Pediatric Vital Signs and Drug Doses for EMS

Normal vitals by age, the hypotension rule, length-based weight and common prehospital pediatric doses

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PEDIATRIC VITAL SIGNS BY AGE FOR EMS

National EMS model guideline ranges (4-5 and 5-6 years combined; pulse 80-140 at 4-5). Sleeping pulses run lower.

AGE	PULSE (AWAKE)	RESP. RATE	SYSTOLIC BP
Newborn	100-205	30-60	67-84
Up to 1 year	100-190	30-60	72-104
1-2 years	100-190	24-40	86-106
2-3 years	98-140	24-40	86-106
3-4 years	80-140	24-40	89-112
4-6 years	75-140	22-34	89-112
6-10 years	75-140	18-30	97-115
10-12 years	75-118	18-30	102-120
12 years and older	60-100	15-20	110-131

SAFETY Hypotension in a child 1 to 10 years old: systolic under 70 + (2 x age in years). A falling blood pressure is a late sign; a fast pulse, slow capillary refill and altered mental status come first.

ESTIMATING WEIGHT

- Use a length-based tape (or your agency's system) for any child who fits on it; it gives weight, doses and equipment sizes together.
- Treat patients up to about 40 kg or 14 years as pediatric for dosing; protocols vary.
- Tapes are least accurate in heavier and overweight children; use the actual weight if a reliable one is known.
- A weight-based dose should never exceed the adult maximum.

COMMON PREHOSPITAL PEDIATRIC DOSES

National EMS model guideline and 2025 pediatric resuscitation doses. Verify with your length-based tape and protocol.

DRUG	USE	DOSE	MAX
Epinephrine 1 mg/mL IM	Anaphylaxis	0.15 mg under 25 kg; 0.3 mg 25 kg or more (0.01 mg/kg)	0.3 mg; repeat q5-15 min
Epinephrine 0.1 mg/mL IV/IO	Cardiac arrest	0.01 mg/kg (0.1 mL/kg)	1 mg; q3-5 min
Dextrose	Glucose 60 mg/dL or less	0.5-1 g/kg: D10 5-10 mL/kg (newborn 2 mL/kg)	Adult 25 g
Glucagon IM/IN	Low glucose, no IV	0.5 mg under 20 kg; 1 mg 20 kg or more	1 mg
Naloxone	Opioid overdose, slow breathing	0.1 mg/kg IV, IM or IN	2 mg IV/IM; 4 mg IN
Midazolam	Active seizure	0.2 mg/kg IM or IN; 0.1 mg/kg IV/IO	10 mg IM/IN; 4 mg IV
Fentanyl	Moderate to severe pain	1 mcg/kg IN, IM, IV or IO	100 mcg first dose
Adenosine	Stable SVT	0.1 mg/kg rapid push, then 0.2 mg/kg	6 mg, then 12 mg
Amiodarone	VF/pulseless VT	5 mg/kg IV/IO	300 mg
Isotonic fluid	Shock	20 mL/kg bolus, reassess (10 mL/kg if cardiogenic)	60 mL/kg, then call medical direction

EXAM TIP Electricity: defibrillation 2 J/kg, then 4 J/kg (up to 10 J/kg or the adult dose); synchronized cardioversion 0.5-1 J/kg, then 2 J/kg.

WORKED EXAMPLE: A 15 KG CHILD

- Arrest epinephrine: 0.01 x 15 = 0.15 mg = 1.5 mL of 0.1 mg/mL.
- Seizure midazolam IN: 0.2 x 15 = 3 mg.
- Dextrose 0.5 g/kg: 7.5 g = 75 mL of D10.
- Fluid bolus: 20 x 15 = 300 mL, then reassess.
- First shock: 2 x 15 = 30 J.

SAFETY Always verify with your length-based tape and protocol, say the dose aloud, and have a partner check the drug, concentration and volume before you give it.

Sources (5) are listed with links at medicbasics.com/sheets/pediatric-vitals-and-doses.html. For education and exam preparation only. Not medical advice; follow current guidelines and your institution's protocols. Medic Basics is an independent study aid not affiliated with any certifying body.