# iOS

Almost 70% of the VI community who use a smartphone use an iPhone. The accessibility on iOS is widely recognised as the leading standard and it continues to improve with every update. 2020s update to iOS14 was no exception.

On devices that run iOS there are many ways that you can enhance and adapt the options to suit your eye condition. These can range from adjusting the text size and screen colour to enhance the display, to using the built-in screen reader – voiceover.

**Top tip** it is good practice to have the home screen on phones and tablets set to a solid colour to prevent visual crowding and improve contrast. This can easily be done by blocking the camera and taking a photo this black photo can then be saved as the new wallpaper.

## Display and brightness

Opening this in the settings menu allows you to initially adjust the display settings this is the first step towards personalising the device choosing features such as dark mode and altering the text size. For low vision users Bold text is recommended.

**Night Shift** is a useful feature which removes the blue light from the screen – it can be set to come on at dusk and is designed to aid sleep. The filter can be adjusted and will reduce glare from the screen.

## Accessibility

Clicking accessibility in the settings menu brings up a host of features, the top section of this menu is relevant to visual impairment.

## Voiceover

Voiceover is the screen reader that is present in all iOS devices. Voiceover will read out to you what is selected on the screen and works universally across all apps. Voiceover changes the way a user interacts with the device using either touchscreen gestures or keyboard shortcuts if an external keyboard has been connected.

### Voiceover Commands

We have a list of frequently used voiceover commands which can be viewed online, downloaded or printed (large print PDF).

For a comprehensive list of all voiceover gestures and keyboard shortcuts later versions of iOS have them listed in the voiceover menu under commands which is a great reference source. As the number of gestures and shortcuts is vast it is handily broken down into easily navigable subsections.

### Activities

Voiceover settings can be adjusted to personalise the user experience at all levels. The voice, language and speaking rate can be set as well as intricate adjustments such as assigning different voices to different apps, for example, the home screen can be read by one voice at a much faster rate than messages which are read in another voice.

### Pronunciation editor

This allows a list of words or phrases to be created and pronounced by voiceover how the user prefers.

The adjustments are limitless all aspects of the iOS device can be controlled using voiceovers series of gestures and shortcuts.

Voiceover will also recognise and describe images and pictures which do not have alt text added (new features on iOs14). It has a basic OCR (optical character recognition) built in as well so can read some text within pictures.

### Rotor control

It is worth exploring the various and may features which can be added to the voiceover rotor control. This is a virtual on-screen dial which can have up to 12 settings on any one screen or app added. Rotating two fingers clock wise or anti-clock wise will navigate through the settings and once the preferred setting has been reached one finger swipe up or down will adjust that setting. For example, rotating two fingers until you hear speaking rate, swipe up with one finger will increase the speed of the voice and swiping down will reduce the speed.

### Voiceover and braille

Voiceover includes system wide support for braille chord in six and eight dot braille. The braille keyboard is available in the rotor. Once activated it can be used to type, find apps, launch content and operate within apps.

IOS supports over 80 international Braille tables and more than 70 refreshable braille displays. You can connect a Bluetooth wireless braille display to read voiceover output.

IOS will automatically convert text to braille and vice versa. Braille displays with input keys can be used to control your device when voiceover is activated.

**Top tips**

* It is worthwhile to access the voiceover practice screen to go over the gestures without opening any apps or inadvertently making any calls!
* For voiceover users with some residual vision the large cursor is especially helpful when navigating the screen and understanding how Voiceover gestures interact with the device.
* The last item on the voiceover menu allows the user to set the speed between taps and how Voiceover recognises a double tap.

## Zoom

This is the magnification feature that allows you to zoom in anywhere on the screen to a level that is suitable for you.

### Activating Zoom

* Open the Settings app.
* In the Settings app, select Accessibility.
* Select Zoom. Set the button at the right to on.

### Using Zoom

Once turned on the default gesture to activate zoom is a three finger double tap. In addition, zoom can be invoked by any one of the accessibility shortcuts of preferred.

### Moving around the screen

Three fingers tap and drag will move the zoomed area around the screen in full screen mode. One finger tap and drag the bottom of the window to move the lens around the screen.

### Zooming in and out

Three finger double tap and hold. Drag up to zoom in drag down to zoom out.

### Personalising Zoom features

Zoom features can be adjusted to suit ones needs. In accessibility under the zoom heading the following can be adjusted.

### Follow Focus

Select this feature to On and Zoom will automatically focus on the text box as you type.

### Smart Typing

When enabled the smart typing automatically switches to window zoom to allow the onscreen keyboard to be fully displayed.

### Keyboard Shortcuts

Select this feature to use shortcut commands to control zoom on an external keyboard. The keyboard shortcut menu lists the shortcut below each action. We have provided a table with the most common zoom gestures and equivaled keyboard shortcuts.

### Zoom Controller

Select this to bring up an on-screen button that can control zoom features. This is handy if you find the three finger gestures awkward.

