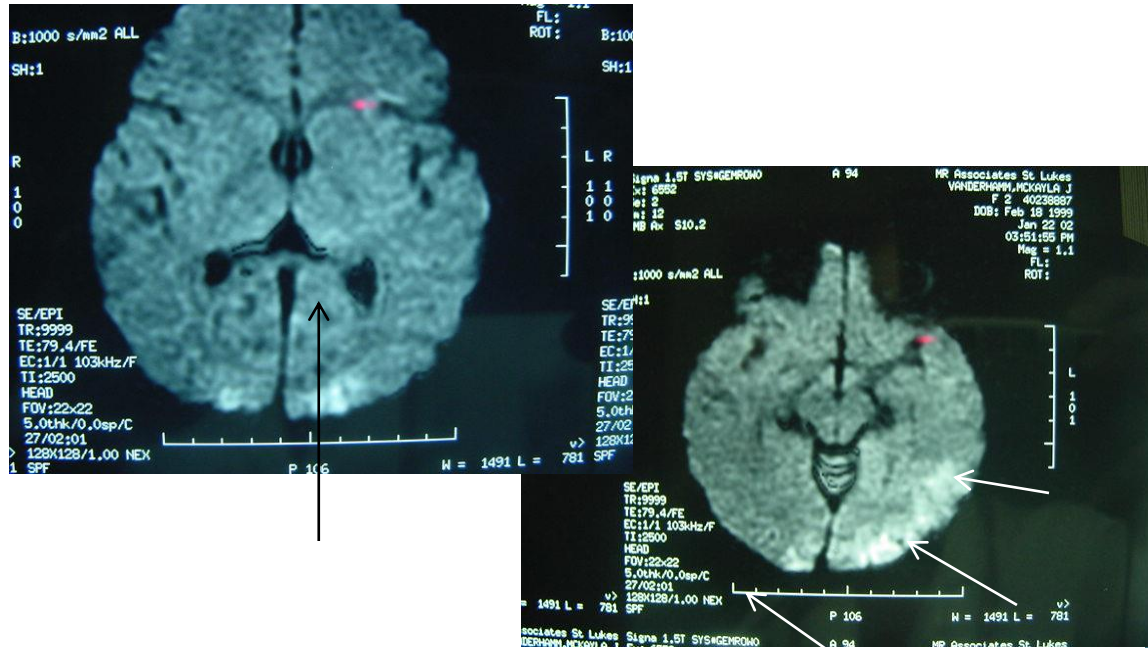


Fig. 15-52 Epidural hematoma (EH) from a short fall. A, CT of a large right EH with severe mass effect. B, A lateral skull parietal skull fracture (arrow).





MRI  
images



# DIAGNOSTIC WORK-UP

## Physical Abuse/Neglect

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- Chest/abdomen CT
  - Chest, abdomen injuries
  - Child with abusive head trauma in coma
- Blood count and coagulation studies
  - CBCC, PLT, PT, PTT, Von Willebrand Panel
  - Child with bleeding, bruising



# Behtesgaden Ntl Park, Germany



MICHAEL BREITUNG  
PHOTOGRAPHY

# DIAGNOSTIC WORK-UP

## Physical Abuse/Neglect

- U/A, urine/hair drug testing, electrolytes, liver, kidney & pancreas functions tests
  - Head, chest, abdominal trauma
  - Excessive soft tissue bruising
- Metabolic tests when metabolic disease ?? (Type I Glutaric aciduria)
- Ophthalmology consult for eye exam





# DIAGNOSTIC WORK-UP

## Physical Abuse/Neglect

---

- Genetics consult for genetic conditions
- Serum proteins, stool & urine tests for infections, lead, drug screening
  - Failure to thrive
- Developmental assessment
- Nutritional assessment



# SUSPICIOUS BRUISES

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- Too many, too big in too young
- Bruises in protected areas
- Patterned bruises
- Black eyes without history
- Bite marks
- Bruises of various ages on body sites with similar structure



