Touch Tap Swipe

A guide for people with minimal body movement.

Choosing and Using Touch Phones and Tablets

dmd pathfinders

www.DMDPathfinders.org.uk

Supporting teenagers and adults living with Duchenne Muscular Dystrophy.

Can I physically use a smart phone or tablet?

Can you:

- Press a feather light button/ joystick with your head, jaw, finger, limb?
- Blink or slightly move a finger?
- Sip or puff through a straw?
- Use your voice?

If so - then you can fully control all they key features of a tablet or smart phone.

In the world of smart phones and tablets, touching, swiping and tapping seem essential to accessing the full range of features available. You might assume they are off limits if you have limited movement or can't touch a screen, but that's not the case.

Our members are all adults living with Duchenne or a similar type of Muscular Dystrophy, many having minimal body movement. Some use a range of different devices and Apps to control phones and tablets without touching the screen at all.

This guide was created by our members to share their experience, and provide information, videos and top tips to anyone with very limited mobility who wants to start using a phone or tablet.

* Products are not endorsed by DMD Pathfinders and provided for information only. Prices are correct at time of printing.

Guide contents.

These are some of the topics in this guide.

- Choosing a phone/tablet.
- Holding and mounting solutions.
- Built in accessibility features for the most popular devices.
- Hands free use.
- Switch control and how it works.
- Stylus options and accessories.
- Communication and technology assessments.
- How Apps have made life easier, less stressful and improved people's health.

Watch video demonstrations of products and technology mentioned in this guide on our YouTube Channel: DMD Pathfinders, playlist Touch Tap Swipe.

Download our guide on-line from www.DMDPathfinders.org.uk and click on links to take you directly to product web pages and information.

Choosing a phone or tablet

When choosing a smart phone or tablet, think about the accessibility options you might need as well as what you want to do with it.

For some people - it's less about making phone calls and more about life enhancing functions, social contact and hobbies.

> Until my smart phone was made accessible for me, I had no idea I would end up using it so much! If planning a new purchase, don't think about how you use your phone now, but what you might use it for if it was completely accessible.
>
> [Jon Hastie]

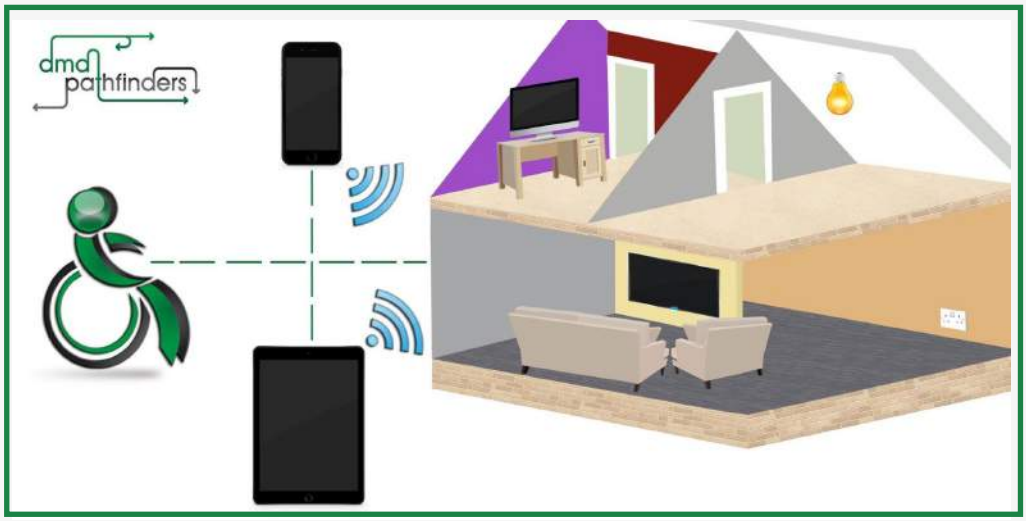
Think about:

What would you like to do with your device?

- Will you be be using it for writing, e-mails, watching films or as a gaming device? If so, will a bigger screen be better?
- Will you be making lots of phone or video calls - or will the phone features just be for an emergency? How easy is it to make and answer calls handsfree?
- Do you want to use your device for gaming, drawing or photography? If using it as a phone isn't important, would a tablet be more suitable?
- Will you be storing lots of photos, music, videos, tv shows, films or books? If so, you might want to consider getting a higher amount of storage?
- Will you be using it as a way of getting help or the attention of an assistant? If so, look for features that could work as a bleeper, intercom, buzzer, hands free call or messaging system (including automatically speed dialing key people or emergency services).
- Do you need good geolocation features to enable people to see where you are or locate other people or places? This might be handy if you have become separated from assistants/ carers or friends!

Home automation

Do you want to use it to control your home environment such as lights,TV, power sockets or your desktop computer for example? These things are all possible with Apps and a huge variety of smart home products are now available in mainstream stores. Others are specifically designed for disabled people such as 'evoassist' from RSL Steeper (http://assistive-technology.co.uk) which turns your iOS device into an environmental control.



Graphic produced by Mithun Soul, DMD Pathfinder.

