



Initial Assessment of the Ill Child (ABCDE Approach)

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1. Definition

The **ABCDE approach** is a structured, rapid assessment and management method used for any critically ill or injured child. It prioritizes identification and treatment of **life-threatening conditions** in order of severity (**Airway** → **Breathing** → **Circulation** → **Disability** → **Exposure**).

Principle: Treat abnormalities immediately as they are found—do not wait until the assessment is completed.

2. Clinical Presentation

Children requiring ABCDE assessment may present with:

Airway problems

- Stridor
- Gurgling
- Snoring
- Inability to speak or cry
- Choking
- Cyanosis

Breathing problems

- Tachypnea
- Bradypnea/apnea
- Increased work of breathing
- Retractions
- Nasal flaring
- Grunting
- Wheezing
- Crackles

- Hypoxemia

Circulation problems

- Tachycardia
- Bradycardia (late sign)
- Weak pulses
- Delayed capillary refill (>2–3 sec)
- Cool extremities
- Hypotension (late sign)
- Altered mental status
- Reduced urine output

Disability

- Altered consciousness
- Irritability
- Lethargy
- Seizures
- Confusion
- Unequal pupils

Exposure

- Rash (meningococemia, anaphylaxis)
 - Trauma
 - Burns
 - Petechiae
 - Fever
 - Hypothermia
 - Signs of dehydration
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3. Diagnostic Approach

Initial impression (within seconds)

Use the **Pediatric Assessment Triangle (PAT)**:

- Appearance
- Work of breathing
- Circulation to skin

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If abnormal → Proceed immediately to ABCDE.

Step 1: Airway

Assess

- Can the child speak or cry?
- Airway sounds
- Secretions
- Foreign body
- Facial trauma

Immediate treatment

- Position airway
 - Suction secretions
 - Jaw thrust/chin lift
 - Oropharyngeal or nasopharyngeal airway if indicated
 - Remove foreign body if visible
 - High-flow oxygen
 - Call for expert help if airway obstruction persists
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Step 2: Breathing

Assess

- Respiratory rate

- Oxygen saturation
- Chest expansion
- Breath sounds
- Work of breathing

Treat

- Oxygen
 - Bag-mask ventilation if inadequate breathing
 - Bronchodilator if wheezing
 - Treat pneumothorax if suspected
 - CPAP or mechanical ventilation when indicated
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Step 3: Circulation

Assess

- Heart rate
- Blood pressure
- Pulses
- Capillary refill
- Skin temperature
- Urine output

Treat

- IV/IO access
 - Fluid bolus (when appropriate)
 - Blood products if hemorrhage
 - Treat arrhythmias
 - Inotropes/vasopressors if shock persists
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Step 4: Disability

Assess

AVPU

- Alert
- Voice
- Pain

- Unresponsive

Check

- Pupils
- Blood glucose
- Seizures
- GCS if needed

Treat

- Correct hypoglycemia
 - Stop seizures
 - Protect airway
 - Treat raised intracranial pressure if suspected
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Step 5: Exposure

Assess

- Entire body
- Rash
- Trauma
- Burns
- Bleeding
- Temperature
- Hydration

Treat

- Prevent hypothermia
 - Control bleeding
 - Treat injuries
 - Look for hidden causes
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4. Differential Diagnosis

Think systematically.

Airway

- Foreign body aspiration
 - Croup
 - Epiglottitis
 - Anaphylaxis
 - Airway trauma
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Breathing

- Asthma
 - Bronchiolitis
 - Pneumonia
 - Pneumothorax
 - Pulmonary edema
 - Congenital heart disease
 - Metabolic acidosis
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Circulation

- Septic shock
 - Hypovolemic shock
 - Cardiogenic shock
 - Anaphylactic shock
 - Obstructive shock
 - Arrhythmia
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Disability

- Hypoglycemia
 - Meningitis
 - Encephalitis
 - Status epilepticus
 - Stroke
 - Toxic ingestion
 - Raised intracranial pressure
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Exposure

- Sepsis
 - Trauma
 - Burns
 - Child abuse
 - Heat stroke
 - Hypothermia
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5. Investigations

Perform **after stabilization** unless immediately lifesaving.

Bedside

- Pulse oximetry
- Blood glucose
- ECG
- Temperature
- Blood pressure

Laboratory

- CBC
- Blood gas
- Electrolytes
- Renal function
- Liver function
- Lactate
- Blood cultures (before antibiotics if possible)

Imaging (when indicated)

- Chest X-ray
 - FAST ultrasound (trauma)
 - Echocardiography
 - CT brain (after stabilization)
 - CT trauma
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6. Management Algorithm

Ill child

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PAT

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ABCDE

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Identify life-threatening problem

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Treat immediately

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Reassess ABCDE

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Identify underlying diagnosis

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Definitive treatment

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Monitor response

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Disposition:

- Ward
 - PICU
 - Operating room
 - Transfer
 - Discharge
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7. Drug Summary Table

