EMS with Kiddos

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Outline

- Developmental Care and Family Centered Care
- Development
- Communication
- Sensory
- Medical Complexity
- Vital Signs
- Car Seats

Learning Objectives

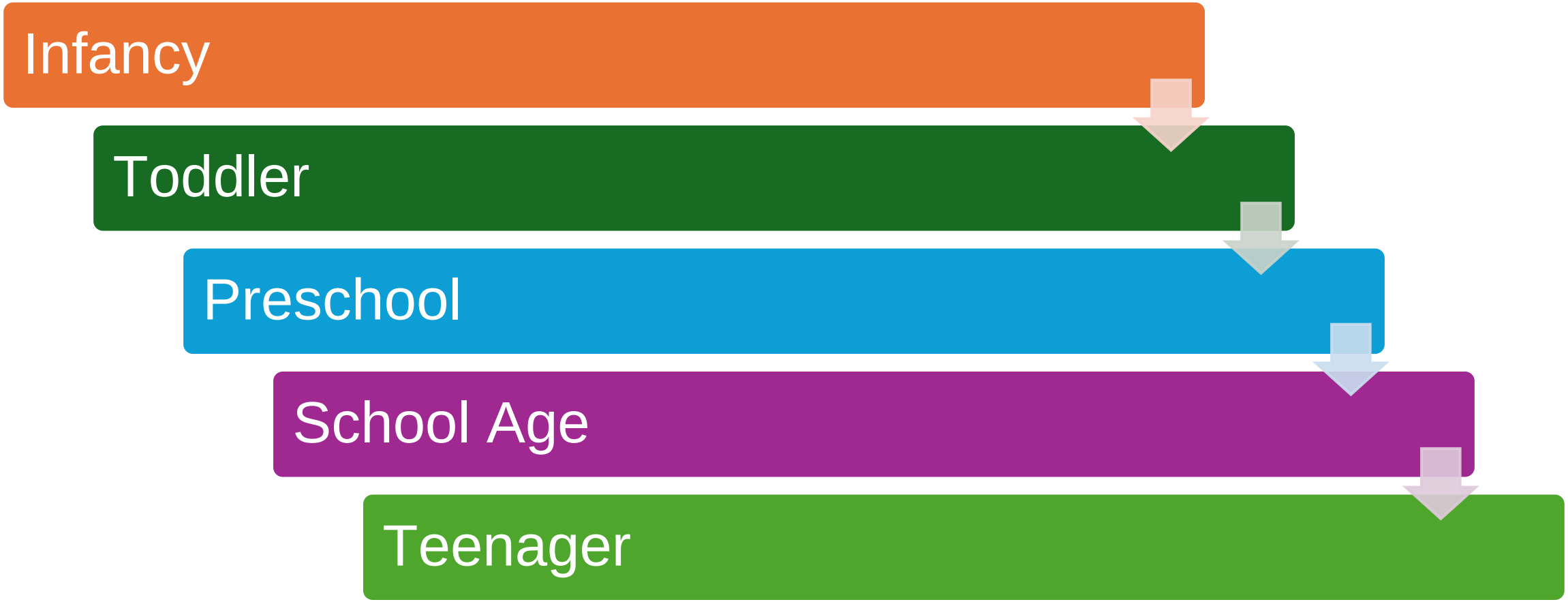
- Understanding developmental care and family centered care in EMS
- Identify alternative communication options
- Understand how sensory processing can impact a child’s responses and how EMS can help regulate them during transport
- Identify some pediatric specific conditions
- Understand how pediatric patients may vary from adult patients
- Understand peds carseat options

Developmental Care

The practice of modifying practice to meet the child's developmental needs

Providing developmentally supportive interventions

Developmental Stages



Developmental Stages

Corrected Age

Developmental Age

Family-Centered Care is a mutually collaborative health care effort between family, patient and provider(s) that helps achieve the best possible outcome for a child experiencing a medical emergency. The foundation of family-centered care is the working partnership between families, patient and providers.