Practical checklist - things to consider.

Before I bought my iPhone I did a mock up with weight and width to see how well I could hold it, for how long and what parts of the screen I could or couldn't reach.

[Louise Watch]

- ☑ Will you want to operate it in your hand, on a tray or stand, or totally handsfree - experiment with size, weight and shape to find a good match.
- ☑ Do you need to mount it to your wheelchair and use it whilst moving? If so, a smaller, lighter device might be easier to mount.
- ☑ Protective cases will alter the grip and add weight and width to your device when holding or mounting.
- ☑ Safety - can your device be easily stolen from your tray or hands - check if insurance includes theft faway from home and not just theft from a house or vehicle.
- ☑ If Apps are important then there are over a million to choose from (Apple App Store or Google Play). Software developers have been given the tools to incorporate certain types of accessibility into Apps for Apple devices for a few years more than on Android phones - increasing the chances of Apps for iOS being more accessible than Android.
- ☑ Buying a phone that can handle the most up to date operating system will ensure you benefit from all the latest accessibility features. Older devices might not run as smoothly or be able to benefit from the latest technology that Apps use or may not run the latest operating systems.

NB: When phones update to a new version of their operating systems, it may take a few months before technology like the Tecla Shield or i-portal is updated to work with the new software (see our Switch section of this guide).

- ☑ Cost - smart phones and tablets can cost as much as a desktop PC or laptop. Accessible technology like switches and controllers can add another £100 to £500 to the price. Mounts can add a further £20 to £100. You may already have some of this equipment controlling your desktop.
- ☑ Devices are getting lighter and come in a variety of shapes and sizes that might better suit your requirements

Make notes on the advantages and disadvantages of devices you are interested in and try them out where possible.

[Louise Watch]

Daniel uses robust mounts and a light weight phone to control his camera for off road photography.

Mounting solutions

The next step is to think about how you might hold /clamp or mount your phone or tablet.

There are many ways to do this - mounts from accessible technology or mobility shops will generally be around £300-£700 and mounts on Amazon or Ebay around £20 - £100.

My husband made me a covered, wooden wedge, to prop up my phone on my wheelchair table for a good viewing angle, near my hands. I've been able to play the piano again using Garage Band on my devices.

[Louise Watch]

If you don't use a tray, a more sturdy (and expensive) clamping option for mounting might be needed - the last thing you want is an expensive device smashing on the floor as you move around!

A clamp does have the advantage of also being flexible in that you can attach it to part of your wheelchair / bed or table and it will still be held at a good viewing angle.

Branded mounts:

- DAESSY, http://www.daessy.com. - a range of different types. Available in the UK from a number of suppliers including http://www.techcess.co.uk and http://www.mountsandmore.co.uk and RRP up to £700

- RAM Mounts, http://www.ram-mount.co.uk - very popular range (not just to mount tablets or phones).

- iKross http://www.ikross.com/ holds most large phones and tablets (landscape for larger tablets shown in the picture).

If you can't turn your head, you may need a screen directly in front of you at eye level.

However, if you want the device to stay on your chair whilst moving, you also need a position to be able to see where you are going!

DAESSY (pictured), provide heavy-duty, rigid and folding wheelchair mounts for viewing or operating via voice commands or switches. Prices available on request from http://www.daessy.com/price.html

If you will be touching the device, look for a mount that has enough flexibility to hold the device next to your hands.

The iKross has a sturdy spring clip so it won't fall off if you lean heavily on the tablet. It also has a rotating shaft, 180 degress lever and ball head joint that means you can angle it in any direction. Useful if you want it high in the air or propped up on a table next to your hand. RRP £22 from Amazon.

Consider browsing a photography store for a clamp, gooseneck (reticulated rod) or tripod. Some mounts can be moved by remote control - offering you the ability to angle it yourself on the go.

There are a range of attachments that give flexibility designed for smart phones and tablets - think laterally and look for attachements for bikes, boats and cars - they may fit your chair even better than those made for 'wheelchair users'.

For my tablet & phone I use cheap car holders with suction cups on the bottom.

[Daniel Baker]

Daniel Baker using a variety of mounts, switches and a mouse to control his phone and use his external cameras.

I have a custom built system which combines both a DAESSY mount and RAM mount. This gives me a really secure mount with a flexible end for easy positioning. This was the best solution for me because I like to drive with the phone mount but I don't use a wheelchair tray. It was tricky to find a solution that didn't interfere with the many different positions of my highly-adjustable wheelchair so I found support from a private wheelchair service really helpful.

[Jon Hastie, UK]

My iPad is held by a Manfrotto Superclamp and Manfrotto Flexible Arm (50cm). I use a camera ball head mount attached to a Grifiti Nootle for iPad 2/3/4

[Mark Chapman, UK]

If you are having trouble finding a solution, some wheelchair services may be able to help you. You may need to pay privately if there is no clinical need. Charities that assist people with technology and communication solutions might also be able to help you find a good mounting solution (see the end of this guide).

