



The Fatal Five Plus

Presented by:

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- Over 20 years of experience caring for people with mental illness and intellectual and developmental disabilities
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Fatal Five Plus

- Aspiration
- Bowel Obstruction
- Seizures
- Dehydration
- Sepsis
- + GERD



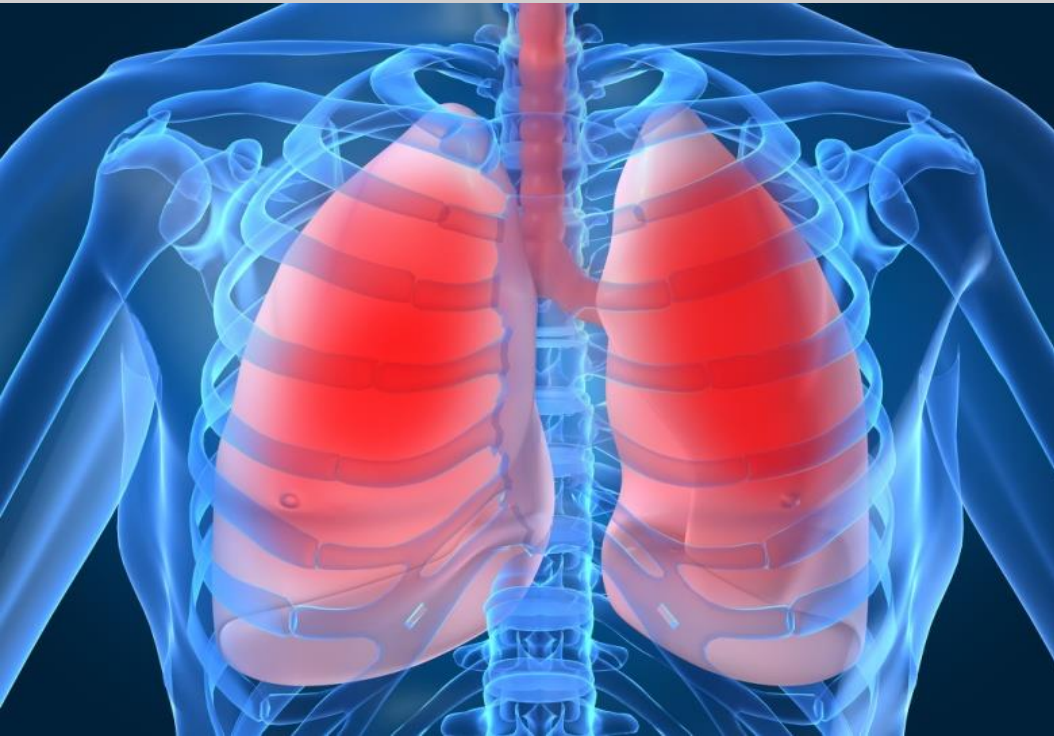
Question

Approximately what percentage of people with IDD do you think experience swallowing issues?

