

AbilityNet Factsheet – June 2019

**Workstation ergonomics**

Ergonomics is the study people’s performance and wellbeing in relation to their and working environment. This document provides an introduction to many of the issues you need to consider when setting up a workstation. However, it is not an exhaustive guide and you may need to do some further research using the links provided.

AbilityNet are specialists in using digital technology to help people with disabilities fulfil their potential at work, at home and in education. However, the issues raised here are relevant to any employee with a workstation, and not just disabled people.

It is important that employers understand their legal responsibility to provide ‘reasonable adjustments’ to protect their staff from injury and prevent discrimination. This includes adjustments to the workstation.

Section 10 gives details of all the services that AbilityNet can provide to assist employers in establishing safe and efficient workstations to help increase productivity and wellbeing.

Links to other helpful resources are given in Section 11.

Contents

[1 Why is ergonomics important? 3](#_Toc11060774)

[2 What do you need to do? 3](#_Toc11060775)

[3 How can you achieve correct posture? 4](#_Toc11060776)

[4 How should you set up your workstation? 5](#_Toc11060777)

[5 How do you choose the right chair? 7](#_Toc11060779)

[6 What are the keyboard options? 7](#_Toc11060780)

[7 How can different input devices help? 8](#_Toc11060781)

[8 What other special equipment can you get? 10](#_Toc11060782)

[9 Ergonomics and Mobile Devices 10](#_Toc11060783)

[10 Useful links and resources 11](#_Toc11060784)

[11 How can AbilityNet help you? 12](#_Toc11060785)

[Free advice and home visits 12](#_Toc11060786)

[My Computer My Way 12](#_Toc11060787)

[Workplace Assessment Service 13](#_Toc11060788)

[Consultancy services 13](#_Toc11060789)

[DSA / Student assessments 13](#_Toc11060790)

[12 About AbilityNet 14](#_Toc11060791)

[Support us 14](#_Toc11060792)

[Contact us 14](#_Toc11060793)

[13 Copyright information 14](#_Toc11060794)

# Why is ergonomics important?

Many different factors affect our health and productivity in the workplace including ergonomics, especially in relation to our workstation - the place where we do our work.

As much as 90% of the UK’s workforce use a computer as part of their work. This may be at a specified workstation, or given the rise of laptops and mobile working, in hot-desk environments, in cafes, at home, and sometimes even in cars.

There are three main reasons to consider ergonomics in the workplace:

* **Business case**
  + Poor ergonomics contributes to absenteeism, chronic sickness and a higher risk of claims against employers.
* **Social case**
  + Responsible employers should be concerned about the wellbeing of their workforce.
* **Legal case**
  + Employers have a duty of care to their employees, and must provide ‘reasonable adjustments’ to prevent discrimination against people with disabilities.

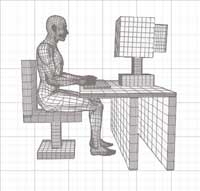
# What do you need to do?

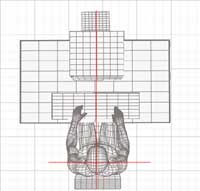
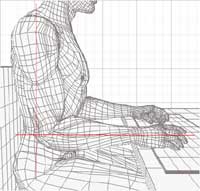
Employers must provide reasonable adjustments in the workplace to prevent discrimination, and this includes adjustments to workstations. Appropriate changes can involve changes to the desk, chair or other office furniture, or through providing equipment, such as an adapted mouse or keyboard. Adjustments can also include changes to your work pattern and the way you work with colleagues.

Many options can be achieved at little or no cost to the employer. However, there is no one size fits all. Establishing the right reasonable adjustments can only be achieved by working with the individual to identify their needs, and combining this with an awareness of the available solutions.

While this factsheet is a good starting point, AbilityNet can also provide employers with more specialist assistance and support. Details of our Workplace Assessment Service are given in Section 10.

# How can you achieve correct posture?

Make sure you are comfortable

* Move your chair close to the workstation.
* Sit upright, with your back supported by the chair’s back support – adjust the support until it is comfortable.
* If the chair armrests prevent you from getting close to the workstation edge, consider lowering or removing them completely.
* Some people find it more comfortable to have their chair seat inclined 5-10 degrees downwards – this can help open up the pelvic area to relieve back problems and help with digestive tract disorders.
* Sit with your feet flat on the floor or supported by a suitable footstool.
* Sit directly in front of your computer screen and keyboard.
* Ensure your legs are not obstructed by drawers or any other objects under the desk.
* Check the direction of the light source – place your screen at right angles to the window and ensure there are no glares/reflections on screen - re-position if necessary.
* Make sure there is a comfortable viewing distance between your eyes and the screen.
* As a guideline, you should be able to view your screen with a neutral neck position.
* Your shoulders should be relaxed – periodically check that your shoulders do not become tense, rise up or hunch.
* Let your upper arms hang down naturally from your shoulders.
* Your forearms should be at 90 degrees, or preferably slightly lower when resting on the keyboard.
* Your chair and workstation height should allow your keyboard to be directly below your fingers to avoid reaching.
* Although with a standard keyboard your palms will be facing down, your wrists should be straight, not bent or extended.