I use the Grifiti Nootle [£7] with a clamp and Fotodiox gooseneck camera mount [£10] for holding my phone onto my tray to take photos from a height higher than my tray.

The Nootle grasps your phone really well, even an iPhone 6 Plus with case, and has a 1/4-20 thread which fits all standard camera mounts.

Apple EarPods (free with my phone) have an easy press button to adjust the sound when playing music - which also doubles up to operate the camera shutter.

[Louise Watch]

Controlling your phone from a desktop computer.

Android phones can be controlled from a Windows PC. You run a programme (server) on your desktop and a corresponding App on your smart phone to link the two.

You cannot control an iPhone from a desktop unless you jail break it - which some members have done to give them more flexibility in controlling their phone. This is a process which allows unauthorised software to be used. As such, it opens up security issues, invalidates your warranty and if you are not a technical expert, may cause your phone to stop working and fail to update - so it's done at the users own risk.

Without jail breaking, you can answer and make both phone calls and use SMS text messages from any Apple desktop or Macbook (running the latest Yosemite operating system) or iPad, if you also have an iPhone running iOS8.

I control my Android phone from my Windows PC through 2 methods, depending on connection (USB vs WIFI).

MyPhoneExplorer http://www.fjsoft.at/en/ is best via USB but can work via WIFI. USB connection can be tough to setup though. It requires you to enable USB debugging in your phone (google for instructions for your specific phone, it's often hidden in newer phones), then find and install drivers for your phone (again, google).

VNC remote desktop - I recommend VMLite as server & UltraVNC viewer from the Google App Store

VMLite costs a little, but is very stable vs the other free VNC servers available https://play.google.com

[David Skinner]

Built-in Accessibility

Within the operating system (OS), phones and tablets will come with some built-in accessibility features. You usually need to go to the phone settings to switch them on. There are many more features than we have highlighted - we've selected those we think most relevant to members.

Considerations for ventilator users.

It is worth noting that voice recognition might not be perfect if you use a vent. This is because software not only detects clarity of speech but also patterns and speed - and your phone might not be expecting a pause whilst you take a breath. The majority of members did not find this a problem, but the best option is to try before your buy. Most phones have excellent noise cancellation features and background noise from your vent should not impact on using voice commands/dictation or making calls.

iOS for Apple iPhones and iPads / iPad mini

Apple build award-winning accessibility into all their devices - and have done so from the very first one. For many members this makes them a popular option. The latest version is iOS8 - the operating system for iPhones and iPads. There are numerous features for people with reduced physical or motor strength/dexterity with some particularly for wheelchair users. Find out more from the on-line Apple Phone Manual or visit:

http://www.apple.com/accessibility/

http://atmac.org - "Information site for Apple product users with disability, chronic illness or other impairments".

- Use **Siri** (Apple's intelligent assistant). Connect a power source to your device and say 'Hey Siri' or press the home button. Just tell Siri what you want to do, here are just a few examples:
  - "Ring Mum' - hands free dialling (use speaker phone if needed - which is great at cancelling out background noise from a ventilator and can be set as the default for each call).
  - 'Launch Photos' [The Launch command launches Apps]
  - 'Tell my sister I will see her at 2' [sends that message to the person],
  - 'Play … ' [plays a chosen song or play list from your music library],
  - 'Email Mark' [hands free e-mail],
  - "Take a Photo' [Opens the camera App].
  - "What's the weather like tomorrow' [Ask a question or search the Internet].
  - 'Wake me up at 3.30' [sets alarm].
  - 'Note I need to make a Dr appointment.' [makes a note in the Notes App to remind you or you can ask it to add an appointment to your calendar]
  - Send commands to update your FaceBook status or send a Tweet.
  - Set timers or appointments, get travel, traffic and location information.

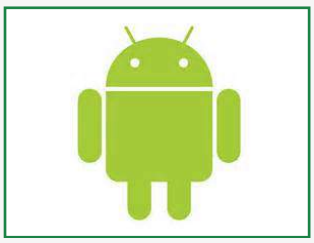
- **Switch control** is available from iOS7 onwards. This gives you the ability to control any aspect of your devices with one or two external switches including using Siri and turning your phone on. More about switches later.
- **Bluetooth Pairing** - link up a Bluetooth Switch or keyboard to your device to control it without touching the screen.
- **Assistive Touch** - if you find some commands like 'pinch' too difficult or can't press the home button for example - you can select another way to activate the command.
- **Speak Screen** (iOS8) - a two finger swipe from the top will start the reading of everything on the screen with natural sounding speech (or tell Siri to read it out to you).
- Screen reader called **Voice Over**.
- **Word Prediction** (iOS8) - the next word will be reccommended for one tap selection.
- **Third Party Keyboards** - developers can create accessible keyboards e.g. one handed keyboards, ergonomic shaped keyboards and Apps like Swipe allow you to drag your finger over letters to "magically form words" like 'Word Flow' does on a Windows Phone.
- **Zoom -** Many levels - useful if you mount your device some distance away. Choose which part of the screen to zoom in on and by how much.
- **Text size and contrast** is changeable.
- You can lock your device into a single App called **'Guided Access'** so if you drag your hands over the screen you won't accidentally open another App with a swipe gesture.
- **Dictation** - talk anywhere you would type - your words will be converted to text.
- **Keyboard shortcuts** - make up your own short cuts like typing "Path" to bring up the word Pathfinder or even "add" to bring up your entire address.
- **Touch ID** - touch lightly on the Home Button and your phone will be unlocked (you can set up your own fingerprint recognition and those of assistants or family members - it will recognise your fingerprint at different angles if your can't turn your hands).
- Your phone can be viewed in landscape or portrait mode - and locked on your chosen setting.
- You can make and receive phone calls on any iPad or Mac as long as you also have an iPhone running iOS 8 on the same Wi-Fi network.