- 10%
- 25%
- 50%
- 65%

Aspiration

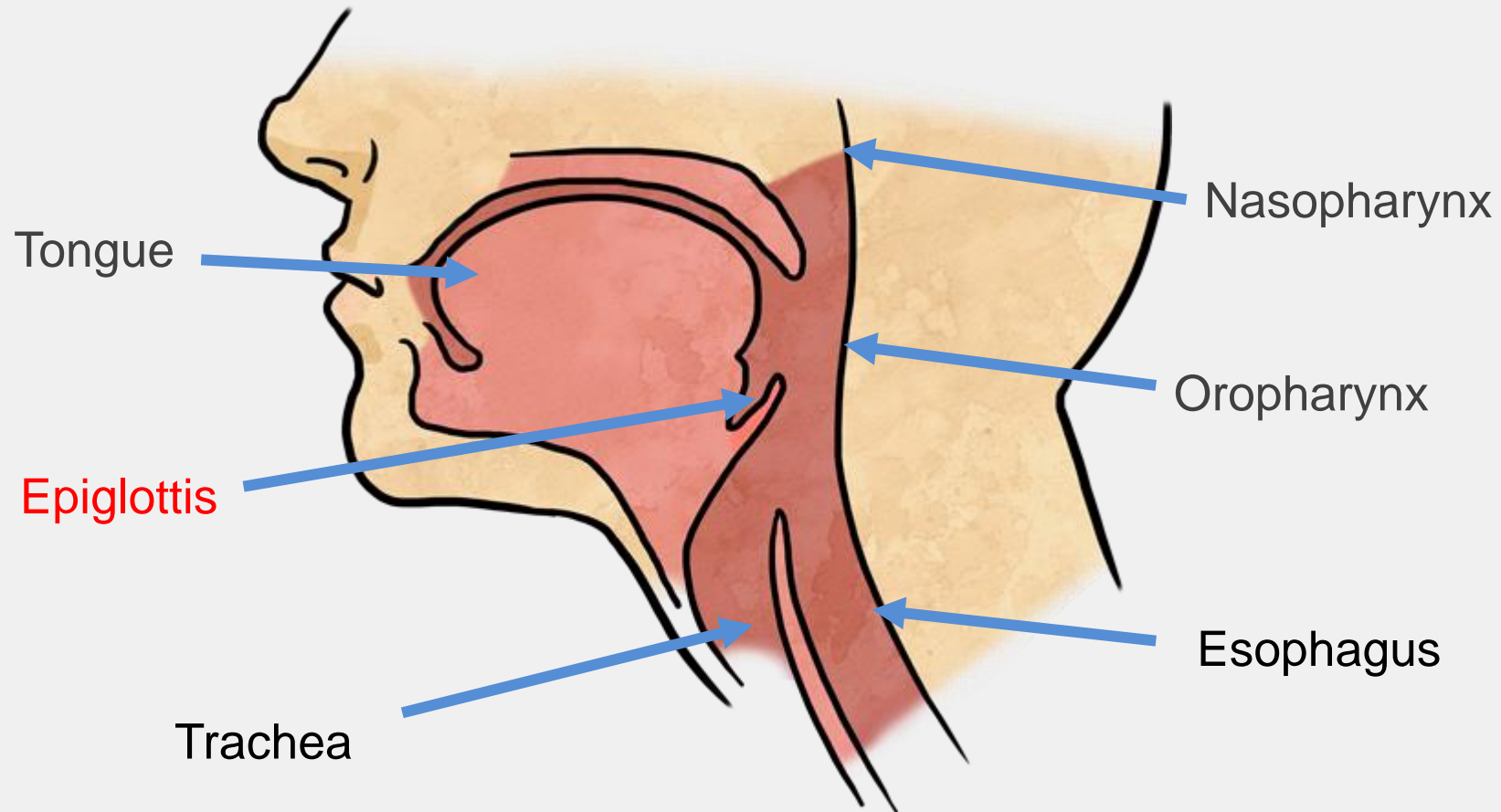
Breathing food or fluid into the airway



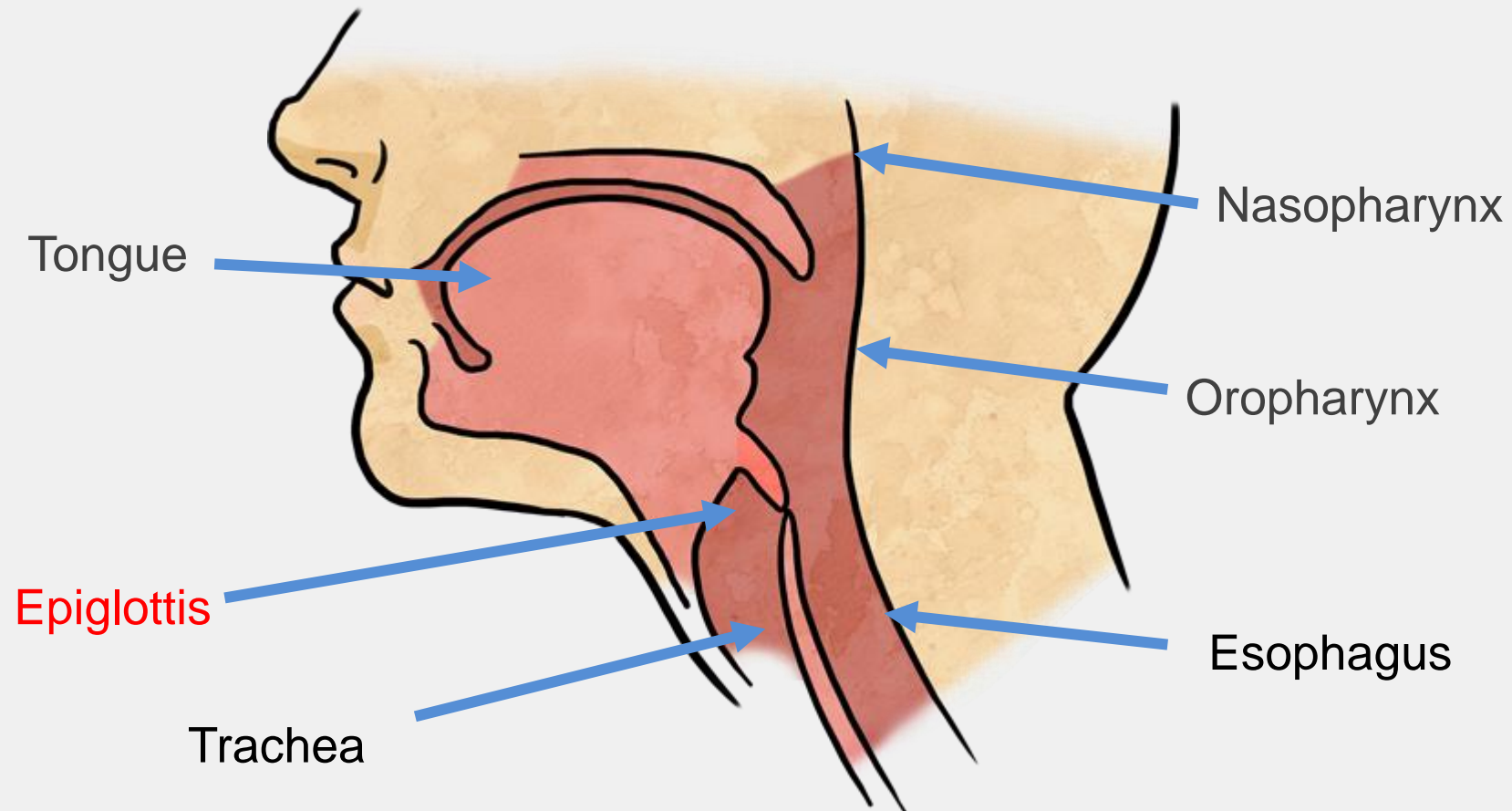
Aspiration

- A high cause of death in people with IDD
- Influenced by many factors
- Individual management and staff training are critical!
- Identifying root cause is vital!
