

Assistive Technology in the Workplace
A Tool for Everyone
A Practical Guide
for Employers & Managers

IrishJobs.ie

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Foreword

2003 was nominated the European Year of People with Disabilities by the EU to raise awareness of the abilities and skills of the 37 million people with disabilities in Europe, and to address the barriers and obstacles they face daily. Over 10 percent of the population in Ireland is made up of people with disabilities - that is nearly 400,000 people.

People with disabilities should have the same access to choices and opportunities, with an equal value placed on their skills, abilities, ambitions and aspirations in the workplace. Assistive Technology (AT) is an essential tool which can assist people with disabilities to participate more fully in productive work. AT can be of benefit not just to people with disabilities but to ALL employees, particularly in terms of the prevention of Repetitive Strain Injury (RSI) and other work-related injuries.

This guide, produced by IrishJobs.ie in association with Enable Ireland, discusses the role of Assistive Technology in the workplace and is intended as a comprehensive resource for business owners, HR professionals and managers. It includes interviews with employees who use Assistive Technology, demonstrating how AT impacts on their work, and how it can make a difference to a wide range of workers in a diverse range of work environments.

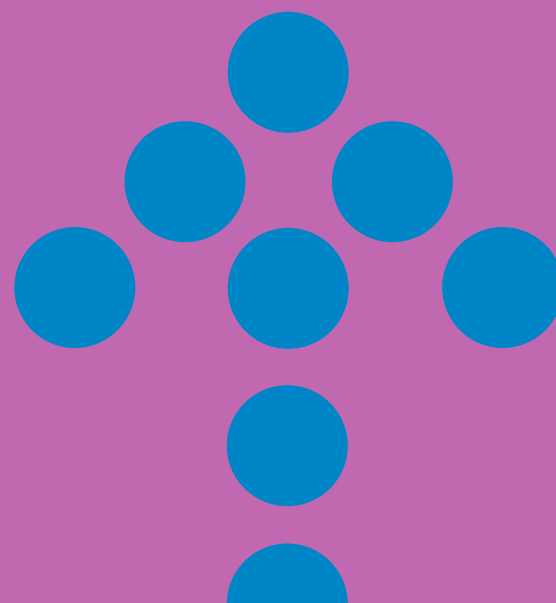
It is also hoped that this guide will stimulate employers to develop and promote a work environment that is better for everyone. With growing emphasis on reducing risk of cumulative and repetitive stress injuries due to poor work and tool design, the ergonomic needs of people with a disability become effective templates for improvements in job and workplace design for all. AT is a resource for employers and employees who wish to prevent the development of work-related injuries, and for employees who acquire a disability during their working life. It is also a powerful tool for potential employees who have yet to secure employment.

Seven out of ten economically active disabled people of working age will have become disabled during their working life, according to The Employers Forum on Disability in the UK. Losing the services of an employee who becomes disabled deprives organisations of a considerable asset and investment in terms of their skills and experience. It can also be very expensive. One large employer in the UK found that the average cost of retiring an employee on medical grounds was £40,000.

In developing this guide, it is hoped that employers will provide people with a disability the opportunity to become productive and competitive members of the workforce. It suggests ways that AT may improve and expand the career and employment opportunities of people with disabilities.

More and more, access to rewarding employment for people with disabilities is becoming easier, and technology has played a significant part in making this happen. Today there are many people with a disability pursuing successful careers in a wide variety of jobs. People with disabilities have excellent skills and employers need to look beyond the disability to realise that this talent can be tapped in ways which benefit the organisation as a whole.

This Guide was compiled and written by Debbie O'Halloran, Editor, IrishJobs.ie



Introduction

Assistive Technology is a tool, not just for new employees with disabilities, but for all employees who wish to maximise their potential at work. It is about supporting employees at work, preventing the development of work-related injury such as Repetitive Strain Injury, and promoting good practices in a wide range of work settings.

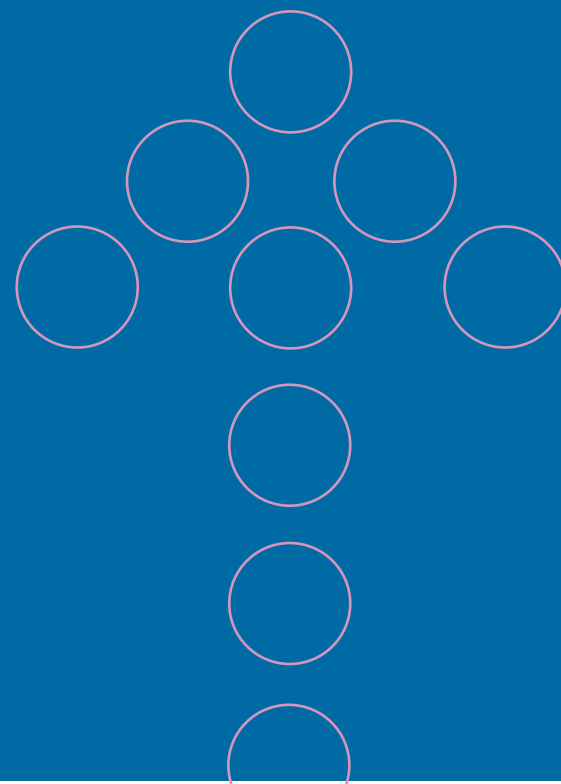
Technology has transformed the lives of all workers, but it has been particularly important for people with disabilities because it often represents the best way - or the only way - for people with disabilities to perform certain jobs that people without disabilities do in other ways.

Assistive Technology can be harnessed in a variety of ways. It can help in compensating for loss of dexterity, eyesight or other limitations. For example, a worker who is blind may need visual support software to access a computer or a worker who is experiencing a mobility-impairment may need voice recognition software which allows them to use their voice instead of using a mouse or keyboard. Often people with disabilities only need a specific device to maximise their ability to do the job.

AT can sometimes appear to be complicated or difficult, but with the right advice and support, it is in fact, no more or no less than a tool to assist the employee at work. Assistive Technology encompasses everything from alternative ways of using computers to communication aids that use synthetic speech, power chairs operated by switch-controlled interfaces and environmental-control systems offering total remote control of lights, doors and windows.

For the purposes of making this guide relevant for all employees, IrishJobs.ie has devoted an entire section to Ergonomics. Good ergonomics in the workplace enables workers to do their job efficiently while poor ergonomics can expose employees to the risk of injury and ill health. Included in the guide are details of a range of different equipment on the market from chairs that have adjustable back supports and footrests to ergonomic keyboards and keyboard wrist supports.

With unemployment rates among people with disabilities running as high as 80 percent in Ireland, the need for Assistive Technology that facilitates entry into the workplace is huge. Happily, organisations across the nation are starting to act to reverse statistics and close the divide. Your organisation too can hire a diverse workforce that includes people with disabilities. To successfully hire and place people with disabilities, managers must become familiar with the needs assessment process. This includes the various types of accommodations and the current technology available in today's environment.



What is Assistive Technology?

Assistive technology is any device or process that assists a person with a disability to do something that could otherwise be difficult or impossible to accomplish.

Many of us use computers at work to send e-mails, to write letters and reports, or simply to surf the web. Most computers have standard keyboards, mice and monitors. There are a wide range of alternative options which can make using a computer easier; hardware and software products that enable persons with disabilities to access, interact with, and use computers at work. Computer access devices include modified or alternative keyboards, touch screens, text to speech software and screen magnification software.

There is a wide range of assistive technology currently being used in the workplace today including:

VOICE RECOGNITION SOFTWARE: Voice technology allows for the almost entirely hands-free use of a computer and is therefore particularly useful for those employees who dislike or are slow using the keyboard for typing; for example those with manual dexterity problems or those suffering from a Repetitive Strain Injury. Software allows people to use their voice instead of using a mouse or keyboard to control all aspects of the computer from sending emails to saving files and surfing the web. Dragon Naturally Speaking is one of the more popular voice recognition software packages available and costs approximately €120 excluding VAT.

VISUAL SUPPORT SOFTWARE: Software such as Screen enlargers help people with low vision. Also called screen magnifiers, they act like a magnifying glass. Screen readers are software programmes which allow non-visual access to Window applications and the Web. A screen reader allows users who are blind to hear what is happening on their computer by converting the screen display to digitised speech. Window-Eyes and JAWS are examples of screen readers.

JAWS Standard costs €975 (€1,179.75 inclusive of VAT). JAWS Professional costs €1,295 (€1,566.95 inclusive of VAT). The ZT2 Magnifier and Screenreader costs €630 (€762.30 inclusive of VAT).

SWITCH ACCESSIBLE SOFTWARE: An example of such software is On-screen keyboards, which are used by people who are unable to use a standard keyboard. They allow the user to select keys using methods such as an alternative mouse, switch or Morse code input system.

ALTERNATIVE MICE

Joystick Mouse - This allows the user to control the cursor on screen by moving a joystick in any direction. Items are selected by either using 'click' and 'drag' buttons on the joystick. A Joystick Mouse costs between €200-€450, excluding VAT.



Joystick Mouse
Copyright: AbilityNet UK

Touchpads are pointing devices, or mice commonly used in laptops.

Headmouse - This can be operated through the use of a reflective dot being placed on the user's forehead/glasses. When they move their head, the movement of the headmouse is recognised by an infrared receiver which translates the head movements into cursor movements on screen.

Footmouse - This allows hands-free mouse operations using your feet instead of your hand. Alternative keyboards come in diverse shapes and sizes. They may be designed for single-handed use, and may be smaller, or they may be differently contoured or have alternative layout to optimise typing speed.