Getting my iPhone has opened up a whole new world for me, and Siri is a great feature.

I can now have it next to me in bed so in the event of an emergency I can call a PA or my family who live elsewhere. I can read and send short messages and check my calendar without any help.

[Jon Hastie]

Android devices e.g Samsung Galaxy, LG, Sony Experia



Android is the mobile operating system by Google. Version 5.0 Lollipop brings additional accessibility features to these phones. One of the most popular features is that some phones can be operated using a mouse (see our Switch section).

http://www.android.com

These built in access features may be improved by different phones e.g. the Galaxy S5 will incorporate them differently than an LG. Some phones have a lot more options - so it's worth checking each out. For example the Galaxy S5 has the ability of an Assistant Menu to use one tap instead of touch or press button combinations, Air Wake so that moving your hand over the phone activates it and Smart Scroll - tilt your head or phone to scroll.

We have included links to Android Central which details the access options for some key phones and tablets.

http://www.androidcentral.com/accessibility

Basic Android access features

- **Google Now** predicts what information you want to see and has it ready to view e.g weather, tv programmes, maps, reminders etc through screens called **Cards.**
- **Google Now - voice activation.** Open google and say 'ok google …' to start voice commands or download a voice control App.
- Google **Talkback** is the built in screen reader to give verbal, audio and vibration cues.
- **Switch Access** - [Same as Switch Control] is new to Android devices running 5.0 Lollipop.
- **Magnification** gestures magnifies the entire screen or large text (including contrast)
- **Auto Rotate Screen** - set the screen to rotate so you can view it portrait or landscape.
- **Text to Speech** - choose to download your favourite voice and quality (and language).
- **Touch and Hold** - alter the duration of touch and hold which you need to complete some actions.

My new tablet, Ausus Fonepad 7, is an Android tablet which allows me to put in a SIM card to make phone calls and send text messages. It's ideal if you want a bigger screen but don't want to loose phone functionality.

[Daniel Baker]

Windows Phones e.g. Lumia, HTC One, Samsung ATIV, M8 for Windows.

Windows Phone 8.1 is the latest operating system.

http://www.windowsphone.com

You can read more about features (although very limited on specific access features) on:

http://www.windowscentral.com

Basic Windows Phone access features

- **Cortana** - The personal assistant for Windows Phone. Type or speak a command.
- **Word Flow** - shape writing so that you can slide your finger over the keyboard to make words.
- **Text Suggestions** - suggest words based on your typing for one tap entry.
- Change the text size and contrast
- **Narrator** reads aloud text (e.g. in e-mails, messages).
- **Magnify** - enlarge any screen being viewed.
- **Zoom** - zoom in and out of a webpage.
- **Speech** - allows hands free use to make calls, search the web, open Apps and send SMS texts.

Using voice commands on different phones.

Voice commands for Windows, Android and iOS devices are functionally very similar - which is why we have only included examples for Siri. However, there are a few differences and these are best explored through asking for a store demonstration.

Alternatively, there are a range of videos on YouTube comparing Apple, Android (Google) and Window voice commands which are included on our DMD Pathfinder YouTube channel [in the Touch, Tap, Swipe playlist]

The Sesame Phone

sesame
touch is overrated

"The Sesame Phone is a touch-free smartphone, designed by and for people with disabilities.' It works through using the body as a switch/input control, the camera tracking your movement to move an on screen cursor. Voice control is also integrated. Visit: http://sesame-enable.com

Switch Control

Switches are used to send commands to your phone or tablet in a range of ways (the action of pressing a button, pulling a cord, sip/puff, blinking etc). They enable you to select elements you might normally activate with a touch, tap or swipe.

It is possible to control all the main built in features of iOS and Android devices, through the use of 1-2 switches. The effectiveness of using a switch is based on three things:

- Choosing the right switch in terms of activation, size and shape.
- Positioning and mounting (you don't want to strain or wear yourself out using a switch)
- Correct set up i.e the way you tell your device to respond when a switch is activated.

It is only in the last few months, that switch use has become possible on Android phones. Windows phones do not currently support switch access.

These basic light-touch switches cost around £14 - £40 from:

http://www.liberator.co.uk

and are also available in most switch technology stores on-line.

There are over 100 different types to choose from across specialist stores.

What is a switch and what is an interface?