Double tap the controller to activate/deactivate zoom. Single tap to bring up a list of zoom features:

* Zooming in /out
* Choose region
* Choose filter
* Slider to adjust zoom level

The **Zoom Controller** button  can be moved around the screen with a one finger touch and drag gesture. It can also be customised in the zoom controller menu.

### Zoom Region

Zoom provides two options of region:

* Full screen – select this to zoom in on the whole screen when zoom is activated. The three finger double tap gesture will centre the screen on your tap when zooming in.
* Window - this is an adjustable lens which can be moved around the screen as well as zooming in and out.

The zoom lens can be resized by double tapping on the bottom of the zoom window, tapping on resize lens and dragging the corners out or in.

### Zoom Filter

Select this to choose a filter when activating zoom to improve contrast, if necessary.

### Maximum Zoom Level

This can be set from 1.5z up to 15z magnification.

## Magnifier

This will turn the iOS device into a digital magnifier – once activated the magnifier is turned on by one of the accessibility shortcut options or it can be added in the control center.

As well as the slider to zoom in and out of the camera shot the magnifier has additional features that can be adjusted and activated.

* Brightness
* Contrast
* Filters
* Torch

There is also the option to take a freeze frame and zoom in photos taken in magnifier are not saved to the camera roll.

## Display and text size

The features in this section provide further enhancement to the adjustments that can be made in the display and brightness section of the main settings menu. It is recommended to explore these features when adjusting the accessibility settings initially as in many cases these could be all that is required.

Enabling larger text will provide more than just increasing the font size by a few points. Various filters can be added. Smart invert will allow pictures to be seen in original colour while the text is inverted.

## Motion

Some messages and apps have quite dramatic features when they open which can be very off putting – this section gives the user control of these.

## Spoken content

This can be a Very useful setting for low vision users who do not require the full screen reader iOS provides in Voiceover.

The features in this section can enable a user to read a text heavy document aloud with a few easy gestures.

The controls are simple and listed below the features – a controller can also be added to the screen similar to that for zoom to pause and play speech output, adjust the speed or exit spoken content.

The words can also be highlighted as they are read aloud which is a huge benefit to low vision users who have reading difficulties.

## Audio description

Activating this feature will automatically play any audio description if available when watching videos.

## Accessibility shortcuts

Most of the accessibility features can be set to the accessibility shortcut. Traditionally this is the triple click of the power button (or home key on SE or older models). The click can be slowed in home key or side button settings.

Any number of accessibility features can be added to this shortcut but they can also be relocated as a shortcut elsewhere. The magnifier can be added to the control panel for example and other accessibly features can be assigned to the back tap.

## Back tap

This feature is found within the touch section of the accessibility menu. Shortcuts can be assigned to either double tap or triple tap.

Tapping the back of the phone two or three times will open the feature of your choice.

## Siri and Voice control

### Siri

Getting used to using Siri on iOS can really improve the experience for people with a visual impairment. Especially when “Hey Siri” is activated.

Many features and actions can be activated and undertaken eyes free and in the case of “Hey Siri” hands free as well. Once activated the easiest way to find out what Siri can do is to ask Siri what can it do

“hey Siri. What can I ask you?”

### Siri Shortcuts

Frequently used actions and even actions within frequently used apps can be assigned to a phrase Siri will recognise to perform this action. This is done in the shortcut app found on the home screen.

For example - You could assign the phrase, “Visibility Scotland website” to the action of opening our website in safari.

### Voice control

Voice control takes this a step further by giving the user control of more functions on the device than Siri has access to. The phone can be unlocked by saying pass codes aloud for example. Shortcuts can also be used in conjunction with voice control to perform frequent tasks and actions hands free.

(Voiceover users beware - if utilising voice control the two can start to instruct each other)!

# New features for iOS 14

### Screen detection and screen recognition

New exciting features added to iOS 14 enable users to hear what Is on the screen – and also the camera. Not just describing photos but the inbuilt feature means that it is possible to update in 0.25 seconds providing you with a description of the environment as you walk around.

The on-device processing enables privacy.

Screen recognition further improves accessibility for VI people as it has the ability to make inaccessible apps accessible. If an on-screen button has not been tagged voiceover traditionally would only read “button” the screen description has the ability to describe and read what the button is i.e. play button or buy.

### People detection

On the latest and highest spec devices (iPhone 12 pro and pro max) Lidar technology is built in. Using augmented reality this provides the ability for a VI person to have real time description of individuals around you while you navigate. The distance of the person is given via audible or haptic alerts. The inbuilt people detection is located within the magnifier, once activated in settings it will provide information on the persons distance away and in which direction they are.

Apps such as Seeing AI and Super Lidar have utilised this. Recognising the current need for social distancing they will also let the user know if the person is wearing a face covering or not.

Distance of the closest person to you and gives information on their proximity in either audible or haptic alerts.

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