ALTERNATIVE INPUT DEVICES: These devices enable individuals to control their computers through means other than a standard keyboard or mouse. Examples include smaller or larger Keyboards, eye and head-operated pointing devices, head and foot-controlled mice and switches. A Switch is an electronic connection which allows an individual to control a computer or other assistive technology device, and is used in place of standard keyboards, mice, etc. A switch can be designed to be operated by the individual's head, foot, elbow, etc. The choice of switch depends on the individual's personal preferences.



People with Disabilities and IrishJobs.ie

IrishJobs.ie aims to facilitate and support the meeting of jobseekers with disabilities and recruiters through the website. In so doing, we hope to significantly raise awareness and to encourage people with a disability to pursue work in their chosen careers.

To meet the individual needs of jobseekers with disabilities, IrishJobs.ie has introduced a number of changes to the site. The main functions within IrishJobs.ie have been made accessible to disabled jobseekers to Double-A standards of the W3C Web Content Accessibility Guidelines (WAI level AA).

The W-Mark, which IrishJobs.ie has been awarded, is an internationally recognised web certification mark. IrishJobs.ie is one of only six organisations in Ireland to achieve this standard. To achieve the W-Mark the website was rigorously audited by the EIQA under a number of criteria, including accessibility. We are the only recruitment website nationally or internationally to receive this award. IrishJobs.ie's Web Accessibility Initiative followed rigorous testing by blind users, including renowned international speaker, sportsman and entrepreneur, Mark Pollock, who is blind. New features and functionality on IrishJobs.ie enable blind or partially sighted people to search for jobs and access career advice through the use of advanced screen reader technology which reads information from the screen aloud, and includes refreshable Braille displays.

IrishJobs.ie pages are compatible with screen-reading software and other assistive technology like screen magnification.

The following are just some of the many features in place on the site to help users with disabilities navigate easily:

- **Bypassing Navigation Bars**
To skip over the top and left navigation bar to the main page content, jobseekers can follow the link marked "Skip to main content" or "Skip to job search" provided at the start of each page. This will take them to the main content page.
- **Using the Tab key to jump between links**
Jobseekers can use the tab key on their keyboard to jump from one link to the next. All navigation bars in the site provide a logical order for this.
- **Zooming in and font sizes**
The main content on each page of IrishJobs.ie allows for flexible resizing of fonts to meet user requirements. If a jobseeker finds that font sizes are too small, they can simply increase the default font size used on their web browser software (for example, in Internet Explorer, font sizes can be changed in the View Menu under Text Size).

IrishJobs.ie has also developed a comprehensive online resource "People with Disabilities" to increase awareness and practical knowledge of jobseekers and recruiting companies in the area of the employment of people with disabilities. The development of an accessible version of IrishJobs.ie has ensured that ALL site visitors can gain maximum benefit from the website as an employment opportunity resource.

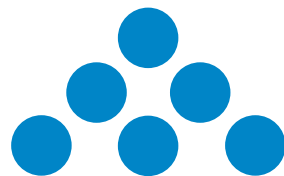
A Pain in your Workplace

The main causes of workplace injury today are back strain and repetitive strain injury (RSI). RSI has other names; Occupational overuse syndrome and work-related upper limb disorder (WRULD) are two of the more formal descriptions. Tendonitis, tennis elbow, carpal tunnel syndrome – there are many manifestations of this occupational hazard. It affects hands, wrists, arms, elbows, shoulders, back and neck.

Repetitive Strain Injuries are a major problem in the workplace and a significant cause of lost production. According to the RSI Association, 1 in 50 of all workers in the UK has reported an RSI condition. 5.4 million working days were lost in sick leave due to RSI last year. The cost to UK industry is likely to be between £5 billion and £20 billion annually. According to a recent European survey, 30 percent of workers complain of backache; 17 percent (25 million workers) complain of muscular pains in their arms and legs and 45 percent report working in painful or tiring positions.

Treatment and recovery are often unsatisfactory especially in more chronic cases. The end result can be permanent disability. With employee compensation costs soaring, and ergonomic legislation coming to fruition in all industries, employers are well advised to implement broad-based ergonomic programmes. Ergonomics is the study of the interaction between people and their work, and includes the examination of awkward postures, repetitive movements and the use of excessive force.

Although ergonomics can be particularly important when accommodating employees with disabilities, the benefits of implementing such a programme apply to ALL workers. Solutions to ergonomic problems may include anything from mechanical aids to voice recognition software for computer users to changing the design or layout of the workstation or work area so that awkward postures, repetitive movements and forceful actions are eliminated.



“30 percent of workers complain of backache; 17 percent (25 million workers) complain of muscular pains in their arms and legs and 45 percent report working in painful or tiring positions.”

RSI and Work-related upper limb disorder (WRULD)

WRULDs are widespread across a range of industries and jobs. Any type of work that involves a worker using their arms to carry out tasks can lead to WRULDs. Computer use and assembly work are frequently associated with WRULDs, but there are many other tasks that may have higher risks including cake decorators, postal workers, hairdressers, musicians, journalists, dentists and dental technicians. Those in the meat and fish packing industries, as well as those using vibrating tools like chain saws, are also at risk.

Employers whose staff develop RSI conditions as a result of work face a range of costs, some evident, others hidden. These include:

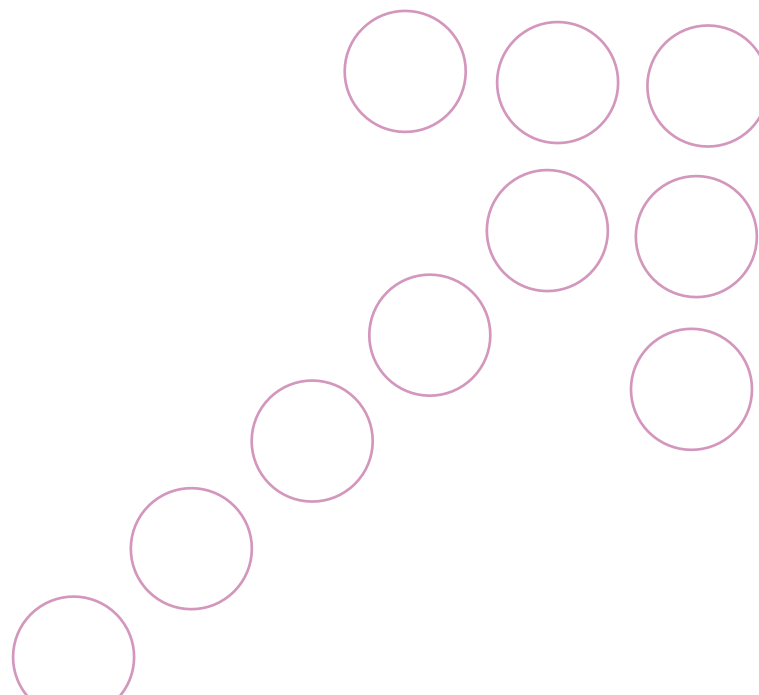
- Loss of production
- Poor worker morale
- Sickness payments for those unable to work
- "Presenteeism", staff at work when they are not fit to be there, but are afraid to be absent
- Ill-health retirement costs for those permanently unable to work
- Injury benefits payments in some industries
- Recruitment and retraining costs as skilled and experienced workers need to be replaced. The average cost of replacing employees due to injury, long-term illness or early retirement is approximately £3,000-4,000 per employee
- Bad publicity
- Difficulties with recruitment due to a number of the above factors
- Litigation costs and compensation payments to those successfully pursuing negligence claims
- Increased insurance premiums
- In some cases, the total cost to an employer of an ill-managed RSI condition can be the equivalent of up to 50 percent of the employee's salary.

Source: *The RSI Association*

Because anyone who works at a computer is particularly at risk of developing a WRULD or repetitive strain injury, employers need to be aware of legislation covering Display Screen Equipment.

Display Screen Equipment Regulations

These are regulations which deal with computer workstations. Regulations lay down the requirements on how a computer or VDU should be set up at the workstation so the worker can work both safely and in a comfortable manner, minimising the risk of upper limb pain or discomfort, eye strain or fatigue and stress. Employers are legally obliged to carry out "Risk Assessments" for all VDU users and ensure compliance with the requirements. It is recommended that they are carried out by Ergonomists. Assessments should be carried out on an annual basis.



Ergonomic Keyboards

The increased number of people using computers has provoked a surge in ergonomic keyboards and mouse pads. There are many different types of "ergonomic" keyboards that reduce the risk of suffering a WRULD and make it easier to type and interact with a computer. Some are split in half to make it easier to reach the keys, others place the keys on shaped panels so fingers can touch them more readily, and others simply rearrange the letters. Still others install a soft bar between the user and the keyboard to ensure the wrist stays straight while typing. It is even possible to buy software that reminds you to take regular breaks and gives on-screen examples of the exercises you can do to stretch and protect against WRULD. An ergonomic keyboard is an Assistive Technology that can provide Repetitive Stress Injury relief in the office. The wrist-friendly ergonomic design of Microsoft's Natural Multimedia keyboard has made it very popular. This device takes the ergonomics of the Natural keyboard, with its split keypads, shaped surface and wrist rest, and adds a lot of extra function keys; so it's a lot more comfortable to type with, even for long periods.