- Can be caused by food going in or out of the stomach

Anatomy of the Head and Neck

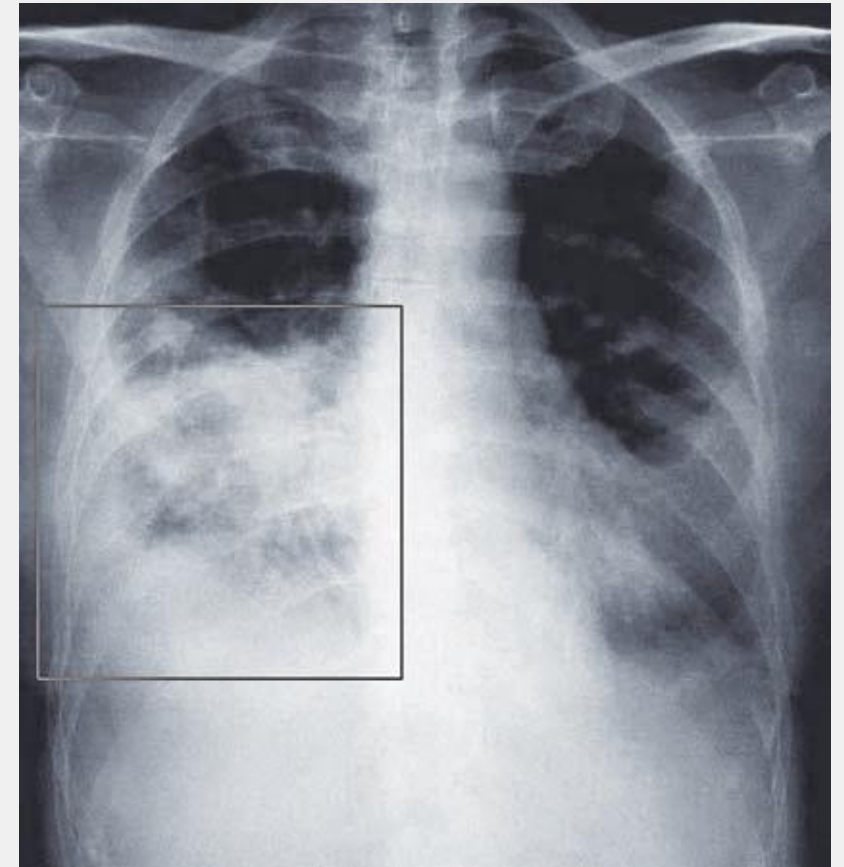


Anatomy of the Head and Neck



Aspiration

- Acute
 - Large quantity of aspirated material
 - Can result in death
 - Smaller quantity
 - Pneumonia
- Recurrent
 - Frequent pneumonia
 - Wheezing