On the next page are some examples of switches, interfaces and how you connect them. Most switches can't directly plug into a device - the middle component between a device and a switch is an interface. Some interfaces contain pre-programmed modes to help you tell your switch what action it must do.

There are three different types of switch:

- **Wired switches**

Wired switches need to be physically connected to a switch interface. The interface then connects to your device with either a cable, directly through one of the sockets, or wirelessly.

- **Wireless switches** (they connect through Bluetooth)

These can communicate to your device wirelessly, either through a seperate interface or directly with your device (built in interface). We have provided examples of these in this guide.

- **Body movement switches** (built into phone operating systems)

An example is how iOS comes with a built in function to use your head movement as a switch when facing the built in camera. However, this uses facial recognition and may not work if you use any type of Non Invasive Ventilation that covers the mouth or nose.

Example switches and interfaces

Types of switches/input devices:

- Feather-touch press switches.
- Chin button activation on a necklace
- String pull switches - just a slight pull of the cord and the button activates.
- Pneumatic switches 'Sip/Puff' .
- Eye Blink / small movement sensors - eg SCATIR (Self-Calibrating Auditory Tone Infrared) - £460 from http://www.inclusive.co.uk
- iPortal ™ Accessibility or iPortal ™ Mouse Mover + Accessibility. Use your wheelchair joystick/as a switch to control an iOS device and/or laptop. Available from http://dynamiccontrols.com

Pressure switches require a force to push the button. They are often micro/feather light switches and activate with only the slighest touch.

Infra Red 'blink' switch can be used to detect eyebrow movement or indeed any movement that breaks the beam.

A sip and puff [suck and blow] switch with saliva control.

A chin switch on a necklace, activated by moving the chin up and down

Here's a picture of me using a Tecla Shield, set up with a TaoTronics cradle holder for my iPhone bought from Amazon, Wheelchair USB Charger bought from Portset Systems Ltd. (connected to my wheelchair's control box) and Spec Buddy buttons bought from www.inclusive.co.uk (plugged into Tecla Shield).
[Mithun Soul]

If you can get a USB charger built into your powerchair then you can keep devices fully charged, wherever you are. This is important because assistive technology and Bluetooth quickly deplete the battery on all devices.

Bluetooth / Wireless Switch and Interface combined.

Bluetooth switches can be paired up with your device. When both are turned on, they should recognise each other and all you need to do is turn on switch accessibility on your device, to use them. Bluetooth switches must be powered - and many use rechargeable batteries.

The 'NEW Blue2' (left) is a popular big button double switch for iOS, Android devices and most laptops or desktop computers which have Bluetooth. It's not as discreet with each button nearly 3 inches square.

You can purchase this from: http://www.inclusive.co.uk for £129 and view the product manual on http://www.ablenetinc.com

Visit our YouTube channel to see it in operation.

iSwitch (a small single button) also connects to iOS devices using Bluetooth. Two extra switches can be plugged into it and there is a choice of 4 colours.

You can purchase this from: http://www.inclusive.co.uk for £125

Wireless interfaces

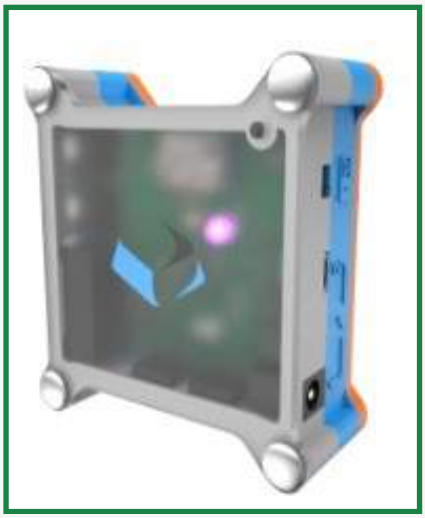
These connect to your device using Bluetooth (usually) and you then plug in your chosen switch. The Tecla Shield DOS from http://gettecla.com/pages/tecla is the most used devices by our members, although similar devices include the iPortal from http://dynamiccontrols.com

The Tecla Shield DOS works across iOS and Android devices and also OS X and Windows and Linux. It connects via Bluetooth and allows you to connect up to six switches or use your wheelchair driving controls as an input switch device.

As well as sockets for your switches it has a power port for a micro USB socket.

A key feature (not on the earlier Tecla Shield UNO) is allowing you to use Siri handsfree - which you can normally only do if your iOS device is connected to a power supply. If you use Android, you will need the free Tecla App.

The Tecla Shield is available from: http://www.smilerehab.com
Price on request from Smilerehab.
and http://www.dadinashed.com for £269



Tecla Shield DOS ™

This is the Receive Micro which is suitable for a range of popular Android tablets such as Nexus, Xoom 2 and Sony S. It has a micro USB plug which connects it to your tablet. It can then connect (wirelessly) to products from the SimplyWorks range of switches, joysticks and keyboards. Visit: http://www.pretorianuk.com for more information. Available from http://www.inclusive.co.uk, http://www.therapy-box.co.uk and http://www.iansyst.co.uk .

