



BTS/ACPRC Guideline
Physiotherapy management of the adult, medical, spontaneously breathing patient
Web Appendix 8 – Respiratory (chest) physiotherapy for people with
Spinal Cord Injuries

www.brit-thoracic.org.uk

What are the effects of a spinal cord injury on breathing?

The brain normally sends signals along nerves in the spinal cord to the muscles in your chest which control breathing. When everything is working properly, the lungs and the breathing muscles work together to allow you to breathe in and out without any thought or too much effort.

If you have suffered a spinal cord injury your lungs are not affected by the injury, but the signals sent from the brain may be unable to flow through the spinal cord to control your breathing muscles. The effect it will have on your breathing will depend on the level of your injury and how severe the injury has been. Injuries lower down the spine do not usually affect breathing muscles but higher levels of injury usually affect at least some of the breathing muscles. It may mean that you don't breathe deeply enough all the time.

What kind of problems can I expect?

Different positions we lie in change the way the lungs expand and it may be difficult for you to change your position. Coughing may be difficult as your abdominal (tummy) muscles are not able to produce enough force for a strong cough. This can make it more difficult to clear phlegm (sputum) from your chest. All these things can lead to difficulties with keeping the lungs well inflated and clear, and you could be more prone to getting chest infections than you were. It is therefore very important that you look after yourself, especially within the first year after injury when you are most susceptible to these problems.

What symptoms will I have if am getting a chest infection?

Call your doctor if you feel unwell with any of these symptoms or if others say you are looking pale:

- Shortness of breath
- Fever
- Feelings of heaviness in your chest
- An increase in phlegm

Who should I contact if I have problems with my chest?

Let your GP, Nurse or Physiotherapist know. They can advise the best course of action for you. They may also be able to refer you to a specialist who deals in breathing problems who can assess you if necessary.

How can physiotherapy help me?

Your physiotherapist will examine your chest and they may also test how strong your breathing and your cough are. They may test your breathing ability in different positions as many people with spinal cord injury breathe better lying on their back. Together you can discuss the best ways helping your breathing. Your physiotherapist will also help you learn to look out for signs of chest problems and teach you the best ways of dealing with phlegm (sputum) which may build up in your lungs. This may involve teaching your carer(s) to help you to clear your chest when you are unwell. They may suggest trying any of the following techniques:

Wearing an abdominal binder

Wearing a binder around your abdomen (tummy) can help provide some support for your tummy muscles to help you breathe better when sitting. It may also help you generate a stronger cough. It may be helpful to consider this if you have an infection, even if you do not normally use one.

Adopting a good posture

Sit up in your wheelchair every day and turn regularly in bed if you are spending long periods of time in bed. This will help stop phlegm from building up too much in one place in your chest, which would increase the risk of getting an infection. Moving also makes it easier to get the phlegm out of your chest.

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Take regular exercise

Every person with spinal cord injury can benefit from some type of exercise. Doing some exercise may help you feel less breathless as you are keeping your breathing muscles in shape. Talk to your physiotherapist and doctor first to find the right exercise programme for you.

Functional Electrical Stimulation

This is an electrical device to stimulate the muscles to work. It is a means of training and strengthening your tummy muscles. Discuss with your physiotherapist if it might be helpful for you.

Inspiratory muscle training

This kind of exercise is not helpful for everybody. Discuss with your physiotherapist if specific training for your breathing muscles would be of help to you. After assessing you, they can advise on the type of exercise and how frequently to carry this out.

Clearing phlegm from the chest

You will be able to use any of the techniques below and you and your physiotherapist can plan together the one(s) that work best for you.

Manually assisted coughing

A helper pushes firmly upwards on your tummy as you cough. This does the work that your tummy muscles would normally do and makes coughing stronger. Your helper will be taught to coordinate the push with your breathing. You should take several normal breaths in between each assisted cough and don't do too many in each session to tire yourself out.

Mechanical insufflator-exsufflator

This machine can help you take in a bigger breath by helping to inflate your lungs through a facemask or mouthpiece. It also helps you cough by creating a gentle sucking pressure making your cough stronger and helping to move phlegm.

What else can I do to keep myself well?

- Drinking plenty of water helps your body in many ways. In your chest, it can help stop secretions in your chest from becoming thick and difficult to cough up, and helps the normal mechanism for clearing phlegm working better.
- Do not smoke. People who continue to smoke following a spinal cord injury are at higher risk of developing a chest infection than a non smoker. It increases phlegm and reduces your ability to clear secretions.

Who should I contact if I do not have a physiotherapist?

If you speak to your GP, they should be able to refer you to a physiotherapist who specialises in breathing problems or spinal cord injuries.

Useful Contacts

Your physiotherapist is _____

Association of Chartered Physiotherapists in Respiratory Care www.acprc.org.uk

British Thoracic Society
www.brit-thoracic.org.uk

Spinal Injury Association
<http://www.spinal.co.uk/>

British Lung Foundation
www.lunguk.org

Chartered Society of Physiotherapy
www.csp.org.uk

NHS free smoking helpline **0800 0224332**
www.smokefree.nhs.uk