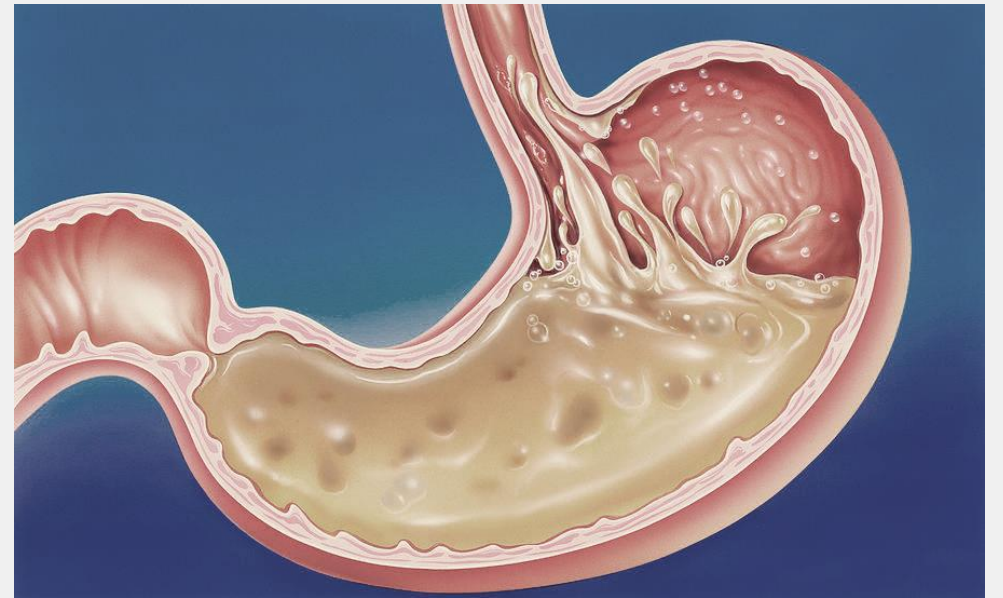
Aspiration – Subtle Signs and Symptoms

- Cough - especially with eating or drinking
- Refusal to drink thin liquids
- Resistance in eating or drinking
- Recurrent pneumonia
- Reactive airway disease



Aspiration - Causes

- Constipation
- GERD
 - Reclined positioning
 - Liquid diet
- Dysphagia
- GI dysmotility
- Sedation
 - Medications
 - Illness



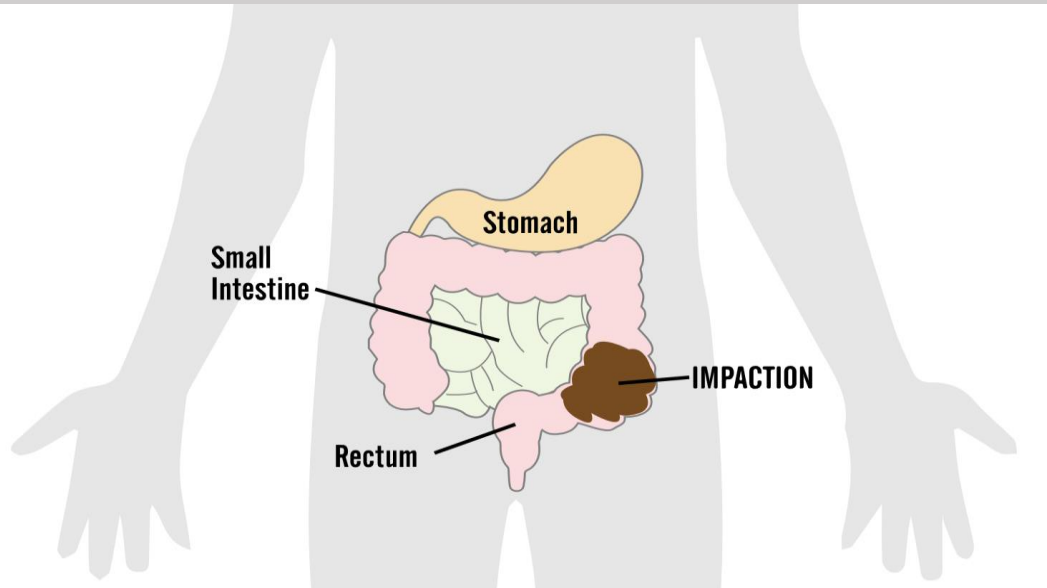
Aspiration - Prevention

- Positioning
- Feeding techniques
 - Feeding evaluation
 - Thickening Liquids
 - Food texture/size
- Test - Modified barium swallow
- PEG Tube
 - Volume/Time
- J-Tube
- J-Tube/PEG



Bowel Obstruction

Blocking of movement through the GI tract from scar tissue, lack of movement (peristalsis) or constipation or foreign body



Bowel Obstruction

- Major cause of death in the community
- Inability to communicate pain or other symptoms
- Over-reliance on bowel management medications
- Influence of anti-cholinergic drugs
- Failure to implement early intervention
- Risk of repeat incidents is VERY high!



