High Tech Kids

Objectives:

Define a High Tech Kid.

Familiarize self with equipment used by high tech kid!

Common conditions encountered with high tech child.

Psychosocial needs of high tech child and their family!

Emergency Care of the high tech kid!

High Tech Kid

defined as a child who is born with or develops a condition that requires assistive devices to assure basic life functions.

Greatest source of info!

Equipment

Mechanical Ventilators

Suction

Tracheostomies

Apnea Monitors

Feeding tubes

Development devices

Transportation Devices

Speech Assistive Devices

Mechanical Ventilators

increased survival rate
of chronically ill

movement to reduce
hospital costs thus
discharge earlier

for children with
hypoventilation and
chronic respiratory
failure

-usually hypoxic and hypercarbic

-most will have a tracheostomy

How do you assess a patient with airway compromise who is intubated?

DOPE

Dislodgement

Obstruction

Pneumothorax

Equipment Failure

Dislodgement

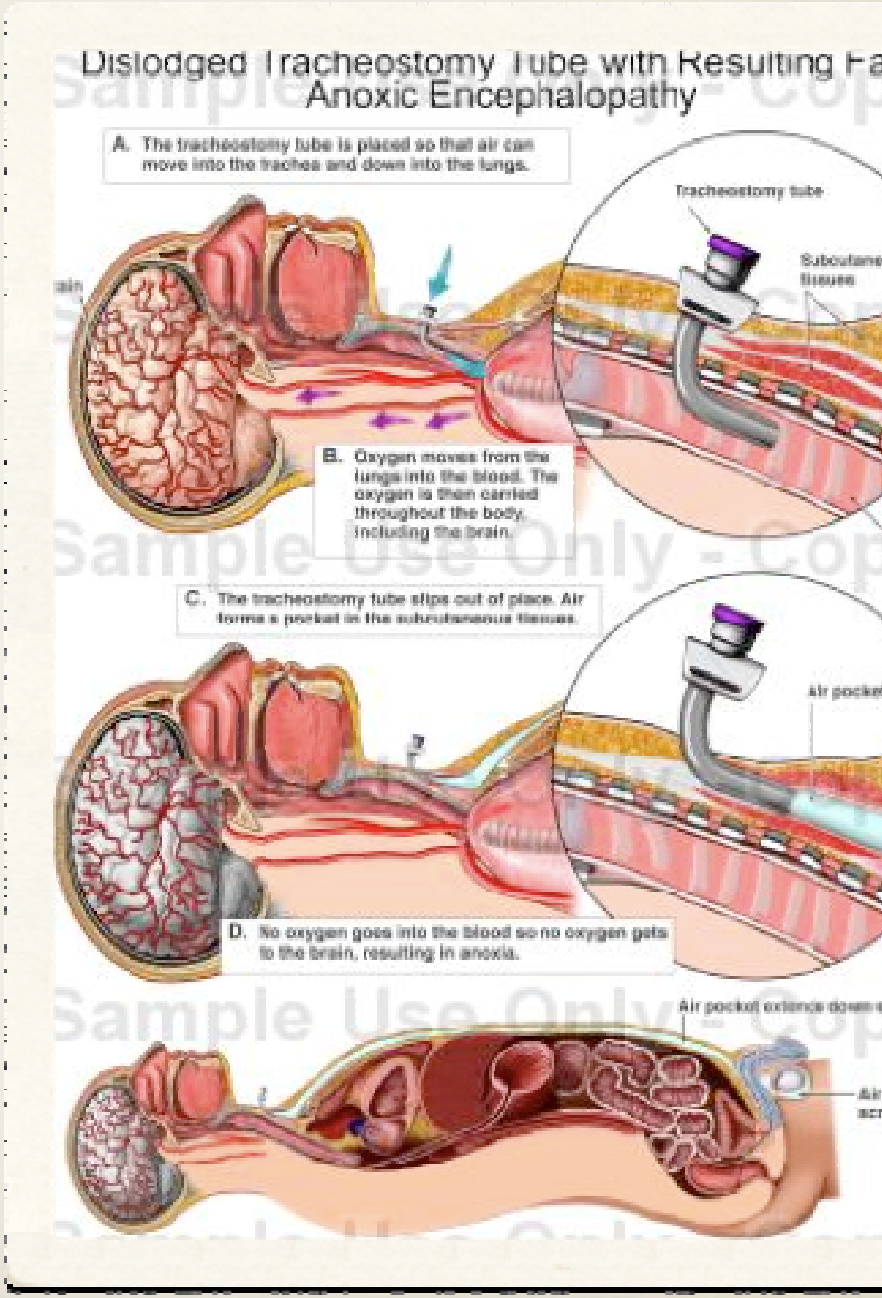
try to ventilate

f unsuccessful place 0.9% saline
et down tube (no more than
10ccs) to see if mucus plug and
suction

