

PEM Tips and Tricks, Kelly D. Young, MD, MS Harbor-UCLA Medical Center

Primary Resources

PEMsource Tips and Tricks <http://pemsourcesource.org/category/tips-and-tricks/>

AliEM Tricks of the Trade

<https://www.aliem.com/category/emergency-medicine-clinical/tricks-of-the-trade/>

Emergency ‘MacGyver’ Tips for Physicians – Medscape

<https://www.medscape.com/viewarticle/905376>

More Emergency ‘MacGyver’ Tips for Physicians – Medscape

<https://www.medscape.com/viewarticle/912367>

Examining Children

Don’t be scary – get down to their level and use a happy, light, higher tone of voice

Know the characters currently popular with kids, eg Paw Patrol

Have toys for distraction, eg musical watch, glitter wands, animal stethoscope covers

Consider learning a few simple magic tricks

If a child is upset, go away and keep stopping by every so often to unobtrusively observe him/her

Or, can put in a less threatening environment (eg waiting room, corner with toys) to observe

Order of physical exam matters

First, observe unobtrusively from the door: alertness, toxicity, work of breathing, skin color, tone

TICLS: tone, interactiveness, consolability, look/gaze, speech/cry

Auscultate while the child is still calm (before more invasive exam eg ear, throat, abd, GU)

Virtual candle app that patient can “blow out”

<https://www.aliem.com/2010/07/trick-trade-blowing-out-candle/>

Abdominal exam:

1) Press your stethoscope to palpate while “listening”

2) For ticklish children place your hand over theirs to palpate

3) Have the parent examine the abdomen for you

4) Have the parent hold the child upright over their shoulder facing away from you and reach around from behind the child to gently palpate the abdomen

Ear exam:

Position child sitting on parent’s lap, facing to one side, legs between parent’s legs, arms controlled by parent, anchor head against parent’s chest. Flip 180 degrees to examine other ear.

<http://pemsourcesource.org/2019/02/08/pediatric-ear-exams/>

Throat exam:

Child sits facing parent with legs astride parent’s lap, parent leans child back “dentist chair style”

Mnemonics

ABCDEFGH ABC’s and Don’t Ever Forget Glucose

Children have low glycogen stores and become hypoglycemic more easily

Hawaii 5-0 To give dextrose 0.5 gm/kg IV to treat hypoglycemia, give:

D50 at 1 mL/kg ($50 \times 1 = 50$)

D25 at 2 mL/kg ($25 \times 2 = 50$)

D10 at 5 mL/kg ($10 \times 5 = 50$)

To convert % to mg/mL, add a “0” to the end of the % number

Example: 1% Propofol is 10 mg/mL
2% Lidocaine is 20 mg/mL
10% Calcium chloride is 100 mg/mL

<https://www.aliem.com/2012/07/trick-of-trade-converting-to-mgml/>

SAMPLE-PT for trauma patients

Symptoms

Allergies

Medications

Past medical history

Last meal

Events

Pregnancy

Tetanus

Trauma Management

Airway

Breathing

Circulation

Disability

Exposure / Environment (keep pt warm)

FAST / Foley

Glucose, Gastric tube (OG)

Hemoglobins

IVs, Immunization (tetanus, Rh)

Join parents and children

6 H's of PALS = A SHOCK

A	Acid	H+
S	Sugar	Hypoglycemia
H	Hypovolemia	Hypovolemia
O	Oxygen	Hypoxia
C	Cold	Hypothermia
K	K+	Hypo/hyperkalemia

Holliday-Segar rule for maintenance IV fluids rate 4-2-1 rule

0-10 kg = 4 mL/kg/hr or 100 mL/kg/day

10-20 kg = additional 2 mL/kg/hr or 50 mL/kg/day

> 20 kg = additional 1 mL/kg/hr or 20 mL/kg/day

Either calculate total mL/hr, or calculate total mL/day and divide by 24 to get mL/hr

Examples: 5 kg infant gets 4 mL/kg/hr x 5 kg = 20 mL/hr

15 kg child gets 4mL/kg/hr x 10 kg + 2 mL/kg/hr x 5 kg = total 50 mL/hr

Tricks from the Kitchen

Sugar

Use sugar to osmotically decrease edema to aid in reducing a paraphimosis or rectal prolapse
Paraphimosis: mix 50mL D50 + 2% lidocaine jelly and soak a gauze with the mixture, place gauze on swollen area and apply pressure dressing or condom over, leave for an hour

<https://www.aliem.com/2016/08/trick-trade-management-paraphimosis/>

For a rectal prolapse, can pour granulated sugar directly on the prolapsed bowel

To make diy sweet solution for infant procedures: mix a standard packet of table sugar with 15mL of sterile water, give infant 1mL prior to procedure and dip a pacifier in solution

Tea bags

Black or green tea has tannic acid, a natural vasoconstrictor, - wet the tea bag and apply to bleeding socket post tooth extraction <https://www.youtube.com/watch?v=jmZ2iZ07nIo>

Mayonnaise packet

Use to lubricate a finger with a ring stuck on it

Use an oxygen mask strap to wrap the finger, reducing edema, then slip the end under the ring and unwind to remove ring <https://www.aliem.com/2012/08/trick-of-trade-ring-removal-using/>

Coca-Cola

Can be used to unclog a clogged feeding tube

<https://www.ifixit.com/Guide/How+to+Unclog+a+Feeding+Tube/103885>

Can be mixed with activated charcoal to make the charcoal more palatable

Place the charcoal solution in an opaque Styrofoam cup with an opaque lid and have the child drink it with a straw