The Gastrointestinal Tract

The design of the human GI tract has some serious issues!
For example:

- Nothing gets to enter without first crossing the airway
- It is filled with noxious chemicals from which it is not well-protected
- It is gravity-dependent
- Its function is affected by 2/3 of the medications on the market

The Gastrointestinal Tract

It is impacted by...EVERYTHING

- Medications
- Stress
- Physiology
- Position
- Nutrition/hydration

Constipation

Primary cause of “everything”

- Fever
- Anorexia
- Vomiting
- Seizures
- Medication Intoxication
- Decreased LOC
- Pneumonia
- Behavioral outbursts
- Death



Constipation - Causes

- Decreased GI motility
- Immobility
- Lack of sensation
- Diet
- Medications
 - Anti-Epileptic Drugs
 - Antipsychotics
 - Iron
 - Anticholinergics
 - Opiates
- Pica
 - Common
 - May cause bowel obstruction

Question

Approximately what percentage of people that you serve experience problems with constipation on a routine basis?

- 25%
- 50%
- 75%
- 95%

Constipation - Treatment

- Diet
 - Fiber
 - Adequate fluid intake
- Laxatives
 - MOM
 - Mg Citrate
 - Polyethylene glycol
- Suppositories
- Enemas
- Manual dis-impaction

Dietary Issues

- Not enough fiber
- Not enough fluid
- Not enough movement



Prevention

- Avoid use of irritant laxatives
- Provide adequate fluid - 8 oz. for every 6-7 g a day
- Increase dietary fiber gradually - 6-8 g every 2 weeks
- Give time and attention to periods of high gut motility
- Increase physical activity
- Supplement gut flora with yogurt, or pro-biotics with 6 to 7 billion organisms per capsule
- Uncooked, high-fiber fruits and vegetables at each meal



Seizures

An alteration in brain function resulting in changes in awareness, or function for a brief period of time

Question

Approximately what percentage of people with IDD has a diagnosis of epilepsy or experiences seizures?

- 5%
- 10%
- 15%
- 25%

Seizures

- Can be most severe and difficult to treat
- Varying presentations
- Status epilepticus prevalent
 - Sub-clinical status - rapid eye movements
- Accurate seizure record VERY helpful in management

Seizure Record



Name: _____

Case#: _____

[illegible]

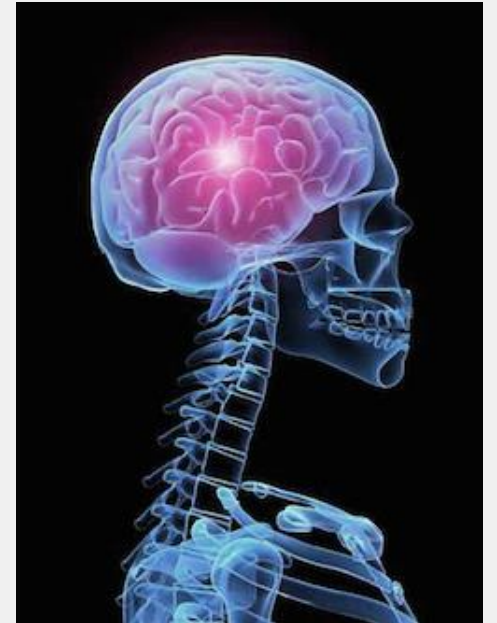
Abbreviations:

Y = yes N = no L = left R = right B = both H/A = headache

Seizures

Status epilepticus

- Respiratory suppression
- SUDEP - Sudden Unexplained Death in Epilepsy



Seizures- Precipitation Factors

- Constipation
- Infection
- Medication compliance issues
- Menses
- Age
- Shunt issues (LOC changes)
- Head Injury
- Stroke
- Hypoglycemia
- Electrolyte Imbalance