The ‘golden rule’

It is important that you do not remain in the same position for too long, so make   
sure you periodically move in your seat and adjust your general position.

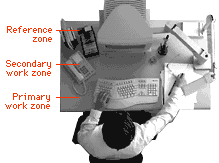
A break of just 20 seconds - so short that your concentration is hardly broken - can work well and might be taken every 20 minutes or so before tension builds up in your muscles and tendons.

# How should you set up your workstation?

Comfort zones

Every working surface is divided into three zones: primary, secondary and tertiary (or reference). Individuals should position items in the appropriate zones for the task in hand and frequency of use, i.e. the keyboard and mouse and/or pad and pen should be located in the primary zone (within the distance of the elbow to the hand); items that are used regularly but less frequently should be placed in the secondary zone (within arm’s reach) and items that are used infrequently should be located around the outside edges of the workstation in the tertiary zone (within stretching distance).

When changing tasks, you should move items to the appropriate zone(s) for the duration of the task, or move yourself to the appropriate part of the workstation.



Primary work zone (distance from elbow to hand)

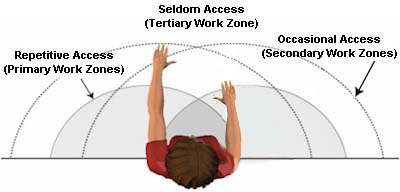
* Use this zone for the items you use all of the time, e.g. keyboard & mouse or writing pad.

Secondary work zone (within arm's reach)

* Use this zone to position those items that you use frequently, but don't need all the time.

Tertiary / reference zone (outside arm's reach)

* Use this zone for your least-often used items.



# How do you choose the right chair?

Ideally, office chairs should be as adjustable as possible allowing the user to customise and adjust their sitting position. Here are a few points to bear in mind when choosing a standard office chair.

* The height and rake of the seat should be adjustable to enable a comfortable working position. Many people find an angle of more than 90° at the hips with the hips slightly higher than the knees is the most comfortable.
* The seat depth should ensure the spine is supported by the back rest while maintaining a gap between the back of the knees and the front of the seat. The front seat edge should be curved or a ‘waterfall front’ to prevent pressure on the back of the knees.
* The back rest should be adjustable in height and angle so that the lower and middle back is supported.
* Armrests are optional but should not prevent the user getting close to the desk. Armrests can encourage people to lean to one side, or hunch their shoulders if they are too high. Removable armrests the alternatives to be tried.
* Swivel chairs and chairs with castors help people turn and move around a workspace. However, people who have difficulty getting up from a chair may prefer it to stay still when rising.

# What are the keyboard options?

In addition to standard equipment, there are many specialist keyboards available. Some alternative keyboards and supports are described below. For more details, see our factsheet on *Keyboard and mouse alternatives*.

Compact keyboards

The numeric keypad on a standard keyboard can cause some people to stretch unnaturally to reach their mouse. Compact keyboards allow the user to position the mouse closer to their body. This can help reduce wrist and shoulder discomfort, and the risk of sustaining a repetitive strain injury (RSI), including conditions such as tendonitis and carpal tunnel syndrome.

The provision of a separate numeric keypad allows the user to choose where it should be located and which hand to use it with.

As compact keyboards are smaller than standard keyboards, they can also be used where there is restricted space.

Some compact keyboards and numeric keypads even have lower profile keys that require less pressure to operate.

Split keyboards

Using a split keyboard helps to straighten the wrists and arms whilst aligning them with the shoulders to achieve a neutral posture. Split keyboards can be split both horizontally and vertically according to peoples’ needs.

Natural keyboards

Natural keyboards have a curved key bed which brings the keys closer to the user’s fingers. This, in turn, reduces reach and unnecessary motion.

Keyboard wrist rest

Extended periods of keyboard use can lead to aching wrists and even long-term injuries. Keyboard wrist rests are designed to encourage correct wrist alignment by allowing the user’s hands to be supported above the keyboard. This improves comfort and can help prevent future problems.

