



York and Scarborough  
Teaching Hospitals  
NHS Foundation Trust

# Balance and Vestibular Exercises

Information for patients, relatives and carers

① For more information, please contact:

Balance Centre

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# Introduction to balance

Balance is the ability to maintain an even distribution of weight to remain upright and steady without falling.

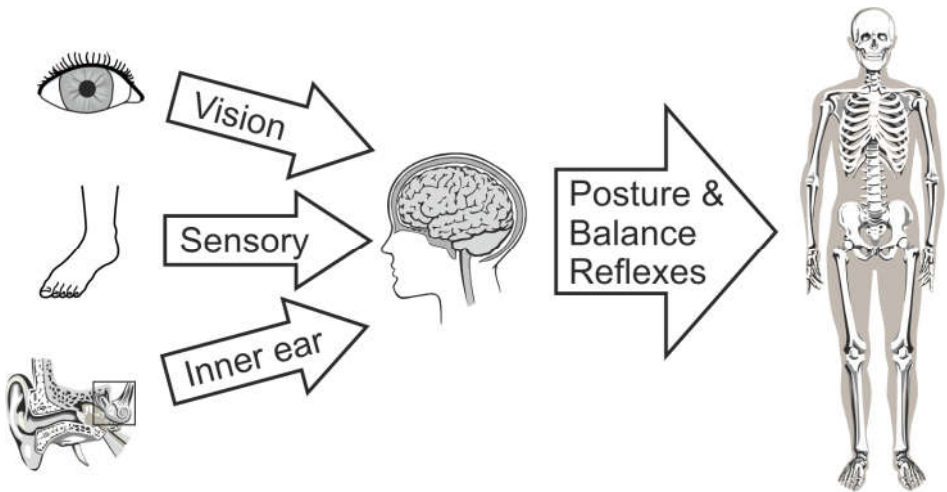
We use three key systems to send information relating to our balance to the brain.

- **Visual system:** Your vision provides valuable information to the brain about your environment.
- **Somatosensory / proprioceptive system:** You have special sensors in your muscles, tendons, joints, and skin that help your brain to know how your body is positioned.
- **Vestibular system:** Balance organs in the inner ear tell the brain about the movements and position of your head. This system senses head movement and keeps your eyes stable.

Our brain then responds by sending messages to the body to move in a way that will help you keep your balance and have clear vision while you are moving.

## Three key systems for balance:

- Vision
- Sensory
- Inner ear



If any of the three key systems for balance is damaged by disease, ageing, or injury, balance problems can result. People with vestibular disorders often experience problems with vertigo, dizziness, visual disturbance and/or imbalance.

Balance and walking exercises will challenge your balance and vestibular system. Doing this repetitively can improve stability and reduce dizziness and visual vertigo. Your specialist physiotherapist will guide you to the most effective exercises for your needs and concerns within this booklet.

To make improvements, you must carry out the exercises you are given. Maintaining, or ideally increasing activity levels, is especially important and should be part of your everyday routine. If you continue to practice your balance exercises, your balance will continue to improve.

Always ensure you challenge your balance in a safe way. This might mean standing near a supportive surface or wall or taking a walking aid, such as a stick when out walking. If you are unsure how to make exercise safe, discuss this with your physiotherapist.

Activity can count as exercise, whether its gardening, housework, a specific sport, or exercise class. Your body and brain need movement to stay strong and healthy. By repeating movements that trigger dizziness or imbalance, starting gently and then increasing can improve your tolerance and ability.

# Walking

This is one of the best exercises you can carry out. Try to go for a walk every day. Where possible go out for at least 30 minutes of moderate exertion.

Moderate exertion means increasing your heart rate, feeling a little out of breath but still being able to hold a conversation.

You may need to start at **five to ten** minutes and build up a little more each time.

Vary your route and gradually go to busier places or places with different surfaces.

Try not to hold onto anyone but use a walking aid as needed. You may want to start going with a family member or friend as you build up your confidence.

Try to look around as you walk and note details on things near and far to you. For example, the patterns on leaves or types of flowers. Spot interesting things you see in places and people.

Try to walk in daylight and ensure comfortable and secure footwear.



# Functional balance exercises

Work through the exercises below. Stand near a supportive surface but try not to hold on. Move onto the progressions as they become easier.

Aim to practise each one for **one to two** minutes and if applicable switch the leading foot and repeat each side.

It is helpful to focus on keeping the pressure through your feet equal and use that sensation to adjust your position.

- Stand with your feet apart.
- Stand with your feet together.
- Step stance position- move one foot ahead of the other like you have taken a step. Repeat with the other foot leading.
- Stand heel to toe. Switch the leading foot.
- Stand on one leg. Swap legs.
- Stand with your feet apart, sway your weight towards your toes and then to your heels slowly. Hold in each position for three to five seconds. Repeat.
- Marching on the spot- raise the knees as high as you can and perform slowly, holding for a second before slowly lowering the foot back to the floor.

- Progress the above list of exercises by adding in the below:
  - Add head turns left to right and up and down.
  - Swing your arms forward and back.
  - Close your eyes and hold your balance.
  - Stand on a foam cushion. Stand near a wall or chair for support. Or have someone supervise you during this task.