f unsuccessful deflate balloon on
trach (if one present) and remove
trach-if replace with new trach
make sure to use obturator

use bag valve mask over face

do not try to replace trach
especially if recently placed as

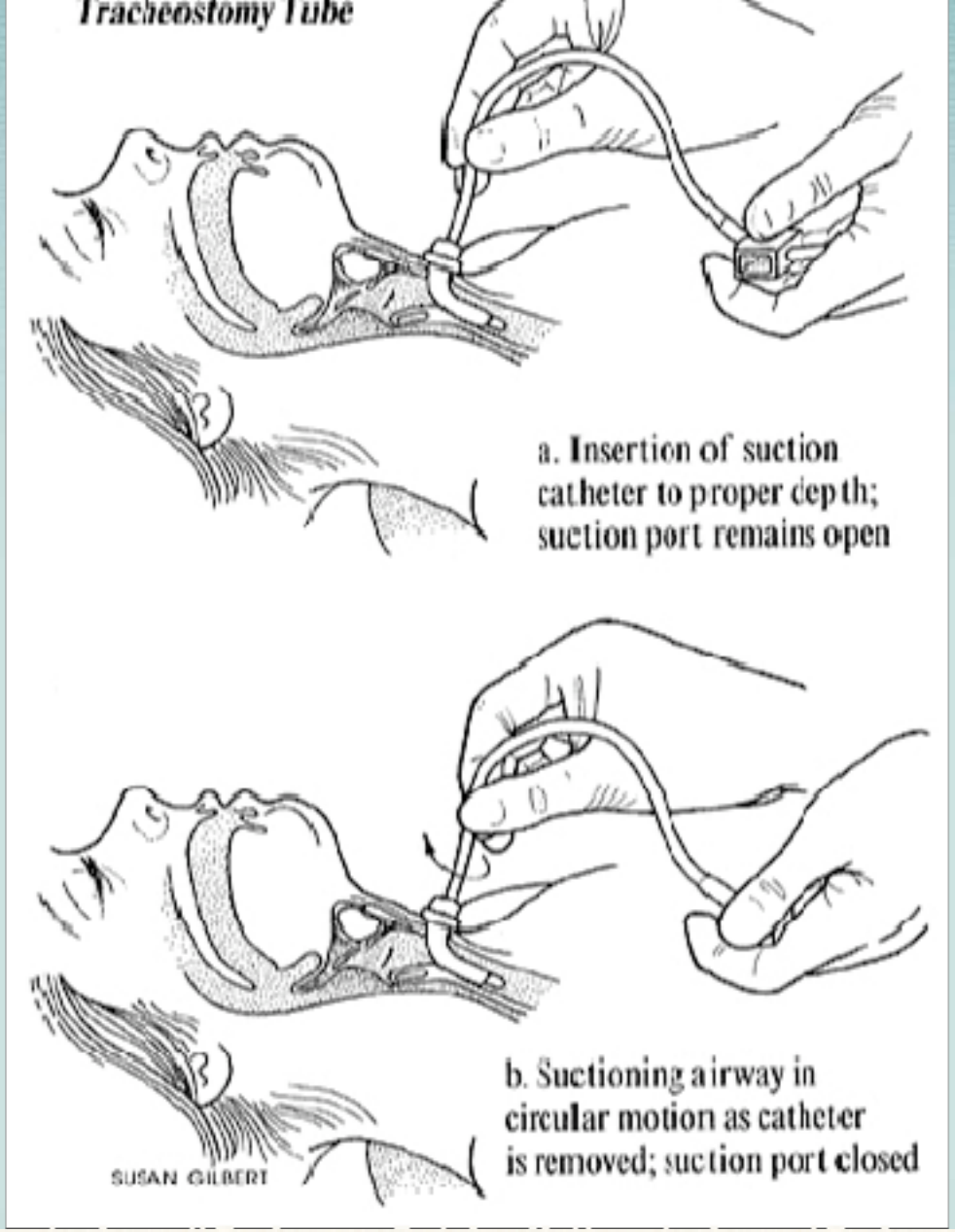


Obstruction

t is more difficult for the child with a tracheostomy to clear secretions adequately by coughing so the tube needs special care to prevent it blocking with secretions

