MRSC CS matters

WINTER 2021

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Welcome to the Winter 2021 issue of MRSCICS Matters, the newsletter of the Midwest Regional Spinal Cord Injury Care System (MRSCICS) at Shirley Ryan AbilityLab, formerly the Rehabilitation Institute of Chicago (RIC). The MRSCICS research study started at RIC in the early 1970's to help researchers and doctors understand what happens to people with a traumatic spinal cord injury (SCI) a□er they leave the hospital. The MRSCICS team contacts participants for interviews, or surveys, 1 year a□er SCI, 5 years a□er SCI, and then every 5 years a□er that. Researchers use this information about health and daily life to improve therapy, community programs, and educational resources for people living with SCI. You enrolled in this study while you were a patient at SRAlab (or RIC), and you are receiving this newsletter as a 'thank you' for participating! In this edition, we share exciting new research projects and highlight educational info to help you stay informed. Enjoy!

INSIDE:

The National Institute on Disability, Independent Living, and Rehabilitation Research (NIDILRR) is a national leader in sponsoring research. NIDILRR is located in Washington, D.C., and is part of the Administration for Community Living at the U.S. Department of Health and Human Services.

Every test in the RMD has a summary that includes a short description, instructions for using and scoring the test, and a link to the test if it can be found for free. These summaries are written by students as part of their training to become physical therapists, occupational therapists, counselors, and other types of rehabilitation workers.

Re M N Hea a d SCI

MSKTC SCI · TBI · BURN | Model Systems Knowledge Translation Center

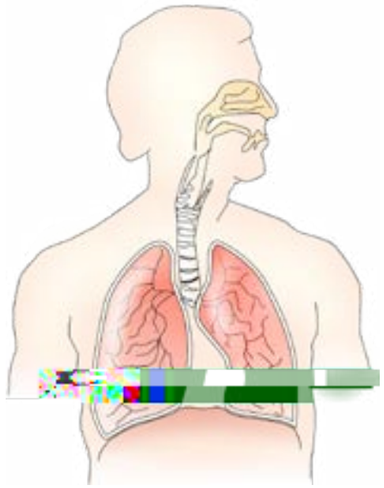
The respiratory system is responsible for breathing. Our bodies need oxygen to survive. Our bodies also produce carbon dioxide, which needs to be removed to prevent acid from building up. The respiratory system puts oxygen into your blood when you inhale (breathe in), and takes carbon dioxide out of your body when you exhale (breathe out).

Breathing happens automatically, which means you don't have to think about it. But it is actually a complicated process that requires your brain to control every breath. Your brain does this by sending signals down your spinal cord to the nerves in your neck area, which causes your diaphragm to contract. Your diaphragm is a muscle under each lung. When your diaphragm contracts, or tightens, it moves down to create more space for fresh air with oxygen to flow in. This is what happens when you inhale, or breathe in. When you exhale, or breathe out, the diaphragm relaxes and moves back up. This pushes air with carbon dioxide out of your chest. Your lungs take fresh oxygen and transfer it to your blood so it can move around your body.

Your body needs to use more muscles when you cough or exercise. The brain sends signals down to nerves at the middle part of your spine that cause the muscles in your stomach and ribs to tighten. This forces air out faster than normal breathing. Coughing is important to clear mucus and other particles out of your lungs so that they don't build up and block air flow.

H d e SCI ac e M e N e ?

The impact of SCI on your breathing depends a lot on the level of your injury. The brain can't send messages below the level of injury. If your injury is at a high level, in your cervical (neck) area, your brain may not be able to tell your diaphragm when to contract or relax. This is why people with very high-level injuries (C3, C4, C5) may need a tracheostomy (trach) and/or mechanical ventilator (vent) to help them breathe.



People with thoracic (middle back) injuries will probably not have issues with their diaphragm muscles, but the brain may not be able to send signals far enough to reach the abdominal or rib muscles. This can cause problems with breathing harder than normal, coughing, or sneezing. People with low level injuries (lumbar or sacral) usually do not experience any problems with breathing.

H d e a ec ea ?

If your SCI a□ects the muscles you use to breathe, your body will have to try harder. You may not be able to breathe hard or cough with enough force to clear your lungs. When you cannot clear your lungs, mucus can build up. All of these things can increase your risk of respiratory infections and make it harder for you to breathe.

Respiratory Health and SCI

W a ea M be a M c ?

Infections

Infections can cause extra mucus buildup in the lungs. Coughing can help clear mucus, but some people with SCI have trouble coughing. If too much mucus builds up, the lung may collapse--this is called atelectasis.

- Bronchitis: An infection in the tubes that leads to the air sacs in the lungs
- Pneumonia: An infection in the air sacs in the lungs

Signs & Symptoms: Fever, chills, cough with thick mucus, chest tightness, shortness of breath

Obstructive sleep apnea

Sleep apnea occurs when muscles in the tongue and throat relax too much and block the airway. When air cannot get into the lungs, your oxygen levels drop, and your body forces you to wake up very suddenly to breathe. This keeps happening throughout the night, which stops you from sleeping normally.

Signs & Symptoms: Loud snoring, restless sleep, gasping for air, sore or dry throat, headache, feeling tired or sleepy during the day even though you think you are sleeping long enough

Sleep apnea is more common in men, people who are overweight or obese, people who snore, drink alcohol, take muscle relaxers, and people with a small jaw/large tonsils/di□culty breathing through nose.

W a N M e M N N b e ?

- High level SCI (injuries in the neck region)
- Complete SCI (no feeling or movement below the level of injury)
- Smokers
- Breathing through a tracheostomy (trach) or mechanical ventilator (vent)

H d l ee M e M N e a ea a b e?

- Do not smoke! Stay away from secondhand smoke
- Keep your lungs clear
- Healthy lifestyle—control your weight, stay hydrated,

We a eaN N !

Interested in other SCI topics? Want to be the next "Beyond the Research: Video Series" guest? Need to update your contact information? Want to receive this

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