



AIRWAY

Airway Equipment

| ZONE | 3 kg | 4 kg | 5 kg | PIN | RED | PUR | YEL | WHI | BLU | ORG | GRN |
|-------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|--------------|--------------|
| Weight (kg) | 3 | 4 | 5 | 6-7 | 8-9 | 10-11 | 12-14 | 15-18 | 19-23 | 24-29 | 30-36 |
| ET Tube (mm) | 3.5 unc/ 3.0 cuff | 3.5 unc/ 3.0 cuff | 3.5 unc/ 3.0 cuff | 3.5 unc/ 3.0 cuff | 3.5 unc/ 3.0 cuff | 4.0 unc/ 3.5 cuff | 4.5 unc/ 4.0 cuff | 5.0 unc/ 4.5 cuff | 5.5 unc/ 5.0 cuff | 5.5 cuff | 6.0 cuff |
| Lip-Tip (cm) | 9-9.5 | 9.5-10 | 10-10.5 | 10-10.5 | 10.5-11 | 11-12 | 12.5-13.5 | 14-15 | 15.5-16.5 | 17-18 | 18.5-19.5 |
| Suction | 8F | 8F | 8F | 8F | 8F | 8-10F | 10F | 10F | 10F | 10F | 12F |
| L-Scope blade | 1 St. | 1 St. | 1 St. | 1 St. | 1 St. | 1 St. | 2 St./Cvd. | 2 St./Cvd | 2 St./Cvd | 2-3 St./Cvd. | 2-3 St./Cvd. |
| Stylet | 6F | 6F | 6F | 6F | 6 | 6F | 10F | 10F | 10F | 14F | 14F |
| Oral Airway | 50mm | 50mm | 50mm | 50mm | 50mm | 60mm | 60mm | 60mm | 70mm | 80mm | 80mm |
| NP Airway | 14F | 14F | 14F | 14F | 14F | 18F | 20F | 22F | 24F | 26F | 26F |
| BVM (min vol mLs) | 450 | 450 | 450 | 450 | 450 | 450 | 450 | 450-750 | 750-1000 | 750-1000 | 1000 |
| LMA | 1 | 1 | 1 | 1.5 | 1.5 | 2 | 2 | 2 | 2-2.5 | 2.5 | 3 |

AGE ESTIMATION CHART

| COLOR | WEIGHT | AGE |
|--------|----------|-----------|
| GREY | 3-5 kg | < 3 mo |
| PINK | 6-7 kg | 3-5 mo |
| RED | 8-9 kg | 6-11 mo |
| PURPLE | 10-11 kg | 12-24 mo |
| YELLOW | 12-14 kg | 2 yrs |
| WHITE | 15-18 kg | 3-4 yrs |
| BLUE | 19-23 kg | 5-6 yrs |
| ORANGE | 24-29 kg | 7-9 yrs |
| GREEN | 30-36 kg | 10-11 yrs |

Airway Differences

| | Infants | Adults |
|------------------------|-------------------------------------|--------------------------|
| Head | Large prominent occiput—flexed neck | Flat occiput |
| Tongue | Relatively larger | Relatively smaller |
| Epiglottis | Omega sign or “U” shape | Flat, flexible |
| Vocal Cords | Short, concave | Perpendicular to trachea |
| Smallest Diameter | Cricoid ring, below cords | Vocal cords |
| Cartilage | Soft | Firm |
| Secretions | Increased | Normal |
| Main Breathing Orifice | Preferential nose breathers | Either, mainly mouth |