Microsoft's Natural Multimedia Keyboard

“It is even possible to buy software that reminds you to take regular breaks and gives on-screen examples of the exercises you can do to stretch”

Employer Checklist

The following checklist will ensure that you have safeguarded both yourself and your employees:

1. **Space Arrangement:** Is there a minimum of 4.65 sq metres of space at the workstation? Is the furniture arranged in such a way that employees can move about freely? Is all the equipment within easy reach?
2. **Noise and View:** Is the work area quiet enough to allow employees to do their work and can they see the rest of the room at a glance?
3. **Lighting:** Do the windows have blinds or curtains to regulate outside lighting? Is there anti-glare on computer screens?
4. **Chair/Seating:** Is the chair comfortable and does it give enough support in different work positions? Is it adjustable? Is it at the right height? Elbows should be about one inch above the desk. Is there a footrest if feet don't touch the ground?
5. **Monitor Position and Size:** Is the monitor positioned directly in front and approximately fingertip distance away from the PC user? Is the top of the monitor aligned to eye level?
6. **Keyboard and Mouse:** Are the keyboard and mouse on the same level and immediately next to each other? Is there sufficient space on the desk to support wrists and are shoulders relaxed when working?
7. **Document Holder:** Employees should use a document holder if they read a lot of material on their desk.
8. **Headset:** Employees should use a headset if they spend a lot of time on the phone.
9. **Rest Periods:** The RSI Association recommends a five minute break every half hour from concentrated keyboard work, and that breaks are taken before the onset of fatigue rather than after.

Are your employees sitting comfortably?

Sometimes the simplest of adjustments is all that is needed to ensure employees working life can be a comfortable and productive one. Good posture while working at a computer is a key to keeping RSI at bay. The following images demonstrate examples of both good and bad posture.



Sitting with the chair too low and too far from the desk encourages a slouched posture with no support from the chair back. The head is tilted forward. Feet are hooked around the chair base restricting blood circulation in the legs. Shoulders may be hunched.



Move the chair close to the desk and sit back on the seat. Adjust the chair back so that the upper body is relaxed and supported. Raise the chair seat so that, with the upper arms vertical, the elbows are level with or just above the desk.



Shorter people often set the chair height so that their feet are firmly on the floor. If this is too low for the desk, it is likely to result in arms stretched forwards (or sideways) and/or shoulder lifting. This causes undue muscle tension.



Set the chair position and height as described in G1 above. Use a foot rest if the feet do not touch the ground. Height-adjustable chair arms provide additional support for the upper body when not keying. If the armrests restrict desk access, consider removing them altogether.



If the monitor is set too low, this encourages the operator to tilt the head downwards. As a result, the whole body tends to lean forward, moving away from the support of the chair back and encouraging slouching.



TOUCH TYPISTS can raise the monitor so that the visible screen top is just below eye level. Any document holder should be at screen height and in the same focal plane to minimise head twisting and tilting. COPY TYPISTS may prefer the screen to one side and the document holder directly in front.



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HUNT AND PECK TYPISTS who need to look at the keyboard will probably position the monitor slightly lower than touch typists to minimise "nodding" between the two. The document holder should be placed between the monitor and keyboard to avoid twisting.

Work-related upper limb disorder is caused by overwork, poor ergonomic conditions and bad management practices. It can be prevented by reasonable workloads, good working conditions and practices, and by responsible management. Preventative action in most workplaces can be taken quite easily and need not be costly. Indeed it is likely to be far more expensive for employers and their insurers to ignore RSI, which may lead not only to compensation claims, but also to costs arising from sickness absences and reduced productivity. Organisations that employ strategies to improve workplace ergonomics have found that musculoskeletal-disorders were three times less likely to occur ([The Repetitive Strain Injury Association](#)).

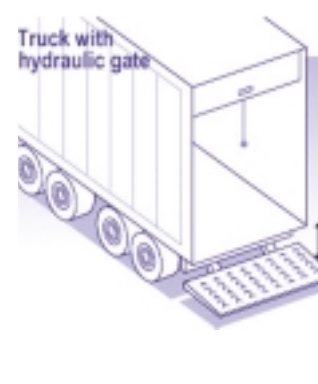
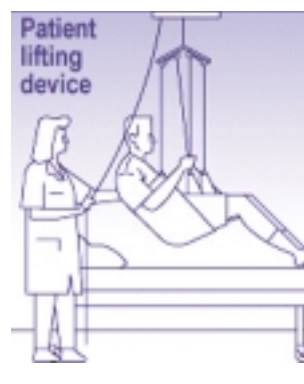
Back Injury

The rate of injuries in Ireland due to manual handling accidents has risen significantly in the last ten years. 30 percent of workplace accidents reported every year relate to manual handling, according to the Health and Safety Authority.

Manual Handling Regulations deal with heavy physical work and address the following aspects of work-related lifting:

- Does the job include repeated and sustained exertions; for example, lifting, pushing or pulling?
- Are mechanical lifting aids available for use whenever possible?
- Have employees been trained in the proper use and selection of mechanical lifting aids?

Examples of Lifting Aids that can be used by employees to prevent back injury include the following:



- Scissor Lift
- Mechanical Lifting Device
- Patient Lifting Device
- Truck with hydraulic gate

Key Question: Although you've provided the training and the information required, are you sure your workers have read and understood it and have you in place a system to verify that they undertake manual handling tasks according to best practice?

Key Point: It is essential that the employer carries out a "Risk Assessment" of the systems of work to ensure risk factors are reduced and eliminated. For further information see the **Manual Handling Regulations in Statutory Instrument SI44 of 1993**.

The Health and Safety Authority has two publications on manual handling, one with particular reference to the health sector. They are *Handle with Care* and *Caring with Minimal Lifting* and they are available from the HSA. Phone 01-6147000 or visit the website at www.hsa.ie for information on Occupational Health and Safety legislation.

By simply addressing workplace ergonomics employers can vastly improve employee work productivity, improve their efficiency and create better job satisfaction.

PC Accessibility Features

If Repetitive Strain Injury is a concern for your employees, why not get them to try out the onscreen keyboard that comes with Windows.



Microsoft's Onscreen Keyboard. Copyright: AbilityNet UK

Every Windows operating system comes with accessibility features that allow users to customise their keyboards, their mice, and even the appearance of icons on their desktops.

Windows Operating Systems, and Windows XP, in particular, are noted for their accessibility features. You can adjust the operating system's settings to enlarge icons or cursors, and to customize it according to your personal preferences. You can get visual warnings for system sounds; you can make the keyboard ignore inadvertently repeated keystrokes. These features are important to someone with limited sight, hearing or dexterity.

Accessibility features and utilities built into Windows XP include:

Display and Readability

Windows includes a wide array of options to increase visibility of items on the computer screen. Options that can be adjusted include:

- **Font style, colour and size of items on the desktop** - using the Display options, choose font color, size and style combinations.
- **Icon size** - make icons larger for visibility, or smaller for increased screen space.
- **Screen resolution** - change pixel count to enlarge objects on screen.
- **High contrast schemes** - select colour combinations that are easier to see.
- **Cursor width and blink rate** - make the cursor easier to locate, or eliminate the distraction of its blinking.
- **Microsoft Magnifier** - enlarge portion of screen for better visibility.

Sounds and Speech

Windows includes options to make computer sounds easier to hear or distinguish - or, visual alternatives to sound. A variety of speech-to-text options are also available. Options you can adjust include:

- **Sound Volume** - turn computer sound up or down.
- **Sound Schemes** - associate computer sounds with particular system events.
- **Show Sounds** - display captions for speech and sounds.
- **Sound Sentry** - display visual warnings for system sounds.
- **Notification** - Get sound or visual cues when accessibility features are turned on or off.
- **Text-to-Speech** - Hear window command options and text read aloud.

Keyboard and Mouse

In Windows you can choose a number of options to make your keyboard and mouse faster and easier to use. Options you can adjust include:

Mouse Options:

- **Double-Click Speed** - choose how fast to click the mouse button to make a selection.
- **ClickLock** - highlight or drag without holding down the mouse button.
- **Pointer Speed** - set how fast the mouse pointer moves on screen.
- **SnapTo** - move the pointer to the default button in a dialoge box.

- **Cursor Blink Rate** - choose how fast the cursor blinks or if it blinks at all.
- **Pointer Trails** - follow the pointer motion on screen.
- **Hide Pointer While Typing** - keep pointer from hiding text while typing.
- **Show Location of Pointer** - quickly reveal the pointer on screen.
- **Reverse the function of the right and left mouse buttons** - reverse actions controlled by the right and left mouse buttons.
- **Pointer schemes** - choose size and colour options for better visibility.

Keyboard Options

- **Character Repeat Rate** - set how quickly a character repeats when a key is struck.
- **Dvorak Keyboard Layout** - choose alternative keyboard layouts for people who type with one hand or finger.
- **StickyKeys** - allow pressing one key at a time (rather than simultaneously) for key combinations.
- **FilterKeys** - ignore brief or repeated keystrokes and slow down the repeat rate.
- **ToggleKeys** - hear tones when pressing certain keys.
- **MouseKeys** - move the mouse pointer using the numerical keypad.
- **Extra Keyboard Help** - get ToolTips or other keyboard help in programmes that provide it.

Accessibility Wizard and Utilities

The Accessibility Wizard can help new users quickly and easily set up groups of accessibility options that address visual, hearing and dexterity needs all in one place. The Accessibility Wizard asks questions about accessibility needs. Then, based on the answers, it configures utilities and settings for individual users. The Accessibility Wizard can be run again at any time to make changes, or changes can be made to individual settings through Control Panel.