Honey

Honey 5mL (1 tsp) in warm water, herbal tea, or milk qHS – TID x 3 days can calm a cough

Do not give honey in < 1 year olds

Oduwole O, et al. Honey for acute cough in children. Cochrane Database Syst Rev 2018 Apr 10;4:CD007094

Tabasco

Capsaicin 0.025-0.075% cream applied to the abdomen helps relieve pain and N/V from cannabis hyperemesis syndrome

If no capsaicin cream is available, Tabasco sauce (red or Habanero) has a similar Scoville spiciness rating https://www.medscape.com/viewarticle/905376#vp_4

Milk

Use to store an avulsed tooth if unable to replant right away

If the tooth is dirty, very gently rinse with milk for 10 seconds

<https://castlehilldentalcare.com.au/knocked-out-avulsed-teeth/>

Chocolate syrup

Use to flavor medicine so the child will take it

Can also add medicine to applesauce, yogurt, ice cream, juice, soda

Getting medicines in

Use intranasal medications instead of IV, with a commercially available mucosal atomizer

Ideally 0.3 mL per nares, maximum 1 mL per nares

May have to use more concentrated solutions of medications

Fentanyl 2 mcg/kg for analgesia

Midazolam 0.2 – 0.3 mg/kg for seizure or anxiolysis (max 10 mg)

Ketamine 1 mg/kg for low dose analgesia

Naloxone 2 mg

<https://pemplaybook.org/podcast/intranasal-medications-and-you/>

<https://www.workingmother.com/evil-genius-mom-hacks-to-get-kids-to-take-their-medicine>

Use a diy or commercially sold syringe-pacifier combo to gently syringe medicine into a pacifier

Dip a lollipop into medicine, repeat until medicine is gone

For eyedrops, have the child lay supine and close his/her eyes, place a few drops in the medial corner of the eye – when the child opens the eye the medicine will run into the eye

<https://www.youtube.com/watch?v=d3wtEwx7HxU&app=desktop>

Hospital supplies hacks – new uses for old things

Make a diy mucosal atomizer device with a 3 way stopcock, 14-16 gauge angiocath, syringe, oxygen tubing, and oxygen

<http://pemsources.org/2016/11/29/improvised-mucosal-atomizer-device/>

Use hospital linen to restrain children for procedures

<http://pemsources.org/2016/12/27/restraining-for-procedures/>

Restrain for laceration repair

Cervical spine collar for facial laceration

Arm board + tape for finger laceration

<https://www.aliem.com/2017/11/pediatric-trick-finger-immobilization-technique/>

Tape two tongue blades together to make a nose clip for epistaxis

<https://www.aliem.com/2011/07/trick-of-trade-epistaxis-control-with/>

Use a small glass or a glass blood collection tube to blanch the skin to look for petechiae (also works to look for an anal fissure)

<http://pemsources.org/2016/10/18/are-they-petechiae/>

Sniffing alcohol pads has been shown to reduce nausea / vomiting

<http://thesgem.com/the-sgem-paper-in-a-pic/isopropyl-alcohol-for-nausea/>

An open pad can be held 1-2 cm below the patient's nose, or, alternatively, place the pad in a syringe leaving air in the syringe, and puff alcohol-scented air under the patient's nose

<https://www.medscape.com/viewarticle/912367>

Use stockinette to make a “skyhook” to elevate a patient's extremity by hanging it from an IV pole <https://www.aliem.com/2018/05/tricks-of-the-trade-diy-skyhook/>

Make your own toys in the ED to entertain the children

<http://pemsources.org/2016/09/27/tongue-depressor-puppets-more/>

Child's body for sizing

King BR et al, Ann Emerg Med 1993;22(3):530-4: width of 5th fingernail estimates uncuffed ETT size <https://aneskey.com/tracheal-intubation/>

Ritchie-McLean S et al. Anaesthesia 2018 Oct; 73(10):1207-1213. Middle finger length rounded up to nearest 0.5 estimates uncuffed ETT size, children up to age 12 years

Qing-he Zhou, et al. Paediatr Anaesth 2015 Nov; 25(11):1132-1138. Middle finger length x 3 = ETT depth in cm, children aged 4-14 years studied

Haliloglu M et al. Rev Bras Anesthesiol 2017;67(1):15-20. Ear size = LMA cuff size
http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0034-70942017000100015

Estimating % body surface area (BSA) burned – look to see how many of patient's own palm fit in the burn (2nd and 3rd degree) area <https://www.emnote.org/emnotes/burn-size-estimation>

Child: palm only = 0.5% BSA, whole hand = 1%

Adult (puberty+) palm only = 0.5% BSA, whole hand = 0.8%

Elgie LD, Williams AR. Using age on clothes size label to estimate weight in emergency paediatric patients. Eur J Emerg Med 2012 Oct; 19(5):338-40. When no other way to estimate child's age/weight, look at the clothing size on their clothing tags – can use the age from tag in a formula to calculate estimated weight: (age in months + 9) / 2 or (2 x age in years) + 10

Young, TP et al. Am J Emerg Med 2014 Mar;32(3):243

Quick estimation of child weight – count off on your fingers: left hand = age 1, 3, 5, 7, 9 years, corresponds to right hand = weight 10, 15, 20, 25, 30 kg

<https://twitter.com/ucirvineem/status/409020531124736000>