



POD-NMD
PHYSIOTHERAPY

Managing Falls in Neuromuscular Disorders


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Falls in NMD

- Falls are not uncommon in NMD
- It is important to reduce the risk of falls
- This presentation discusses the reasons why you might fall and how to prevent falls in both adults and children including those with Duchenne Muscular Dystrophy
- It includes advice if you have fallen





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There are four components to balance



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Balance components



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Muscle Strength

Your muscle strength may become weaker over time

This means they may tire more quickly

Tired muscles don't work as well especially when you are performing a repetitive or continuous movement such as walking or standing

You may not be aware of this tiredness but your "knees give way" when you are walking or turning leading to a trip or a fall

Natural ageing will also lead to this type of tiredness

When you are not using your muscles such as after a fall this can lead to more weakness (due to lack of use of your muscles) which can make it harder to walk

Managing Fatigue is discussed in a separate Scottish Muscle Network Leaflet - See Fatigue Management



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Balance – role of semi-circular canals

Your muscle condition may impact your balance systems

The balance system is also impacted by age

Our ears contain a semi-circular canal that monitors our position and changes to that position. The brain then uses this information to guide our muscles, so we don't fall

If your muscle condition affects your hearing – resulting in hearing loss – you should get your hearing checked.



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Vision - eyesight

Poor or limited vision can increase your risk of falls

Good idea to visit optician on a regular basis

Some muscle conditions are associated with eye problems so talk to your specialist doctor

If you need glasses wear them!

Good lighting is important especially if you are getting up in the night. Night lights designed for children can be helpful



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Proprioception and sensory feedback

Proprioception is the body's ability to sense movement in our joints and their position in space, so we don't need to look at them

This is important for all activities but especially when our movements need to be accurate or precise

If your condition affects the nerves in your feet and legs your brain will not get this extra information.

If you are walking on uneven ground, you may not have the best information on your body position to prevent falling or tripping




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Other factors which may increase risks of falls

Medication may impact balance, and some can cause dizziness. It is important to review your medication if you feel dizzy / light-headed or if you think the medication is impacting your balance


Long term and persistent use of neck collars can reduce the proprioception in your neck so when you are walking in poor lighting, your balance may be impacted. If you are concerned about this speak to your doctor or the professional that prescribed your collar.

Illness / injury may increase your risk of falls - as mentioned before, muscle disuse leads to muscle wasting which can make you more tired and at greater risk of falls.




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Managing risk of falls



When you are out and about

- Using splints
- Using wheelchairs and scooters
- Using walk aids
- What to do if you fall



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When you are out and about

Tired muscles don't respond well to change in speed or direction



Be careful especially in busy or unfamiliar places. Falls are more likely when there are many distractions


If you're walking with someone don't turn to look at them – the rotation uses muscle strength and can cause you to over balance.
Take care in inclement weather.

Consider using a walking aid such as a stick / walking poles. Talk to your local physiotherapist for an assessment.

They can be a useful visual prompt

They are another thing to carry / manage



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Splints

If your lower leg has a foot drop – you cannot lift your toes and foot properly when walking. This may be permanent or more pronounced when you are tired at the end of the day


May benefit from an ankle splint which prevents or limits this when you are walking.

Wear it outside especially on uneven ground when you may need better foot and toe clearance

May be helpful for managing stairs

What type of splint?


- May be a dynamic elastomeric fabric which uses the elasticity spring back to pull your foot up for mild foot drop
- Rigid support such as an ankle foot orthoses (AFO)
- More dynamic carbon fibre foot up




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Using wheelchair or mobility scooter

Don't let risk of falls stop you leaving the house
Consider other options and discuss these with your therapy team



A wheelchair conserves energy
Gets you to your destination safely
Folding versions can fit in the boot of your car – use it if you need it
Try it out first
Use it on holiday where you can gain confidence and are less likely to meet people that you know






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Using a wheelchair

Ask your GP or specialist team to refer you to wheelchair services or discuss different options with them


It can be hard using it for the first time
It can be emotional for you and the whole family
They worry it will make them weaker more quickly or perceived as laziness
You may worry about costs / space for storage