Family Centered Care

Including	Acknowledging	Communicating	Supporting
Including parents in decision making	Acknowledging parent as expert on their child	Communicating with parent throughout the call	Supporting parents emotions

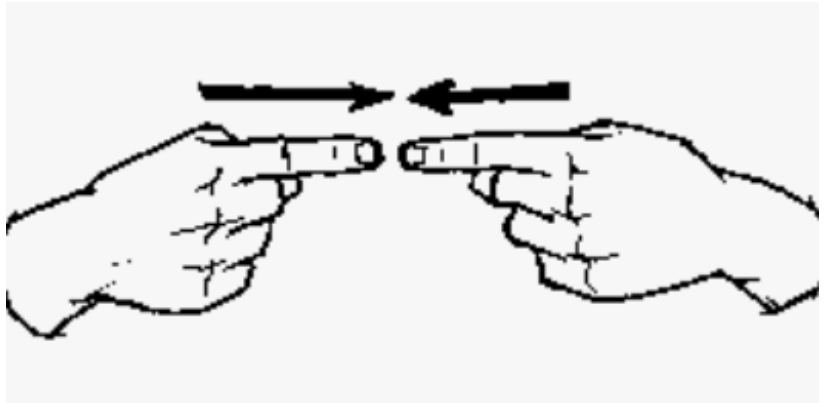
Communication

- Apraxia
- Non-verbal
- Dysarthria
- Dysfluency

- PECs
- Signs
- Increased time
- Familiar listener
- Device


GoTalk 20+
Please
Time out


My Communication Board
I
eat
drink
happy
sad
you
hurt
bathroom
mad
tired
want
where
what
go
stop
look
I like
help
more
leave
my turn
I don't like
no
again
all done



Sensory

Hypo- Responsive

- Under reactive to sensory input
- Need more information to react
- May crave sensory input

Hyper- Responsive

- Over reactive to sensory input
- Sensitive and quick to react
- May avoid sensory input
- Fight or Flight

Sensory

Vision

- Difficulty with eye-hand coordination
- Difficulty with visual discrimination
- Photophobia

Auditory

- Delayed processing
- Inattention
- Easily overwhelmed by sounds
- Difficulty with auditory discrimination

Sensory

Tactile

- Decreased pain response
- Heightened pain response
- Sensitive to textures and temperatures
- Need to get hands clean

Proprioception

- Decreased body awareness
- Uncoordinated
- Decreased pain response
- Heightened pain response

Sensory

Vestibular

- Motion sickness
- Unable to get dizzy
- Constantly on the move

Gustatory/Olfactory

- Crave bold flavors
- Unaware of odors
- Picky eaters

Medical Complex Kiddos

Cardiac	• Atypical vitals
Respiratory	• Trach • NC – super low flow
Orthopedic	• Fragile bones • Limb anomolies
GI	• Ostomy, G-tube, J-tube, NG tube • Prune belly, Gastroschisis, Omphalocele
Neuro	• Shunts • Conditions that impact cognition and tone