To use the Accessibility Wizard:

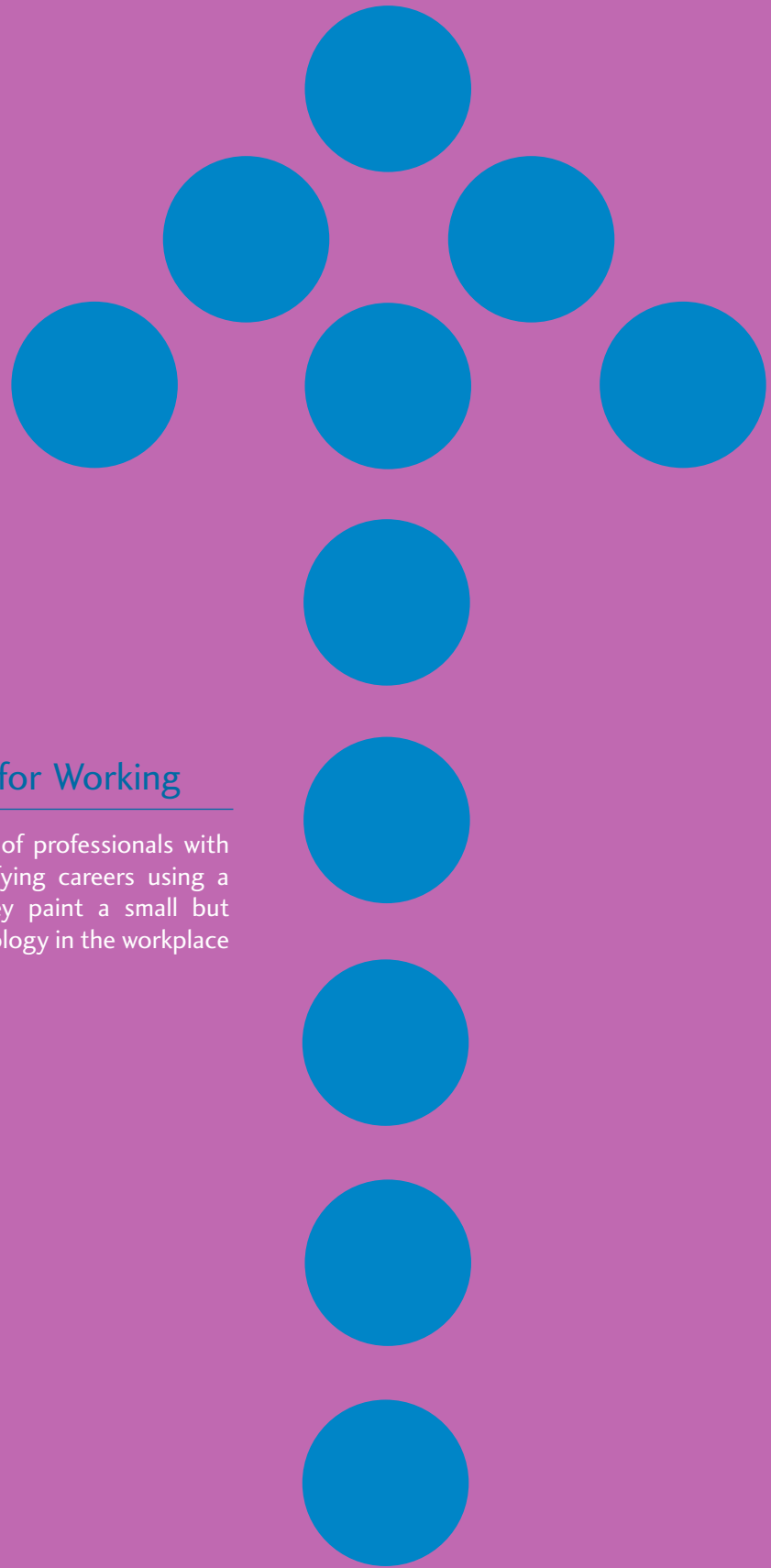
On the **Start** menu:

- Click **Programs**
- Point to **Accessories**
- Point to **Accessibility**
- Click **Accessibility Wizard**

Windows Accessibility Utilities:

- **Magnifier** - a display utility that makes the computer screen more readable by creating a separate window that displays a magnified portion of the screen.
- **Narrator** - a text-to-speech utility that reads what is displayed on the screen - the contents of the active window, menu options, or text that has been typed.
- **On-screen-keyboard** - displays a virtual keyboard on the computer screen that allows people to type data by using a pointing device or joystick.
- **Utility Manager** - enables administrator-level users to check an accessibility programme's status and start or stop an accessibility programme automatically, if required.

For further information on PC Accessibility features, go to www.microsoft.com/enable



Assistive Technology: A Tool for Working

The following interviews feature a variety of professionals with disabilities pursuing successful and satisfying careers using a wide range of Assistive Technology. They paint a small but illuminating picture of how Assistive Technology in the workplace is making employment possible.

INTERVIEW ONE

Carmel, an Administrative Assistant, suffered from Repetitive Strain Injury. She explains how using Voice Recognition has helped her save her career.

Carmel (name changed) has lived with Repetitive Strain Injury since 2002. Her job as an Administrative Assistant in a bank meant that she was constantly using the keyboard at work. She suffered from prolonged pains throughout her right hand, arm and shoulder. Carmel needed a solution to help her and approached her employers about implementing Voice Recognition Software.

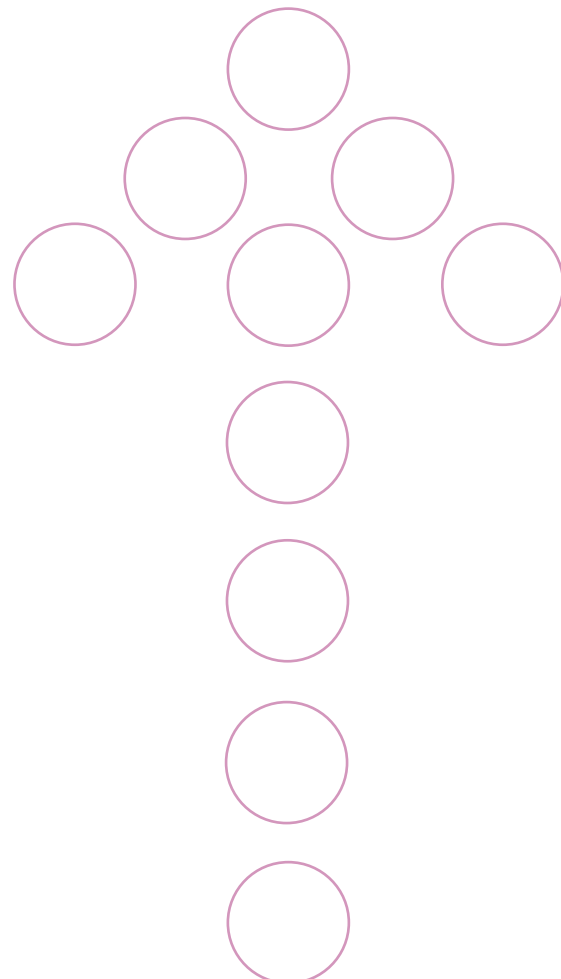
Once the software was implemented, Carmel explains how she had to learn computing “pretty much from scratch” as she had only previously used a simple word processing system. **Dragon NaturallySpeaking** provided a high degree of accuracy and also enabled her to command and control her computer hands-free.

Prior to using voice recognition, Carmel achieved helpful results with a simple keyboard over short periods, averaging 20 words per minute. After gradually building up her skills with Dragon NaturallySpeaking, she now averages 120 words per minute including the time taken to make corrections. Given that she has never been a touch typist, voice recognition software has significantly improved her productivity since most of her work involves writing.

Using voice recognition has really helped Carmel. She says that having a company that understands RSI and its impact on the user is essential for putting together a long-term strategy for the successful implementation of a hands-free computer solution.

Dragon NaturallySpeaking turns speech into text at up to 160 words-per-minute, and allows users to control Microsoft Windows and many of their PC applications completely by voice. The product is tightly integrated with Microsoft Office, which allows users to create new documents and e-mails, navigate programs, and surf the Web, all by voice. Dragon NaturallySpeaking can play an important role in greatly reducing the risk to employees with chronic conditions such as RSI, as well as enable any individuals with limited mobility to become more productive.

“She says that having a company that understands RSI and its impact on the user is essential”



INTERVIEW TWO

Terry Murphy is chairman of BILCO, the Bray Independent Living Co-op Online. He has Multiple Sclerosis, and using voice recognition software, he can command his computer to do whatever he wants it to; everything that is, except make the coffee.

Terry Murphy uses **Dragon NaturallySpeaking** voice recognition software to compensate for his dexterity limitations. Instead of using his hands, he uses his voice to operate his computer. This is done through dictating his commands into the computer via a headset type microphone. By speaking into the microphone, he can use it to dictate into virtually any Windows applications, to control the Windows environment, moving and clicking the mouse or opening up applications.

Terry can command the computer to carry out functions which would previously have been undertaken with the mouse. "Wake up" and the screen comes alive ready to execute his every bidding. Simple verbal commands allow him to control his PC, write word documents, print, photocopy, run the Web browser and even make phone calls.

"Bring up Word" Terry says into his microphone, and the Word application opens on his computer screen. Speaking into the microphone, he can move the cursor in any direction. It's quite like a digital secretary that diligently takes all your dictation without kicking up a fuss. Perhaps, the only thing it doesn't do is make the coffee. "Go to sleep" and the voice recognition software takes a break.