# Bruises suspicious for abuse

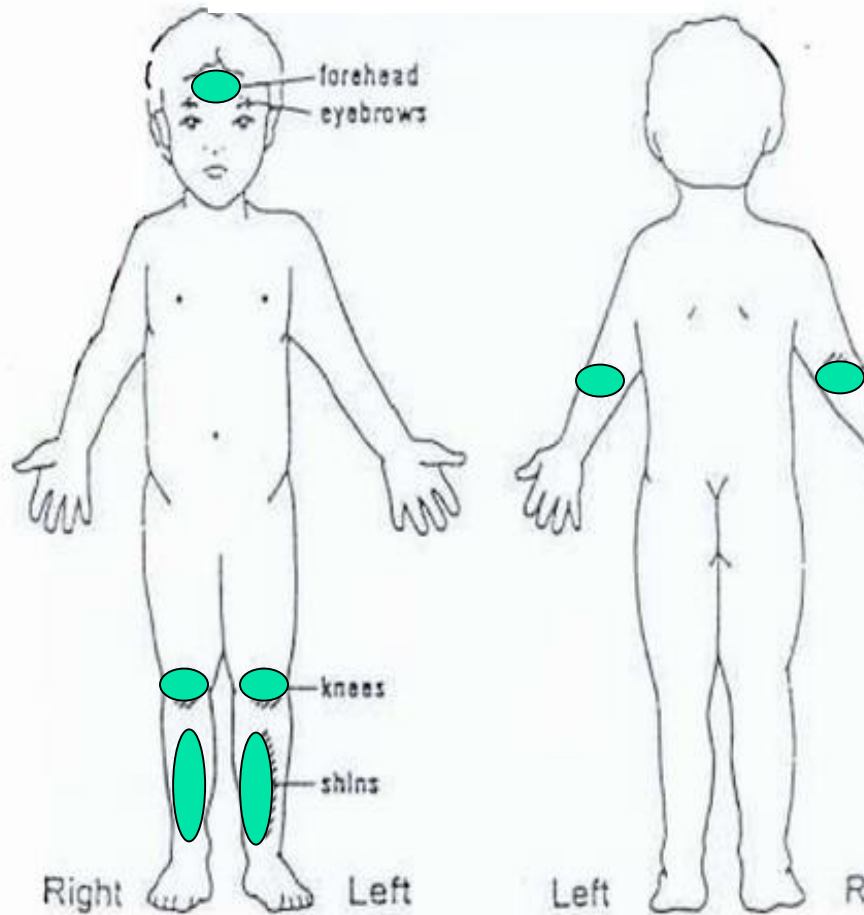
- **TEN-4**

- Torso, ears, neck injuries on a child < 4 y/o
- Any bruise on a child less than 4 m/o

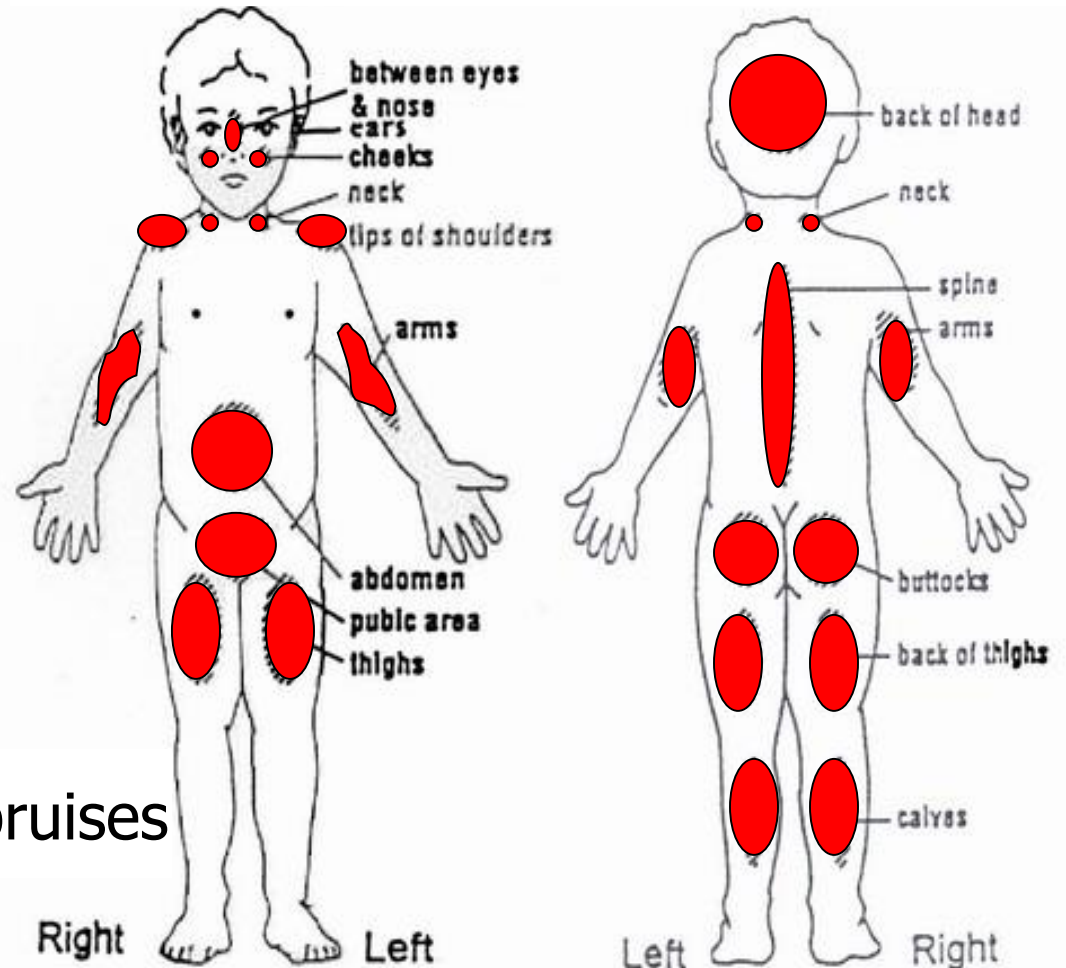


Pierce et al. Bruising Characteristics Discriminating Physical Child Abuse From Accidental Trauma. *Pediatrics* 2010;125;67-74

