# Free or Low Cost Accessibility Tools to Support Digital Accessibility

One of the most common questions I have received from clients is:

"We don't have any budget. We don't have executive support. What can we do to improve accessibility while we work on a business case?"

After first introducing them to the [Microsoft Accessibility Checker](https://support.microsoft.com/en-us/office/improve-accessibility-with-the-accessibility-checker-a16f6de0-2f39-4a2b-8bd8-5ad801426c7f) for their documents (how is this ***still*** a secret to so many people?), I then introduce them to a few of my favourite free (or low cost) accessibility tools. Yep you heard right there are free tools and in fact a lot of them. Some are not as awesome as others (hey we can't all be superheroes), but if you start using these tools you might be a superhero for your team.

## Software and Plug-in Accessibility Tools for Content Creators, Business Users and Empathy Builders

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| Tools | Type | Purpose | Comments |
| [Colour Contrast Analyser](https://www.tpgi.com/color-contrast-checker/) | Application | Analyses two user selected colours to determine if their contrast levels meet that specified for different elements across the [Web Content Accessibility Guidelines (WCAG)](https://www.w3.org/WAI/standards-guidelines/#guidelines)  | Allows a user through colour pickers, to select a foreground and background colour and analyse the colour contrast ratios.  Direct pass-fail criteria will be displayed to the user for the three different types of criteria within the WCAG and across all levels of AA, AA and AAA.Note that with updates to Chrome Dev Tools some of these features are already included and can be easily shown in Dev Tools. |
| [Color Oracle](https://colororacle.org/) | Application | Allows a sighted user to view a snapshot of their screen with a colour composition indicating how the screen is viewed for different colour vision | Types of colour vision supported : “Normal Vision” DeuteranopiaProtanopiaTritanopiaGreyscale Note the application only works on a primary monitor (and will duplicate what snapshot is captured from the primary monitor across all other monitors while in use.)  The user is unable to scroll the screen during use and the screen grab will automatically reduce resolution as required to operate.This can be frustrating for some users and users who have some aspects of assistive technology or adaptive strategies implemented may struggle with this tool. It does not always operate on the WYSIWYG principals a user would expect. |
| [Microsoft Accessibility Checker](https://support.microsoft.com/en-au/office/improve-accessibility-with-the-accessibility-checker-a16f6de0-2f39-4a2b-8bd8-5ad801426c7f) | Component application | Proprietary software bundled with Microsoft office products which allows those product’s documents to be analysed for accessibility issues and provides guidance on a set of pre-programmed rules.  | All issues are identified against a set of rules created specifically for each office application. These rules do not necessarily cover all potential accessibility issues within office document however do cover key features which can lead to significant inaccessibility.Use of this tool does not override the importance and necessity of a user understanding good document accessibility principles.  |
| [Photosensitivity Epilepsy Analysis Tool (PEAT)](https://trace.umd.edu/peat/) | Application | Allows videos to be analysed for flashing and red-light contrast issues which can trigger seizures in people predisposed to photosensitivity and photosensitivity epilepsy | This Windows tool is developed for web designers and computer software developers. Licencing does not allow for use by commercially produced television broadcast, film, home entertainment or gaming industries.  Not all video files are supported, and the video capture functions do not always work. Recommendations include when analysing videos, users should ensure the captured videos are in AVI formats or convert to AVI format prior to analysis in PEAT.   |
| [Color Contrast Analyser](https://chrome.google.com/webstore/detail/color-contrast-analyzer/dagdlcijhfbmgkjokkjicnnfimlebcll?hl=en-US) | Plug-in | Allows a webpage to be scanned and marked-up highlighting, for a user selected colour setting (including high contrast and any of the different types of colour-blindness). | Allows a user to capture and provide an overlay indicating where components achieve a specified WCAG level standard configured by the user. You can scan page region, visible content or the whole page Screen zoom is still functional while the plug-in is in use, however scanning of a page does take some time and the colour masks are not always clearly visible, which will affect users with low vision more predominately.Personally, I find this plug-in a little cumbersome and can be prone to failure. I am also not confident that it processes all CSS changes applied. I would advise this only to be used as a starting point when analysing colour contrast and that users also include alternative methods for evaluating their colour selection accessibility.  |
| [High Contrast](https://chrome.google.com/webstore/detail/high-contrast/djcfdncoelnlbldjfhinnjlhdjlikmph?hl=en-US) | Plug-in | Allows web content to be adjusted to different colour palates to enhance contrast for people with low vision | Allows for 5 different types of filters for improving contrast for users.Settings on each page visited can be saved so returning users do not need to reactivate the contrast profile selected. This provides quick feedback where items disappear in different settings, however users should also be aware of the differences where a website may specifically create their own high contrast settings.  |
| [Silktide Toolbar](https://chrome.google.com/webstore/detail/silktide-website-accessib/okcpiimdfkpkjcbihbmhppldhiebhhaf)  | Plug-in | A disability simulator which allows a user to see different types of visual disability symptoms overlaid on a web page | Features available are for representations of conditions such as Multiple forms of colour blindness, cataracts, tunnel vision etc. This is predominately useful for demonstrations and understanding purposes rather than for specific testing of accessibility. Remember no simulation can capture the actual experience of people with disabilities and can not replace them in your designs and testing. |
| [Site Unseen](https://chrome.google.com/webstore/detail/site-unseen/aflfgnngnnhdoffmmpmakkdflfedldlh?hl=en-US) | Plug-in | Creates a screen curtain for a website and allows a user to operate as a simulated user operating a screen reader | The user can visually see text as would be read out to a screen reader as they are navigating a screen, but the plug-in hides all other visual representation of the page through the use of a “screen curtain.”A user also has the ability to “peek” at the page which will temporarily remove the screen curtain and display the website for a brief time in it’s standard visual form.This tool is great for users not yet confident with screen readers or users sensitive to sensory overload. Screen readers can be quite tiresome for users who are not familiar with the technology and the constant audio can be tiring even when slowed down.  |
| [Alt or Not](https://chrome.google.com/webstore/detail/alt-or-not/bhbbijphceaijfpppmdjmjalnogkhamc?hl=en-US) | Plug-in | Allows users to see alt text on Twitter and TweekDeck and be warned when posting inaccessible tweets | User can set preferences to disable their “Tweet” button if the do not provide alternative text. They can also set multiple settings on how alt text will be reported to them helping content creators ensure their content released is accessible from the start.  |
| [HappyScribe](https://www.happyscribe.com/subtitle-tools) | Web applications | Provides a suite of tools for creating, editing and synchronizing subtitles to media. It allows for subtitle conversion, creation, editing and timecode shifting. | The subtitle converter is extremely easy to use and handy for converting subtitles required for different platforms and into a range of formats. Being an online tool this is a potential security concern for organisations. Some organisations I have worked with in the past have specifically blocked this site for that reason.  |
| [Subtitle Tools](https://subtitletools.com/) | Web applications | Like Happy Scribe this provides a suite of tools for creating, editing and synchronizing subtitles to media. It allows for subtitle conversion, creation, editing and timecode shifting. | The subtitle converters allow easy conversion from a range of formats to formats which can be used by a range different platforms. Formats can be converted to As with HappyScribe’s subtitle tools this is also an online tool which has the potential for security concern for organisations. Some organisations. |