Terry has set up his own business from his home. He is the Chairman of BILCO, the Bray Independent Living Co-op Online. "The purpose of BILCO is to raise awareness of physically disabled people and their capabilities", explains Terry. Among other things, Terry hopes to raise more awareness among employers about the capabilities of people with a physical disability.

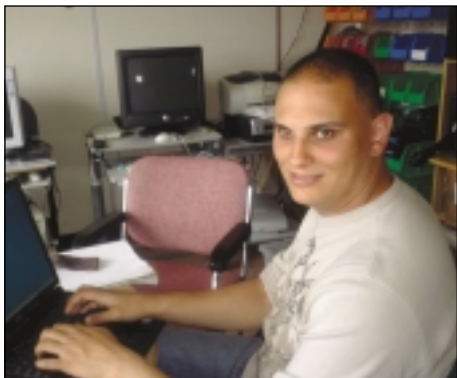
"Don't look at the wheelchair, look at me; this is the message I am trying to get across to people", emphasises Terry. "When I first decided to set up my own business, my disability seemed like an insurmountable obstacle. People with a disability are well able to hold down a job. Through BILCO, I am hoping to uncover and display the talent and ability hidden in the minds of people with a disability", he adds. Terry believes that companies would benefit from contact with people like him and to organisations that support people with a physical disability. "Contrary to what some employers might think, my voice activated software doesn't impose on anyone. The more exposure companies have to people with a physical disability, the better they will be at understanding them. They won't be afraid anymore. I myself used to be an employer and disability just wasn't a part of my life. I wasn't aware of it until I had to be."

Among the many assistive technologies Terry uses, he has harnessed the potential of voice recognition software in particular. He is an expert user of all kinds of AT, from voice recognition software to electronic page turners and remote control of his video, TV, music, etc.

Terry operates his wheelchair with a chin switch called IRIS. "IRIS is a sophisticated remote control used for everything from turning on the TV to opening and closing my front door. It is the computer centre of my whole operation" explains Terry. The IRIS Environmental Control System costs €1,800 excluding VAT.

INTERVIEW THREE

Rahim Nazarali is a Researcher with Client Technical Services in the Central Remedial Clinic. He is visually impaired. He explains how Software installed on his computer has enabled him to do his job.



Rahim Nazarali works as a Research Assistant with Client Technical Services. His work is mainly done on a computer and involves designing questionnaires, writing up reports and conducting interviews with people over the phone. Through the use of Assistive Technology, he has been able to advance and develop his career as a Research Assistant.

Rahim is no stranger to Assistive Technology. A graduate of Social Science, he began to use AT, namely the **JAWS** screen-reading software, in a big way in College. At work, he uses the same software package, which enables someone who is visually impaired to listen to, rather than

look at, the screen content, by speaking out whatever is on the screen. The software speaks using a voice synthesiser, and the speed of screen reading, as well as the voice used, can be adjusted to suit the user.

"JAWS reads everything on the computer screen back to me", explains Rahim. "Different tones are used to distinguish between capital letters and lower-case. For example, it reads capital letters by using a high-pitched voice. It has some difficulty with reading spreadsheets and databases, but the software is improving all the time. It is definitely the best product for screen reading", he adds. He also uses a scanning package for reading hard copy material called **Kurzweil 1000**.

Rahim also uses Word Prediction which enhances the rate at which he inputs text into the computer. This literacy support software programme attempts to predict his target word, based on the first letters typed by Rahim. One example of word prediction software is Penfriend. The cost of Penfriend is approximately €100 excluding VAT.

Assistive Technology has helped Rahim do his work as a Research Assistant and he is very optimistic about the effect it has had on his life. "I do all my work with JAWS. Without it, I simply wouldn't be able to do any work" he says.

Before starting work with Client Technical Services, Rahim worked for a time as a Research Assistant with the National Training and Development Institute (NTDI). While there, he had to write a statement of individual need outlining the type of AT he would require in order to do his job. His Environmental Liaison Officer also looked at his needs and helped install the software on his computer. Rahim received a Workplace Adaptation Grant from FÁS for the software. When moving job to Client Technical Services, he kept his copy of JAWS and therefore no changes needed to be made. "I came in all prepared, at no expense to the company," he says.

Rahim uses a double headset so that he can hear his computer and the telephone at the same time. Other than that, no special expenses or accommodations were necessary. He uses JAWS at home as well for emailing and finding information online. "I would be lost without it. I also use a Screen Magnifier called Zoomtext, a software programme which allows me to increase the size of the text in a document."

Assistive Technology has been a huge support for Rahim in breaking down barriers when applying for a job. "I feel now that I am nearly on the same level playing field as everyone else. It has raised my opinion of myself and I have more confidence in job interviews". Rahim is currently studying for a Masters in Rehabilitation Studies.

"JAWS reads everything on the computer screen back to me. Different tones are used to distinguish between capital letters and lower-case."

INTERVIEW FOUR

Maria Pileidi recently completed a work placement as a Communications Assistant with O2. She is visually impaired. She explains how this placement gave her vital experience on her CV.



26 year old Maria Pileidi worked as a Communications Assistant with O2. Her job involved mainly doing research on the internet as well as some clerical work and file management. It was her responsibility to make up spreadsheets on the number of sick or absent days employees at the company took. She was also involved in writing articles for the company magazine.

Maria uses the screen-reading software package **JAWS** to do her work. Although she is blind, this speech output technology allows her to hear all of the text on the screen. In addition, she uses a headset with the software so that she can regulate the volume. Maria knows a lot of shortcut commands on the computer because JAWS users rely on

them as an alternative to using the mouse.

"The only problem I've encountered with the software is it doesn't recognise graphics or photos on the internet" explains Maria. "I also use a scanning package called **Kurzweil** which can read a page by putting it onto the scanner. It reads everything except hand-writing." The Kurzweil 3000 Screenreader (colour with full scanning capability) costs €1,300. (€1,367.30 inclusive of VAT).

Maria got the job with O2 through Access Ability, a placement company that promotes the employment of people with a disability into the mainstream. "When you get a work placement, your placement officer helps you install the software. He or she will even show you where the interview is so everything is done in advance."

Mobility is not a problem for Maria. While working at O2, her Placement Officer showed her the bus route to work so she didn't have to depend on any of her co-workers. "The only thing I had to ask them was what was on the menu and how much it cost? There is a thin line, however, between being independent and trying to prove something", warns Maria.

"The job placement gave me more confidence" admits Maria. "It was originally for five weeks but O2 extended it for a further three months. Now I have experience on my CV. I have registered my CV with IrishJobs.ie and Access Ability and am currently seeking employment. And because I now have the software myself, the interview process is a lot easier. Companies can be reluctant if you don't have the software to hand as they don't want to have to wait for the grant from FÁS."

A very outgoing person, Maria says she finds it hard to accept the patronising way some employers and recruitment agencies have treated her in the past when they realised she had a sight problem. "Employing someone with a disability is not charity work", says Maria. "And that is what employers have to start realising. I worked part-time at O2, from 8am to 1pm, and time-keeping was never a problem. In fact," laughs Maria, "I was always early. I enjoyed what I was doing and I never had a problem meeting a deadline."

Maria now has an ECDL (European Computer Driving Licence) under her belt and is open to further learning in the future. Being technologically skilled has added a whole new layer to her life. She is adept at electronic filing and word processing. She is very positive about the future and the challenges she will meet and would like to work as a personal assistant for a company or as a Clerical officer in the Civil service.

"Employing someone with a disability is not charity work and that is what employers have to start realising."

INTERVIEW FIVE

Carl Grey works in Atlantic Homecare's garden centre. He is a wheelchair user and he explains how a simple accommodation in the workplace enabled him to become a valued employee with the DIY store.



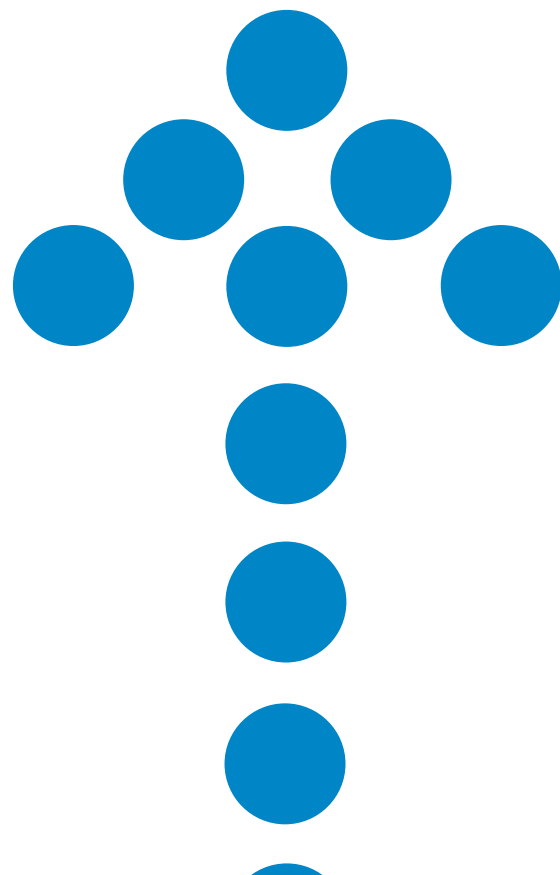
Because of his love of the outdoors, Carl Grey has been working part-time for the past two years in the gardening centre in Atlantic Homecare in the Sandyford Industrial Estate. His job involves watering the plants, weeding, and tidying the garden centre. A simple accommodation made by his employers to his workplace enabled him to do his job. "The taps in the gardening centre were positioned high on top of the wall and because I am in a wheelchair I couldn't reach them", explains Carl. "My employers lowered all the taps to accommodate me. I also use a lifting aid for picking things up off the ground."