# Topography of Bruises



Common sites for accidental bruises



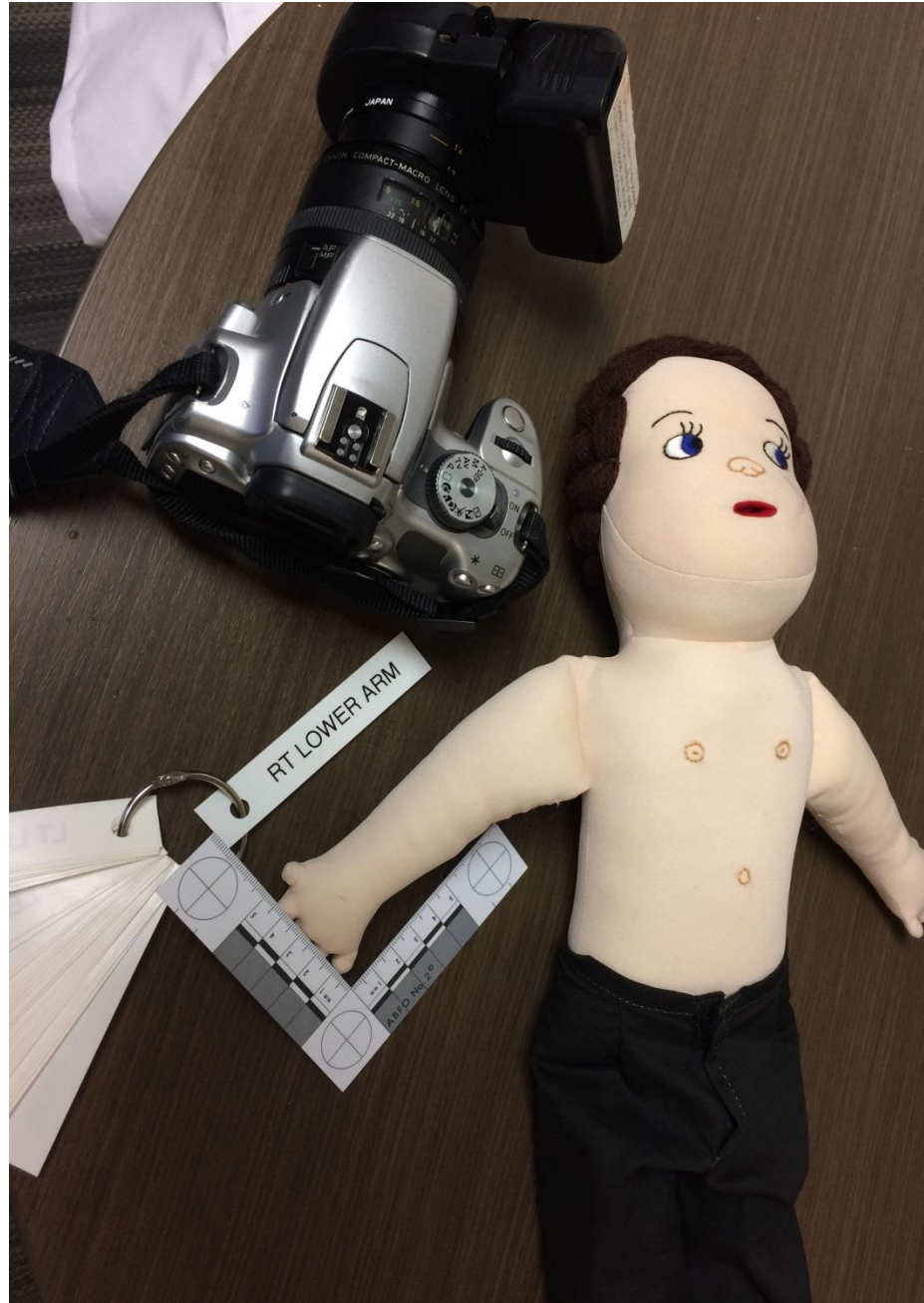
Suspicious bruises



# Canyonlands Ntl Park, UT





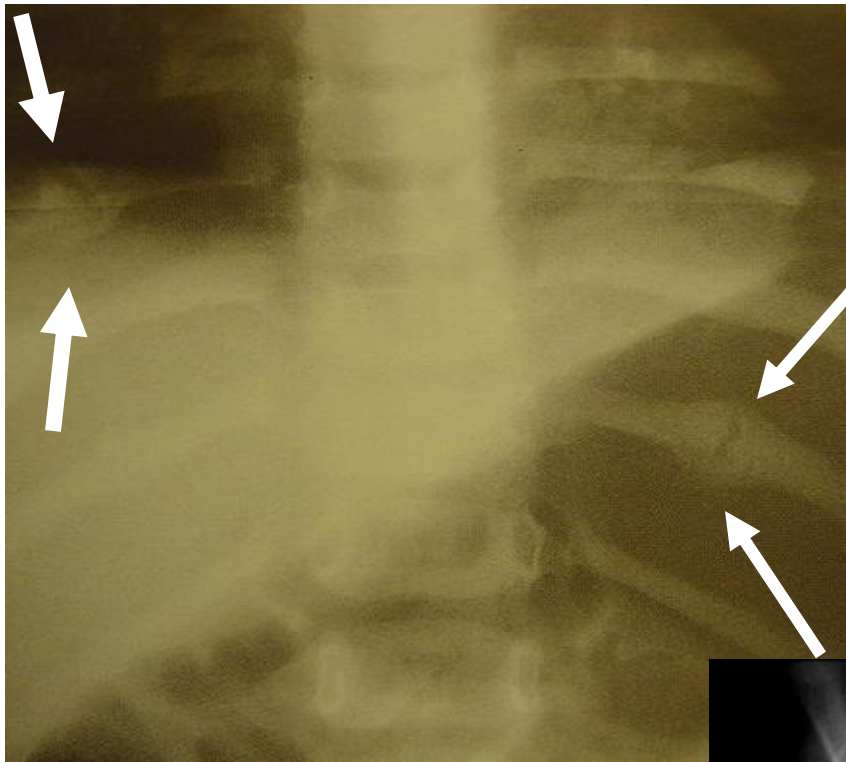


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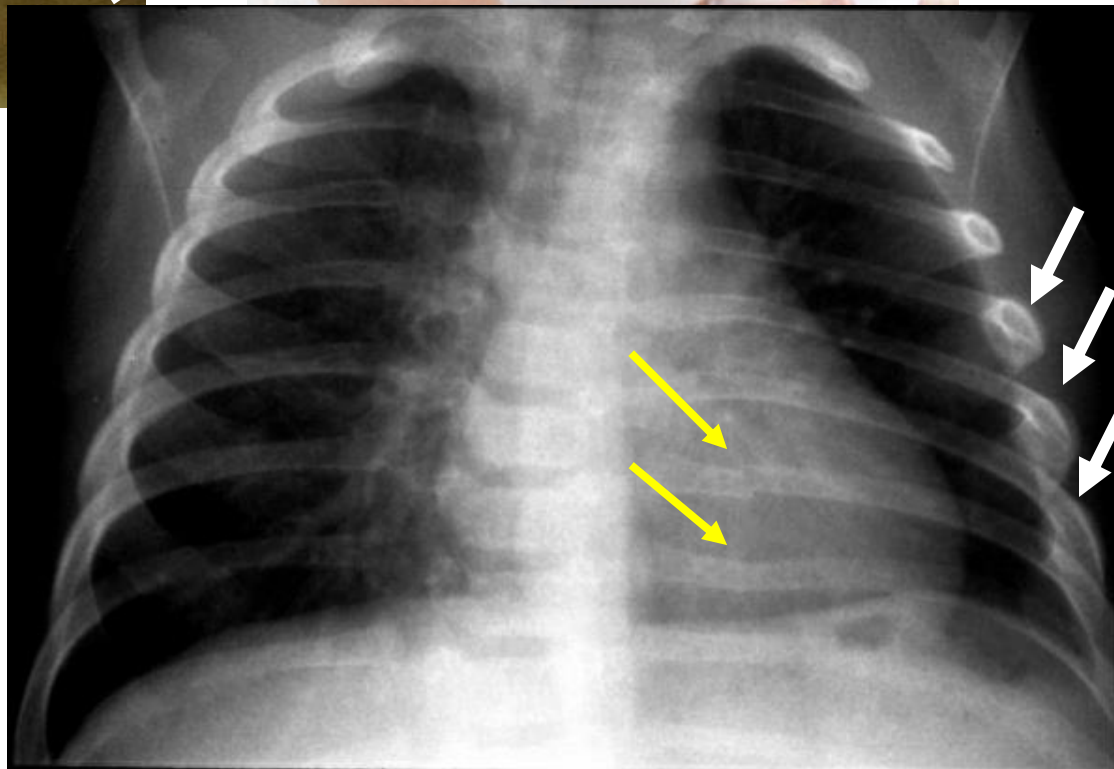
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Sex: M