RSI MEDICATIONS

| ZONE | 3 kg | 4 kg | 5 kg | PINK | RED | PUR | YEL | WHI | BLU | ORG | GRN |
|-----------------|--------|--------|--------|--------|--------|-------|-------|-------|-------|-------|-------|
| Weight (kg) | 3 | 4 | 5 | 6-7 | 8-9 | 10-11 | 12-14 | 15-18 | 19-23 | 24-29 | 30-36 |
| PRE | | | | | | | | | | | |
| Atropine | 0.06mg | 0.08mg | 0.1mg | 0.13mg | 0.17mg | 0.2mg | N/A | N/A | N/A | N/A | N/A |
| INDUCTION | | | | | | | | | | | |
| Etomidate | 0.9mg | 1.2mg | 1.5mg | 2mg | 2.5mg | 3.2mg | 4mg | 5mg | 6.3mg | 8mg | 10mg |
| Ketamine | 6mg | 8mg | 10mg | 13mg | 17mg | 20mg | 26mg | 33mg | 42mg | 53mg | 66mg |
| Propofol | 9mg | 12mg | 15mg | 20mg | 25mg | 32mg | 40mg | 50mg | 63mg | 80mg | 100mg |
| PARALYSIS | | | | | | | | | | | |
| Succinylcholine | 6mg | 8mg | 10mg | 13mg | 17mg | 20mg | 26mg | 33mg | 40mg | 53mg | 66mg |
| Rocuronium | 3mg | 4mg | 5mg | 7mg | 9mg | 10mg | 13mg | 17mg | 21mg | 27mg | 33mg |
| MAINTENANCE | | | | | | | | | | | |
| Vecuronium | 0.3mg | 0.4mg | 0.5mg | 0.7mg | 0.9mg | 1mg | 1.3mg | 1.7mg | 2.1mg | 2.7mg | 3.3mg |
| Lorazepam | 0.15mg | 0.2mg | 0.25mg | 0.3mg | 0.4mg | 0.5mg | 0.6mg | 0.8mg | 1mg | 1.3mg | 1.6mg |

BREATHING

Ventilator Settings

| Zone | 3 kg | 4 kg | 5 kg | PINK | RED | PUR | YEL | WHI | BLU | ORG | GRN |
|-----------------------|--|-------|-------|-------|-------|--------|--------|---------|---------|---------|---------|
| Tidal Vol. (mL) | 20-30 | 24-40 | 30-50 | 40-65 | 50-85 | 65-105 | 80-130 | 100-165 | 125-210 | 160-265 | 200-330 |
| Ventilator Rate (BPM) | 20-25 | 20-25 | 20-25 | 20-25 | 20-25 | 15-25 | 15-25 | 15-25 | 12-20 | 12-20 | 12-20 |
| Insp. Time (sec) | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.7 | 0.7 | 0.7 | 0.8 | 0.8 | 0.8 |
| PEEP | 3-5 cm; Avoid peak pressures >40 or mean >30 | | | | | | | | | | |
| PIP | Start at 16, avg. 20-30 cm, increase by increments of 2 until appropriate minute ventilation | | | | | | | | | | |

Mechanical Ventilation Considerations

Support Modes—spontaneous breathing

Pressure Support:

Fixed pressure; variable volume w/every sensed breath.

Volume Support:

Fixed TV; pressure variable w/every senses breath-based on proximity to goal vol.

CPAP: (Continuous Positive Airway Pressure)

The ventilator always maintains pressure in the circuit; patient takes breath → ventilator increases flow.

NAVA: (Neurally Adjusted Ventilatory Assist)

Support varies depending on sensed diaphragmatic effort.

Non-invasive Ventilation: (Bipap™)

Can have different inspiratory & expiratory pressures, or straight CPAP.

Control Modes— all breaths controlled

PRVC: (Pressure Regulated Volume Control):

Tidal volume set; delivered w/ a decelerating flow pattern to try to keep peak pressure under a set limit.

Pressure Control:

Set pressure over PEEP for each breath.

Volume Control:

Set TV delivered at constant flow rate—Seldom used.

SIMV: (Synchronized Intermittent Mandatory ventilation):

A hybrid between Control and Support. A portion of the breaths (the SIMV breaths) are controlled, the remaining spontaneous breaths are supported. SIMV can be done w/ any type of breath (PRVC, PC or VC).

Normal Pediatric Respiratory Rates

| Age | Rate (breaths per minute) |
|-----------------------|---------------------------|
| Infant (birth–1yr) | 30–60 |
| Toddler (1–3yrs) | 24–40 |
| Preschooler (3–6yrs) | 22–34 |
| School-age (6–12yrs) | 18–30 |
| Adolescent (12–18yrs) | 12–16 |

Chest Tube Sizes

| Weight (kg) | Pneumothorax/Transudate | Exudate | Pigtail 5F-12F |
|-------------|-------------------------|---------|----------------|
| <3 | 8-10 | 10-12 | 8.5 |
| 3-8 | 10-12 | 12-16 | 8.5 |
| 8-15 | 12-16 | 16-20 | 10-12 |
| 16-40 | 16-20 | 20-28 | 12-14 |
| >40 | 20-24 | 28-36 | 12-14 |