Suction if the following:

- noisy breathing (the sound of air bubbling hrough secretions)
- visible secretions at the tracheostomy ube opening
- a cough with the sound of secretions in he tube
- restlessness, crying (crying also increases he amount of secretions)
- increased respiratory rate, working hard to



Tracheal Suctioning

Suction

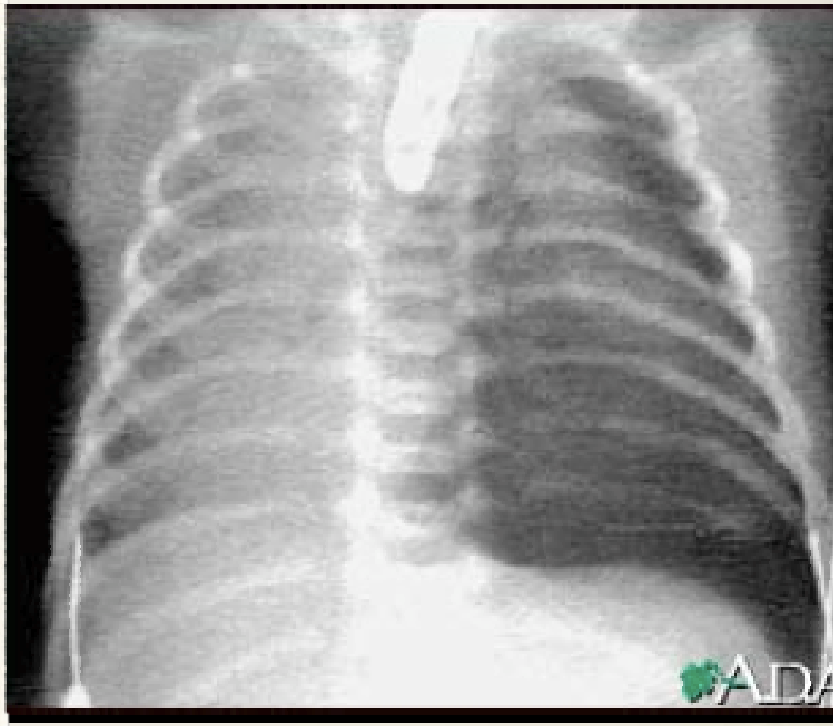
- may have to suction more than one time
- only suction on way out
- no more than 5-6 seconds
- may use saline bullets to loosen secretions
- no more than 100 mmHg suction pressure