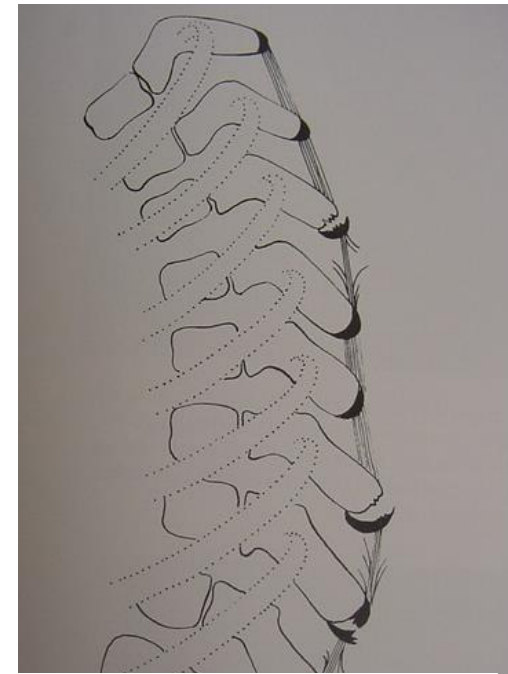
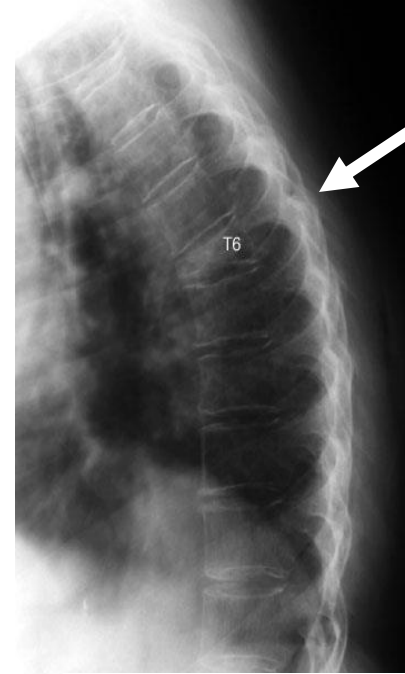
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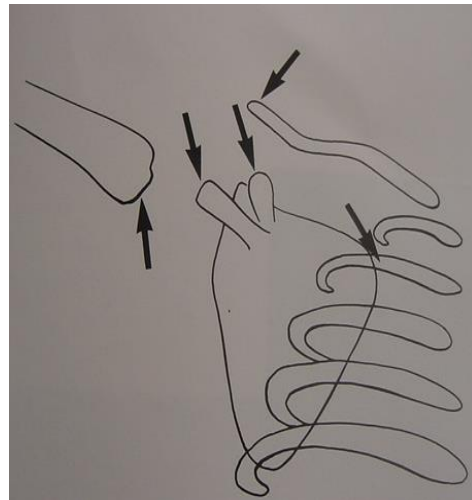