Airway

DOPE Mnemonic

Dislodged tube

Obstructed tube

Pneumothorax

Equipment failure

CIRCULATION

Pediatric ECG Values

| Age | Heart Rate (bpm) | QRS Axis (degrees) | PR interval (sec) | QRS Duration (sec) | R V1 mm | S V1 mm | R V6 mm | S V6 mm | SV1-RV6 mm |
|-----------|------------------|--------------------|-------------------|--------------------|------------|-------------|------------|------------|------------|
| <1 day | 94-155 (122) | 58-168 (+135) | 0.08-0.16 (0.11) | 0.03-0.07 (0.05) | 5-27 (14) | 0.5-23 (9) | 0-12 (5) | 0.2-10 (4) | 2-27 (13) |
| 1-3 days | 91-158 (124) | 65-171 (+134) | 0.08-0.14 (0.11) | 0.03-0.07 (0.05) | 5-27 (15) | 0.5-21 (10) | 0.1-12 (5) | 0.2-10 (3) | 2-28 (14) |
| 3-7 days | 90-166 (128) | 76-168 (+133) | 0.07-0.14 (0.10) | 0.03-0.07 (0.05) | 3-25 (13) | 0.5-17 (7) | 0.5-12 (5) | 0.4-10 (4) | 2-25 (12) |
| 7-30 days | 106-182 (148) | 65-159 (+110) | 0.07-0.14 (0.10) | 0.03-0.08 (0.05) | 3-22 (11) | 0.5-14 (14) | 3-17 (8) | 0.2-10 (3) | 3-22 (12) |
| 1-3 mo | 120-179 (149) | 31-115 (+75) | 0.07-0.13 (0.10) | 0.03-0.08 (0.05) | 3-19 (10) | 0.5-13 (5) | 5-22 (12) | 0.3-7 (3) | 6-29 (17) |
| 3-6 mo | 105-185 (142) | 7-105 (+60) | 0.07-0.15 (0.11) | 0.03-0.08 (0.05) | 3-20 (10) | 0.5-17 (6) | 6-23 (14) | 0.2-10 (3) | 7-35 (19) |
| 6-12 mo | 107-168 (132) | 7-98 (+54) | 0.07-0.15 (0.11) | 0.03-0.08 (0.05) | 2-20 (9) | 0.5-18 (7) | 6-23 (13) | 0.2-8 (2) | 7-33 (19) |
| 1-3 yrs | 90-151 (119) | 8-100 (+55) | 0.08-0.15 (0.11) | 0.04-0.08 (0.06) | 3-18 (9) | 1-21 (9) | 6-23 (14) | 0.1-7 (2) | 7-38 (22) |
| 3-5 yrs | 73-137 (108) | 7-104 (+55) | 0.09-0.16 (0.12) | 0.04-0.08 (0.06) | 2-18 (8) | 2-22 (10) | 9-25 (15) | 0.1-6 (2) | 13-42 (25) |
| 5-8 yrs | 65-133 (100) | 10-140 (+66) | 0.09-0.16 (0.12) | 0.04-0.08 (0.06) | 1-13 (7) | 3-24 (12) | 9-27 (17) | 0.1-4 (1) | 13-47 (28) |
| 8-12 yrs | 63-129 (92) | 9-115 (+61) | 0.09-0.16 (0.13) | 0.04-0.09 (0.06) | 0.5-10 (6) | 3-26 (12) | 10-26 (17) | 0-4 (1) | 15-45 (28) |
| 12-16 yrs | 66-120 (86) | 11-133 (+58) | 0.09-0.18 (0.14) | 0.04-0.09 (0.07) | 0.5-10 (5) | 3-22 (11) | 7-23 (15) | 0-4 (1) | 11-42 (25) |