Pneumothorax

Premature neonates
on MV are at high risk

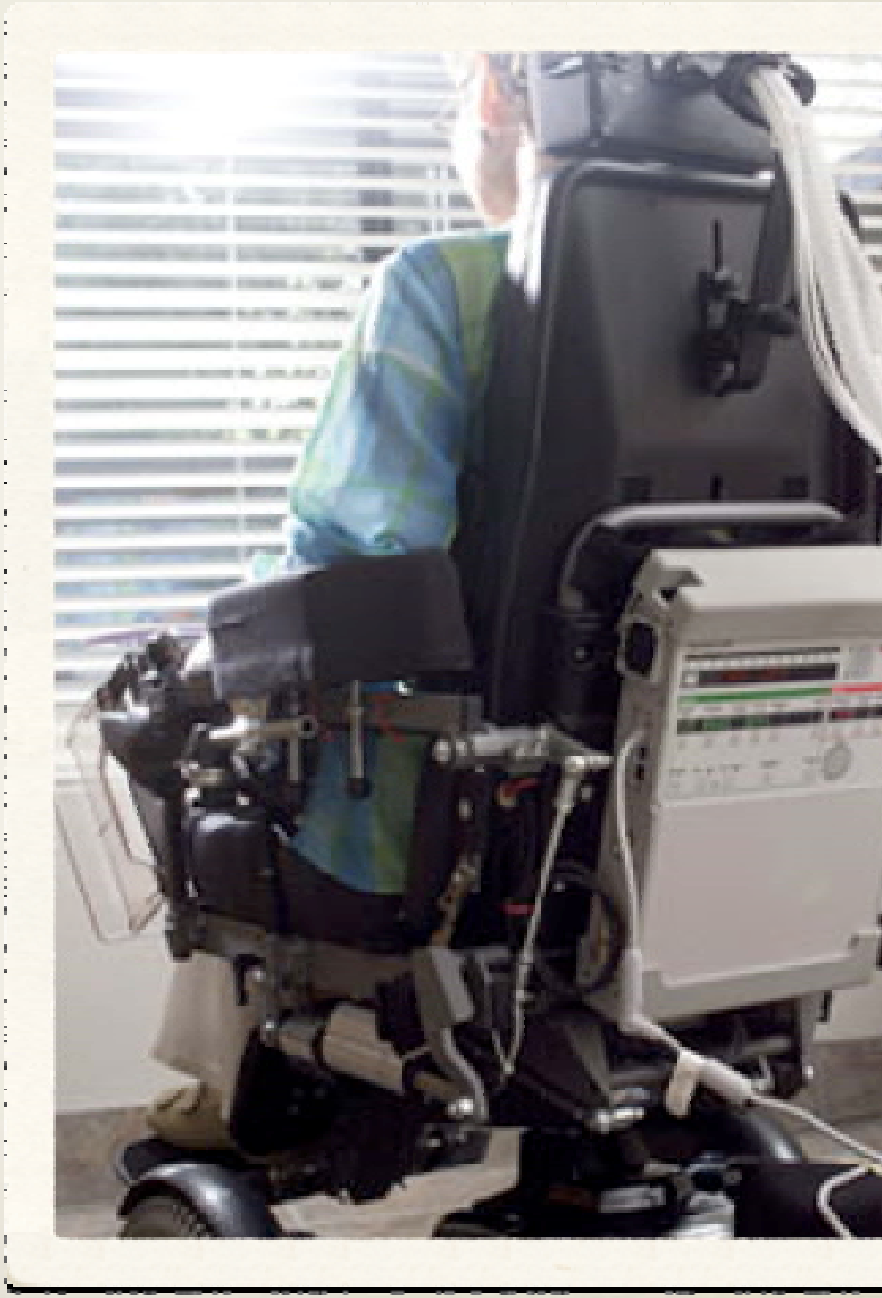
simple or complicated

tension pneumothorax
is a life threatening
emergency



Equipment Failure

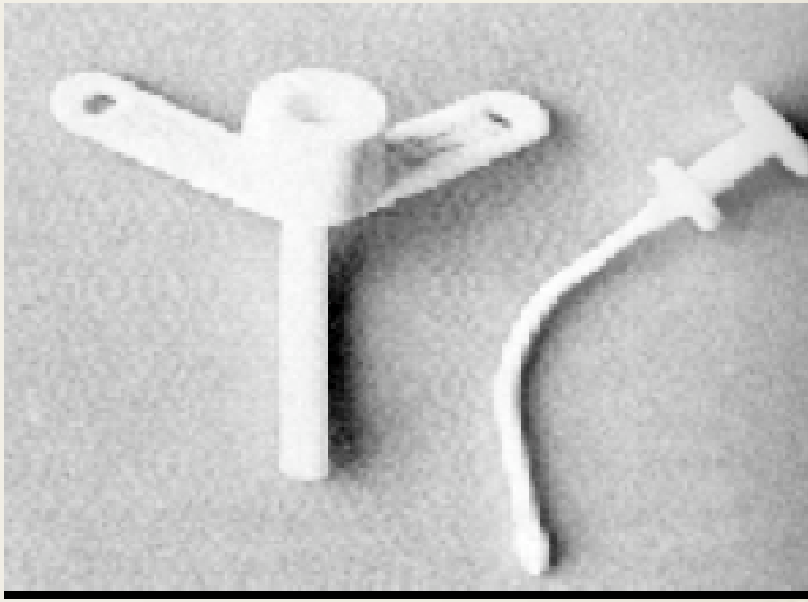
if you suspect this
remove from
equipment
(mechanical ventilator)
and bag using bag
valve trach