Fresh & old rib fractures





## VERTEBRAL FRACTURES



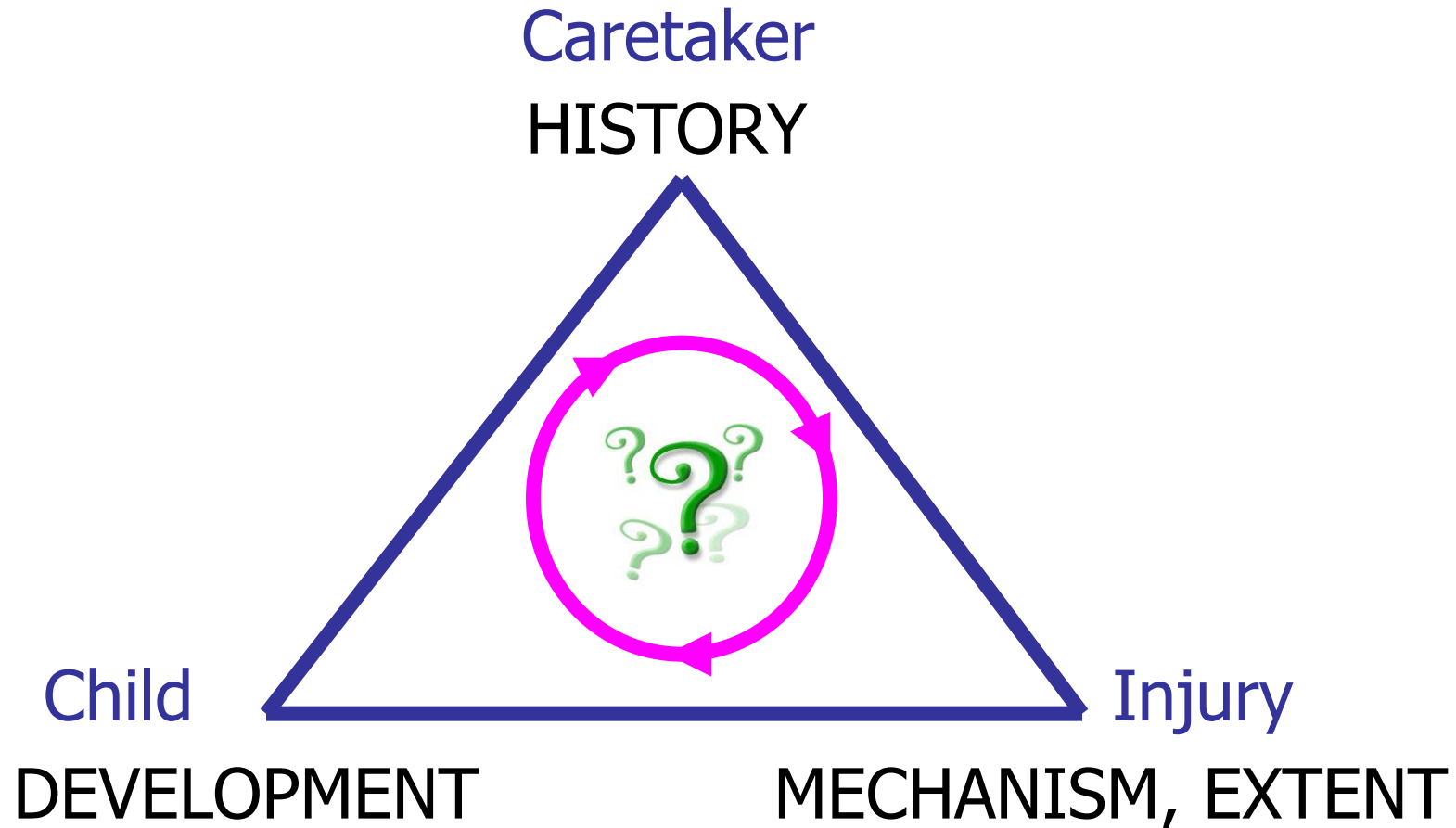
## SCAPULAR FRACTURES



## STERNAL FRACTURES



# DIAGNOSTIC INTERPRETATIONS OF PHYSICAL ABUSE FINDINGS



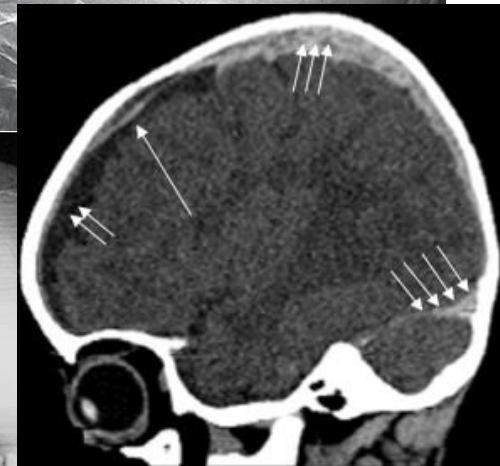
