

Alternative Mice for Pre-school Children with Neurological conditions and Physical Difficulties”

Generally when you purchase a computer it comes with a standard mouse. Standard computer mice come in all shapes and sizes (usually too large for small hands), and are similar in needing the whole device to be moved around to move the cursor around the screen. They then need to be held in one position and need to be completely still when clicking on the selected item on the screen and they have 2 buttons to choose from and press to carry out different functionalities. For some pre-school children because of a physical and/or cognitive difficulty they cannot operate this type of mouse.

This factsheet provides information on mouse alternatives that have been used throughout the Play NI project and have been very successful for individuals who were experiencing difficulty with the standard mouse. We have also provided case studies demonstrating how some of the equipment has been successful. It is also important to note that when we try out the alternative mice we treat each child as an individual, so for example just because a single button mouse worked for a child with Autism it does not necessarily mean that it will be suitable for another child presenting the same diagnosis. It is important to try a range of options out with an individual.

Adjusting the Way the Mouse Behaves

It is possible to change the way the mouse behaves. In the Windows Control Panel there is a mouse icon that when you double click on it provides an option to change the speed of the mouse.

For further information on how to change the mouse settings on your computer please refer to the factsheet and the training video on the Play NI website www.abilitynet.org.uk/playni/factsheets.htm

Different Kinds of Mouse

Trackballs

A trackball is basically an upturned mouse. Rather than rolling the mouse on the table top it is a static device and the ball on the top is moved using fingers, thumbs and palms. Larger trackballs are often suitable for use by feet.

The Trackballs that we find we use the most with pre-school children are:



BIGtrack



Kidtrac

Product	Supplier
BIGtrack	Inclusive Technology, SpaceKraft
Kidtrac	Inclusive Technology, Keytools

Single Button Mouse



This mouse is ideal for those children who can move a standard mouse but have problems distinguishing between a left or right mouse click, as it only has the one button across the top.

Also having just the single button available helps the child to concentrate on the task of moving the mouse and clicking and stops inquisitive minds clicking on the non primary button and seeing what is available and to go into areas that you don't want them to. This mouse, from experience throughout the project, has been particularly useful for children on the higher functioning Autistic Spectrum to help to keep them focused on the activity they should be playing and not what other functions available on the computer.

Product	Supplier
Chester Single Button Mouse	Inclusive Technology, and available from a number of non specialist suppliers online.

Touch Pads

These devices are often found on laptops. They are stationary pads which are operated by sliding your finger across the surface. Clicking can be done with buttons or by tapping lightly on surface. They can be held in the hand or placed on a desk. These are really effective for pre-school children with muscular fatigue difficulties. E.g. Muscular Dystrophy.



Cirque Touch Pads

Product	Supplier
Cirque Touch Pads	Keytools, PC World

Joysticks

These type of devices work in a similar manner to joystick controls on a wheelchair. The mouse pointer moves fastest when the joystick is pushed fully forward. The joystick illustrated has a built in guard and has a drag lock button and a button which sends a double click.



Traxsys Joystick Plus

Product	Supplier
Joystick Plus range	,Inclusive Technology, Keytools

Case Study Demonstrating a Trackball

Sean age 4 years old, has a rare and complex progressive neurodegenerative condition, Ataxia Talangiectasia, that can cause severe disability and premature death. He has physical and cognitive difficulties and low concentration levels.

Sean's nursery worker and his mum both attended the assessment.

The aim of the assessment was to assess Sean's access and to adapt the ICT equipment to meet his current needs, using play and fun to introduce him to using the computer to provide him with as much play opportunities as possible as his condition changes. His mum, who attended the assessment, had reservations about whether technology could help him and whether he could cognitively understand how to use the equipment and to maintain his interest.



We looked at how Sean could control a pointing device. At the time of the assessment he demonstrated that he was beginning to get good control when using the **BIGtrack**, rollerball device and really enjoyed using it and showing us what he could do.

We also slowed the mouse speed down to allow him better control and provided him with a nice big mouse pointer on screen, called Enormouse, (available to download from www.fxc.btinternet.co.uk/assistive.htm), that he was able to see and control better than a standard mouse pointer.

Sean also had an opportunity to play with a range of software activities that provided music and visual feedback, and he also showed us that he could engage with software activities where he had to make choices. (Please refer to the Play NI website for further information on software, including FREE software available.

www.abilitynet.org.uk/playni/factsheets.htm

Sean's mum was very emotional at the time of the assessment as Sean really showed her that he was much more cognitively aware than they thought and the technology seemed to motivate him to show off his skills. In the past he showed very little interest in the majority of play activities available to him and will only play for a few minutes. He spent nearly an hour playing on the computer during the assessment and really enjoyed showing off what he could do and enjoying the praise from everyone who attended. Mum also commented that it was the first assessment that he had had that showed off "what he could do" rather than "what he can't do".

