Western HealthSciences

Respiratory System Simulation - Straw Lung Challenge

Our respiratory system undergoes several physiological changes as we age, making breathing more energy-intensive and challenging. For example, our lungs lose elasticity, airways narrow, and oxygen exchange becomes less efficient. As a result, older adults may find themselves feeling winded with even mild exertion. These effects are further exacerbated by a common respiratory disease among older adults known as Chronic Obstructive Pulmonary Disease (COPD) which significantly restricts airflow and makes breathing feel laboured. The purpose of this simulation is to mimic the increased effort required to breathe with compromised lung function for individuals who experience COPD. Your task is to try to breathe only through a straw while performing light physical activities.

Materials

- A drinking straw
- Timer or stopwatch

Procedure

1. Take normal breaths for 30 seconds, focus on your breathing
2. Place a straw in your mouth and ensure it is secure
3. Pinch your nose closed with one hand
4. Breathe in and out only using the straw and notice any changes in effort
5. Walk on the spot for 30 seconds while only using the straw and pay attention to how your breathing feels
6. Remove the straw and take deep breaths with your nose to relax

Reflection Questions

- How did your breathing change when using the straw compared to normal breathing? What sensations did you experience and how did it affect your ability to complete the exercises?
- If you had to continue breathing through the straw for a prolonged period, how would this affect your physical and mental health?
- Did you experience any frustration while breathing through the straw? If so, what aspects were most challenging?
- Reflect on your views on older adults. Have any of these views changed after this simulation with COPD?