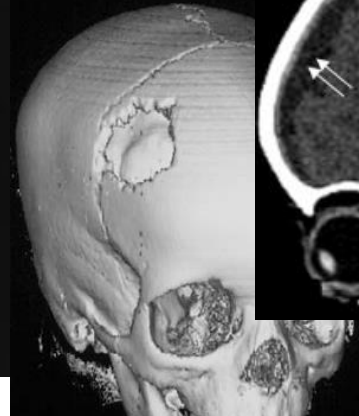
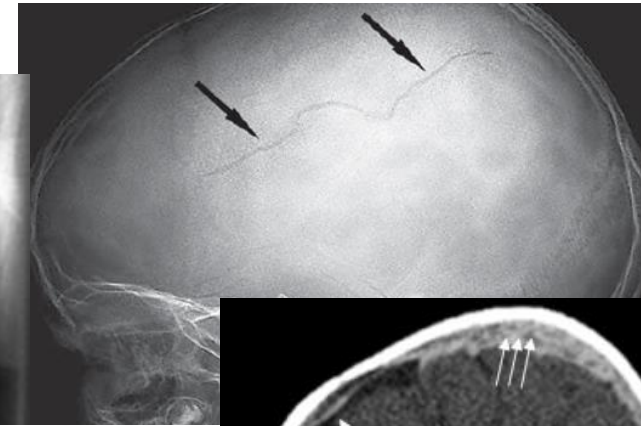
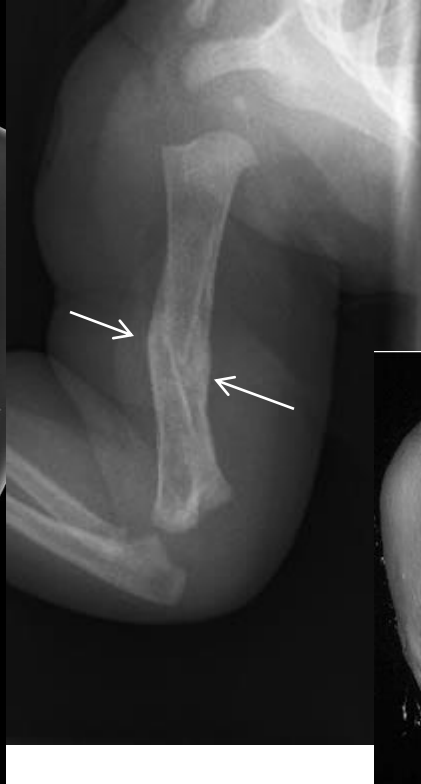
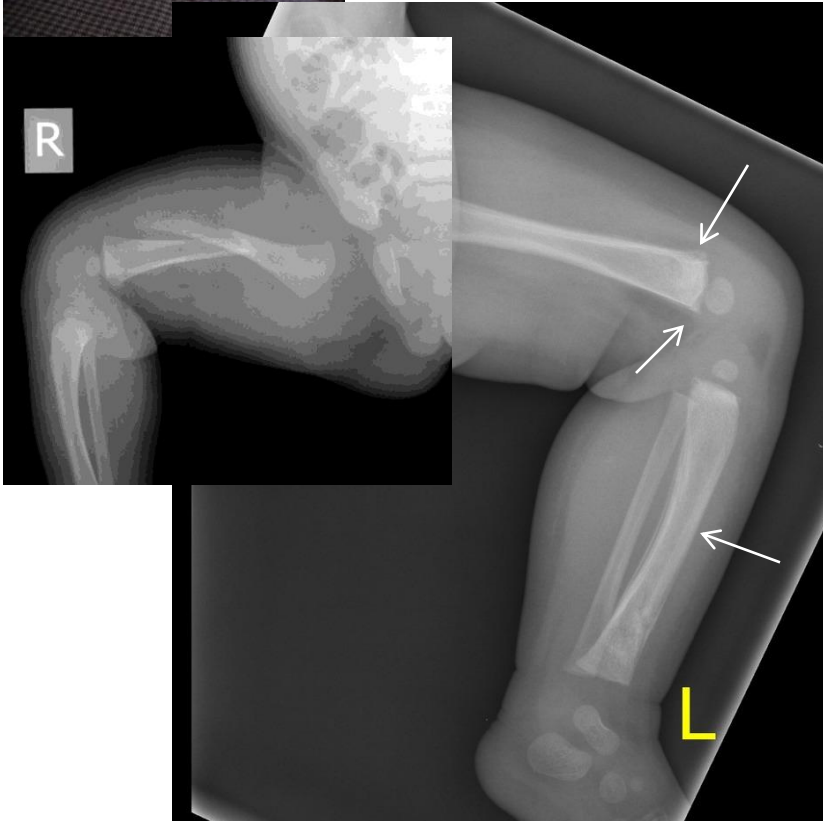
# Green Mountain, VT







