

Scottish Muscle Network

Patient information leaflet

Postural management in neuromuscular disorders

Introduction

Posture is something physiotherapists refer to a lot when discussing the way in which your neuromuscular condition affects you. Pain, muscle strength and muscular activity are all affected by posture and vice versa. Understanding the way in which your posture changes when you have a neuromuscular condition is an important aspect of learning how to manage your current and future health management.

Posture refers to the way you hold yourself upright against gravity, or the position you adopt when standing, sitting, lying, or relaxing. Posture is both dynamic (walking, running, playing sports, and generally moving around) and static (e.g. sitting at the computer, reading a book, standing in a queue, or lying in bed at nighttime).

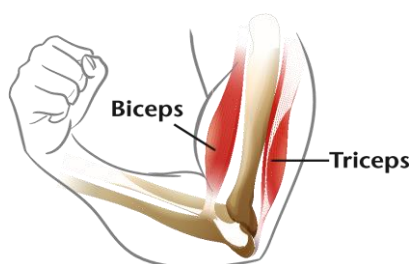
Posture and neuromuscular disorders

In many neuromuscular disorders, weak muscles will affect your posture over time. If the muscles on both sides of your body do not have equal strength, this can lead to asymmetrical changes in your posture such as a twist or curve in your spine (scoliosis). These asymmetrical changes can also affect the way you walk, for example, you may walk with a limp or compensate for the weak muscles by using other muscles which may unknowingly pull you into awkward asymmetrical positions. This may cause you to tire quicker and experience pain in your joints.

Muscles work in pairs and tend to have a push and pull action. For example, in the elbow joint the bicep muscle bends the elbow and the tricep muscle straightens the elbow. If these muscles do not work equally with one another, then the full range of movement is lost and the elbow joint will move over a shorter range, perhaps not being able to fully straighten, if for example, the tricep muscle is weaker. Over time, the bicep muscle will shorten as it no longer is able to extend to its full length to allow the elbow to be straight.

Eventually the full range of movement is lost, and the elbow will have a contracture i.e. will be tight when it is moved into the straight position, or you will not be able to fully straighten it.

This can lead to pain when dressing for example, when the joint is pulled into a straighter position as hands go through the arms of shirts, jackets etc.



Contractures

Contractures (the shortening of a muscle) can occur at any of your joints and is one of the reasons your physiotherapist discusses your posture with you. When muscles tighten, the body can be pulled into further awkward postures and if muscles are a bit weaker, they fatigue or tire more easily and are not able to correct these awkward postures. This causes further tightness and can lead to pain.

If you have weak muscles, especially if you need to use a wheelchair or spend long periods of the day sitting or lying and do not change your posture regularly, pain may become an issue.

We recommend moving every 20 minutes or so. If you are unable to move independently, you can get help from a caregiver or personal assistant (PA) as even small movements and changes in position can make a big difference over the course of a day especially if pain is an issue.

This pain may be:

- in the form of pressure (the blood supply to the superficial tissues and skin is interrupted) or
- mechanical (the bones and joints are not being properly supported)

This lack of support causes the body to move into uncomfortable and inefficient postures putting pressure on the bones, joints and muscles and stressing them in ways they are not able to cope with effectively. There are a number of ways your physiotherapist can help, and they will discuss this in detail at your physiotherapy review.

As mentioned earlier posture can be both dynamic (walking, running, playing sports and generally moving around) and static (sitting, standing or lying).

Dynamic postural management: When muscles are weaker, they don't let you move as efficiently as stronger muscles do. More strain is put on the joints when walking, going up and downstairs and standing from the sitting position. In fact, all movement will be done slightly differently. You may already notice that you walk with more of a 'swagger' or you drag your toes as lifting your feet can be more difficult. In these cases, the muscles are working harder and will therefore fatigue quicker. When muscles fatigue, you are more likely to trip or fall over. When out walking over uneven surfaces, especially surfaces like stones, rough ground, grass and sand, your postural muscles, the muscles of the core (back and abdominals) must work harder. When already working at their best, they may not be able to respond quickly enough to help you to keep your balance. Stepping up a kerb or going up or down hill may feel difficult. This is why people will describe themselves as becoming more tired when walking out of doors.

