

When does a child **need referral** for further evaluation?

*The majority of pediatric patients' conditions may be addressed with confidence in an office setting with a minimum of diagnostic testing or radiologic evaluation. Some patients, however, who complain of **head injury**, **headache**, **abdominal pain** and **chest pain** may present with subtle, unusual or concerning elements that may be harbingers of serious or even critical illness. The following clinical clues and tips regarding risk stratification of pediatric patients who have these common problems can help appropriately direct this high-risk population to care settings where more in-depth evaluation is available.*

Headaches

Most pediatric headaches are benign. Worrisome headaches that may suggest further evaluation (e.g., those that affect the child's life and routine activities) include headaches that:

- Disturb a child's sleep, and/or are worse in the morning
- Induce vomiting
- Interfere with play and school activities because of the discomfort and/or the clumsiness or cognitive disturbances they cause.
- Result in personality changes such as irritability.

Presumably minor head injury

Risk stratification of minor head injuries is a controversial subject. The following guidelines can help steer higher-risk patients toward more detailed evaluation that often includes a computed tomography scan of the head. Consider further evaluation and advanced imaging for pediatric patients:

- Experiencing loss of consciousness that requires intervention, such as trying to rouse the patient.
- Who don't remember the event (amnesia may be a proxy for LOC).
- If they have prolonged lethargy or decreased activity for more than one hour.
- With three or more vomiting episodes or two episodes within one hour. Note:

Some vomiting following a closed head injury can be expected.

- Who have fallen out of car seats or out of their parent's arms. It may be difficult to evaluate the infant otherwise.
- Who appear to have had a minor event but displaying evidence of injury to the scalp (e.g., a hematoma). Studies have shown a correlation between scalp trauma and intracranial injury.

While seizures following a closed head injury are not often indicative of intra-cranial injury, parents may be frightened and request referral.

Chest pain

Chest pain in children is usually benign. When should you be concerned?

- Children with chest pain more centrally located and associated with shortness of breath are of greater concern than those complaining of left lower chest pain.
- Those with central discomfort and shortness of breath warrant further evaluation.
- Certain diseases with new onset chest pain, such as sickle cell anemia and cystic fibrosis, warrant comprehensive workups to assess potential complications of the underlying disease.
- Chest pain following a recent febrile illness is suggestive of Kawasaki disease or a cardiomyopathy and warrants additional evaluation.

Abdominal pain

Abdominal pain represents one of the most common, yet challenging, entities in pediatrics to risk stratify. Appendicitis, intussusception and ovarian torsion can frequently masquerade as more benign forms of abdominal pathology such as gastroenteritis. A few rules of thumb include:

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1. Gastroenteritis should not present with significant persistent pain.
2. Presence of diarrhea does not rule out the presence of worrisome pathology.
3. Biliary vomiting always merits further evaluation (including diagnostic imaging).
4. Lethargy in young children with abdominal pain may represent intussusception.
5. The presentation of ovarian torsion in young female patients is exceedingly nonspecific and difficult to diagnose clinically. A strong clinical suspicion regarding this diagnosis warrants a diagnostic ultrasound study.

Determining when to refer patients for further evaluation at a pediatric emergency department is always challenging. Conditions that alter significantly the child's lifestyle or produce persistent visceral discomfort should be evaluated in a facility with the capability for diagnostic imaging, serial assessments and sub-specialist consultation. 🌐

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