Carl is an excellent example of how sometimes the simplest of accommodations made by an employer can make all the difference in whether or not an employee can carry out a particular job.



"It's not easy to get a job when you are in a wheelchair" recalls Carl of his past efforts to find a job. Sometimes, says Carl, the hardest part of his disability was in trying to convince employers that, with the proper training and equipment, he is just as capable of completing a project as well as his colleagues. "I get on very well with all the staff and I am as capable as anyone else of consistently doing a good job."

Carl has also shown how a physical disability doesn't have to be a barrier to getting to and from work. Carl has his own transport; he drives a power scooter. A Power Scooter costs approximately €3,000, excluding VAT.



INTERVIEW SIX

Colette Brown works in the customer care department at Meteor. She is visually impaired, and believes that Assistive Technology isn't the only thing needed in the workplace. The right mindset is also essential, she says.

Colette Brown has been working in the Customer Care department in Meteor for the past four years. She is also a computer trainer with Enable Ireland. Colette recalls how she always wanted to work in telephony. Her job in customer care means that she is on the phone all the time. "I am dealing with the public all day, sorting out complaints or helping with top-up and coverage issues and giving advice on buying phones."

"When I was applying for jobs" says Colette, "I struggled with the decision to disclose information about my disability and the accommodations I would require. I decided not to disclose my disability during initial contacts so that I could get an interview and have an opportunity to present myself in person." That she did and she landed the job with Meteor.

"Assistive Technology isn't the only thing needed in the workplace", says Colette; "the right mindset is also essential. I think that all companies need to have disability awareness training. People with disabilities need to be given the opportunity to work and it is up to companies to make themselves aware of disability issues. There should be a National disability awareness body set up to make every company aware of the capabilities of people with disabilities," believes Colette.

"Take the O2 Ability Awards for Employers. The Awards recognise disability-friendly Irish businesses." The Ability Awards is the first awards programme to acknowledge and profile Irish businesses that demonstrate best practice in the employment of people with disabilities. IrishJobs.ie has been nominated for an O2 Ability Award under the Customer Service Category. "It's vital to encourage companies to open their eyes to the opportunities available to them within the disability sector. Employers have to look beyond the stigma of disability", says Colette.

Before starting work at Meteor, the Health and Safety officer at the company conducted a needs analysis for Colette. "I use a big monitor at work and a software programme called **Zoomtext**. It's amazing to see how technology is changing and advancing all the time. Take phones for example. Vodafone are currently developing software for the visually-impaired called "Talktext", whereby a visually-impaired person will be able to hear what a text message says".

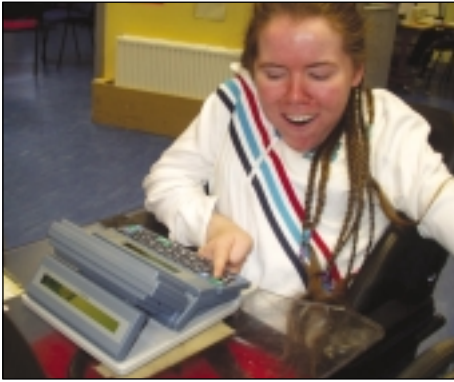
Colette remains optimistic about her future career in Telecoms. "Ideally, I would like to see my role changing in Meteor and eventually working as a Liaison officer in the development of phone software for visually-impaired people", she adds.

"Assistive Technology isn't the only thing needed in the workplace, the right mindset is also essential. I think that all companies need to have disability awareness training."

INTERVIEW SEVEN

Jenny McCann works as a Journalist with the Tallaght Echo. She uses an alternative mouse called a Rollerball to compensate for her dexterity limitations.

20-year old Jenny McCann has dystonia, which causes her to experience unpredictable body spasms. She uses a **Power chair** to get around and a **Lightwriter** to communicate.



A Lightwriter is a portable device like a palmtop that can synthesise speech. It looks like a mini-keyboard and Jenny uses it by typing what she wants to say. Then it speaks the message. A Lightwriter Communication Device costs approximately €4,500, excluding VAT.

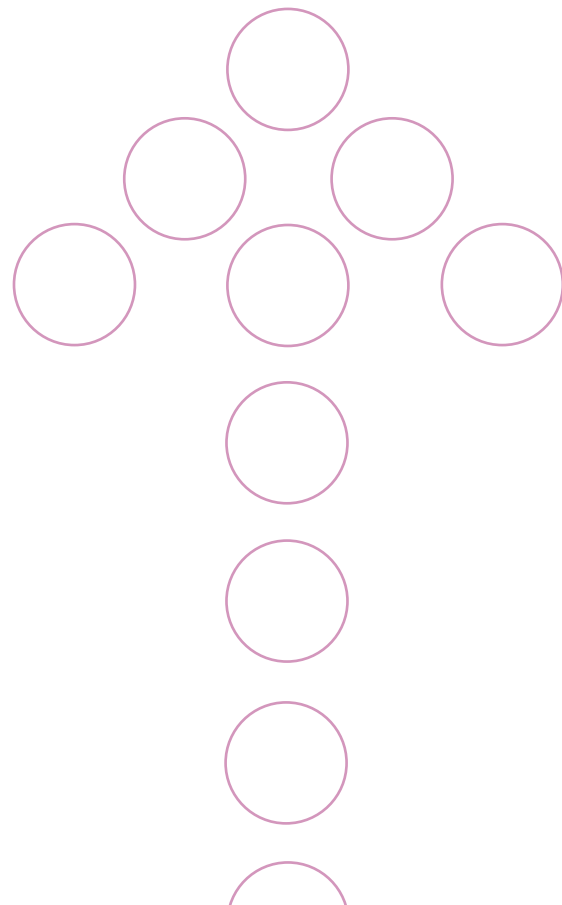


Rollerball Mouse. Copyright: AbilityNet UK

At work, Jenny uses a standard keyboard with a combined Rollerball Mouse on it. A **Rollerball Mouse** is essentially an upside down mouse. Consequently, the mouse itself does not move on the surface of the table and there is no need for a mouse mat. Jenny selects items by using 'click' and 'drag' buttons on the rollerball. Her work involves typing up news bulletins for the paper. A Wireless Keyboard with integrated Rollerball costs approximately €120, excluding VAT.

"The newspaper I work for is really open-minded. They see the value that I bring to the company." The Tallaght Echo was a great match for Jenny from the very beginning. She was able to discuss her accommodation needs during the interview process, as well as inform the company about the type of mouse, desk and other supports she would require. All it involved on their behalf was the simple change of a keyboard. "The only thing my employers had to do was to exchange their standard keyboard with mine."

"The newspaper I work for is really open-minded. They see the value that I bring to the company. The only thing my employers had to do was to exchange their standard keyboard with mine."



INTERVIEW EIGHT

Paul, a Software Engineer, had to give up his job and is undergoing treatment for RSI. He explains how this could have been prevented with proper medical and ergonomic intervention.

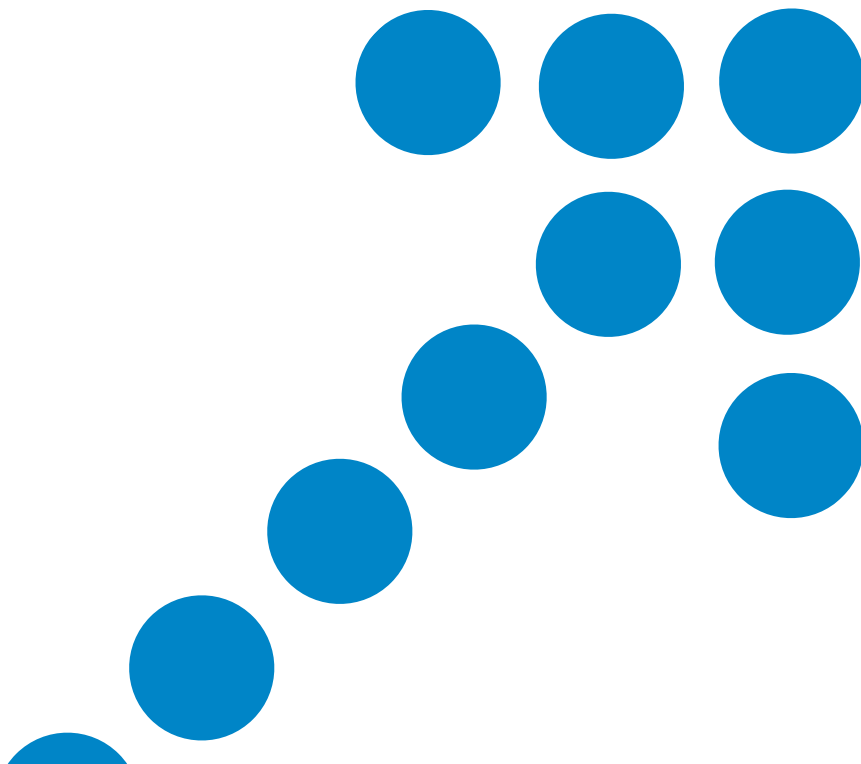
Paul (name changed), a software engineer, has been working in the IT industry for six years. His problem started last year when he developed sudden pain in his neck, back and shoulders. The symptoms persisted even after undergoing different kinds of treatments at various orthopaedic centres in Dublin. The final blow came when he was at work at a customer's site. "I was pounding on the keyboard when the back of my hands went numb. I was shaking and felt as if I had an old woman's hands," he recalls.

