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# The Fatal Five

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Health Care Quality Units

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# Disclaimer

- The information presented to you today is intended to increase your knowledge.
- The information is not intended to replace medical advice.
- If you are in need of medical advice, please contact your physician.

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# Objectives

The participant will learn to identify:

- The five health issues that have the worst outcomes for individuals with intellectual and developmental disabilities and can be fatal
- Define: Aspiration, Constipation, Dehydration, Seizures, and Sepsis
- List causes and risk factors
- Complications of each condition
- List treatment and prevention

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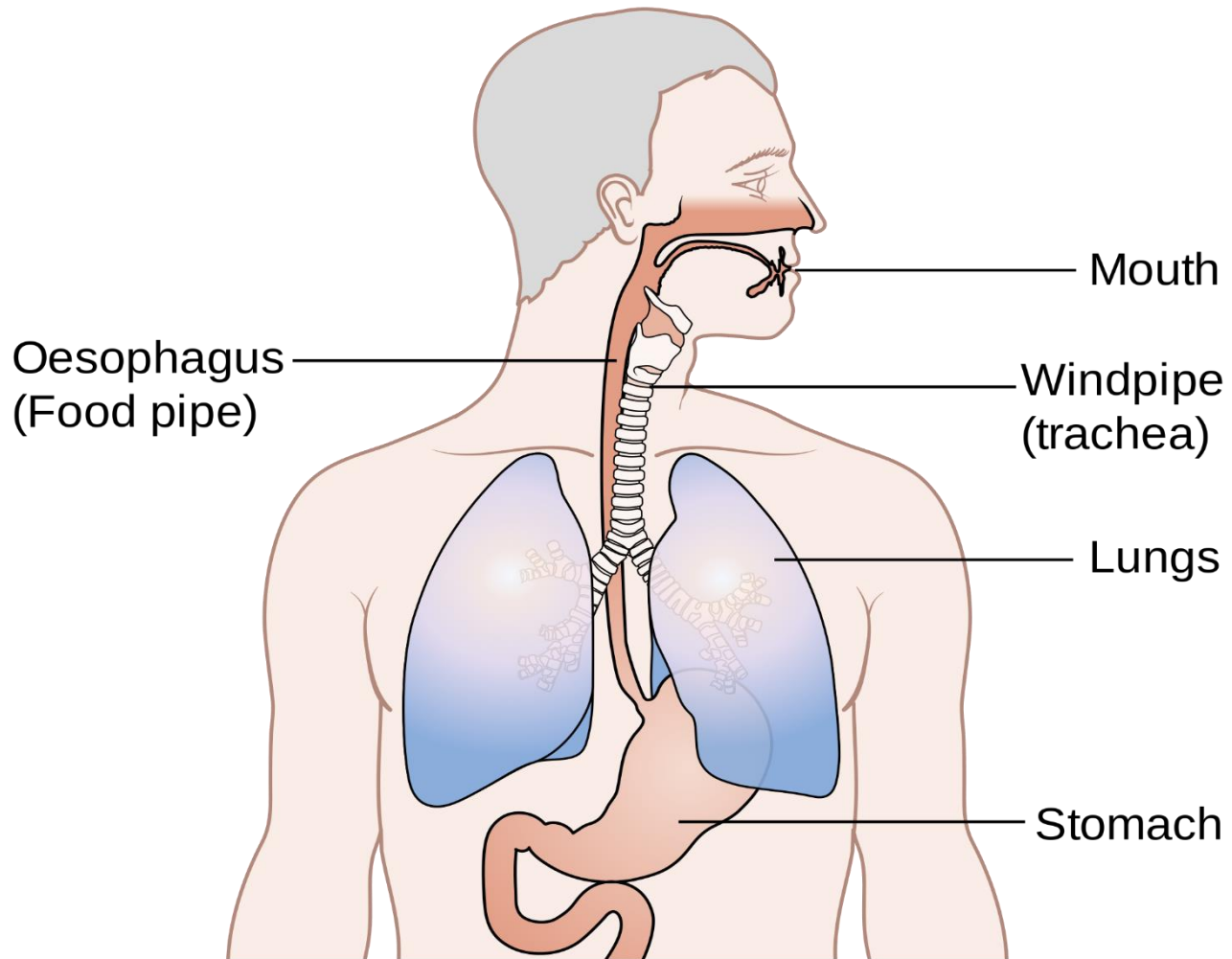
# What are the Fatal Five?