Seizures

Drug toxicity

- Anti-epileptic modifications have significant side-effect and risk profiles



Seizures

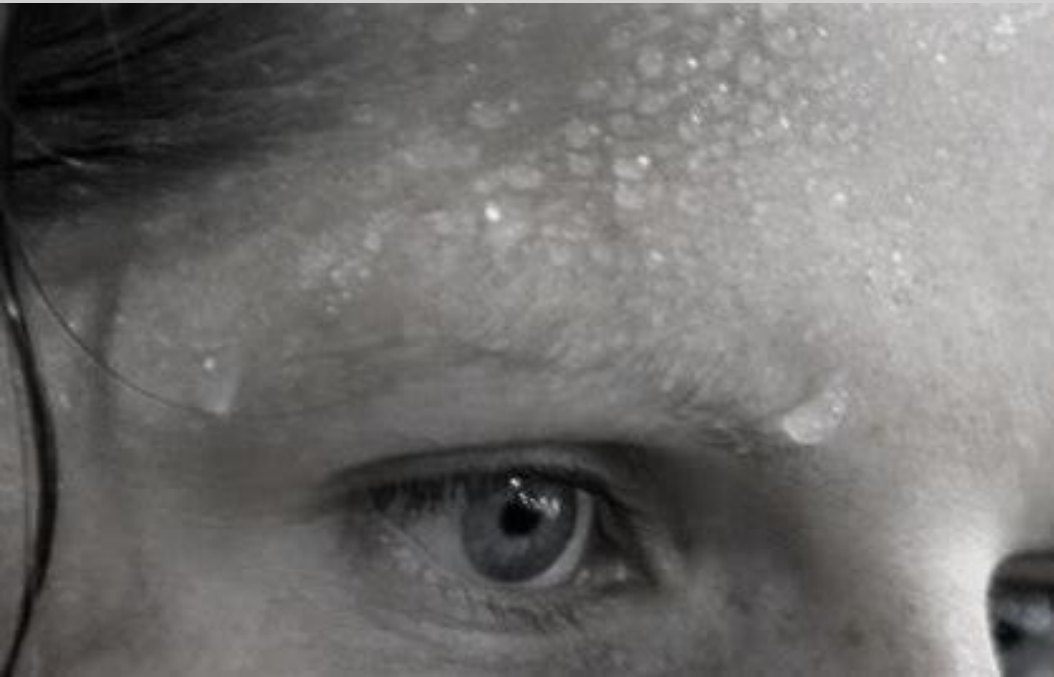
Seizure sequelae

- Aspiration
- Accidents



Dehydration

A harmful reduction in the amount of water in the body



Dehydration -Causes

- Vomiting
- Diarrhea
- Dysphagia
- Drooling
- Excessive sweating
- Increased urination– DM, diuretics

Dehydration – Additional Cause

- Limited intake
 - Limited ability to communicate thirst
 - Immobility to access fluids
 - Loss during intake
 - If PEG Tube – inadequate amount of fluids provided
 - Draining PEG- Excess fluid loss without replacement
 - Follow electrolytes

Dehydration - Symptoms

- Dry mouth and tongue
- No tears when crying
- No wet diapers for three hours
- Sunken eyes, cheeks
- Sunken soft spot on top of the skull
- Listlessness or irritability
- Extreme thirst
- Less frequent urination
- Dark-colored urine
- Fatigue
- Dizziness
- Confusion

Dehydration - Prevention

- Adequate hydration
- Activity timing
- Weather
- Illness
- Staff awareness



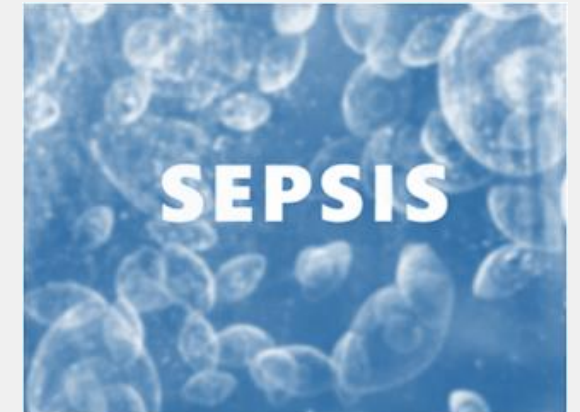
Sepsis

The body's extreme response to an infection



Sepsis

- Blood Poisoning
- Caused by an infection or its toxin spreading through the bloodstream
- Occurs when large numbers of infectious agents invade the bloodstream leading to bacteremia



Sepsis is a Silent Killer

- A “silent killer” whose early diagnosis could save thousands of lives each year
- Should be treated aggressively
- Very prevalent, costly disease with a high in-hospital mortality rate



Sepsis – Common Causes

- Burn, ulcer, or open wound
- Pneumonia
- Urinary Tract Infection (UTI)
- Diarrheal diseases
- Underlying injury

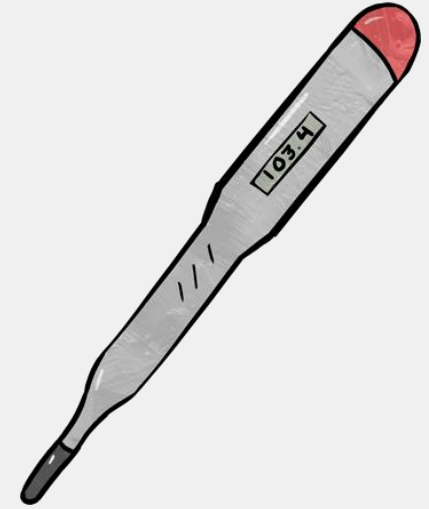


Sepsis – Who's at Risk?