His case was diagnosed as Grade III RSI (the most serious kind). Subsequently, he gave up his job and is now undergoing treatment for the malady. Paul's initial symptoms were pain and stiffness of the neck, shoulders and upper back only while he was at work. This could have been corrected with proper medical and ergonomic intervention. However, because it was ignored, it led to shooting pain, burning, numbness or weakness in the arm, forearm, wrist or hand, which can take several weeks or months to be treated. If left too late, says Paul, the pain can become constant, and even after proper treatment, recovery may not be total.

The first step in the correction process is to perform a workstation assessment, says Paul. "Many IT companies think twice about having ergonomic programmes because they fear escalation in costs due to purchase of new furniture or equipment. But research in the US has shown that for every one dollar spent on ergonomic programmes, the company realises a return of \$17.8. What they don't realise is that it is possible to achieve corrections within the existing facilities," he adds.

Most of the time, an ergonomic correction solves the problem, while in cases like that of Paul's, special therapy is administered. Warning that those working in call centres are particularly at risk because they have to be at the PC and telephone all day, Paul advises people to stay away from misconceptions associated with RSI that the aches and pains are common for a working person.

“Research in the US has shown that for every one dollar spent on ergonomic programmes, the company realises a return of \$17.8.”



Financial Assistance

A range of State supports is available to employers if they need help to cover additional costs of employing someone with a disability.

WORKPLACE EQUIPMENT/ADAPTATION GRANT

Grant assistance is available for employers who need to purchase specialised equipment for staff with a disability. The grant may be paid whether the person with a disability is already employed or is about to be employed. A maximum grant of €6,348.70 is available towards the cost of adaptations to premises or equipment. This grant can also be used to upgrade adapted equipment funded previously.

Application forms for the Workplace Adaptation Grant can be obtained from any local FÁS Employment Services office. Employers should identify the equipment required, justifying why it is needed and supply quotations. If it costs over €635, two price quotations from different suppliers are required. If the equipment or adaptation costs over €1,270, three price quotations from different suppliers are required.

Public sector employees who require assistive technology should get in touch directly with the Disability Liaison Officer in their HR Unit. Public sector employers in Ireland are obliged to facilitate the needs of their disabled staff. This means making assistive technology, adaptive equipment and facilities, aids and appliances available. **Public sector employers and their disabled employees are therefore not entitled to claim this FÁS grant.**

Contact your local FÁS Employment Services Office or LES (Local Employment Services) office for further information. Information is also available on the FÁS website at www.fas.ie.

Examples of some adaptations for which grants may be given include:

- Voice synthesisers for computers or amplifiers for telephones
- Alarm systems with flashing lights for hearing-impaired employees
- Minor building modifications (including construction or addition of ramps or modifications to toilet facilities)
- Braille converters
- Stair lifts
- Machinery adaptations, i.e. foot rather than hand operated.

There is a wide range of equipment and adaptations that are covered by this grant. However, employers are not entitled to make an application for grant assistance each year. An application for equipment that was purchased retrospectively cannot be made (i.e. a claim made in 2003 for equipment purchased in 1999).

PERSONAL READER GRANT

An employee who is blind or visually impaired and needs assistance with job-related reading may be entitled to a grant to allow them to employ a personal reader. The grant is available for up to 16 weeks. FÁS will normally pay a fee of €6.35 per hour; it will be paid up to a maximum of 640 hours per annum.

An employee can apply for this grant if:

- They are in employment in the private sector and need assistance with work-related reading.
- They have recently become visually impaired and in danger of losing their job.
- They are going back to their original employer to do new or different work.
- Their prospects for promotion are being restricted because of reading difficulty due to their visual impairment.

The employee contacts their local FÁS Employment Services Office to obtain and complete an application form. FÁS, the employee and employer agree the number of hours and duration based on the amount of reading required. FÁS pays a grant to the employee to pay the costs of their personal reader. The personal reader must not be replacing any reading help normally given by work colleagues, relatives or friends.

EMPLOYMENT SUPPORT SCHEME (ESS)

The Employment Support Scheme (ESS) offers financial support to employers who employ people with disabilities whose productivity levels are between 50 percent and 80 percent of usual performance. The person is paid the normal rate of pay for the job and an ESS grant is paid to the employer to cover the shortfall in productivity.

A person on the Employment Support Scheme is subject to the same conditions of employment as other employees. These conditions include PRSI contributions, annual leave and tax deductions and minimum wage requirements. Whilst employed and benefiting from ESS funding, the person can retain for one year any secondary benefits which have been received prior to taking up employment (i.e. medical card, travel pass).

DISABILITY AWARENESS TRAINING SUPPORT SCHEME

The Disability Awareness Training Support Scheme provides for grants towards the cost of Disability Awareness training for employees. It addresses the concerns that employers and employees may have about working with people with disabilities. It covers topics such as the use of appropriate language and prepares existing staff when they are being joined by a new colleague with a disability.

Funding is available from FÁS to companies in the private sector at a level of 90 percent of costs in the first year and 80 percent of costs in subsequent years. The maximum funding available is €20,000 in any one calendar year. Further details are available from the FÁS Regional Services to Businesses offices or at www.fas.ie.

EMPLOYEE RETENTION GRANT SCHEME

The purpose of this grant is to assist employers to retain at work employees who become disabled through illness or injury. Through this grant such employees can be offered re-training so that they can undertake alternative duties or continue to work at their existing duties, using modified techniques.

EMPLOYER'S PRSI EXEMPTION SCHEME

This scheme is available from the Department of Social and Family Affairs to employers who recruit a person with a disability for at least 4 days' work per week and a minimum of 20 hours per week. It must be a new position and not carried out by anyone previously.

When extra eligible disabled workers are employed, employers will not have to pay their share of their PRSI contributions for the first two years' employment. There is no limit to the number of people with disabilities who can be employed under the Scheme.

Further details and Application Forms are available from:
PRSI Exemptions Scheme,
Department of Social, Community and Family Affairs,
Gandon House,
Amiens St.,
Dublin 1.
Phone: 01 7043000

Legislation covering the employment of people with a disability

Safety, Health & Welfare at Work Act, 1989

The purpose of this Act is to ensure that all employees are protected against accidents and ill-health at work. People with disabilities are given special mention in the Act with regard to training on health and safety issues. The Act also states that "places of work shall be arranged to take account of people with disabilities". The main requirements are that:

- Health and safety training provided to employees must take account of their capabilities to take on a particular task
- Consideration must be given to evacuation procedures in the event of an emergency for people with disabilities
- Adequate assistance should be provided for the safe evacuation of those with a disability in the event of an emergency.

Equal Status Act 2000

The Equal Status Act 2000 prohibits discrimination in the provision of goods and services on nine grounds, one of which is disability.

Employment Equality Act 1998

Under this Act, employers had to do all that was reasonable to accommodate the needs of a person with a disability, unless the employer could show that there was a cost to him/her other than a nominal cost. Weaknesses in the legislation such as the restriction, through the use of the nominal cost threshold, on the responsibility of employers and service providers to accommodate the needs of people with disabilities, have limited its potential impact. The Act left matters so that employers were able to discriminate against workers with disabilities if the cost of necessary adjustments to the workplace exceeded a 'nominal cost'.

The Equality Act 2004

The Minister for Justice Equality and Law Reform announced on 19 July 2004 the signing into law of the Equality Act 2004. This Act makes a number of significant changes to both the Employment Equality Act 1998 and the Equal Status Act 2000.

Disabled workers now enjoy a far greater level of protection. In relation to the disability ground, the Employment Equality Act 1998 obliged an employer to provide reasonable accommodation to allow persons with a disability to have equal treatment in relation to access to and conditions of employment, but this was subject to a nominal cost limitation. This has now been replaced by an obligation on the employer to provide "appropriate measures" unless those measures would impose "a disproportionate burden" on the employer.

In this regard, account will be taken of the financial resources of the employer concerned. Previously an employer could refuse to provide facilities on the grounds that it gave rise to more than a "nominal" cost and accordingly the new Act imposes a higher burden on employers. It also makes it easier to take successful claims on the disability ground.

AT Suppliers

Computer-related Assistive Technologies

1. **Andrews Awards Systems**
38, Pine Valley Park, Grange Road, Dublin 16 Ph: 01-4930011, Fax: 01-4944252,
Email: AWARDSYS@IOL.IE (also supply keyboard stickers)
2. **TechCess Ltd**
Unit 12 Willow Park, Upton Lane, Stoke Golding, Nuneaton, Warks., CV13 6EU, England
Tel: 0044 1455 213708, Fax: 0044 1455 213709, Email: sales@techcess.co.uk
3. **Don Johnston Special Needs Ltd**
18 Clarendon Ct., Calver Rd, Winwick Quay, Warrington, England WA2 8QP Ph: 0044 1 925 241642,
Fax: 0044 1 925 241745, Email: jmunro@djsn.u-net.com Web: www.donjohnston.com/uk
4. **Jackson Technology**
24, Kiltipper Ave, Aylesbury, Dublin 24 Tel/Fax: 01-4518508, Email: djackson@iol.ie
5. **Ash Technologies Ltd**
31, Tallaght Business Centre, Whitestown Road, Tallaght, Dublin 24. Ph: 01-4526380,
Fax: 01-4526385, E mail: info@ashtech.ie Web: www.ashtech.ie