## Software and Plug-ins for Developers

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| Tools | Type | Purpose | Comments |
| [Dev Tools](https://developer.chrome.com/docs/devtools/) | Component application | A set of web developer tools built into Chrome to improve web development | DevTools provides abilities allowing developers to view and interrogateSource code, API calls and interactions, site performance, emulate other devices, view the Accessibility API and a mix of other functions. |
| [Lighthouse](https://developer.chrome.com/docs/lighthouse/overview/) | Component application | Open-source automation tool for improving the quality of web pages | This is one of the tools bundled with Chrome DevTools developed by Google. Lighthouse analyses web apps and web pages collecting metrics for developer best practices across Performance, Accessibility and SEO.Note if you search the internet you will find countless articles advising of some of the perils of Lighthouse, when it alone is used for determining accessibility. Additionally you will find articles documenting ways you can trick Lighthouse to provide a higher score than what a user would experience. So use at your own risk. |
| [User Agent Switcher](https://chrome.google.com/webstore/detail/user-agent-switcher-for-c/djflhoibgkdhkhhcedjiklpkjnoahfmg) | Plug-in | Allows websites to be tested and rendered on different technology and browser configurations | This allows users to simulate a device different to their own for accessing a site. Any code specific to the device and browser type being simulated will be triggered by the application. Perils with this tool include that functional such as Apple Pay will not trigger through use of these tools and there are a host of other issues too. Where you have access to a device farm it is always strongly recommended testing for accessibility with physical devices over simulations of this nature. |
| [Web Developer](https://chrome.google.com/webstore/detail/web-developer/bfbameneiokkgbdmiekhjnmfkcnldhhm?utm_source=ext_sidebar&hl=en-US) | Plug-in | A toolbar of web development tools originally for Firefox | Allows users to test multiple web functions including aspects critical for accessibility such as disabling CSS or JavaScript, managing cookies and testing resizing of text and screen size. |