Tracheostomies

may be cuffed or uncuffed

remember these bypass normal respiratory passages that filter air

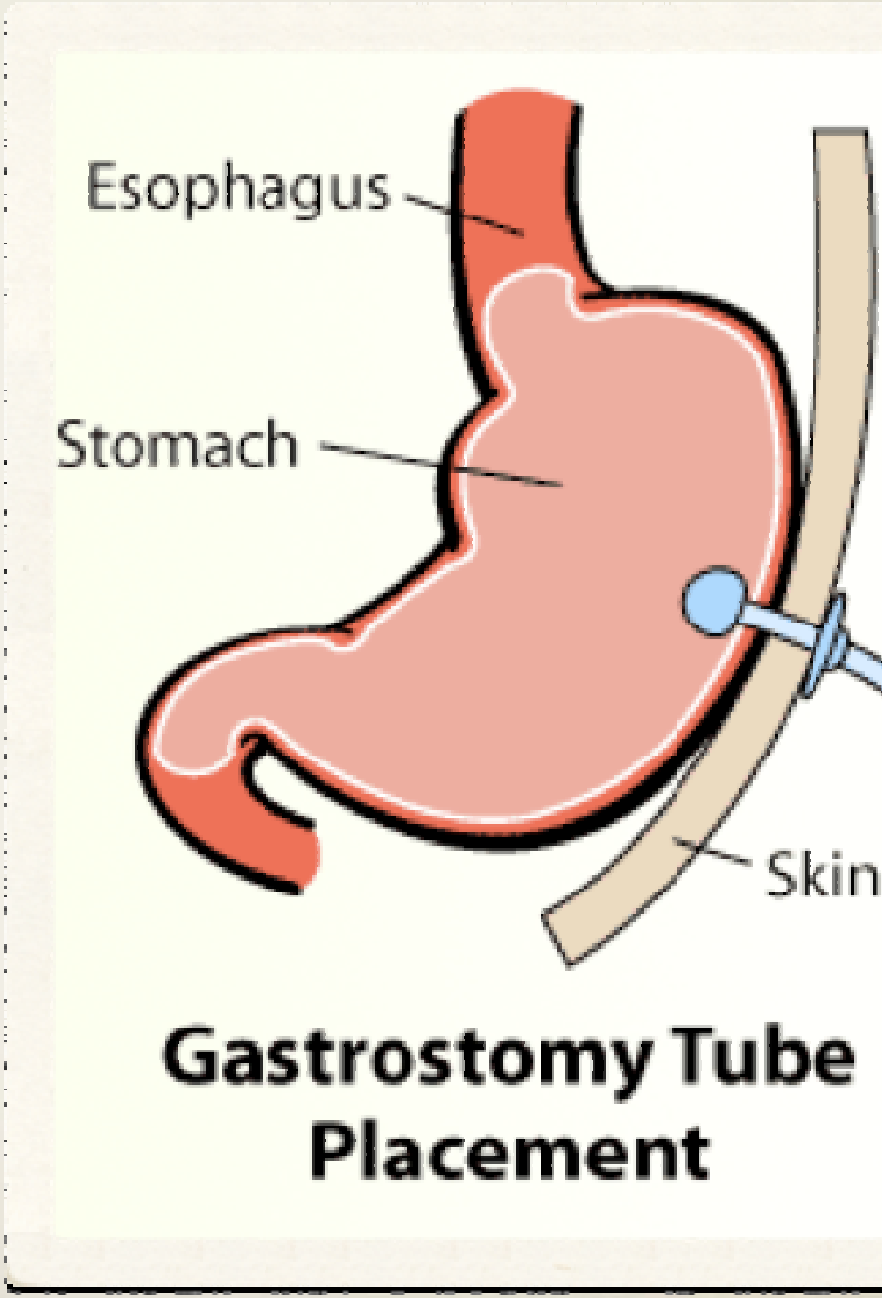


Apnea Monitor

Feeding Tubes

can be a source of infection (sepsis)

DO not administer feedings especially if child has altered ventilatory status from THEIR norm.



Transportation Devices

If you choose to transport patient in your ambulance you would place patient on your stretcher. Pad patient as necessary!

Speech Assistive Devices

Passy Muir Valve

If in place and respiratory compromise then remove it and treat patient as usual!

Used to develop and strengthen patients vocal cords!

