



Fractures and Broken Bones

Toddlers' Fractures

1. Nature of the Injury

- **Characteristics:** Toddlers' fractures typically involve a spiral fracture of the tibia (shinbone). These are usually hairline fractures and may not be immediately obvious.
- **Age Group:** Most common in children aged 1 to 3 years, coinciding with the onset of walking.

2. Mechanisms of Injury

- **Accidental Causes:** Often occur during play, such as when a child's foot is planted and the body twists over it, or from a fall while the foot is caught under the body.

3. Interpretation Considerations

- **Activity at Time of Injury:** Such fractures are usually consistent with the child's level of activity and mobility.
- **Presentation:** Children may present with a limp or refusal to bear weight on the affected leg.

4. Red Flags for Abuse

- **Inconsistency with Developmental Stage:** A spiral fracture in a non-walking infant is concerning.
- **Associated Injuries:** Other signs of trauma or multiple fractures at various stages of healing.

5. Examples

- **Accidental:** A toddler trips while running, resulting in a spiral tibia fracture.
- **Inflicted:** A spiral fracture in a non-mobile infant or inconsistent history of how the injury occurred.

Other Broken Bones

1. Nature of the Injury

- **Variety of Fractures:** Includes fractures of the wrist, arm, clavicle, and other bones. Can range from simple hairline fractures to more complex breaks.

2. Mechanisms of Injury

- **Accidental Causes:** Falls while playing, sports injuries, or accidents (like falling off a bike).



The Primary Concern is **other-than** a Head Injury

- **Inflicted Causes:** Direct force applied to the bone, twisting injuries, or violent shaking.
3. **Interpretation Considerations**
 - **Consistency with Reported Incident:** The fracture type and severity should align with the described accident or fall.
 - **Location and Type of Fracture:** Certain fracture types (e.g., metaphyseal lesions) and locations (e.g., ribs, upper arm) are more suspicious for non-accidental injury.
 4. **Red Flags for Abuse**
 - **Multiple Fractures:** Especially if they are in different stages of healing.
 - **Unusual Fractures:** Such as rib fractures in young children, which are rarely accidental.
 - **Delay in Seeking Care:** Late presentation for treatment of a fracture.
 5. **Examples**
 - **Accidental:** An older child falls off a swing, breaking an arm.
 - **Inflicted:** Multiple fractures of differing ages without a history of major trauma or accidents.

Injuries Involving Contusions, Abrasions or Soft-Tissue Trauma

Bumps and Bruises from Daily Activities

1. **Nature of the Injury**
 - **Common Sites:** Knees, elbows, forearms, and head.
 - **Characteristics:** Usually superficial bruises or small bumps.
2. **Mechanisms of Injury**
 - **Normal Play and Activity:** Running into furniture, falling while playing, minor bumps during everyday activities.
3. **Interpretation Considerations**
 - **Location and Severity:** Should align with typical child activities. Bruises on the front of the body are more common.
4. **Red Flags for Abuse**
 - **Unusual Locations:** Bruises on non-bony areas like the cheeks, stomach, or back.
 - **Multiple Bruises of Varying Ages:** Could indicate repeated trauma.



5. Examples

- **Accidental:** A toddler with knee bruises from falling while playing.
- **Inflicted:** A child with multiple bruises in unusual locations without a consistent explanation.

Falls from Furniture or Play Equipment

1. Nature of the Injury

- **Common Injuries:** Head bumps, small cuts, and bruises.
- **Severity:** Usually correlates with the height from which the child fell.

2. Mechanisms of Injury

- **Falls from Furniture:** Climbing on furniture and falling off.
- **Playground Falls:** Falling from equipment like slides or swings.

3. Interpretation Considerations

- **Circumstances of Fall:** Consistency of injury with the height and nature of the fall.

4. Red Flags for Abuse

- **Inconsistent History:** Injury severity not matching the described fall.
- **Repetitive or Severe Injuries:** Especially with vague or shifting explanations.

5. Examples

- **Accidental:** A child with a bruised forehead from falling off a low chair.
- **Inflicted:** Severe head trauma with a claim of falling from a low height.

Environmental Injuries

1. Nature of the Injury

- **Types:** Scratches from vegetation, minor bruises from bumping into objects.

2. Mechanisms of Injury

- **Outdoor Play:** Injuries from running through bushes, falling on rough terrain.

3. Interpretation Considerations

- **Consistency with Environment:** Injuries should match the child's play setting.



4. Red Flags for Abuse

- **Inconsistent with Reported Activity:** For example, deep cuts or bruises in a child not exposed to rough outdoor play.