Pediatric Blood Pressure

Hypotension = <70 + (age in years x 2)

| Normal BP Ranges | Systolic (mm Hg) | Diastolic (mm Hg) | Mean Arterial (mm Hg) |
|---------------------------|------------------|-------------------|-----------------------|
| Birth (12hr-<1000g) | 39-59 | 16-36 | 28-42 |
| Birth (12hr, 3kg) | 60-76 | 31-45 | 48-57 |
| Neonate (96hr) | 67-84 | 35-53 | 45-60 |
| Infant (1-12m) | 72-104 | 37-56 | 50-62 |
| Toddler (1-2yr) | 86-106 | 42-63 | 49-62 |
| Preschooler (3-5yr) | 89-112 | 46-72 | 58-69 |
| School-aged child (6-7yr) | 97-115 | 57-76 | 66-72 |
| Pre-adolescent (10-12yr) | 102-120 | 61-80 | 71-79 |
| Adolescent (13-15yr) | 110-131 | 64-83 | 73-84 |

Initial Maintenance Fluid Rates

| Bodyweight (kg) | Maintenance Rate |
|-----------------|--|
| 0-10 | 4 mL/kg/hr |
| 11-20 | 40 mL/ + 2 mL/kg/hr for each kg over 10 kg |
| 21-70 | 60 mL/ + 1 mL/kg/hr for each kg over 20 kg |

Ex: Maintenance rate for a 15 kg child
40 + 10 (5 kg x 2) = 50 mL/hr
(or see weight/length-based dosing system)

Cardiac Arrest Medications

| | |
|------------------|--|
| Dopamine Drip | 2-20 mcg/kg/minute |
| Epinephrine | 0.01 mg/kg OR 0.1 mL/kg of 1:10,000 concentration q 3-5 min |
| Epinephrine Drip | 0.1-2 mcg/kg/minute |

Pediatric Arrhythmia Management

| | |
|----------------|--|
| Defibrillation | 1 st shock 2 J/kg, 2 nd shock 4 J/kg, subsequent shocks ≥4 J/kg, max 10 J/kg or adult max dose |
| SVT | Start at 0.5-1 J/kg, if not effective, increase to 2 J/kg |

QTc = QT (sec)/√RR(sec) = 0.xyz(sec) = xyz (milli sec)

Blood Transfusion Formula (1 unit pRBC's ≈ 250-300 ml's)

Vol to be transfused (mls) = Patient Weight (kg) x Aimed for increment of Hb (g/dl) x 5

Or 10-20 ml/kg for hemorrhagic shock

AVPU

| | |
|---|---------------------------------|
| A | Awake |
| V | Responds to Verbal Stimulation |
| P | Responds to Painful stimulation |
| U | Unresponsive |

Celsius to Fahrenheit Conversion Chart

| CELSIUS (°C) | FAHRENHEIT (°F) | CELSIUS (°C) | FAHRENHEIT (°F) |
|--------------|-----------------|--------------|-----------------|
| 26 | 78.8 | 35 | 95 |
| 27 | 80.6 | 36 | 96.8 |
| 28 | 82.4 | 37 | 98.6 |
| 29 | 84.2 | 38 | 100.4 |
| 30 | 86 | 39 | 102.2 |
| 31 | 87.8 | 40 | 104 |
| 32 | 89.6 | 41 | 105.8 |
| 33 | 91.4 | 42 | 107.6 |
| 34 | 93.2 | 43 | 109.4 |

Conversion Equation:

°C x 1.8 + 32 = °F OR °F - 32 / 1.8 = °C

ABUSE: TEN 4 FACES P

Any bruising to the:

| | |
|---|----------------|
| Torso, Ears, or Neck | 4 yrs or under |
| Frenulum, Angle of jaw, Cheek, Eyelid, Sclera | |
| Pattern | |
| Or ANY bruising 4 months or under | |
| is a significant indicator of child abuse. | |

DISABILITY/ENVIRONMENT

PEDIATRIC GLASGOW COMA SCALE (PGCS)

| | Infant <1yr | Child 1-4 yrs | 4-Adult |
|---------------|----------------------------|--|-----------------------|
| Eyes | | | |
| 4 | Open | Open | Open |
| 3 | To voice | To voice | To voice |
| 2 | To pain | To pain | To pain |
| 1 | No response | No response | No response |
| Verbal | | | |
| 5 | Coos, babbles | Oriented, Speaks, interacts | Oriented and Alert |
| 4 | Irritable cry, consolable | Confused speech, disoriented, consolable | Disoriented |
| 3 | Cries persistently to pain | Inappropriate words, inconsolable | Nonsensical speech |
| 2 | Moans to pain | Incomprehensible, agitated | Moans, unintelligible |
| 1 | No response | No response | No response |
| Motor | | | |
| 6 | Spontaneous movement | Spontaneous movement | Follows commands |
| 5 | Withdraws to touch | Localizes pain | Localizes pain |
| 4 | Withdrawals to pain | Withdrawals to pain | Withdrawals to pain |
| 3 | Decorticate flexion | Decorticate flexion | Decorticate flexion |
| 2 | Decerebrate extension | Decerebrate extension | Decerebrate extension |
| 1 | No response | No response | No response |