- older persons
- pregnant or recently pregnant women
- neonates
- hospitalized patients
- patients in intensive care units
- people with HIV/AIDS
- people with liver cirrhosis
- people with cancer
- people with kidney disease
- people with autoimmune diseases
- people with no spleen

Sepsis – Signs and Symptoms

- fever or low temperature and shivering
- altered mental status
- difficulty breathing/rapid breathing
- increased heart rate
- weak pulse/low blood pressure
- low urine output
- cyanotic or mottled skin
- cold extremities
- extreme body pain or discomfort



Sepsis – Prevention

- Prevention of microbial transmission
 - Good hygiene
 - Safe drinking water sources
 - Access to vaccines
 - Environmental and equipment sanitation practices
- Prevention of infection evolving into sepsis
 - Early recognition of infection
 - Prompt medical treatment
 - Appropriate antibiotic use

<https://www.who.int/news-room/fact-sheets/detail/sepsis>

Sepsis – General Treatment

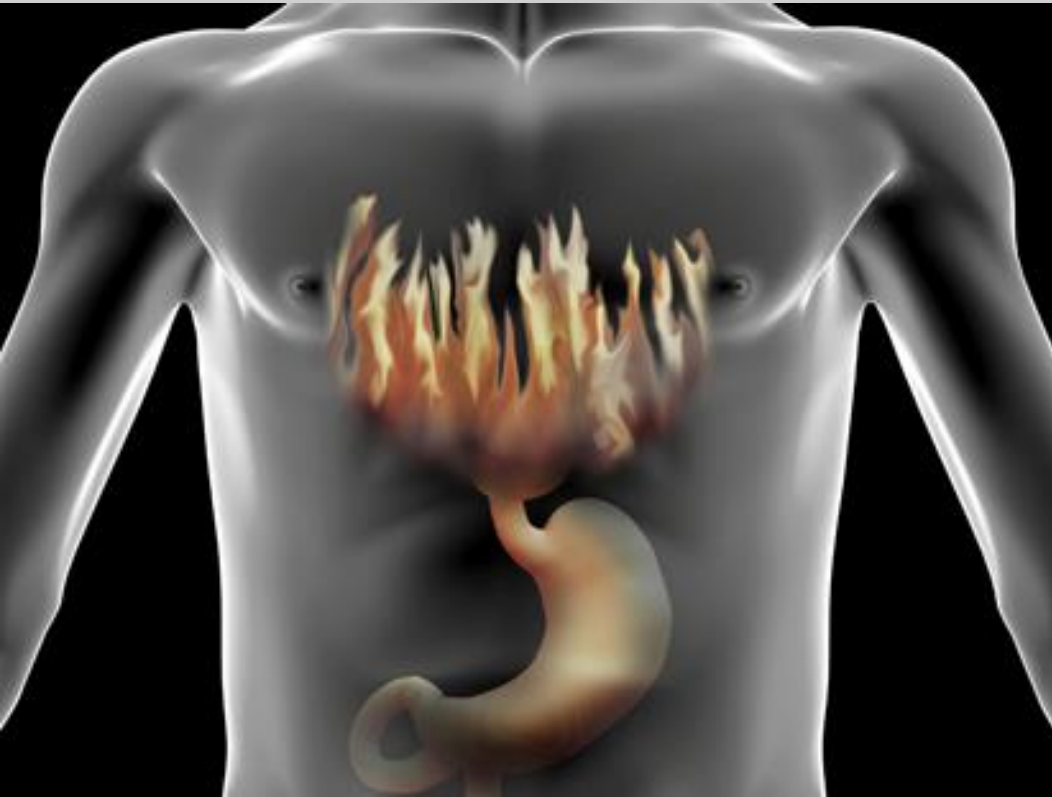
- Early recognition
- Biomarkers (CRP, procalcitonin)
- Identifying cause
- Antibiotics
- Fluid resuscitation
- Vasopressors

Every hour that passes without treatment
raises death risk by 10%

When in doubt, send them out!

Gastroesophageal Reflux disease (GERD)

Back flow of partially digested food and acid into the esophagus causing pain and inflammation



Question

Approximately what percentage of the people that you support have a diagnosis of GERD (Reflux)?