5. Examples

- **Accidental:** Scratches on arms from playing in a wooded area.
- **Inflicted:** Unexplained deep lacerations in a child with limited outdoor access.

Accidental Abdominal Injuries

1. Nature of the Injury

- **Common Types:** Bruises or mild internal injuries from blunt trauma.

2. Mechanisms of Injury

- **Sports or Playground Activities:** Impact from balls, falls onto hard surfaces.

3. Interpretation Considerations

- **Activity Level:** Injuries should match the intensity of the sport or play.

4. Red Flags for Abuse

- **Severe Internal Injuries:** Without a history of significant trauma.

5. Examples

- **Accidental:** A bruised abdomen from falling onto the edge of playground equipment.
- **Inflicted:** Severe internal injury with no explanation or a minor fall.

Accidental Bruising in Infants

1. Nature of the Injury

- **Common Types:** Minor bruises, particularly on the forehead, legs, and arms.

2. Mechanisms of Injury

- **Learning to Move:** Bumps while crawling, walking, or during diaper changes.

3. Interpretation Considerations

- **Developmental Stage:** Bruises should align with the child's mobility level.

4. Red Flags for Abuse

- **Bruises in Non-Mobile Infants:** Especially in unusual locations.



5. Examples

- **Accidental:** Forehead bruises from bumping into crib slats.
- **Inflicted:** Bruises on the back or abdomen in a crawling-age infant.

Soft Tissue Injuries

1. Nature of the Injury

- **Types:** Sprains, strains, minor cuts.

2. Mechanisms of Injury

- **Sports or Physical Activities:** Overextension, falls, accidental cuts.

3. Interpretation Considerations

- **Consistency with Activity:** Injuries should correlate with the intensity and type of activity.

4. Red Flags for Abuse

- **Injuries Unrelated to Reported Activities:** For example, a sprain in a child not engaged in physical activities.

5. Examples

- **Accidental:** A sprained ankle from playing soccer or a minor cut from accidentally touching a sharp edge.
- **Inflicted:** A sprain or significant bruise in a child not involved in corresponding physical activities or a pattern of recurring injuries without plausible explanations.

Accidental Burns

Nature of Accidental Burns

- **Scalds from Hot Liquids**
 - **Characteristics:** Uniform burn depth, often covering a large area; usually second-degree burns.
 - **Common Sites:** Hands, arms, lower limbs; splash patterns are typical.
- **Contact Burns**
 - **Characteristics:** Burns conforming to the shape of the hot object, usually with well-demarcated edges; often first or second-degree burns.
 - **Common Sites:** Hands or fingers, sometimes forearms.



Mechanisms of Injury

- **Scalds**
 - **Common Causes:** Pulling down a container with hot liquid, accidental spills during cooking or serving, hot bath water.
 - **Pattern:** Splash or flow patterns indicating the direction of the liquid movement.
- **Contact Burns**
 - **Common Causes:** Touching hot surfaces like stoves, irons, or heaters, often out of curiosity or accidentally during play.
 - **Pattern:** Clear, distinct marks mirroring the object's shape.

Interpretation Considerations

- **Consistency with Scenario:** The burn pattern should match the reported incident (e.g., a spill would create a splash pattern).
- **Child's Development and Mobility:** The ability of the child to reach the burn source and the likelihood of engaging in activities leading to burns.

Additional Red Flags for Abuse

- **Symmetrical Burns:** Especially in places hard for the child to reach by themselves.
- **Burns in Non-Mobile Infants:** Suggestive of inflicted injury as they cannot reach hot objects themselves.
- **Repeated Burn Incidents:** Multiple burn injuries of various ages are concerning.
- **Delay in Seeking Care:** Late or no medical treatment for significant burns.

Examples of Accidental vs. Inflicted Injury

- **Accidental Burns:**
 - A toddler pulls a cup of hot tea from a table, causing a splash-pattern scald on the arm.
 - A child touches the hot plate of an iron, resulting in a burn on the palm that mirrors the iron's shape.
- **Inflicted Burns:**
 - Burns with clear lines or shapes in unusual locations for accidental contact, such as on the buttocks or back.
 - Immersion burns with a distinct waterline, suggesting the child was forcibly held in hot liquid.



Bite Marks and Animal-Related Injuries

Bites from Other Children

1. Nature of the Injury

- **Characteristics:** Usually superficial with clear teeth marks. They are typically less severe than adult bites. Additionally, the impression marks on the skin will be consistent in size with an adult mouth versus a child's mouth.
- **Common Sites:** Often on accessible body parts like arms, hands, or face.