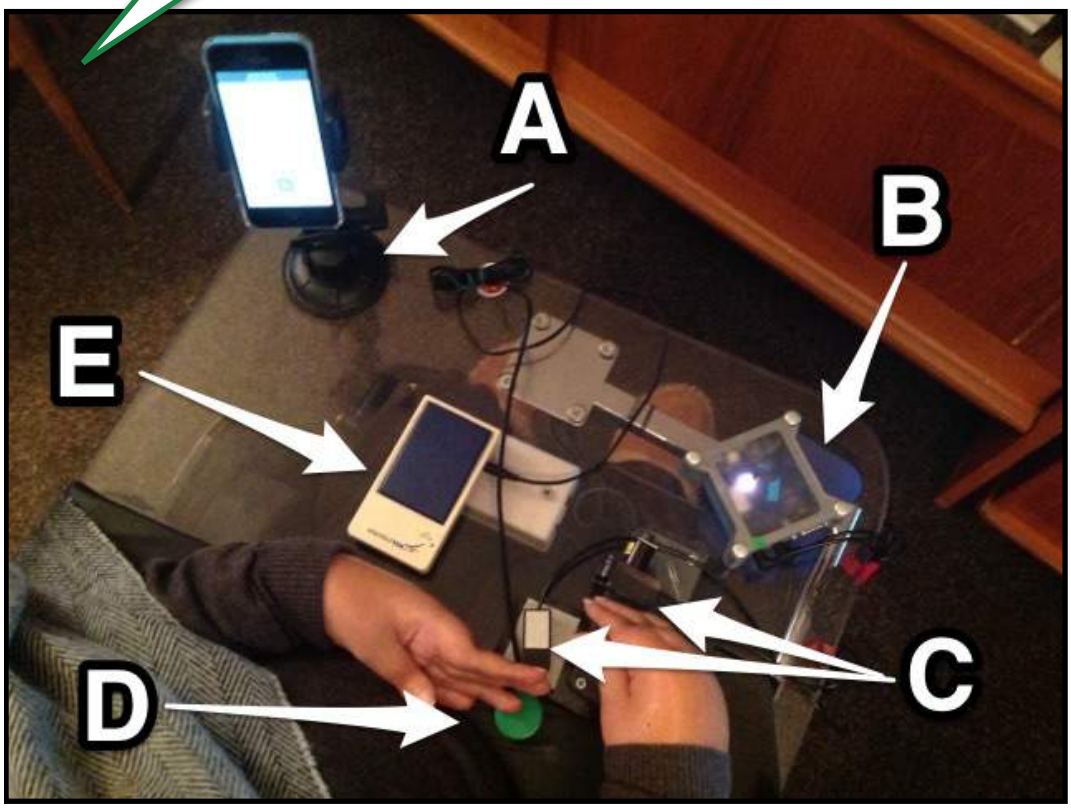
Wired Switches / interfaces - requires purchase of a switch.

Pererro works with iOS devices. Simply plug Pererro directly into your iOS device via the power/charge socket, then attach your favourite switch. You can charge your device through the connector so you don't have to keep removing it. It costs £50 and is available from http://assistive-technology.co.uk

I've been using the Tecla Shield to operate my iPad and iPhone with 2 micro switches for nearly a year. It's totally opened up a whole world of communication and technology which was previously inaccessible to me. However, I've now got too many switches to work my chair, environmental control and phone!

It cost around £200 and the micro switches were £40 each.

[Mark Chapman]



A = iPhone with suction mount and Grifiti Nootle for iPhone.

B = Tecla Shield DOS ™

C = Switches going to the above.

Also shown:

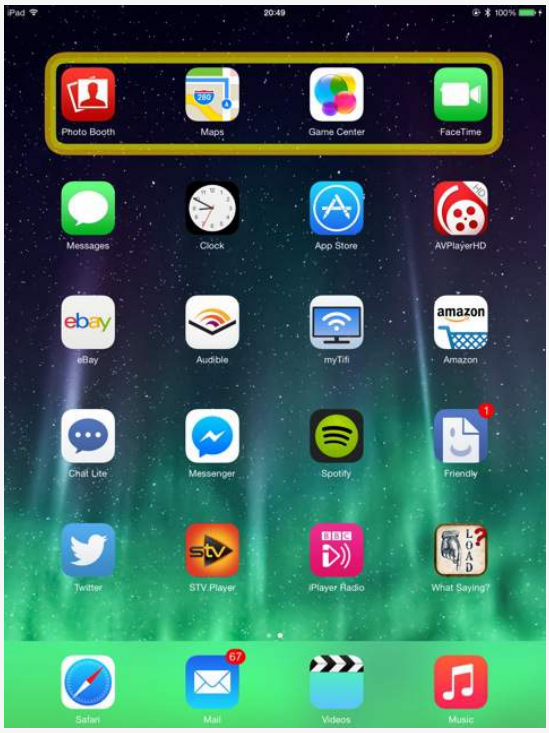
D = Easy press switch going to E.