Common Conditions Found in High Tech Kids

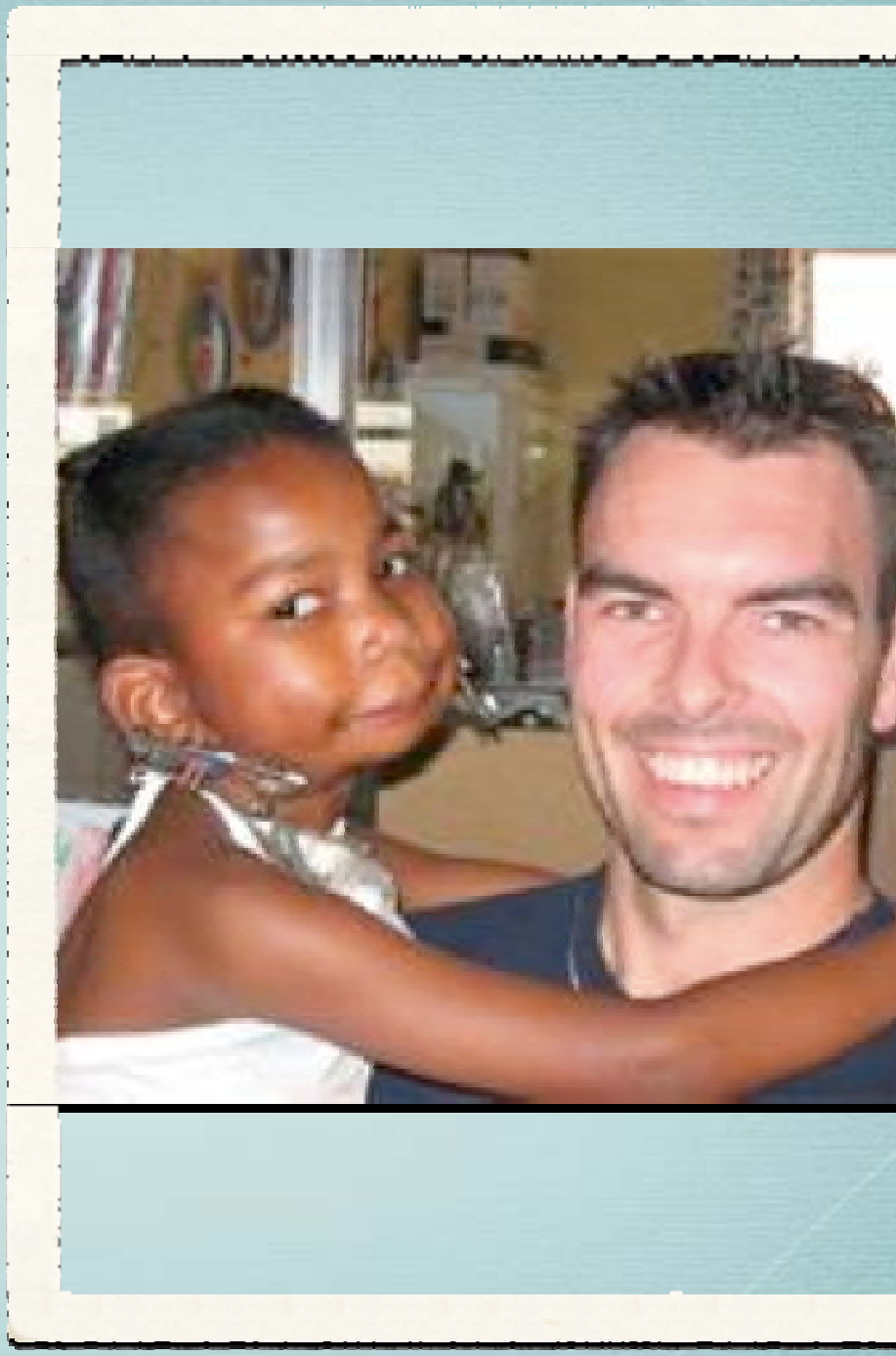
- Pierre-Robin Syndrome
- Moebius Syndrome
- Cerebral Palsy
- Downs Syndrome
- Congenital Heart Defects
- Epilepsy

Pierre Robin Syndrome

sually accompanied by a cleft palate!