2. Mechanisms of Injury

- **Common Settings:** Daycare, playgroups, or during playtime interactions.
- **Behavioral Context:** Occurs often in younger children who may bite as a response to stress, frustration, or as a part of exploring their environment.

3. Interpretation Considerations

- **Size and Shape:** Child bite marks are smaller with less force, distinguishing them from adult bites.
- **Number and Frequency:** Multiple bites or recurring incidents may indicate issues in the childcare setting.

4. Red Flags for Abuse

- **Adult-Sized Bite Marks:** Larger, more defined bite marks may indicate adult involvement.
- **Location and Severity:** Bites in concealed areas or that are excessively deep or severe.

5. Examples

- **Accidental/Typical:** A toddler at daycare shows a small, superficial bite mark on the forearm from another child during a dispute over a toy.
- **Inflicted/Atypical:** Bite marks on a child's back or thigh, appearing too large to be from another child.

Animal-Related Injuries

1. Nature of the Injury

- **Characteristics:** Can range from minor scratches to more severe bites, depending on the animal and situation.
- **Common Sites:** Extremities (hands, arms, legs), face (especially in smaller children).



2. Mechanisms of Injury

- **Common Causes:** Household pets reacting to rough play, fear, or being provoked.
- **Accidents:** Incidental scratches from normal interactions with pets.

3. Interpretation Considerations

- **Family's Pet History:** Knowledge of the pet's behavior and previous interactions.
- **Consistency with Animal Behavior:** Injuries should match typical behavior for the type of animal (e.g., cat scratches, dog bites).

4. Red Flags for Abuse

- **Discrepancy in History:** The injury does not align with the reported interaction with the animal.
- **Severity or Pattern:** Unusually severe injuries or multiple wounds suggesting provocation or lack of supervision.

5. Examples

- **Accidental:** A child receives a scratch on the arm while playing with the family cat.
- **Concerning:** Multiple deep bite marks from a family dog in a situation where the child was unsupervised or the animal's aggressive history is known but ignored.

Key Points in Initial Investigative Information Interpretation

Consistency of Injury with History

- **Thorough Evaluation:** The injury should logically correspond to the child's age, abilities, and the described incident. For example, a non-mobile infant is unlikely to sustain injuries from climbing or running.
- **Red Flags:** Inconsistencies or changes in the story, especially when the severity or type of injury does not align with the explained cause.
- **Non-Offending Parents' Language:** Likely to provide a consistent, detailed account that aligns with the child's developmental stage and known activities. May express concern, confusion, or guilt about the incident.
- **Offending Parents' Language:** May offer vague, changing, or implausible explanations. There might be a lack of concern for the severity of the injury or defensiveness when questioned.



Multiple Injuries at Different Healing Stages

- **Patterns of Healing:** Observing injuries at various stages of healing can suggest ongoing harm. However, in active children, especially those learning to walk or play sports, repeated minor accidents can result in bruises or cuts in various healing stages.
- **Contextual Factors:** The child's level of activity, history of previous injuries, and environmental risks should be considered.
- **Non-Offending Parents' Language:** They may acknowledge the child's active nature or specific incidents leading to each injury. They might also express worry about the child's repeated accidents.
- **Offending Parents' Language:** Often lack detailed explanations for each injury or may be dismissive of concerns raised about the number or variety of injuries. There might be a tendency to generalize or minimize the significance of the injuries.

Family and Social Context

- **Environmental Influences:** The overall safety of the living environment, presence of stressors (such as financial hardship, substance abuse), and the quality of family relationships can impact injury risk and interpretation.
- **Parenting Practices:** Understanding the parenting style and disciplinary practices used in the home can provide insights into potential injury causes.
- **Non-Offending Parents' Language:** Typically demonstrate concern for the child's well-being, openness about family dynamics, and willingness to seek help or advice. They may speak positively about the child, showing empathy and understanding.
- **Offending Parents' Language:** Possible signs include negative or critical language about the child, viewing the child as burdensome or problematic. They may exhibit a lack of insight into the child's needs or deflect questions about family dynamics.

Additional Considerations

- **Behavioral Observations:** Non-verbal cues and interactions between the parent and child during questioning can be revealing. For instance, comfort-seeking behavior from the child towards the parent, or the parent's comfort-providing actions, are noteworthy.
- **Expert Consultation:** In ambiguous cases, consulting with child welfare professionals, pediatricians specializing in child abuse, or psychologists can provide valuable perspectives.