- 20%
- 30%
- 40%
- 50% or greater

Gastroesophageal Reflux disease (GERD)

- Multiple causes of death
 - Massive GI bleed
 - Esophageal cancer
 - Aspiration of stomach contents



Common Signs Not Recognized

- Pica
- Hands in mouth
- Agitation within 30 minutes of eating
- Refusing meals
- Agitation and restlessness in the middle of the night
- Clinical signs: eroding hemoglobin, hematocrit and albumin (blood protein)
- Unplanned weight loss regardless of intake

Diagnosis

- PH monitor
- Barium Swallow
- Endoscopy
- Oxygen Saturation decreasing at any time during or after mealtime

MEALTIME PULSE OXYMETER STUDY



GENERAL GUIDELINES

1 BASELINE

SpO2 and pulse normals outside of eating. This is best done for one minute just before mealtime.

2 MEALTIME RANGE

Impact of eating on SpO2 and pulse once coordination of respiration and swallowing has begun. This is compared to the baseline.

SIGNIFICANT IF

SpO2 drops into 80's. SpO2 does not rebound into 90's (best if 93% plus.) Values decline steadily over course of meal. Pulse rate increases and stays excessively elevated without returning close to baseline rate.

3 LENGTH OF MEALTIME

Mealtimes which require longer than 30 minutes to complete place the person at risk for fatigue leading to further problems with coordination of respiration and swallowing.

4 COUGHING EPISODES

Observe amount of coughing during mealtime and its effects on SpO2 and pulse. A good clearing cough should result in a rise in SpO2 to 95% or greater, facilitating O2/CO2 exchange.

Generally, a poor or inadequate clearing cough will not affect the SpO2 or cause it to drop even further. Excessive coughing during mealtime can increase fatigue and increase the risk of aspiration.

5 COUGHS WITH COLOR CHANGES

Generally indicates aspiration of mucus/food/fluids in significant amounts. If either wheezing or apnea episodes are also present, the overall seriousness of the aspiration episode increases.

6 DECLINE OF SpO2 DURING AND/OR SHORTLY FOLLOWING MEALTIME

Answer "yes" or "no" by comparing the average SpO2 during the meal to the average baseline. Many individuals are experiencing "silent aspiration". Decline of SpO2 values into the 80's can indicate aspiration even if coughing is not present. Decline of SpO2 values after mealtime may be indicative of the onset of reflux with aspiration. Readings are observed at 5 minutes and 30 minutes after the meal.

7 OXYGEN SATURATION

SpO2 during eating and drinking is also recorded in terms of the highest, lowest, and most common value. If SpO2 values are below normal limits (95%), they are further evaluated according to what percentage of time is spent below 90%, 85%, 80%. Many individuals with chronic respiratory diseases (COPD, ARDS) have lower baseline SpO2 values. These individuals may normally run between 80-85%.

8 INADEQUATE SpO2 DURING MEALTIMES

Decreases alertness and general CNS function, which includes movement in the oral structures. Hinders the efficiency of coordination of respiration and swallowing.

MEALTIME PULSE OXYMETER STUDY



GENERAL GUIDELINES

Name **Jim Jones**

Date **2/2/17**

Assessed by **K. Green, RN**

Time Start: **12:15pm**

Time End: **12:45pm**

Baseline SpO2 **95%**

Pulse **90**

Mealtime Range SpO2 **91-98**

Pulse **89-108**

Length of Mealtime **22 min.**

Coughing Episodes **3**

Single Coughs **0**

Coughs with Color Change **0**

Decline of SpO2 During **none**

Following **none**

Five Minutes Post Meal

SpO2 **92 for 2 min, then 93-98**

Pulse **99**

Thirty Minutes Post Meal

SpO2: **95 steady**

Pulse **99**

Oxygen Saturation (SpO2)

Highest **98**

Lowest **91**

Avg. **94-99**

Percent of Time Below

90% **0**

85% **0**

80% **0**

Interpretation

1) Minimal fluctuation in SpO2/pulse during meal.

2) SpO2/pulse minimally changes from baseline during meal.

3) Three single coughs w/ 30 minute post-meal period. SpO2 and pulse not significantly affected.

4) No "wet" respirations noted during or after the meal.

5) Position upright in wheelchair with head in midline and neutral position.

Fatal Five Plus

- Aspiration
- Bowel Obstruction
- Seizures
- Dehydration
- Sepsis
- + GERD



Prevention

The most important part of fixing a problem is figuring out what the problem is.



Attitudes and Perceptions

- Never discount anything reported by parents or front-line staff
- Always find a way to present people in the best possible light
- Help others see that good health is worth achieving
- Don't be afraid to advocate

Thank you!



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