small lower jaw

VERY DIFFICULT INTUBATION



Moebius Syndrome

-born without cranial nerves VI and VII

eformed tongue and jaw

and or foot deformities (one third or of cases), such as club foot or missing rs

ow muscle tone, meaning the child has le sitting or crawling

wallowing or breathing problems

Cerebral Palsy

neurological disorder

-ataxia

-spasticity

varied degrees of presentation

Downs Syndrome

aka Trisomy 21

-impaired cognition

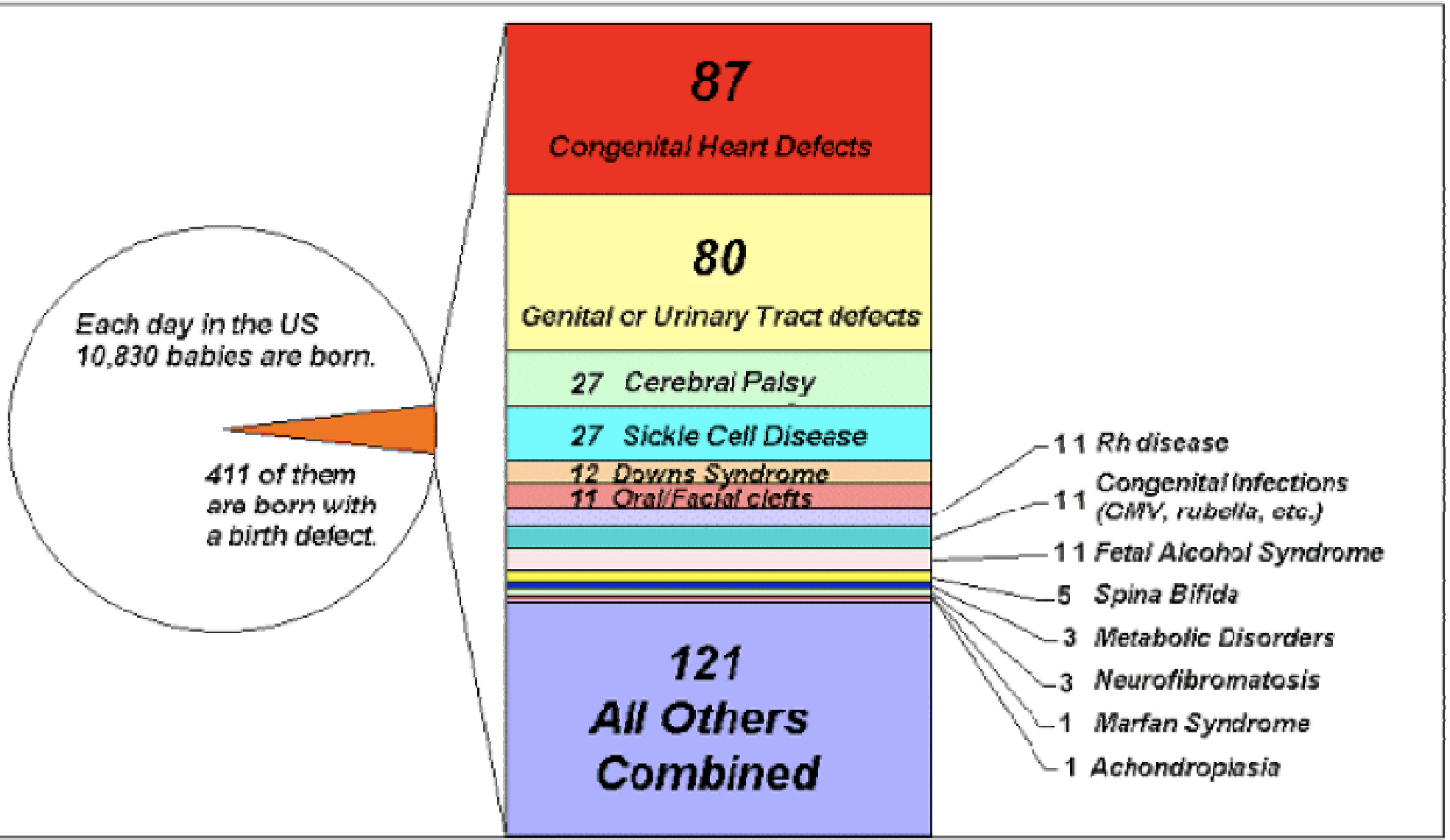
-altered growth

-facial presentation

High Risk for CHD!