Burn Resuscitation Fluid Rates/Target Urine Output By Type & Age

PAIN MANAGEMENT & SEDATION

| Acute Pain Medications | |
|--|--|
| Generic (Brand) | Pediatric (<12 yo) |
| Acetaminophen (Tylenol®) | 15 mg/kg PO q 4-6 h Max: 90 mg/kg/day |
| Acetaminophen IV (Ofirmev®) Use only if not tolerating PO | <50 kg 15 mg/kg IV q 6 h or 12.5 mg/kg IV q 4 h prn pain Max: 75mg/kg/day |
| Ibuprofen (Motrin®) (> 6 months) | 10 mg/kg PO q 6 to 8 h Max: 40 mg/kg/day or 2400 mg/day |
| Ketorolac (Toradol®) (> 6 months) | 0.5-1 mg/kg/ dose IM/IV q 6 h Max: 15-30 mg q 6 h x 5 day |
| Naproxen (Naprosyn®) (> 2 years) | 5 mg/kg PO q 12 h Max: 1000 mg/day |
| Morphine | IV 0.1 mg/kg q 2-4 h |
| Hydromorphone (Dilaudid®) | IV 0.015 mg/kg q 4 h |
| Fentanyl | IV 1-2 mcg/kg q 1-2 h (max 50 mcg/dose) |
| Hydrocodone/APAP 325 mg (Norco 5, 7.5, 10 tabs) Hycet (7.5 mg/325 mg per 15 mL) | 0.1-0.2 mg/kg q 4-6 h |

| Intranasal Medications | | | |
|------------------------|---|--|---|
| Generic | Dose | Max Dose | Comments |
| Fentanyl | IN: 1.5-2 mcg/kg q 1-2 h Neb: 1.7-3 mcg/kg | 3 mcg/kg or 100 mcg | Use most concentrated form with an atomizer. |
| Midazolam (5 mg/mL) | IN: 0.3 mg/kg | 10 mg or 1 mL per nostril (total 2 mL) | 1 mL/nare max. Divide dose equally between each nare. |

| Ketamine (Ketalar®) | |
|----------------------------|--|
| Indications | Starting Dose |
| Procedural Sedation | IV: 1-2mg/kg; IM: 4-5 mg/kg |
| Sub-dissociative Analgesia | IV: 0.1 to 0.3 mg/kg; IM: 0.5-1.0 mg/kg; *IN: 0.5-1.0 mg/kg |
| Excited Delirium Syndrome | IV: 1 mg/kg; IM: 4-5 mg/kg |

| Nonpharmacologic Interventions* | |
|----------------------------------|--|
| Physical (Sensory) Interventions | Cognitive-Behavioral Interventions |
| Comfort positioning | Psychological preparation, education, or coaching |
| Cutaneous stimulation | Distraction tools: movies, games, videos, apps, toys with light/sound, bubbles |
| Nonnutritive sucking | Relaxation techniques (breathing, meditation, etc.) |
| Pacifier +/- sucrose solution | Music and singing |
| Pressure, massage | Guided imagery |
| Hot or Cold treatments | Conversation and therapeutic language |

*Used alone or in conjunction with pharmacologic interventions. Intervention based on age, developmental stage, setting and situation.