- There are five major health issues impacting individuals with Intellectual and Developmental Disabilities (IDD) who live in congregate care centers or community based residential settings at a greater rate and severity than those of the general population
- These conditions are commonly called “The Fatal Five” and are most likely to result in the death or health deterioration of persons with IDD
  - Aspiration, Constipation, Dehydration, Seizures, and Sepsis

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# Definition of Aspiration

- Aspiration is the inhalation of food, fluid, saliva, medication and other foreign material into the trachea or lungs following swallowing
- Aspiration is most common cause of death in nursing homes and large group homes for IDD
- Aspiration can cause choking and can present with subtle signs in adults with intellectual and developmental disabilities



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# Aspiration Causes:

- Eating too rapidly
- Difficulty swallowing
- Being fed too quickly
- Improper positioning
- Improper consistency or texture of food/liquids
- Gastroesophageal reflux disease

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# Aspiration Risk Factors:

- Dysphagia
- Low muscle tone
- Poor alignment
- Gastroesophageal reflux disease or esophageal strictures
- History of pneumonia
- Neurological disorders



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# Aspiration Symptoms:

- Coughing after swallowing foods/liquids
- Fever
- Recurrent pneumonia
- Decreased appetite
- Shortness of breath
- Wheezing
- Excessive sweating
- Colored sputum

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# Aspiration Diagnostic Tools:

- Complete blood count
- Arterial blood gases
- Computerized topography of chest
- Bronchoscopy
- Chest X-ray
- Speech Evaluation
- Swallow Study

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# Aspiration Complications:

- Aspiration pneumonia
- Pneumonitis
- Acute respiratory distress syndrome
- Hypoxia
- Bronchospasm
- Lung abscess
- Pulmonary hypertension
- Respiratory failure
- Death

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# Aspiration Treatments:

- Antibiotic therapy
- Hospitalization in severe cases
- Oxygen therapy
- Medication for acid reflux (if cause)
- Nebulizer treatments
- Modified diets/liquid consistencies

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# Aspiration Prevention:

- Maintain history of aspiration and pneumonia
- First aid training for choking and CPR
- Encourage individuals to eat slowly
- Make sure individuals are in your view while eating
- Keep in upright position
- Always follow diet

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# Constipation

- Constipation is defined as a condition where a person has fewer than three bowel movements a week
- 33-50% of the IDD population experience constipation
- Normal frequency of bowel movements vary from person to person and each person's individual patterns should be considered

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# Constipation Causes:

- Inadequate fluid intake
- Inadequate fiber intake
- Uncoordinated muscle contractions
- Immobility
- Polypharmacy
- Iron supplements
- Calcium supplements
- Surgery/Hospitalization
- PICA (eating non-nutritive substances)

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# Constipation Risk Factors:

- Cerebral palsy
- Cystic fibrosis
- Muscular dystrophy
- Spinal cord injury
- Neurological damage
- Illness or injury
- Poor Swallowing
- Down Syndrome



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# Constipation Symptoms:

- Infrequent passing of stool
- Straining on the toilet
- Fever
- Hard and dry feces
- Hard, protruding abdomen
- Bloating and complaints of stomach pain
- Vomiting digested food that smells like feces
- Anorexia (loss of appetite)
- Behavioral outbursts

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# Constipation Diagnostic Tools:

- Bristol stool chart
- Complete blood count/ thyroid panel
- Radiograph of stomach
- Computerized topography scan/magnetic resonance imaging
- Ultrasonography
- Sigmoidoscopy
- Colonoscopy

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# Constipation Complications:

- Bowel obstruction (complete blockage and a medical emergency)
- Anal fissures (small tears and bleeding)
- Fecal impaction (stool blocks the colon/rectum)
- Hemorrhoids (swollen blood vessels)
- Potential for medication intoxication
- Rectal prolapse (intestinal lining pushing through anus)
- Death

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# Constipation Treatments:

- Juice (apple/prune)
- Suppositories
- Laxatives
- Disimpaction (removing stool)
- Stool softeners
- Enema
- Nasogastric tube

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# Constipation Prevention:

- High fiber diet
- Regular exercise
- Adequate fluid intake
- Adequate fiber intake
- Bulking agents
- Laxatives
- Track bowel movements

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# Dehydration

- Dehydration is a loss of fluids and electrolytes (important salts like potassium and sodium).
- Vital organs like the kidneys, brain and heart cannot function without a certain amount of fluids and electrolytes, which can be lost through sweat, urine, vomit and diarrhea.

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# Dehydration Causes:

- Loss of appetite
- Nausea and vomiting
- Inability to chew food
- Excessive sweating
- Fever
- Diarrhea
- Dysphagia
- Increased urination

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# Dehydration Risk Factors:

- Unable to access fluids independently (infants, children, older adults, IDD)
- People with chronic illness
- Needing assistance with drinking
- Unable to manage fluid and saliva
- Non-verbal or limited communication skills
- Taking diuretics
- Medication interactions
- People who work or exercise outside
- Persons on modified consistency diets



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# Dehydration Symptoms:

- Dry, cracked lips
- Listlessness or irritability
- Extreme thirst
- Fatigue/dizziness/confusion
- Low blood pressure
- Seizures
- Sunken eyes
- Poor skin turgor
- Flank pain
- Dark urine
- Unable to urinate

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# Dehydration Diagnostic Tools:

- Chemistry profile (sodium and potassium levels)
- Urinalysis
- Serum creatinine
- Blood urea nitrogen
- Checking skin turgor
- Vital signs

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# Dehydration Complications:

- Kidney failure
- Elevated sodium level
- Decreased potassium level
- Increased urine specific gravity
- Elevated serum creatinine and Blood urea nitrogen levels
- Falls/Injuries
- Fainting
- Seizures
- Death

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# Dehydration Treatment:

- Fluid and electrolyte replacement
- IV fluids for severe dehydration
- Hospitalization for symptoms of circulatory collapse
- Potassium supplements
- Treat underlying cause

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# Dehydration Prevention:

- Increase fruit and vegetable intake
- Drink plenty of water (about half your weight in ounces)
- Avoid extreme temperatures
- Limit caffeine and alcohol

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# Seizures

- A seizure is defined as an uncontrolled electrical disturbance in the brain
- Can lead to changes in behavior, movement, feelings and levels of consciousness
- Recurrent seizure activity is known as Epilepsy
- Most seizures last thirty seconds to two minutes
- Seizures lasting longer than five minutes are considered a medical emergency

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# Seizure Causes:

- High fever/infection
- Dehydration
- Missing doses of anti-seizure medication
- Too many medications
- Very low or high blood sugar
- Sensory stimuli
- Stroke
- Brain injury
- Illegal drug use/alcohol abuse

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# Seizure Risk Factors:

- Down syndrome
- Tuberous sclerosis
- Dementia
- Cerebral palsy
- Neurological disorders
- Severe high blood pressure
- Liver or kidney failure
- Stroke
- Brain tumors



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# Seizure Symptoms:

- Muscle spasms, uncontrollable jerking of arms and legs
- Numbness or tingling in extremities
- Blank stare or fluttering eyes
- Loss of consciousness
- Temporary confusion
- Loss of bladder or bowel
- Hearing or smelling things that aren't there