Congenital Heart Defect

- responsible for more deaths than any other congenital defect in the first year of life
- Ranges from Mild to so severe they require heart transplant
- Some defects do not present until the child is a couple of years old
- Some require several cardiac surgeries


Each day in the US
10,830 babies are born.
411 of them
are born with
a birth defect.
87
Congenital Heart Defects
80
Genital or Urinary Tract defects
27 Cerebral Palsy
27 Sickle Cell Disease
12 Downs Syndrome
11 Oral/Facial clefts
121
All Others
Combined
11 Rh disease
11 Congenital Infections
(CMV, rubella, etc.)
11 Fetal Alcohol Syndrome
5 Spina Bifida
3 Metabolic Disorders
3 Neurofibromatosis
1 Marfan Syndrome
1 Achondroplasia

Epilepsy

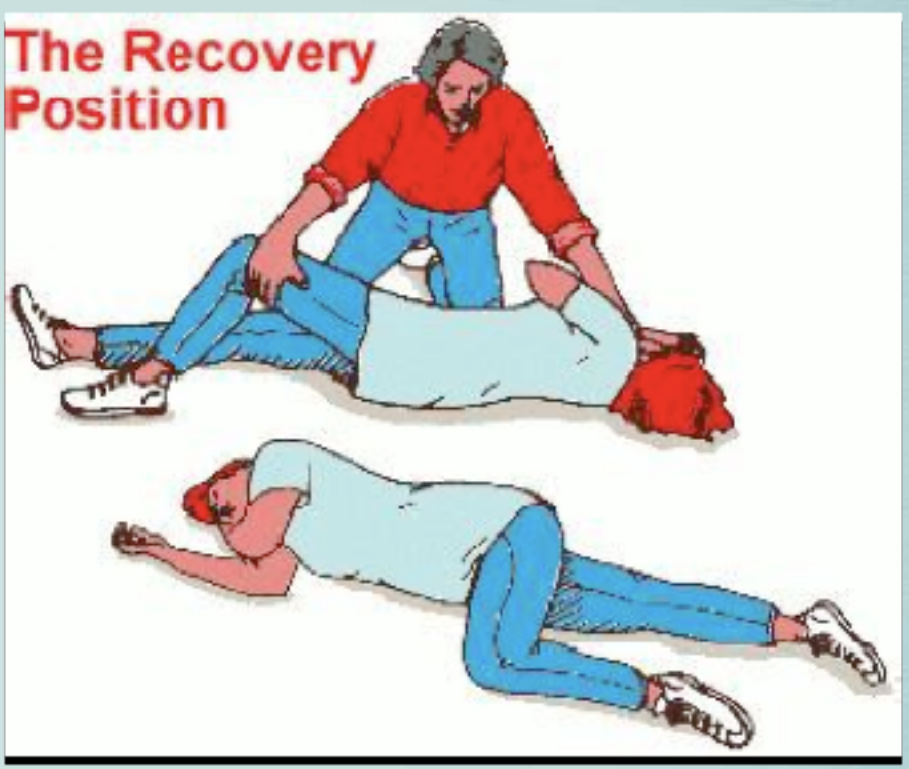
-recurrent seizures

-protect child

-primary survey

-suction oxygen prn

-SAMPLE



ventilator depen-
dent we had more
← to carry!

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Psychosocial Needs

- the child is a human being
- treat them with dignity and respect
- LISTEN to their caregivers
- Expect exhausted caregivers
- Remember parents equipment needs!
- Let parents be involved!

Psychosocial Needs

What is child’s developmental age?

Be a resource of information and community resources for family.

Emergency Care of Special Needs Child

Remember these children have their ABC's maintained for them on a regular basis!

Emergency Care Circulation

Treat as any other child!

Patient # 1

You receive request to respond to a residence for a child who is turning pale! Upon arrival you are met by the father who gives you history.

Patient # 1 continued

From your preplanning and the SAMPLE informati
from father you learn that Desmin has Moebius
Syndrome. She has been baseline until after her
tracheostomy was changed earlier today. Now sh
is short of breath more than usual today!

Patient # 1

You reach child:

Discuss PAT (Pediatric Assessment Triangle)

child is limp

lethargic

intercostal retractions

grunting

PMV on child

Patient # 1

What are your courses of action?

Airway, Airway, Airway

Remove PMV

saline bullet

suction

bag valve (use emergency kit at residence that is presized for that pt)

difficulty bagging

Discussion?

Patient # 2

Child sent home esterday after cardiac surgery!

You receive call for respiratory distress!

Patient # 2 continued

When you enter the residence you notice the child apneic!

Child is on mechanical ventilation!

Patient # 2

What next?

Summary

Your best resource of information is your caregiver
They are familiar with what the childs baseline is.
The use the equipment on a regular basis. Use yo
resource! Keep them involved!

Any Questions?