For more information on nonpharmacologic interventions or to download a distraction toolkit, visit

<http://pami.emergency.med.jax.ufl.edu/resources/new-approaches-to-pain-course/>



<http://pami.emergency.med.jax.ufl.edu>

| Procedural Sedation and Analgesia | | |
|-----------------------------------|--|---|
| Generic (Brand) | Pediatric | Comments |
| Ketamine (Ketalar®) | >3 mo: IV 1-2 mg/kg; additional doses 0.5 mg/kg IV q 10-15 min prn; IM 4 - 5 mg/kg | Risk of laryngospasm increases with active asthma, upper respiratory infection and procedures involving posterior pharynx; vomiting occurs, commonly consider premedication. Not recommended in patients < 3 mo. |
| Midazolam (Versed®) | IV 0.05-0.1 mg/kg IN 0.2-0.3 mg/kg (IN max 10 mg) | Initial max dose 2 mg. |
| Propofol (Diprivan®) | IV 1 mg/kg slow push (1-2 min); additional doses 0.5 mg/kg | Risk of apnea, hypoventilation, respiratory depression, rapid changes in sedative depth, hypotension; provides no analgesia |
| Etomidate (Amidate®) | Risk of myoclonus (premedication w/ benzo or opioid can decrease), pain with injection nausea and vomiting, risk of adrenal suppression; provides no analgesia | |
| Ketamine + Propofol | IV ketamine 0.75 mg/kg + propofol 0.75 mg/kg. Additional doses: ketamine 0.5 mg/kg, propofol 0.5-1 mg/kg | See ketamine and propofol comments respectively |
| Dexmedetomidine (Precedex®) | IV 0.5-2 mcg/kg loading dose (over 10 min) followed by 0.5 to 2 mcg/kg/h continuous infusion IN 2-3 mcg/kg | Risk of bradycardia, hypotension, especially with loading dose or rapid infusions, apnea, bronchospasm, respiratory depression |
| Nitrous oxide | 50% N2O/50% O2 inhaled | Do not use if acute asthma exacerbation suspected pneumothorax/other trapped air or head injury with altered level of consciousness |
| Morphine | IV 0.1-0.2 mg/kg, titrated to effect | Monitor mental status, hemodynamics, and histamine release. Requires longer recovery time than fentanyl. Difficult to titrate during procedural sedation due to slower onset and longer duration of action. Reduce dosing when combined with benzodiazepines (combination increases risk of respiratory compromise) |
| Fentanyl | 1-3 yo: 2 mcg/kg; 3-12 yo 1-2 mcg/kg | 100 times more potent than morphine; Rapid bolus infusion may lead to chest wall rigidity. Reduce dosing when combined with benzodiazepines and in elderly. Preferred agent due to rapid onset and short duration. |

COMMON PEDIATRIC PAIN SCALES

Wong-Baker FACES® Pain Rating Scale

| FLACC SCALE | | | | |
|-------------|---------------|--|--|--|
| | | 0 | 1 | 2 |
| 1 | FACE | No particular expression or smile | Occasional grimace or frown, withdrawn or disinterested | Frequent to constant frown, clenched jaw, quivering chin |
| 2 | LEGS | Normal position; relaxed | Uneasy, restless, tense | Kicking or legs drawn up |
| 3 | ACTIVITY | Lying quietly, normal position, easily moves | Squirming, shifting back and forth, tense | Arched, rigid or jerking |
| 4 | CRY | None (awake or asleep) | Moans or whimpers, occasional complaint | Crying steadily, scream or sobs, frequent complaints |
| 5 | CONSOLABILITY | Content, relaxed | Reassured by occasional touching, hugging or being spoken to, distractible | Difficult to console or comfort |

| Weight (kg → lbs) | | | |
|-------------------|-------|------|-------|
| (kg) | (lbs) | (kg) | (lbs) |
| 0 | 0.0 | 37.5 | 82.7 |
| 2.5 | 5.5 | 40 | 88.2 |
| 5 | 11.0 | 42.5 | 93.7 |
| 7.5 | 16.5 | 45 | 99.2 |
| 10 | 22.0 | 47.5 | 104.7 |
| 12.5 | 27.6 | 50 | 110.2 |
| 15 | 33.1 | 52.5 | 115.7 |
| 17.5 | 38.6 | 55 | 121.3 |
| 20 | 44.1 | 57.5 | 126.8 |
| 22.5 | 49.6 | 60 | 132.3 |
| 25 | 55.1 | 62.5 | 137.8 |
| 27.5 | 60.6 | 70 | 154.3 |
| 30 | 66.1 | 72.5 | 159.8 |
| 32.5 | 71.7 | 75 | 165.3 |
| 35 | 77.2 | 77.5 | 170.9 |