Congenital Heart Disease

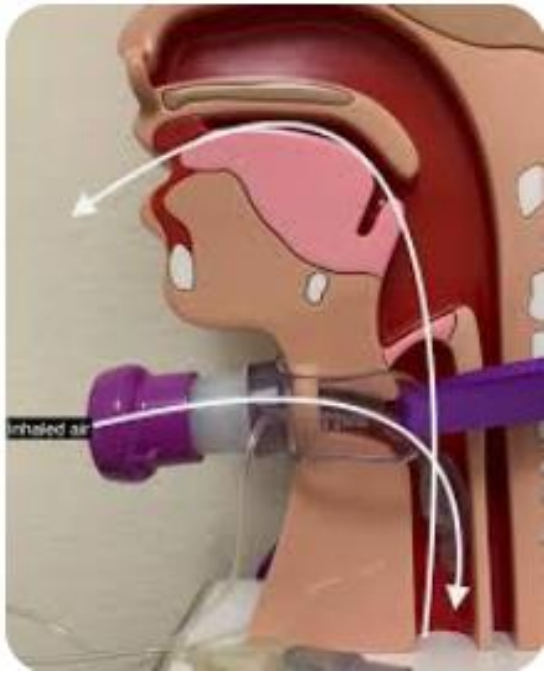
Cyanotic congenital heart disease

- **Left heart obstructive lesions:** These reduce blood flow between the heart and the rest of the body. Examples include hypoplastic left heart syndrome (when your heart is too small on the left side) and interrupted aortic arch (aorta is incomplete).
- **Right heart obstructive lesions:** These reduce blood flow between your heart and lungs (pulmonary blood flow). Examples include tetralogy of Fallot (a group of four anomalies), Ebstein's anomaly, pulmonary atresia and tricuspid atresia (valves don't develop correctly).
- **Mixing lesions:** The body mixes systemic and pulmonary blood flow. One example is transposition of the great arteries, which means the two main arteries leaving your heart are in the wrong place. Another is truncus arteriosus, when your heart has only one main artery, instead of two, to carry blood to your body.

Acyanotic congenital heart disease

- **Hole in the heart:** One of the heart's walls has an abnormal opening. Depending on the location of the hole, this may be called atrial septal defect, atrioventricular canal, patent ductus arteriosus or ventricular septal defect.
- **Problem with the aorta:** It can be too narrow (aortic coarctation). Or the aortic valve may be restricted in opening or have only two flaps instead of three (called bicuspid aortic valve).
- **Problem with the pulmonary artery:** If this artery is too narrow, it's called pulmonary artery stenosis.

Respiratory



- Tracheostomy
  - PMV
  - HME
  - Ask what level/color they suction to
  - Bag the trach
  - Neb mask to trach

Ortho

- Osteogenesis Imperfecta
  - Fragile bones
  - Variable types
  - Infusions help
- Limb Anomalies
  - Arthrogryposis
  - Agenesis
  - Club foot
  - Pretzel Syndrome

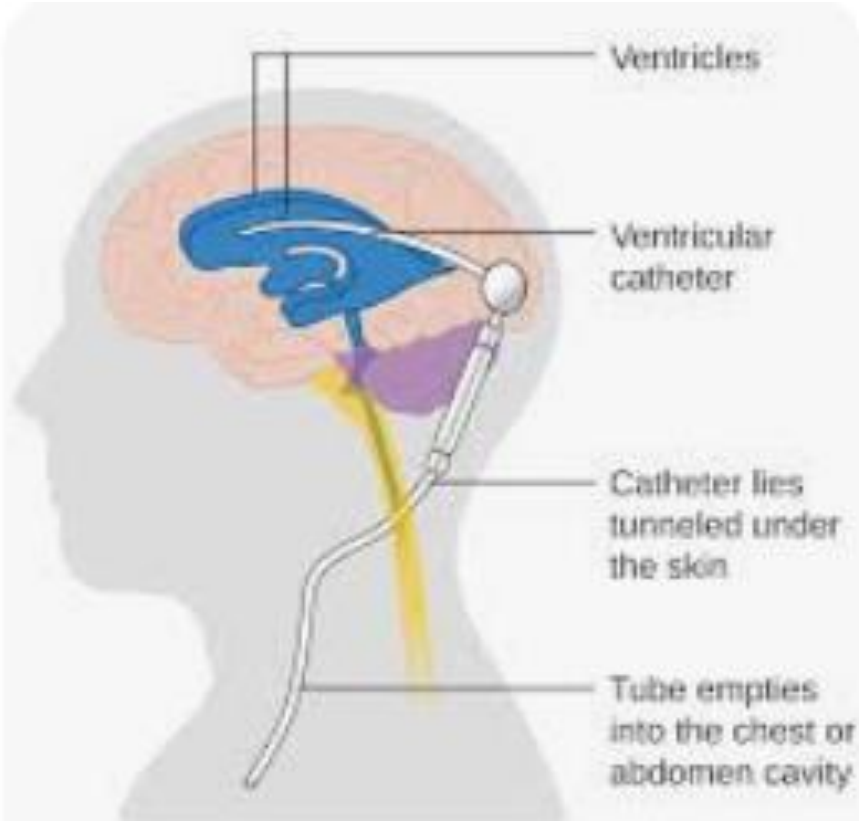
GI

- Types of feeding tubes
  - NG
  - G-tube
  - J-tube
  - TPN
- Types of drainage
  - Peritoneal dialysis
  - Ostomy

- Conditions
  - Prune Belly
  - Gastroschisis
  - Omphalocele
  - Situs Inversus
  - Gastroparesis
  - Hirschsprung's