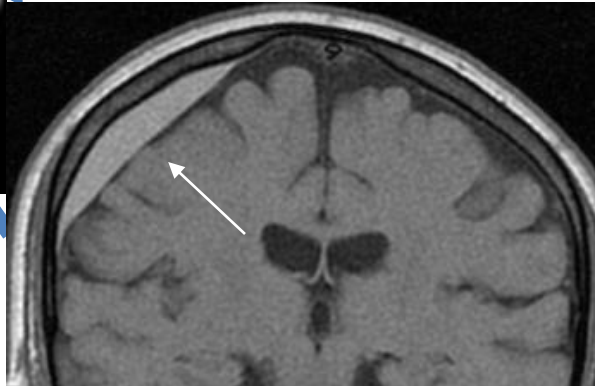
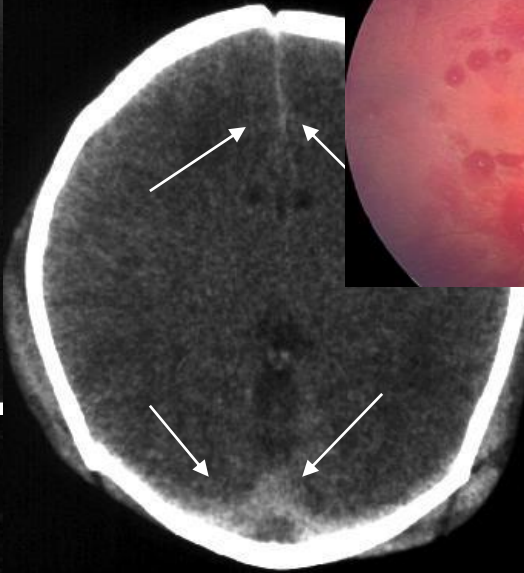
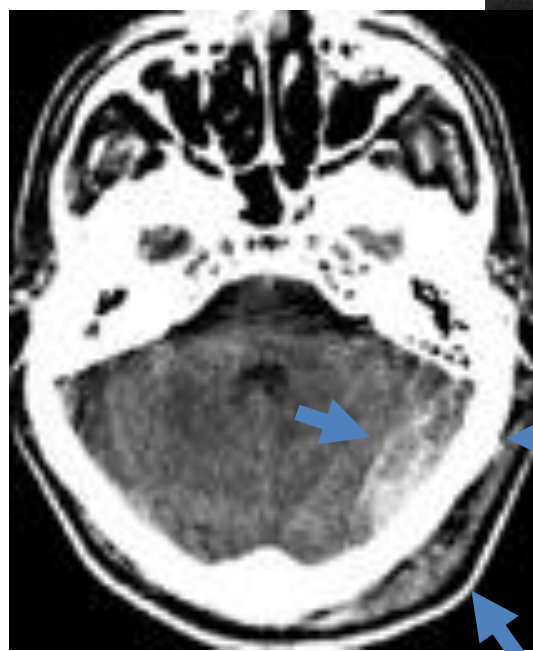
- He may fall off this couch: **supervision neglect**
- It doesn't lead to coma: Not enough acceleration and angular velocity
- A bruise or two, extremity or skull fracture possible
  - Anything else, think **physical abuse**







- She may fall off this bunk bed: **supervision neglect**
- Unlikely to lead to coma: Not enough acceleration and angular velocity
- In addition, focal SDH, SGH possible
  - Anything else, think **physical abuse**