Situation	First-line treatment	Typical pediatric dose
Hypoxemia	Oxygen	Titrate to SpO ₂ ≥94% (or disease-specific target)
Hypoglycemia	Dextrose	D10W 5 mL/kg IV (0.5 g/kg glucose)
Anaphylaxis	IM Epinephrine (1 mg/mL, 1:1000)	0.01 mg/kg IM , max 0.5 mg, repeat every 5–15 min if needed
Asthma	Salbutamol	2.5–5 mg nebulized (or MDI with spacer according to age)
Septic shock	Isotonic crystalloid	10–20 mL/kg bolus, reassess after each bolus
Seizure	IV Lorazepam	0.1 mg/kg IV (max 4 mg)
Seizure (no IV)	Buccal Midazolam	0.3–0.5 mg/kg
Suspected bacterial sepsis	Broad-spectrum IV antibiotics	Administer within 1 hour after cultures if feasible

Always reassess after every intervention before proceeding further.

8. Admission Criteria

Admit children with:

- Respiratory distress
 - Oxygen requirement
 - Shock
 - Altered mental status
 - Persistent seizures
 - Need for IV therapy
 - Significant dehydration
 - Serious infection
 - High-risk comorbidities
 - Inadequate home observation
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9. Referral Criteria

Urgent referral to pediatric emergency/PICU if:

- Airway obstruction
 - Respiratory failure
 - Shock refractory to fluids
 - Need for vasoactive drugs
 - Mechanical ventilation
 - Persistent altered consciousness
 - Status epilepticus
 - Severe trauma
 - Suspected raised intracranial pressure
 - Cardiac arrest/post-resuscitation care
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10. Follow-up

Following stabilization:

- Repeat ABCDE frequently
 - Continuous monitoring of:
 - Heart rate
 - Respiratory rate
 - Blood pressure
 - Oxygen saturation
 - Urine output
 - Neurological status
 - Review laboratory and imaging results
 - Escalate care if deterioration occurs
 - Arrange appropriate specialty follow-up after discharge
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11. Clinical Pearls

- **Airway always comes first.**
- Treat life-threatening abnormalities immediately—do not delay for investigations.
- **Hypotension is a late sign of pediatric shock.**
- Tachycardia may be the earliest indicator of serious illness.
- Reassessment after each intervention is essential.
- Consider **hypoglycemia in every child with altered mental status.**
- Use the Pediatric Assessment Triangle for rapid initial recognition.
- Establish **IV or IO access early** in unstable children.
- Keep children warm to prevent worsening shock and coagulopathy.

12. Common Mistakes in Exams and Practice

- Performing investigations before stabilization.
 - Forgetting to reassess after interventions.
 - Waiting for hypotension before diagnosing shock.
 - Missing airway obstruction because oxygen saturation is initially normal.
 - Delaying antibiotics in septic shock.
 - Failing to check blood glucose in an unconscious child.
 - Administering excessive fluid in suspected cardiogenic shock without reassessment.
 - Ignoring temperature control and hypothermia prevention.
 - Not calling for senior help early.
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13. Key Take-home Messages

1. **ABCDE is the universal approach to every critically ill child.**
 2. **Treat as you assess—do not complete the examination before intervening.**
 3. Use the **Pediatric Assessment Triangle** for rapid recognition of critical illness.
 4. Airway obstruction and respiratory failure require immediate action.
 5. **Hypotension is a late sign of shock in children.**
 6. Reassess after every intervention using the ABCDE sequence.
 7. Check blood glucose early in any child with altered consciousness or seizures.
 8. Early oxygen, vascular access, fluids (when appropriate), and timely antibiotics save lives.
 9. Escalate care promptly when stabilization is unsuccessful or advanced support is needed.
 10. Early recognition and systematic management improve outcomes more than delayed definitive diagnosis.
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High-Yield Examination Box (Must Know)

Scenario	First priority
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Unconscious child	Airway → Breathing → Check glucose
Severe respiratory distress	Oxygen → Airway support → Bronchodilator/ventilation as indicated
Shock	IV/IO access → Fluid bolus (10–20 mL/kg if appropriate) → Reassess → Vasoactive support if needed
Seizure	Airway → Oxygen → Glucose → Benzodiazepine
Suspected sepsis	ABC stabilization → Cultures (if feasible) → IV antibiotics within 1 hour → Fluid resuscitation
Trauma	Follow ABCDE while controlling catastrophic hemorrhage and maintaining cervical spine protection

Key Guideline References

- **European Resuscitation Council (ERC).** European Resuscitation Council Guidelines 2021: Paediatric Life Support. *Resuscitation*. 2021;161:327–387.
- **American Heart Association.** Pediatric Advanced Life Support (PALS) Guidelines (2020, with current scientific updates).
- **World Health Organization.** *Pocket Book of Hospital Care for Children*, 3rd edition.
- **Advanced Life Support Group.** *Advanced Paediatric Life Support: The Practical Approach*, latest edition.