Neuro

- Shunts
  - Keep magnets away from them
- Developmental Delays
  - Down Syndrome
  - PWS
  - Spina Bifida
  - FAS



Peds are different

- Head to neck ratio – higher risk of spinal injuries
- Larger abdominal organs with less subcutaneous fat
- Body Mass ratio – higher risk of hypothermia
- Skeleton has more cartilage and bend more easily

Vital Signs

Age	Breaths/min
<1 year	30-53
1 to 3 years	22-37
4-5 years	20-28
6-12 years	18-25
13-18 years	12-20

Age	Awake Rate
Newborn	100-205
Infant	100-180
Toddler	98-140
Preschool	80-120
School-age	75-118
Adolescent	60-100

Vital Signs


Appearance
Work of Breathing
Circulation to Skin


STABLE
SHOCK

Appearance - TILCLS

T-
Tone

I-
Interactiveness

C-
Consolability

L –
Look/Gaze

S –
Speech/Crying

Work of Breathing

- Nasal Flaring
- Retractions
- Postures

Work of Breathing

https://www.youtube.com/watch?v=oX3CZnrLxbQ

https://www.youtube.com/watch?v=WMoa_coPOdo

https://www.youtube.com/watch?v=LJVfErMKRi8

Circulation/ Skin

- Skin color – mottled, peri-oral cyanosis
- Cap Refill
- Signs of Shock – vasoconstrict more efficiently

Circulation/ Skin

GCS

Eye Opening	
Spontaneous	4
Speech	3
Pain	2
None	1
Verbal Response	
Coos, Babbles	5
Irritable cries	4
Cries to pain	3
Moans to pain	2
None	1
Motor Response	
Normal spontaneous movement	6
Withdraws to touch	5
Withdraws to pain	4
Abnormal flexion	3
Abnormal extension	2
None	1

DOPE

Displacement: check the endotracheal tube for displacement (right mainstem) or dislodgement

Obstruction: check the ETT for obstruction (mucous plug, kink in ventilator tubing)

Pneumothorax – listen to lung sounds, look at trachea

Equipment failure(unusual): disconnect patient from the ventilator and bag manually

Car seats

- Bucket seat
- Convertible
- Carbed
- Ferno
- Wrap

Car seats

Rear Facing

- Infant “bucket” seats
- Convertible seats
- Safer for their necks
- No danger to their legs

Forward Facing

- Most convertible seats are appropriate to 40-50lbs

Carseats

- Must be rear facing in the ambulance
- Secure the seat using the seatbelt paths
- Pad under the seat to make a flat surface for it to sit on
- Use a seatbelt clip to keep the straps from sliding once secure

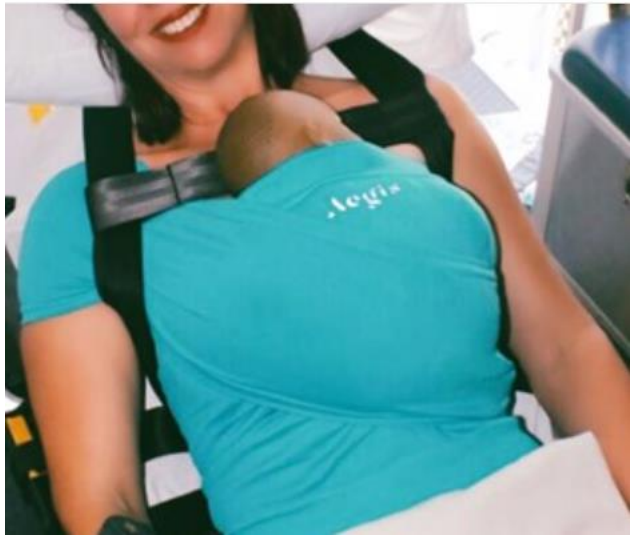
Special Needs Carseats

- Carbed - will lay flat on the stretcher and use the seatbelt paths to secure
- Adapted harness - can be helpful in addition to stretcher straps
- Special Needs seat - very heavy but will allow for head support in developmentally delayed older child

EMS peds transport

1. Carseat from home
2. Ferno/ECR
3. Infant wrap

Never let parent hold child



Questions?