# Dynamic balance exercises

- Practise walking up and down a room or corridor whilst looking gently from left to right and up and down. Start by performing one or two head turns. Focus your eyes forwards again between head turns. Increase the number of turns and walking pace as you feel able to. Try to keep a straight path. Repeat for two to three minutes. Add this to your daily walk.
- Practise walking and turning before carrying on again. First in a bigger circle then gradually smaller until you can turn on the spot.
- Practice walking in a figure of eight around two small obstacles on the floor. Ensure there is enough space around you. When you feel more confident, make it harder by quickly changing direction, carrying an item or adding a mental task such as counting backwards from 100.
- Heel to toe walking- imagine you are walking along a tightrope. Stand near a wall for support.
- Walk whilst throwing and catching a ball.

## Vestibular ocular reflex (VOR) training

These exercises aim to improve the information between your inner ear, brain, and eyes. They will help to make you feel more stable during movements of your head and body. Your physiotherapist will demonstrate these to you to ensure a good technique.

1. Write a capital “E” on a small plain piece of card as a target to focus your eyes on.
2. While sitting or ideally standing if you are able, hold the target out at arm’s length or place the target at eye level on a blank wall in front of you. If standing place, the target approximately three to four feet away.
3. Move your head from side to side (like a “No” head shake) **keeping your gaze focused on the letter E** and make sure that your eyes remain on the target and the **target remains clear**.
4. Keep moving your head from side to side for **one minute continuously**, at your maximum speed. This speed will be identified with your physiotherapist at your appointment.

Repeat three to four times per day.

If you have a metronome or metronome app to help keep you at the correct speed. Start slowly if needed. Aim to get faster. Aim for 160-240bpm.

- Repeat, moving your head up and down vertically (small head nod)
- progress the vestibular ocular reflex exercise by-
- Placing the target on a patterned background
- Standing with your feet together or a step stance position
- Standing on a foam cushion
- Marching on the spot, on firm ground.
- Place a target at the end of a room or corridor. Keep your eyes on the target and walk towards it whilst moving your head side to side. Start slowly with the head, only making a few turns.
- Repeat moving your head and up and down. Get faster with your head and walking speed as you feel more confident.

# Eye movement exercises

Start by performing each exercise for 20 seconds and build up to **one** minute, **five** times a day or as directed by your physiotherapist. Sit in a comfortable position.

## Smooth pursuit

- Keep your head still. Hold a pen out at arm's length and at eye level. Fix your eyes to the pen top. Move the pen side to side, following it with your eyes. You should still be able to see the pen out of the corner of your eye.
- Repeat this while moving the pen up and down.

## Saccades

- Hold two pens out in front of you at eye level about 18 inches apart. Keep your head still. Quickly move your eyes between the two pen tops.
- This can be repeated with the pens positioned vertically or diagonally.

## **Corrective saccades**

- Place two target letters on pieces of card. Hold them out at arm's length horizontally or place on a wall in front of you a few feet away. They should be close enough together so that when you look directly at target one you can see the second target out of the corner of your eye. This distance is approximately nine inches. Rest during the exercise if needed.

Move your eyes so you are looking at target one only.

- Turn your head to face target one.
- Move your eyes so you are looking at target two only.
- Move your head to face target two.
- Repeat this exercise for between one to three minutes or as instructed.

# General fitness and strength exercises

Carry out each exercise for 30 seconds to **one** minute and rest in between.

- Move from sitting to standing as many times as you can. If possible, do this without using your hands.
- Squat- with a chair behind your, sit back slowly keeping your weight on your heels. Go as low as you can before you touch the chair and then fully stand back up straightening your knees.
- Fast walking or jogging on the spot.
- Lunges- take a large step forward, bending your back knee towards the floor, hold and step back. Repeat with each leg leading.
- Step-ups- on the bottom stair or step, step up and down. Repeat with each foot leading.
- Practise side stepping along the length of a room and back.

Note/ other resources:



# Glossary

**Smooth pursuit:** Slower movements of the eyes designed to allow both eyes to smoothly track a moving object.

**Saccades:** Rapid movement of the eyes between two fixed points.

**Vertigo:** Feeling as if you or everything around you is spinning.

**Vestibular Ocular Reflex (VOR):** A reflex between the inner ear vestibular system and the eyes to stabilise gaze during head movement.

**Visual vertigo:** Dizziness or imbalance that is triggered when there is too much visual stimulation for your brain to cope. For example, in busy shops, walking over patterned floors, looking at a cinema screen or watching moving traffic.

## **Tell us what you think of this leaflet**

We hope that you found this leaflet helpful. If you would like to tell us what you think, please contact:

Advanced Clinical Specialist – Vestibular, Physiotherapy,  
The York Hospital, Wigginton Road, York, YO31 8HE or  
telephone 01904 725611.

## **Teaching, training and research**

Our Trust is committed to teaching, training and research to support the development of health and healthcare in our community. Healthcare students may observe consultations for this purpose. You can opt out if you do not want students to observe. We may also ask you if you would like to be involved in our research.

## **Patient Advice and Liaison Service (PALS)**

PALS offers impartial advice and assistance to patients, their relatives, friends and carers. We can listen to feedback (positive or negative), answer questions and help resolve any concerns about Trust services.

PALS can be contacted on 01904 726262, or email [yhs-tr.patientexperienceteam@nhs.net](mailto:yhs-tr.patientexperienceteam@nhs.net).

An answer phone is available out of hours.



# Leaflets in alternative languages or formats

If you would like this information in a different format, including braille or easy read, or translated into a different language, please speak to a member of staff in the ward or department providing your care.

Patient Information Leaflets can be accessed via the Trust's Patient Information Leaflet website:

[www.yorkhospitals.nhs.uk/your-visit/patient-information-leaflets/](http://www.yorkhospitals.nhs.uk/your-visit/patient-information-leaflets/)

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