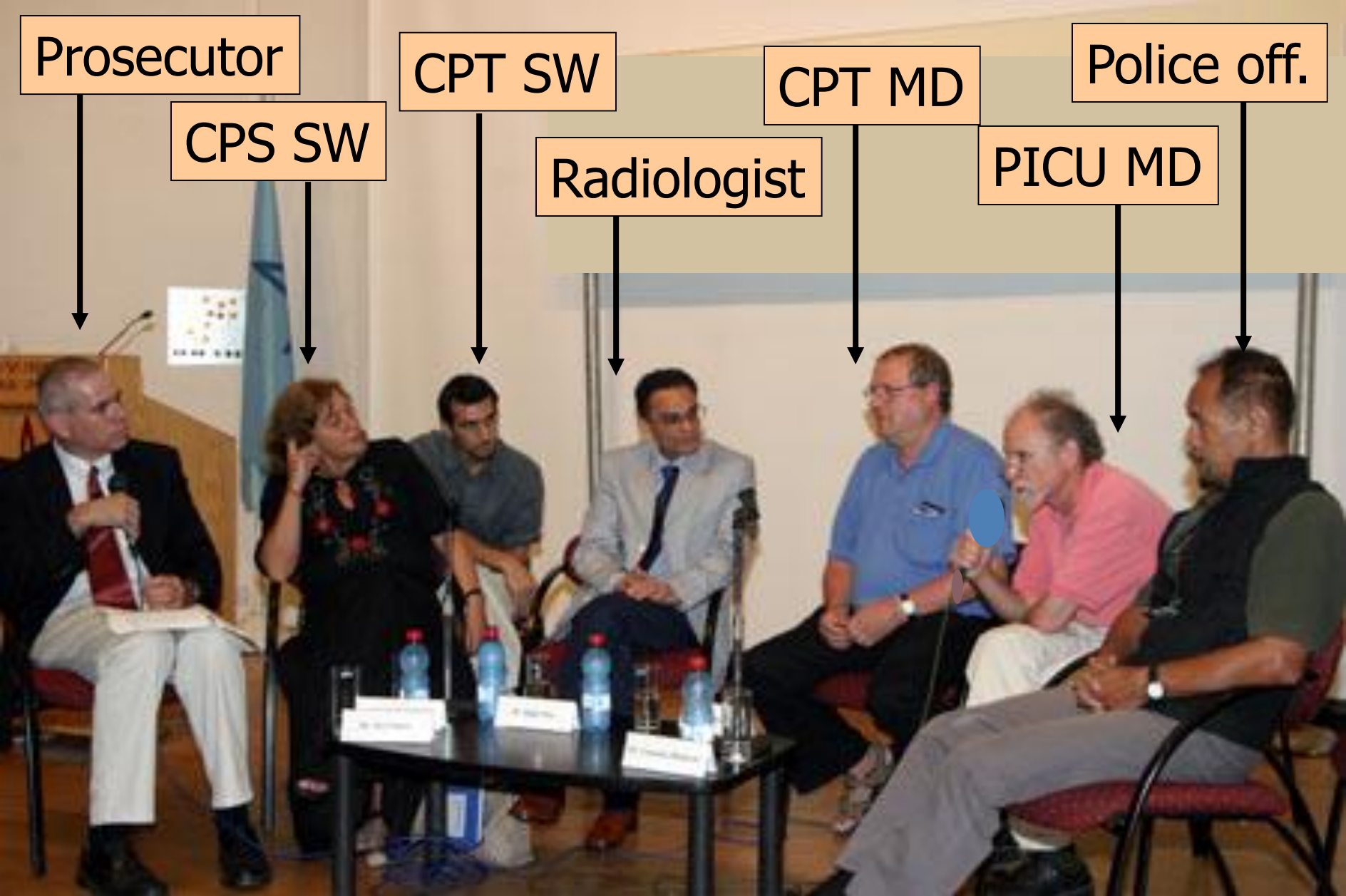




# Post-consultation procedures

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- SW schedules a multidisciplinary meeting in 48-72 hours at PICU:
  - Hospital staff: CPT Clinician, SW, PICU Dr, radiologist
  - Community agency staff: SW from Child Protection Services, police officer, prosecutor
  - In select cases: Ped. Neurosurgeon, Ped. Neurologist, Ophthalmologist, Ped. surgeon, Orthopedist, Geneticist may be invited



Prosecutor

CPS SW

CPT SW

Radiologist

CPT MD

PICU MD

Police off.



# Summary

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- Child abuse and neglect requires a high index of suspicion focusing on behavioral/physical indicators and history.
- Skeletal survey, head CT, abdominal/chest CT, MRI and other plain X-rays are helpful imaging tools in diagnosing physical abuse
- Other tests performed on blood, urine, stool, hair, meconium, cord blood may be used to diagnose/rule out abuse/neglect.



# Joshua National Park, CA



**Thank you**

[Resmiye-oral@uiowa.edu](mailto:Resmiye-oral@uiowa.edu)





# References

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# FROM 0 TO BARNAHUS – SAVE THE DATES FOR THE UPCOMING WEBINARS

## **Medical evaluation – a key criteria for the Barnahus and similar setups**

- 19 Nov 2018 – Sexual abuse diagnostic workup and decision-making

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