Mum mentioned that his physical condition will deteriorate in the next few years and I explained that now he had shown that he could use and understand the technology, he will be able to continue to use the computer in the future using a range of assistive technology to always provide him with access, whatever the future held for Sean.

The family had a computer at home and there was also a computer at the nursery that he attends, so they were going to buy the BIGtrack trackball for home, but also allow him to take it along to the nursery when he attended so that he could play on the computer there too.

Case Study Demonstrating a Chester Single Button Mouse

Zac is 4 years old and is on the autistic spectrum. The aim of the assessment was to look at how to access and to adapt the ICT equipment to meet Zac's needs, using play and fun to introduce him to using and becoming familiar with a computer. It was highlighted that it is important for Zac to begin to use the computer effectively playing with an activity rather than just moving the cursor and clicking randomly in and out of programs and opening and closing icons, which he tends to do when accessing the computer.



We introduced Zac to the Big Track rollerball device. It was clear that he was able to use the device as he was trying to close programs and move things around and press the left and right button and was more drawn by what he shouldn't have been doing rather than focusing on the activity.

To engage him in the actual activity on screen we had to use physical and verbal prompts. Although he demonstrated that he could use the Big Track he was transfixed on the rollerball rather than the game. When slowing the mouse speed down it did make a slight difference as he had to slow down his movements to move the mouse pointer on the screen, but even this did not stop him from being fascinated with the rollerball.



We then tried out the Chester Single Button mouse with him. The difference with this mouse is that it functions the same as a standard mouse but doesn't have a non primary button available. This single button mouse focused Zac on just clicking appropriately rather than clicking the non-primary button in error and also helped to stop any distraction. When Zac has access to this mouse we would recommend that the mouse speed is slowed right down to help with control to try to stop Zac rushing through things, and helping him to concentrate on the activity.

Advisory Notes

We would recommend that the computer has no shortcuts available on the desktop when Zac is using the computer. A good way to do this on a group used computer is to create a user account for Zac. This can be done by clicking on the "User Accounts" icon that appears in the Control Panel and follow the onscreen instructions to create a user account for Zac. So when he and his support worker go to use the computer in the nursery setting, the support worker will logon to his user account that will suit his requirements e.g. no shortcuts or icons on the desktop.

Monitoring Computer use

Zac can become obsessive with certain activities and it is important to monitor his use of using the computer. For example, using a timing device with him to let him know that the computer session finishes after a certain length of time. At this time I would recommend that he only has 10 minutes using the computer at any one time.

Zac will require adult support at all times when using the computer so that he is using it appropriately and he is only engaging with the activity on screen and not allowed to click randomly anywhere else. If he starts to do this we would recommend that the screen is switched off so he has no access immediately.

The session should always be ended by the adult at the 10 minute timing and by always verbally saying "Finished" to Zac and moving him onto the next activity by using the picture prompts that he uses for everyday communication.

Case Study Demonstrating a Cirque touchpad

Billy is 3 years old and attends nursery. He has a diagnosis of Spinal Muscular Atrophy Type 2, which affect the strength and tone of his arms. His fine hand skills are limited as they are generally weak and lack the strength to apply the right pressure when using a pencil, for example.

Billy's communication is appropriate for his age and has normal intellect and excellent learning ability.

Technology is going to be very important to him in providing him with an access tool for both school and leisure activities.

Because his touch and use of fingers are very weak using a standard mouse would be very difficult to control and would not be an option for him to access the computer. However he is able to move his fingers and can press with a light touch. So at the assessment we looked at options available to him that may give him access to the computer.

Cirque Smartcat Device



I set up a TFT screen monitor and some speakers and opened a piece of software called "Choose & Tell Nursery Rhymes", (available from Inclusive Technology <http://www.inclusivetechology.co.uk>) I then showed Billy the cirque device and explained and demonstrated how you use it to play the nursery rhyme software.

With encouragement from his mum and his nursery assistant he began to play with the software. I observed that although he is right-hand dominant he preferred to use his fingers on his left hand when using the mouse but when his left hand became tired he would swap to his right hand. So he demonstrated that he could access the device with both hands.

He was able to move his finger around very well and had no difficulty in getting the mouse pointer to the place he wanted it to go on the screen. He was also able to click accurately using this device because the buttons do not require a strong press to activate it. We had the device placed on a dycem mat so that it remained stationary. I also observed that he has excellent eye hand co-ordination when using the mouse and looking at the activity on the screen. He immediately began to independently play the nursery rhyme game and enjoyed choosing the next stage of the story he was creating by using the mouse. I also opened another program called "My Noisy Colouring Book" (Available from Inclusive Technology www.inclusive.co.uk/my-noisy-colouring-book-p2313) which allows you to colour pictures and as you colour it makes noises. Billy also grasped this very quickly and even independently chose the picture he wanted to colour.

We all felt that the **Cirque smartcat** would be the most appropriate device for him at this time.