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# Seizure Diagnostic Tools:

- Electroencephalograph
- Complete blood count
- Glucose levels
- Computer topography scan
- Magnetic resonance imaging
- Blood levels of medications

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# Seizure Complications:

- Falls and skull fractures
- SUDEP (Sudden unexpected death in epilepsy)
- Automobile accidents
- Aspiration and/or aspiration pneumonia
- Tongue, lip or cheek injuries caused by biting
- Scalding (if seizure occurs during cooking)
- Traumatic brain injuries
- Death

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# Seizure Treatment:

- Neurology consultation
- Anti-epileptic drugs
- Consider maximizing dosage and levels if not effective
- Neuro surgery
- Consider vagal nerve stimulator if no success with medications

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# Seizure Prevention:

- Most seizure disorders cannot be prevented
- Effective management is key
- Compliance with medications
- Early treatment of infections
- Seizure protocols

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# Infections

- The invasion and growth of germs in the body. The germs may be bacteria, viruses, yeast, fungi, or other microorganisms. Infections can begin anywhere in the body and may spread all through the body
- Can also be atypical infections: trauma burns, heatstroke, myocardial Infarction (MI), inflammatory processes (pancreatitis and appendicitis)

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# Sepsis

- Sepsis is a term used to describe a serious illness characterized by a bacterial infection in the bloodstream
- Also known as blood poisoning
- Occurs when many infection agents invade the bloodstream leading to bacteremia
- Sepsis is the body's overwhelming immune response to infection, which can lead to tissue damage, organ failure, amputations, and death

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# Infections/Sepsis Causes:

- Sepsis does not arise on its own. It generally comes from an infection in the lungs, urinary tract, skin, abdomen (such as appendicitis) or other part of the body
- Invasive medical procedures like the insertion of a vascular catheter can introduce bacteria into the bloodstream and bring on the condition



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# Infections/Sepsis Risk Factors:

- Anyone can get sepsis as a complication from an infection
- Sepsis is more likely to affect very young children, older adults, people with chronic diseases (diabetes), and those with a weakened immune system
- The risk is higher for individuals suffering from severe burns or wounds (including pressure injuries), being treated in an intensive care unit or exposed to invasive devices such as intravenous catheters or breathing tubes

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# Infections/Sepsis Symptoms:

Early symptoms of sepsis should not be ignored. These include:

- A fever above 101 degrees F or a low body temperature below 96.8 degrees F – shivering, feeling very cold
- Fast heart rate higher than 90 beats per minute
- Rapid breathing, or more than 20 breaths per minute
- Probable or confirmed infection

**If you suspect sepsis, call 911 or go to a hospital right away.  
Sepsis can be a silent killer.**

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# Infections/Sepsis Prevention:

Reduce the risk of sepsis by preventing infections:

- Practice good hygiene, good handwashing, and clean environment
- Good dental hygiene
- Stay current with vaccinations
- Avoid others with colds/flu
- Clean scrapes and wounds
- Routine catheter/line changes
- Proper positioning (aspiration risk and pressure injuries)
- Supervised feedings/enteral feedings
- Toileting routine/ control constipation

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# Infections/Sepsis Treatment:

- People with sepsis are usually treated with aggressive hospital care
- Doctors focus on treating the infection, keeping the vital organs working, and preventing a drop in blood pressure
- The first step is often treatment with broad-spectrum antibiotics, medicines that kill many types of bacteria. Doctors select medicine that specifically increase blood pressure, stabilize blood sugar, manage pain and reduce inflammation

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# Summary

- In conclusion, being aware of these health concerns, one can better support individuals with intellectual and developmental disabilities to be as healthy and safe as possible
- Know your individuals and their baseline functioning
- Effectively communicate as a team, to help prevent these critical problems from becoming fatal

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