Assistive Technology for Independent Living

1. **Sound Security**
4, Hilltown Way, Rivervalley, Swords, Co. Dublin. Ph: 01-8403345, Email: sound.security@indigo.ie.
2. **Odel**
Paul Carlisle, 1 Hillview Terrace, Dromore St., Banbridge, Co. Down BT32 LOH. Ph: 048-40628349,
Email: info@odel.co.uk Web: www.odel.co.uk

Communication Aids: Hardware and Software

1. **O'Neill Healthcare**
P.O.Box 7196, Dublin 13 Ph: 01-8462721, Fax: 01-8462723, Email: oneillhealthcare@oceanfree.net
(Lightwriter/Early AAC Products)
2. **Sensory Software International Ltd**
26, Abbey Road, Great Malvern, Worcs WR14 3HD. Tel: 0044 1 578868, Fax: 0044 1 684 897753,
Web: www.sensorysoftware.com(includes The Grid, an on-screen keyboard with voice output and full
PC access. The price is £240 for The Grid and £59 for the JoyCable plus £10 P&P plus VAT.)
3. Writing With Symbols, and Inter-Comm (a symbol-based Email package) available from: **Widgit Software Ltd**, 26, Queen St, Cubbington, Leamington Spa CV32 7NA, U.K. Ph: 0044 1 926 885303,
Fax: 0044 1 926 885 293, Email: sales@widgit.com
4. Dynavox, Dynamyte, Dynamo and Dynawrite Communication Aids available from: **Sunrise Medical Ltd**,
Sunrise Business Park, High St., Wollaston, West Midlands DY8 4PS, England.
Ph: 0044 1 38 4446789, Fax: 0044 1 38 4446799, Email: mike.mcconnell@sunmed.co.uk

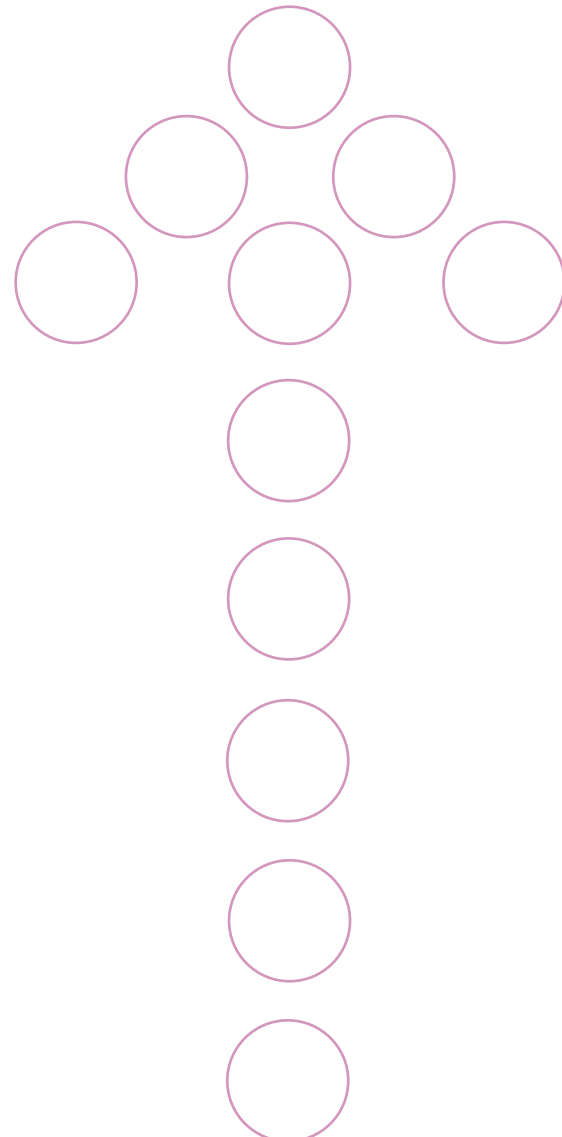
5. **Liberator Ltd**
Whitegates, Swinstead, Lincolnshire NG33 4PA, U.K. Tel: 0044 1 476 550391,
Fax: 0044 1 476 550357, Web: www.liberator.co.uk
6. Tellus Communication Aid available from: **TechCess Ltd**, Unit 12 Willow Park, Upton Lane, Stoke Golding,
Nuneaton, Warks., CV13 6EU, England Tel: 0044 1455 213708, Fax: 0044 1455 213709,
Email: sales@techcess.co.uk
7. **Cambridge Adaptive Communication**
8, Farmbrough Close, Stocklake Industrial Estate, Aylesbury, Buckinghamshire HP20 1DQ, UK.
Ph: 0044 1296 719736, Fax: 0044 1 296 719735
Email: info@cameleon-web.com, Web: www.cameleon-web.com (Cameleon Communication Aid)
8. **ChatAbility**
47 Westland Rd., Cottesmore, Oakham, Rutland LE15 7DS, Tel./Fax: 0044 1572 811085,
Email: support@chatability.co.uk OR sales@chatability.co.uk (Range of devices)

Electronic Height Adjustable Tables

SKM Products

Sandyford Industrial Estate, Furze Road, Sandyford, Dublin 18, Ph: 01 295 2676.

Note: The above list is not exhaustive but incorporates the main AT suppliers currently delivering to the Irish market.



AT Information and Service Providers

Service Providers

- **ENABLE IRELAND**
National High Tech Assistive Technology Training Service, Unit 5, Block B, Cashel Business Centre, Cashel Road, Crumlin, Dublin 12. Telephone: 01-4992357, Email: slong@enableireland.ie
Web: www.enableireland.ie
- **ASSIST IRELAND**
Telephone: 1890-277478, Web: www.assistireland.ie
- **CENTRAL REMEDIAL CLINIC**
Vernon Avenue, Clontarf, Dublin 3. Telephone: 01-8057400, Web: www.crc.ie
- **COMHAIRLE**
7th Floor, Hume House, Ballsbridge, Dublin 4. Telephone: 01-6059000, Web: www.comhairle.ie
- **IRISH WHEELCHAIR ASSOCIATION**
Aras Chuchulain, Blackheath Drive, Clontarf, Dublin 3. Telephone: 01-8338241 Web: www.iwa.ie
- **NATIONAL COUNCIL FOR THE BLIND OF IRELAND**
P.V. Doyle House, Whitworth Road, Drumcondra, Dublin 9. Telephone: 01-8307033 Web: www.ncbi.ie
- **NATIONAL ASSOCIATION FOR DEAF PEOPLE**
35 North Frederick St., Dublin 1. Telephone: 01-8723800 Web: www.nadp.ie

For additional information on specific disability issues

- **EQUALITY AUTHORITY**
Clonmel St, Dublin 2. Telephone: 01-4173333, Web: www.equality.ie
- **FÁS**
Training and Employment Authority (Ireland) P.O. Box 456, 27-33 Upper Baggot St., Dublin 4, Ireland.
Telephone: 01-6070500, Web: <http://www.fas.ie/disability/index.htm>
- **WORKWAY**
Ballinacurra, Innishannon, Co Cork. Telephone: 021-4776849, Web: www.workway.ie
- **ACCESS ABILITY**
Gandon Villa, Roslyn Park, Sandymount, Dublin 4. Telephone: 01-2057318, Web: www.accessability.ie
- **EMPLOY ABILITY**
Unit 15, Bluebell Business Park, Old Naas Road, Dublin 12. Telephone: 01-4603081,
Web: www.employability.ie
- **NATIONAL DISABILITY AUTHORITY**
25 Clyde Rd., Dublin 4. Telephone: 01-6080400, Web: www.nda.ie
- **FORUM OF PEOPLE WITH DISABILITIES**
First Floor – 21 Hill St., Dublin 1. Telephone: 01-8786077, Web: www.inforum.ie
- **DISABILITY FEDERATION OF IRELAND**
Fumbally Court, Fumbally Lane, Dublin 8. Telephone: 01-4547978 Web: www.disability-federation.ie

Conclusion

Assistive Technology has been pivotal in enhancing access to work, and to the workplace, for people with disabilities, enabling countless employees and potential employees to undertake the same tasks as their colleagues, including using computers - a key piece of technology for the 21st century workplace.

AT allows people with disabilities to work more independently; it has opened up dozens of new career fields, and put jobseekers with disabilities on a more equal footing with other applicants.

Armed with knowledge of the potential of Assistive Technology in the workplace, your organisation will be well placed to support employees with disabilities, whether they are new to the organisation or are currently employed, or acquire a disability in the future. Key personnel in your organisation should also know enough about these issues to be able to discuss their effectiveness with an employee who might benefit from using them now or in the future.

Reference Materials

- [Adjustments which Improve Access to Employment](#) – The National Council for the Blind of Ireland
- [Assistive Technology For Living CD](#) – Enable Ireland National High Tech Assistive Technology Training Service, Dublin. Ph: 01-4992357 or [Email: slong@enableireland.ie](mailto:slong@enableireland.ie) (Email queries preferred)
- [Building an Inclusive Workplace](#) – The Equality Authority
- [Caring with Minimal Lifting](#) – The Health & Safety Authority
- [Disability in the UK](#) – Employers Forum on Disability – www.employers-forum.co.uk
- [Disability Resource Pack](#) – The Equality Authority
- [Disabled People as Workers](#) – Employers Forum on Disability
- [Handle with Care](#) – The Health & Safety Authority
- [Manual Handling Regulations](#) – Statutory Instrument SI44 of 1993
- [Microsoft Accessibility: Technology for Everyone](#) – www.microsoft.com/enable/
- [Posture Guidance - Osmond Group Limited](#) – www.ergoergo.info/
- [RSI Facts and Figures](#) – The Repetitive Strain Injury Association – www.rsi.org.uk

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