1 kg = 2.20 lbs

| Arterial Line Catheter Size by Age/Weight | | |
|---|-------------|--------------------------|
| Age | Weight (kg) | Gauge/French/Length |
| Infant | <10 kg | 24 G or 2.5 F; 2.5 cm |
| Child | 10 - 40 kg | 22 G or 2.5 F; 2.5 cm |
| Adolescent | >40 kg | 20 G |

| Central Venous Line Catheter Size by Age/Weight | | | | |
|---|-------------|----------------|--------------|-------------|
| Age (years) | Weight (kg) | Catheter Gauge | French Gauge | Length (cm) |
| < 1, newborn | 4-8 | 24 | 3.0 | 5-12 |
| <1 | 5-10 | 22 | 3.0-3.5 | 5-12 |
| 1-3 | 10-15 | 20 | 4.0 | 5-15 |
| 3-8 | 15-30 | 18-20 | 4.0-5.0 | 5-25 |
| >8 | 30-70 | 16-20 | 5.0-8.0 | 5-30 |

| Pediatric Trauma Score | | | | | |
|------------------------|--------------------|-------|--------------------|--------------------|-------|
| Clinical Parameter | Parameter Category | Score | Clinical Parameter | Parameter Category | Score |
| Weight (kg) | ≥ 20 | 2 | CNS | Awake | 2 |
| | 10-20 | 1 | | Obtunded/LOC | 1 |
| | <10 | -1 | | Coma/decerebrate | -1 |
| Airway | Normal | 2 | Open Wound | None | 2 |
| | Maintainable | 1 | | Minor | 1 |
| | Unmaintainable | -1 | | Major/penetrating | -1 |
| SBP (mmHg) | ≥90 | 2 | Skeletal | None | 2 |
| | 50-90 | 1 | | Closed fracture | 1 |
| | <50 | -1 | | Open/multiple | -1 |

MISCELLANEOUS INFORMATION

Death Communication Tips: GRIEV_ING*

- G**- gather the family/community; insure that all members are present or identify representatives,
 - Gather your inner strength (who if not you?) and Gather your team- 2 minimum, Doctor, if possible.
- R**- resources; call for support resources available to assist the family/community with their grief or the disaster at hand, i.e. community, hospital, chaplain services, ministers, family, and friends. Create list of resources.
- I**- identify yourself, identify the deceased or injured patient by name, identify the situation, and identify the state of knowledge of the family relative to the events of the day. Identify that you are bringing bad news.
- E**- educate; briefly educate the family as to the events that have occurred, educate them about the current state of their loved one(s), educate others about how they can help and not create more chaos.
- V**- verify that their family member has died or other events/bad news. Be clear! Use the words dead or died, missing, etc. No jargon. Be honest.
 - Space-give the family/community personal space and time for an emotional moment; allow the family time to absorb the information.
 - Stop talking. Family may scream, hit, etc. Protect yourself.
- I**- inquire; ask if there are any questions and answer them to the best of your ability. You don't have to be perfect. You may not have all the answers.
- N**- nuts and bolts; preparation; inquire about organ donation, funeral services, and personal belongings. Offer family opportunity to view the body/the site.
- G**- give them your card, hospital or community information. Offer to answer questions that may arise later. Return their call or establish a call center/resource.

*adapted from Hobgood, C. The educational intervention "GRIEV_ING" improves the death notification skills of residents. Acad Emerg Med. 2005 Apr;12(4):296-301.

Salter-Harris Classification of Physeal Fractures

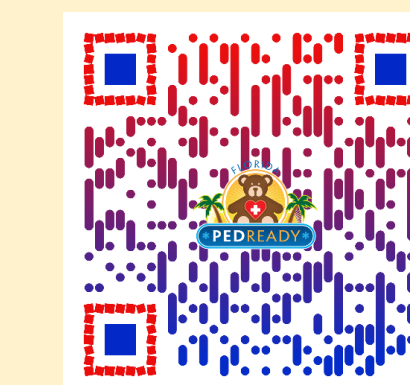
S: Straight Across
A: Above
L: Lower
TE: Through Everything (crushed)
R: Rammed