These fears are usually unfounded
Many people regret not getting one sooner
They regain independence and confidence
They can use energy for other more fun things than just walking


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Role of physiotherapy



Physiotherapist can assess the risk of falling
Make suggestions / referrals for walking aids/ splints / wheelchair
Advise you how to get back up after a fall if you have not injured yourself
Advise others how to help you back up after a fall
You can ask for training on moving and handling for your family

Specialist devices do exist to help you get up after a fall
Small stool may also be helpful
Mobile phone that you carry with you
Consider a pendant device which can be worn around your neck or on a wrist to alert others
Voice operated device to alert others may be helpful – “Alexa” for example





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Occupational Therapy Assessment

An OT assessment can assess your mobility in all or any rooms of your home as well as getting in and out of your home
They can identify hazards such as carpets / rugs / trip hazards
They can discuss solutions and potential equipment ideas to help with safety and access
You can self-refer via your nearest social services OT department

They may also play a role in assessing you for a wheelchair / mobility scooter

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Falls Management – Duchenne muscular dystrophy

A pdf handout of this information can be found on [Scottish Muscle Network Website and our website](#)

Falls are common in DMD but the risk of falls varies depending on the stage of the condition.

It is important to reduce the risks and understand why falls occur.

In DMD muscles are weaker and become progressively weaker. When they are weak the muscles do not react as quickly to sudden changes in direction, different surfaces or bumps in the road. This loss of reactivity can put people with DMD at risk of losing balance and falling.



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Young children with DMD and falls

In young children with DMD falls can happen everyday as they play, with and try to keep up with their friends. Muscle weakness at this stage is not usually advanced so to some extent they can save themselves using their hands or rolling.

Ankle tightness can increase the risk of falls and this lack of flexibility can increase the likelihood of falls especially on uneven ground

The good news is that some support can help. Insoles inside a lightweight set of footwear can provide some additional stability. Good footwear can make a big difference

Ankle tightness can be managed with stretches and orthotics such as night-time ankle foot orthoses. These are usually provided by an orthotist on advice of a physiotherapist



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Late ambulatory stage in DMD and falls

When walking becomes harder and more limited a wheelchair is used more often as falls or stumbles may become more likely

May feel like a sensation of giving way of your legs
May be more likely when you are tired or at the end of a day

You may want to use your wheelchair more often when you know you are tired or to save your energy for something important that requires walking or standing

Look at the Scottish Muscle Network leaflet on Managing Fatigue
Look at the MDUK leaflet on "pacing"




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Avoiding Falls is important

Falls put those with DMD at risk of a fracture especially if they have been on steroids for some time

If you do fracture this will limit your mobility and will put your muscles at risk of getting weaker due to inactivity. This may make it harder to get back on your feet

If you do have a long bone fracture after a fall, see under [Podcasts](#) on pod-nmd website and the importance of the correct emergency management here:
<https://www.duchenneuk.org/dmd-emergency-support/>



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If a boy or young man does fall

They can get up. Advise them to:

- Turn over onto their front
- Try and push up on their hands and knees
- Hold onto a stable surface / bench / chair
- Get them to face the chair and get up slowly until they are on their feet
- Turn themselves around and rest for a few minutes

They cannot get up. Advise them to:

- Attract attention or help / use a phone
- Get them to make themselves as comfortable as they can – rolled up coat for their head
- Keep warm – cover / coat over them
- If possible, get them to move / change position for pressure care, circulation and avoid stiffness
- Wait for help and ensure emergency services know their diagnosis / use emergency card




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If a boy or young man does fall - continued


If they normally use a hoist or aid to help them move:

- Check they feel ok to be moved.
- Do not try to lift them manually, use their hoist or lifting device
- Seek assistance from other people or emergency services




If you think something is broken:

- Don't try to move them as this may make the injury worse
- Emergency plan if you are on steroids See: <https://www.duchenneuk.org/dmd-emergency-support/>
- For MDUK alert card see: <https://www.musculardystrophuk.org/or-der-alert-card>



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We hope this presentation has been useful.
Thank you for listening



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