Mouse wrist rest

Extended periods of mouse use can also lead to aching wrists and even long-term injuries. Mouse wrist rests are designed to encourage correct wrist alignment during by allowing the user’s hands to be supported above the mouse. This improves comfort and can help prevent future problems.

**Palm support**

Palm supports are designed to encourage correct wrist alignment during extended mouse use. The support glides with the mouse and encourages natural movement while relieving wrist pressure.

# How can different input devices help?

There are many specialist input devices to help people achieve an optimal workstation setup. These are summarised below. For more details, see our information sheet on *Keyboard and mouse alternatives.*

Vertical mouse

A vertical mouse helps to eliminate forearm twisting by supporting the user’s hand in an upright neutral posture, and encouraging whole arm movement.

Bar mouse

A bar mouse is a pointing device where the user moves a bar in order to move the cursor. The bar can be moved with any finger/s or either hand, and can be pressed to perform the left mouse click.

The bar mouse is positioned between the user and the keyboard, enabling the user’s arms to be close to the body and eliminating the need to reach sideways to a standard mouse.

Trackball mouse

A trackball mouse remains stationary on the workstation and has a movable ball. Users control the cursor on the screen by scrolling the ball with any finger, thumb or palm, instead of moving their entire hand.

This reduces strain on the user's wrist, hands, arms, and shoulders. Trackball users can also operate the buttons more easily without accidentally moving the mouse itself.

Trackballs are a good solution for users with impairments that inhibit gripping a mouse for extended periods and for users with hand tremor.

Further advantages of a trackball with a central ball, are that it requires less space than a standard mouse, and that it can be used with either hand.

Touchpad

Touchpads use a touch-sensitive surface to allow users to control the cursor. Touchpads may be more comfortable for long-term use as they require less motion and allow users to position their hands and arms in a variety of positions.

As touchpads are stationary, they can be placed anywhere – including directly in front of the user. This eliminates the need to stretch to one side of the keyboard and also means that the user can control it with any finger.

Some touchpads allow users to perform commands such as scrolling and zooming by using one or more fingers in defined gestures.

# What other special equipment can you get?

Height adjustable workstations

The advantage of a height adjustable workstation is that it can be used by different people and/or for different tasks, both sitting and standing. As with any workstation, it is necessary to consider the space required, the optimum height for different people performing different tasks, and the equipment layout on the desk.

Footrests

Adjustable footrests are designed to provide reduce thigh strain through supporting the legs and feet and maintaining good posture. This allows users to be more comfortable for prolonged periods sitting.

Document holders

Combined document holder/writing slopes have been designed for keyboard users that need to refer to paperwork and take notes while using their computer.

Document holders have a sloping surface, with adjustable non-slip feet that fit over the keyboard. They allow the user to avoid repetitive body twisting and potentially harmful stretching whilst writing or referring to documents. Placing documents in a holder directly in front of the user results in a safer, more ergonomic approach. The surface can also be pulled forward towards the user, so that they do not have to reach to write.

Telephone headsets

A telephone headset will prevent the user from cradling the handset between the head and shoulder. It also frees up the users’ hands to write and type.

Screen raisers

Screen raisers can be used to enable the user to view the screen with a neutral neck position.

# Ergonomics and Mobile Devices

Mobile technology is fast becoming an important part of working life making it all the more important to consider the ergonomics when using portable devices as poor posture can lead to pain and other musculoskeletal problems.

The tips below may help improve your posture when using these devices:

* Use a headset wherever possible to prevent strain in your shoulders, elbows and neck from either holding a phone to your ear for long periods or wedging the phone between your shoulder and neck.
* Consider using voice recognition to reduce the amount of input using your fingers.
* To reduce the potential strain on your fingers, try to use a keyboard (rather than a touch screen) for typing long amounts of text. Ideally, use a computer with the screen set at the correct height for this kind of activity, or consider acquiring a Bluetooth keyboards that works with your device.
* It is generally considered better to type with your fingers than using your thumbs, but where you are using your thumbs, try to alternate between using thumbs and fingers.
* Take frequent breaks from typing on your portable device
* Keep your head upright in a neutral position as much as possible with your elbows relaxed below your shoulders.
* A tablet stand may be useful so that you don’t have to hold your device up manually.

# Useful links and resources

AbilityNet factsheets

AbilityNet’s library of factsheets and information sheets provides an extensive range of practical advice about specific conditions and the hardware and software adaptations that can help people of any age use computers to fulfil their potential. Topics covered included:

* *Repetitive strain injury (RSI) in the workplace*
* *Keyboard and mouse alternatives*
* *Controlling the computer with your voice*
* and many more.