Walking against rain and wind and walking on ice and snow also changes the way in which you hold yourself causing you to tense your muscles. This uses up more energy and causes more fatigue.

Falls and trips: Falls, trips and slips are more likely when muscles are tired, and it may be that you need some additional help to support the muscles. Your physiotherapist may suggest a stick or walking aid, or perhaps a splint to support your ankle or knee joint. If your joints are hypermobile (they have more movement than normal) your physiotherapist will give you specific advice on posture and exercises. They may also suggest an orthotic splint or joint support. In these cases, they will discuss referring you to the local Orthotics Department.

Static postural management: Static posture is best described in three sections; standing, sitting, and lying. The key to good static posture is about symmetry so that one side of the body is not taking more strain than the other. You need to regularly change your position when in a static posture to avoid your muscles becoming overly tired from being used constantly in the same position. Although you may think that you are resting while sitting, either in a wheelchair or chair, you are not. Your muscles are still working hard, and you need to change your position to make sure you use the same muscle groups in different ways so that the muscles do not become fatigued.

Standing: Standing requires a lot of muscle work and you can become tired if you stand for long periods of time. Try leaning against a wall or perch on a stool if you can. If the situation allows, sit for ten minutes or so before standing again. If you tend to stand on one leg, then it is important that you change and stand on the other leg too, so you are working both sides of your body. This way all muscle groups are working equally, and one group is not being used more than the other causing an imbalance in your muscle function.

Sitting: If you are sitting for long periods of time, your muscles will need a break. Stand up every 20 minutes or so. This is just an estimate, some people may need to change their position every 10 minutes (or sooner) and others may find that every 30 minutes is enough.

Try alternating between sitting forward and sitting back in the chair. Make sure your seat allows you to sit in the 90/90/90 posture i.e. hips, knees and ankles are at 90° and feet are supported on the ground. Sitting includes sitting on the toilet, sitting at a table in a restaurant, sitting on the sofa watching TV, sitting in the car, sitting anywhere.

Always make sure you are sitting facing people when talking to them and you are not sitting at an angle with a twist in your neck and back. Remember, any asymmetrical posture means muscles are being used in an imbalanced manner, so it is important

that if you find yourself leaning to one side then do the same to the other side and then back to the middle again.

If you have weakness in your shoulders, then it is important that you support your arms to take the strain off your shoulders when you are sitting. For example, place your arms on a table or sit with a pillow on your lap to help support your muscles and joints.

Wheelchairs: If you are sitting in a wheelchair for any length of time, it is essential that your wheelchair has appropriate support. If you cannot change your position on your own, you should consider a chair with more advanced functions such as tilt and recline. Your physiotherapist can offer advice.

Neck supports, trunk supports etc can help maintain good, seated posture. Even sitting with support can tire your muscles and if possible, consider coming out of the chair for periods of time through the day. Frequent changes of posture are important to prevent muscle fatigue and it is important that your family, friends, and colleagues understand that you can become tired when sitting for long periods of time.

Lying: You may think that because you are in bed, your muscles are relaxed, and your posture does not require assistance. While this is partially true, the very fact the muscles are relaxed means that this is exactly the time when extra support is required. It is a good time for your muscles to rest when you are relaxed in bed but because they are resting, you are more likely to relax into asymmetrical and difficult postures. If you prefer to lie on your side, it is important to make sure that you support your top arm and you can do this by laying it across your partner or by supporting it on a pillow. Support your top leg on a pillow too as this keeps your back, neck and shoulders in a good position. It is not good to lie on the same side for too long so always make sure you lie on the opposite side too. If you have shoulder or hip pain, you need to avoid pressure on these joints and make sure you are not lying on them. Your physiotherapist can show you different lying positions. If you are unable to change position by yourself, it is normal to be moved two or three times through the night.

If, however, you waken more often than this, requiring help to move, your physiotherapist may recommend using a mattress topper and / or a sleep system. A sleep system consists of pillows and supports that are designed to help you maintain a comfortable posture whilst re-distributing pressure. This means you can lie in the same position for longer without the need to be turned as often. Your physiotherapist can provide further information about this.

Conclusion

Your posture affects every aspect of your life from home to work to hobbies. Poor posture can lead to pain and fatigue and can cause tightness at joints. An assessment of your posture by a physiotherapist is an important part of the overall management of your neuromuscular condition.