*most common type

| Normal WBC Values | |
|-------------------|---|
| Age | White Blood Cells (x 10 ⁹ /μL) |
| Birth | 9-30 |
| 1-3 days | 9-38 |
| 4-7 days | 5-21 |
| 7-14 days | 5-20 |
| 15-60 days | 5-20 |
| 2-5 months | 5.5-18 |
| 6 months-1yr | 6.0-17.5 |
| 1-3 years | 6.0-17.0 |
| 3-5 years | 5.5-15.5 |
| 6-10 years | 4.5-14.5 |
| 10-15 years | 4.5-13.5 |
| 15-20 years | 4.5-12.5 |

| Hemoglobin/Hematocrit Normal Pediatric Values | | |
|---|-------------------|----------------|
| Age | Hemoglobin (g/dL) | Hematocrit (%) |
| Term newborn | 18.0-21.5 | 51-68 |
| 1-3 days | 14.0-24.0 | 43-68 |
| 4-7 days | 14.3-22.3 | 42-62 |
| 7-14 days | 12.9-20.5 | 39-59 |
| 14-60 days | 10.7-17.3 | 33-51 |
| 2-5 months | 10.1-14.5 | 30-40 |
| 6 months-1yr | 10.0-13.2 | 30-39 |
| 1-2 years | 10.0-13.5 | 30-40 |
| 2-4 years | 10.5-14.5 | 32-42 |
| 5-7 years | 10.9-14.9 | 33-44 |
| 8-10 years | 10.9-14.9 | 33-44 |
| 10-15 years | 11.4-15.4 | 34-45 |

| Key Pediatric Lab Values | | | |
|--------------------------|-----------------|--|------------------------|
| Lab test | Age | Conventional Units | SI units |
| ALT | <12 mo | 13-45 U/L | 13-45 U/L |
| | 1-3 yr | 5-45 U/L | 5-45 U/L |
| | 4-6 yr | 10-25 U/L | 10-25 U/L |
| | 7-11 yr | 10-35 U/L | 10-35 U/L |
| | 12-13 yr | 10-30 U/L (female) 10-55 U/L (male) | 10-30 U/L 10-55 U/L |
| | >14 yr | 5-30 U/L (female) 10-45 U/L (male) | 5-30 U/L 10-45 U/L |
| ALKALINE PHOSPHATASE | Infant | 150-420 U/L | 150-420 U/L |
| | 2-10 yr | 100-320 U/L | 100-320 U/L |
| | Adolescent | 100-390 U/L | 100-390 U/L |
| AMMONIA | Newborn | 90-150 mcg/dL | 64-107 μmol/L |
| | 0-2 wk | 79-129 mcg/dL | 56-92 μmol/L |
| | Infant/child | 29-70 mcg/dL | 21-50 μmol/L |
| AMYLASE | Adult | 15-45 mcg/dL | 11-32 μmol/L |
| | 0-14 days | 3-10 U/L | 3-10 U/L |
| | 15 days-13 wk | 2-22 U/L | 2-22 U/L |
| AST | 13 wk-1 yr | 3-50 U/L | 3-50 U/L |
| | >1 yr | 25-101 U/L | 25-101 U/L |
| | 0-10 days | 47-150 U/L | 47-150 U/L |
| BICARBONATE | 10 days-24 mo | 9-80 U/L | 9-80 U/L |
| | >24 mo | 15-40 U/L | 15-40 U/L |
| | Newborn | 17-24 mEq/L | 17-24 mmol/L |
| GLUCOSE | Infant | 19-24 mEq/L | 19-24 mmol/L |
| | 2 mo-2 yr | 16-24 mEq/L | 16-24 mmol/L |
| | >2 yr | 22-26 mEq/L | 22-26 mmol/L |
| CSF | Preterm | 20-60 mg/dL | 1.1-3.3 mmol/L |
| | Newborn, <1 day | 40-60 mg/dL | 2.2-3.3 mmol/L |
| | Newborn, >1 day | 50-90 mg/dL | 2.8-5.0 mmol/L |
| WBC Count/μL (median) | Child | 60-100 mg/dL | 3.3-5.5 mmol/L |
| | >16 yr | 70-105 mg/dL | 3.9-5.8 mmol/L |
| | Age | WBC Count/μL (median) | 95th Percentile |
| 0-28 days | 0-12 (3) | 19 | |
| 29-56 days | 0-6 (2) | 9 | |
| Child | 0-7 | | |



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