All these resources are free to download from [www.abilitynet.org.uk/factsheets](http://www.abilitynet.org.uk/factsheets)

Health and Safety Executive (HSE)

The Health and Safety Executive (HSE) is the national independent watchdog for work-related health, safety and illness. Its main aim is to secure the health, safety and welfare of people at work and protect others from risks to health and safety from work activity. The HSE also plays a major role in producing advice on health and safety issues, and guidance on relevant legislation.

View the HSE website at [www.hse.gov.uk](http://www.hse.gov.uk)

# How can AbilityNet help you?

AbilityNet is a leading authority on accessibility and assistive technologies. We can assist individuals, charities and employers by providing:

* free advice and information
* free home visits
* workplace assessments
* consultancy services

## Free advice and home visits

Our free helpline offers trustworthy, independent one-to-one advice about technology for anyone with any disability of any age. We take calls every day from disabled people, their friends, employers, teachers, colleagues and anyone else who wants to know how technology can help people achieve their goals.

We also have a network of friendly disclosure checked ITCanHelp volunteers who can offer free computer support to older people and people with disabilities.

You may have a problem with viruses, need some help installing software or be confused about updates or error messages. Our friendly, trustworthy volunteers have relevant IT skills and can help with computer systems, laptops, tablets and smartphones.

Our volunteers can help in all sorts of ways, including:

* choosing equipment to meet your particular needs, with suggestions on computer, adaptations, software or broadband
* helping install and set up new software, arranging settings and adjusting accessibility options
* diagnosing problems, malfunctions, viruses or software updates
* helping you get more form your computer, such as online shopping, video calls to friends, playing music or games....

To find out more about our IT support at home visit [www.abilitynet.org.uk/at-home](http://www.abilitynet.org.uk/at-home) or call our free helpline on 0800 269 545.

## My Computer My Way

My Computer My Way is a free, interactive tool developed by AbilityNet that makes any computer, tablet and smartphone easier to use.

It can help you ensure that your equipment is set up the best way possible to suit your particular needs. It covers all the accessibility features built into your computer, laptop, tablet, Chromebook or smartphone, and all the major operating systems – Windows, MacOS, iOS, Chrome and Android.

My Computer My Way shows you how to adjust your computer to assist with:

* vision – help seeing your screen
* hearing – help with sounds and audio
* motor – help with your keyboard and mouse
* cognitive – help with reading, spelling and understanding

You can use it for free at [www.mycomputermyway.com](http://www.mycomputermyway.com)

## Workplace Assessment Service

When it comes to computing solutions, one size does not fit all. We believe that each case is unique, and that individual attention is vital. Our Workplace Assessment Service integrates personal, technical and organisational considerations to arrive at sound and realistic suggestions, documented in a report.

To find out more about AbilityNet’s Workplace Assessment Service, please visit [www.abilitynet.org.uk/workplace](http://www.abilitynet.org.uk/workplace) or call 01926 465 247.

## Consultancy services

Our expert consultants are also available to assist employers who wish to take a broad, longer-term view in designing computer systems and associated work processes. Our experience and expertise can help you to achieve safe, healthy and productive working procedures.

To find out more about AbilityNet’s consultancy services, call 01962 465 247 or email [sales@abilitynet.org.uk](mailto:sales@abilitynet.org.uk)

## DSA / Student assessments

If you have a disability and are in higher or further education, you may qualify for a Disabled Students Allowance (DSA). If you are eligible you will receive a free assessment and may qualify for a grant towards any adjustments that you might require. This could help with the costs of buying a new computer or any other specialist equipment you might need.

For information, please visit [www.abilitynet.org.uk/dsa](http://www.abilitynet.org.uk/dsa) or call 01926 464 095.

# About AbilityNet

AbilityNet is the national charity that supports people with any disability, of any age. Our specialist services help disabled people to use computers and the internet to improve their lives, whether at work, at home or in education.

## Support us

Visit [www.abilitynet.org.uk/donate](http://www.abilitynet.org.uk/donate) to learn how you can support our work.

## Contact us

Telephone 0800 269 545

Email [enquiries@abilitynet.org.uk](mailto:enquiries@abilitynet.org.uk)

Web: [www.abilitynet.org.uk](http://www.abilitynet.org.uk)

We are always keen to help share knowledge about accessibility and assistive technology. If you have any questions about how you may use the contents of this factsheet, please contact us at AbilityNet and we will do all we can to help.

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