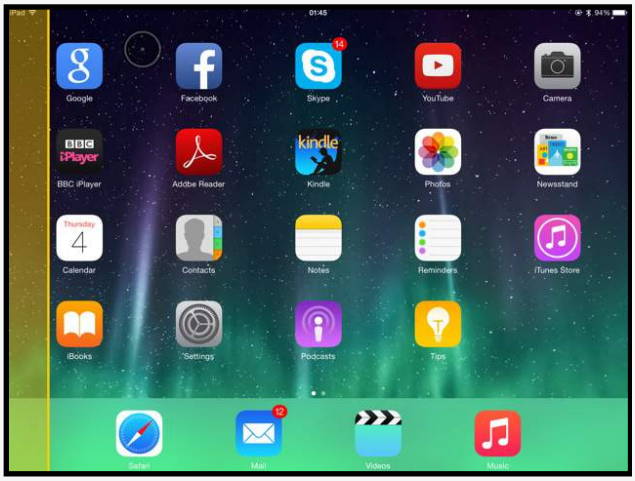
E = Environmental control.

How switches work

You can try out single switch auto scanning to get a feel for how they work. This is where each clickable part of the screen will be scanned and highlighted in turn - pausing on each for however long you set. It is called sequential navigation.

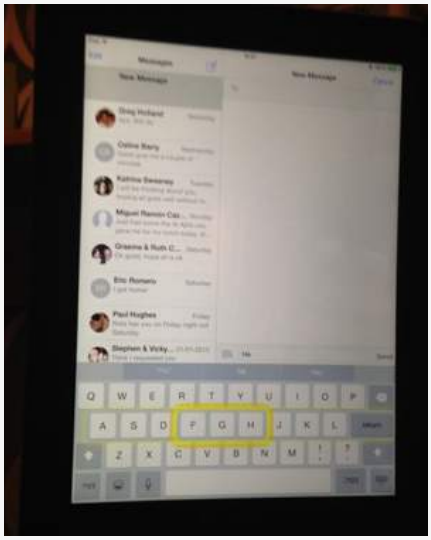
To select an app, first the scan highlights each row in turn, top to bottom, - so you select the row. Next, each item in that row will be highlighted (left to right) enabling you to click again to select your chosen App.





To turn this on choose ‘Auto Scanning’ in the Switch menu option and pick a time for how quickly the scan will move from one item to the next across the page.

You can also choose how many times the scan loops - moves from top to bottom (in case you miss clicking it the first time around!).



You can set double clicks to open up a quick menu to take you out of an app and other functions - it is simple to play around and find out what works the best.

Typing works in a similar way and you can ‘home in’ more quickly on the letter or phrase you want to type by stopping the scan when the part you want to click on is highlighted.

Typing can be very quick using a combination of scanning and text prediction.

See our YouTube channel for a demonstration.

Using a mouse on Android devices that support On The Go

Android supports mice, keyboards, and game pads to control your device. Some connect via USB and others are wireless using Bluetooth. You will see a familiar mouse cursor to click where you would tap.

You can plug a mouse into certain Android phones. Just check it has OTG (On The Go) USB support. You need a mouse with a mini USB connector or an adapter.

[Dan Dean]

What you need:

1. A USB OTG (On The Go) cable compatible with your phone. Plug it into your device - then plug a regular USB mouse or keyboard into the cable. * Not all phones running Android support USB OTG.
2. OR a Micro USB OTG (On The Go) cable compatible with your phone (for Micro USB Mice).
3. OR Use Android Bluetooth settings and pair it up with a wireless Bluetooth mouse.

I have a generic Android tablet that supports OTG, I can connect a mouse and use it, obviously pinch to zoom & other multitouch gestures don't work, my mouse is a notebook one as they are smaller and more comfortable. My smartphone is a Motorola Moto G which also supports OTG, I connect a small USB hub and plug my mouse and Camera (Canon 700D) into it.

[Daniel Baker]

Using a keyboard for typing on an iPhone or iPad

iOS devices do not support USB or a Bluetooth mouse. Bluetooth keyboards and the Apple Wireless Keyboard are supported on iOS devices and you simply pair them up i.e. switch on Bluetooth (on your device) whilst in close proximity to your keyboard and follow any instructions as prompted. When connected, the on screen keyboard does not appear.

Using a stylus

A stylus (sometimes called a wand) can be a useful extension of your finger and great for art work and drawing.

Things to consider:

- **Compatibility** - Skin contact with the stylus is necessary for many of them to work. You need to check which types are compatible with your device. It is recommended that you visit each stylus company for this information - and not just accept what the reseller is saying.
- **Length** - how far do you need to reach?
- **Pressure** - some types work on a light touch, others you need to press a little harder to use them. The Faraday SALT Stylus works with only 1 gram of pressure and, unlike many styli, a range of angles: http://www.ifaraday.com/salt.html
- **Grip** - a non slip rubber surface is usually better than a shiny, thin metal stylus. Many children's styli come in a variety of widths and grips. Wrist Straps or velcro binding might also work to secure the stylus to a fist or finger.

- **Type** - there are a range of ways to use a stylus - as you would a pen, strapping them to your fingers, attaching them to your head, holding them in your mouth. See a range of capacitive types on: http://atmac.org
- **Weight** - This can vary considerably - we recommend you make a mock up of something of similar weight to see if you can hold it.

