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Model Systems
Knowledge Translation
Center

Pain after Spinal Cord Injury (SCI)

A resource for individuals with SCI and their supporters



This presentation is based on SCI Model Systems research and was developed with support from the National Institute on Disability and Rehabilitation Research (NIDRR).

Visit www.MSKTC.org for additional SCI resources.



Purpose of This Resource



The information can help people with SCI:

- Understand their pain
- Work with their doctors
- Identify treatments that help manage pain and improve quality of life

Facts About Chronic Pain



Chronic pain:

- Is pain that lasts for months or years
- Is often related to nerve damage from SCI or musculoskeletal problems, such as overuse
- May be difficult to eliminate
- Can be managed or reduced so it isn't overwhelming

What are the types of pain?

Facts About Neuropathic Pain

Neuropathic pain:

- Is caused by abnormal communication between the nerves that were damaged by a spinal cord injury and the brain
- Comes from areas of the body at or below where there is little or no feeling
- Is usually described as burning, stabbing, or tingling (“pins and needles”)
- Is often difficult to treat and often involves a combination of treatments

Facts About Musculoskeletal Pain



Musculoskeletal pain:

- Is common for all people as they get older
- Gets worse with movement
- Gets better with rest
- Is caused by
 - ✓ Problems in muscles, joints, or bones
 - ✓ Injury from a fall
 - ✓ Overuse or strain
 - ✓ Arthritic changes
 - ✓ Wear and tear to joints
 - ✓ Wheelchair use and/or transfer

Location and Cause of Musculoskeletal Pain

- Shoulder, elbow, and hand pain is caused by overuse of the muscles from doing transfers and pressure-relief maneuvers and from pushing a wheelchair. This type of pain can make it difficult for a person to transfer safely and perform other activities of daily living
- Back and neck pain are experienced by many people with paraplegia or tetraplegia who have had surgery to fuse their spine due to the increased motion that occurs just above and just below the fusion
- Muscle-spasm pain is caused when muscles are strained from spasticity

Facts About Visceral Pain



Visceral pain:

- Is located in the abdomen or pelvis
- Is described as cramping and/or dull and aching
- Is caused by constipation, kidney stones, appendicitis, etc.
- Can be missed
- Should be treated by a doctor knowledgeable about SCI to ensure correct diagnosis and treatment

What can be done to manage pain after SCI?

Physical Treatments and Interventions



Activity modification:

- Treats musculoskeletal pain
- Can be done by
 - ✓ Changing how mobility equipment is used
 - ✓ Doing exercises that strengthen and balance joints
 - ✓ Modifying how pressure reliefs are done, which can significantly decrease muscle or joint pain

Physical Treatments and Interventions



Physical therapy:

- Treats musculoskeletal pain
- Involves stretching and range of motion exercises to relieve pain associated with muscle tension
- Helps strengthen weak muscles to restore balance in painful joints and reduce pain

Physical Treatments and Interventions

- **Therapeutic massages** help relieve musculoskeletal pain due to muscle tightness and muscle imbalance
- **Acupuncture** helps to relieve musculoskeletal pain by inserting tiny needles into the skin at specific points to stimulate the body's pain control system

Psychological Treatments for Pain

- **Relaxation techniques and/or biofeedback** teaches how to reduce muscle pain tension and mental tension
- **Self-hypnosis training** may reduce chronic pain in some individuals
- **Cognitive restructuring** helps people think differently about pain. Treatment can lead to changes in brain activity and, in turn, the experience of pain
- **Individual psychotherapy** helps people identify goals and increase pleasure and meaning in daily life, which can help reduce pain

Medications for Pain

- **Antidepressants**, such as selective serotonin-norepinephrine reuptake inhibitors, are used to treat neuropathic pain and depression
- **Anti-seizure medications**, such as gabapentin and pregabalin, are used to treat neuropathic pain
- **Muscle relaxants and antispasticity medications**, such as diazepam, baclofen, and tizanidine, are used to treat spasm-related and musculoskeletal pain
- **Narcotics (opiates)**, such as morphine, codeine, hydrocodone, and oxycodone, are used to treat neuropathic and musculoskeletal pain
- **Nonsteroidal anti-inflammatory drugs**, such as aspirin, ibuprofen, and naproxen, are used to treat musculoskeletal pain
- **Topical local anesthetics**, such as lidocaine, are used to treat pain that occurs when skin is lightly touched

Surgical Treatments for Pain



- **A dorsal column stimulator** is used to treat neuropathic pain due to root damage. A nerve stimulator is surgically placed in the spinal canal next to the spinal cord or nerve roots
- **Intrathecal pumps** are used to treat all types of pain including spasm-related pain. A pump containing morphine or baclofen is surgically placed under the skin in the abdomen. It delivers the medication directly to the spinal cord and nerve roots

Prevention and Self-Care Techniques

- Get treatment for medical problems
- Try to get as much exercise as possible
- Get treatment for depression
- Reduce stress
- Create distractions for yourself
- Keep a record of pain
- Get a wheelchair seating evaluation
- Do not use alcohol to ease pain

Finding Help

- A physician and/or psychologist familiar with SCI and pain management can provide pain reduction treatment
- A multidisciplinary pain clinic where physicians and psychologist are available is another choice

Try not to become discouraged if one treatment doesn't work and be open to trying a variety of different techniques

**For additional resources on living with a
spinal cord injury, please visit the
Model Systems Knowledge Translation
Center website at www.msktc.org**