Wacom produce a range of different styli (check compatibility with your device on http://www.wacom.com/en/us/everyday). However they weigh in at 10-11 grams - which may be too heavy for some people.

Stylus 'Wands' are available in different styles and lengths, weighing 5.5-6 grams, from a company that ships to the UK : http://www.beststylus.com [also known as Stylus-R-Us].

- An interesting add on is the American 'Hand Glider' which allows you to drag your hand around a tablet screen without activating all the touch buttons - yet leaves your thumb and first two fingers free to hold a stylus. Available from http://www.thehandglider.com

Augmentative and Alternative Communication

If you find spoken and/or written communication difficult, you can have an assessment for equipment and advice from the NHS so you can have a voice. You may also be eligible for NHS funding for this equipment.

AAC Services should recognise the importance of phone and tablet devices to aid communication, socialising and in controlling your home environment. Whilst the NHS might not pay for a tablet or phone, they may offer advice and funding for specialist mounting, switch and communication software.

Whole of UK

For Information on assessment services, funding and organisations around the UK visit Communication Matters - the UK Chapter of the International Society for Augmentative and Alternative Communication: http://www.communicationmatters.org.uk/resources

England

This is assessed for by the NHS as a specialist service and includes assessments for equipment, training and support.

Scotland

In Scotland, specific information and support is available from: http://www.aacscotland.org.uk/Home/ or http://www.nowhearme.co.uk .

Communication Apps - Speech to text.

Your device will already have a built in method of converting spoken words to text. However, there are also dedicated Apps that are leaders in understanding speech.

Nuance Communications produce mobile Apps: Dragon Dictation for iOS, Dragon Go (for web browsing on iOS) and Dragon Mobile Assistant (Android). You can see videos on our YouTube Channel.

I was asked to write a chapter of a book for the Open University and used Dragon Dictation on my phone when I was too tired to type. You can instantly see if it has typed what you are saying correctly and amend it if it's wrong.

[Louise Watch]

Communication Apps - text to speech.

There are a range of Apps available to convert what you type to synthesized speech (computer generated) or speech which digitizes your own voice.

Some are free and others cost over £100. It might be a great way to carry on a conversation if you get tired and can no longer speak out loud yourself. It's also a great way to save energy if you find speech tiring. Whether you have to deliver presentations, do group work eg. at college or university - or simply want to chat with friends in person or on SKYPE , then these Apps are worth considering.

They are also ideal to speak loudly (simply by typing what you want to say and turning up your device volume as it speaks it out for you). Useful when in a noisy environment like a busy pub or when speech is quiet and muffled through a full face vent mask.

One example is Predictable (version 4) for iPhone and iPad

You can choose a voice or record your own - known as 'voice banking' so that if you are unable to speak, or speech is slow, tiring or muffled, people will hear your real voice. This can be invaluable in keeping your identity rather than sharing the same robotic voice used by other people. See how it works on: http://www.therapy-box.co.uk/predictable.aspx or on our YouTube Channel.

You can use your Predictable voice for SKYPE calls, social media and it even has dictionaries to suit the tastes of engineers, historians, biologists and more - with advanced predictive text to type quicker.

Enter text manually or use a switch to key in the words and it costs £109.99 from the App Store.

Top Tips

Velcro is essential - it stops things like switches sliding around and holds everything in place.

When iOS 8 goes into sleep mode it will disconnect Bluetooth on sleep unless you set it to 'never sleep' or connect it to a power source.

I can't turn the pages of magazines or look down for long periods - so I found my aquarium magazine online and read it on my phone. Newspapers, magazines, e-books, ventilator manual - I have them all on my phone.

My iPhone can now do some things better than my environmental control, like making phone calls without help.

I use health Apps every day - tracking my health (breathing ability, swallowing, medication etc), keeping photos of hospital letters, keeping notes about medications, vent and cough assist settings and test results, hospital phone numbers etc. I use TracknShare and My Medical.

If you are an adult with Duchenne or a similar type of dystrophy, why not join our **Facebook group** to ask members about technology described in this guide? Contact us through our website, Twitter or Facebook Page to request membership - the group is a private group that will not show posts on your timeline to non-members.

Our thanks to Daniel Baker, Louise Watch, Jon Hastie, Mark Chapman & Mithun Soul for their work in creating this guide.

dmd pathfinders

DMD Pathfinders is run by and for adults living with Duchenne Muscular Dystrophy. It promotes choice, control and quality of life for teenagers and adults living with Duchenne in the UK through:

- campaigns for improved standards of health and social care
- providing advice, guidance and support.

If you'd like to support our work, please consider making a donation via our online fundraising page at http://dmdpathfinders.org.uk/donate/ . We use 100% of your donation to enable us to do things like produce these useful guides.

If you would like to know more or join our private Facebook group for adults living with Duchenne or similar types of dystrophy, please visit our website www.dmdpathfinders.org.uk or email us at info@dmdpathfinders.org.uk

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