## Software and Plug-in Accessibility Tools for Testers

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| Tools | Type | Purpose | Comments |
| [WCAG-EM Report Tool](https://www.w3.org/WAI/eval/report-tool/#!/) | Web Application | Provides a guided flow to capture information about a website and generate a report in an HTML or JSON format | This tool does not perform accessibility testing on it’s own but allows a user to enter in information against the criteria for the WCAG which they have tested to create quick formatted reports ready for providing to internal business stakeholders. There are limitations and for individual issues being identified other mechanisms are encouraged.  |
| [WAVE](https://chrome.google.com/webstore/detail/wave-evaluation-tool/jbbplnpkjmmeebjpijfedlgcdilocofh?hl=en-US) | Plug-in | Page by page auditing tool to advise of content suspected to breach WCAGs for manual review and confirmation | This tool is specifically designed for accessibility testing. It will markup will markup key features on the visible layout of the page, such as headings, landmarks,, hidden content, Images etc.Features in the freeware version cannot scan more than one page at a time. Understanding of code can be needed for interpreting some results especially when reporting on items offscreen. Note that if like me you use a combination of text and browser zoom you may find this tool difficult to use. |
| [Axe](https://chrome.google.com/webstore/detail/axe-devtools-web-accessib/lhdoppojpmngadmnindnejefpokejbdd?hl=en-US) | Plug-in | Page by page auditing tool to advise of content suspected to breach WCAGs for manual review and confirmation | Once installed is available as a new tab in DevTools the freeware version of axe can scan part or a full page but does not support multi page scanning. Basic report of the page and it’s issues can be generated however more information really is needed when relying on this output.  |
| [IBM Equal Accessibility Checker](https://chrome.google.com/webstore/detail/ibm-equal-access-accessib/lkcagbfjnkomcinoddgooolagloogehp?hl=en-US)  | Plug-in | Page by page auditing tool to advise of content suspected to breach WCAGs for manual review and confirmation | Supported by the chrome browser the plugin adds a new tab “Accessibility Assessment” to DevTools. The plug-in allows for a report to be generated for a given page and includes details of all errors on that page. The reports group by levels which have been identified by IBM in conjunction with the WCAG.IBM additionally have tools and frameworks which can be used and embedded in companies CI/CD pipelines. |
| [Stylus](https://chrome.google.com/webstore/detail/stylus/clngdbkpkpeebahjckkjfobafhncgmne?hl=en-US) | Plug-in | A user style manager which allows you to set and overwrite the CSS styles of websites | A user can create new CSS styles for a single website, a group of websites or a domain and toggle these styles easily on or off. This tool is fantastic for reducing the time taken to test   WCAG criteria 1.4.12 Text Spacing  as well as determining if there are issues with content when CSS is removed.  |
| [Accessible Color Picker](https://chrome.google.com/webstore/detail/accessible-color-picker/bgfhbflmeekopanooidljpnmnljdihld?utm_source=ext_app_menu) | Plug-in | Allows a user to evaluate colour contrast for selected foreground and background colours. | Where colour contrast analyser does not work due to text only zoom features and OS operation features causing incorrect alignment for selection, this tool continues to function. It also provides recommendations of similar colours which have a higher contrast levels. |
| [ANDI](https://www.ssa.gov/accessibility/andi/help/install.html) | Plug-in | Page by page auditing tool to advise of content suspected to breach WCAGs and assist with US 508 compliance.  | Similar to WAVE, Axe and IBM Equal Access Accessibility Checker, this tool allows for evaluation of page content and easy identification when performing manual accessibility reviews. |
| [Accessibility Insights for Web](https://chrome.google.com/webstore/detail/accessibility-insights-fo/pbjjkligggfmakdaogkfomddhfmpjeni?utm_source=ext_app_menu) | Plug-in | Helps web developers quickly find and fix accessibility issues | Another tool like WAVE, Axe, IBM Tools and ANDI just with different interfaces and different rules for flagging issues. |
| [Scan WP - WordPress theme and Plug-in detector](https://chrome.google.com/webstore/detail/scan-wp-wordpress-theme-a/jgepgcdhakjacecafilmhdnifekocmcl?utm_source=ext_app_menu) | Plug-in | Find details about WordPress themes and WordPress plug-ins used on any WordPress Site. | Ok this isn't really one for web accessibility but helpful if you see a site design you like (or hate) and wonder what WordPress theme is being used. |

## Software and Plug-in Accessibility Tools as Assistive Technology

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| Tools | Type | Function | Purpose | Comments |
| [NVDA](https://www.nvaccess.org/download/) | Application | Screen Reader | Open-source screen reader with community support which allows users to operate and navigate a PC through aural output or interfaces with a refreshable braille display. Supports Users with low vision, learning disabilities such as dyslexia and users who are deaf-blind | Windows supported screen reader with a large open-source community and code available to implement additional features quickly and at low cost. One of the main drawbacks of NVDA for development and testing in IT circles is it’s failure to operate correctly through CTIRIX environments however there are additional products which can be purchased to allow this to occur. |
| [VoiceOver](https://support.apple.com/en-au/guide/iphone/iph3e2e415f/ios) | Component Application | Screen Reader | Supports mobile technologies through gesture control to operate and navigate a mobile Apple product (iPhone, iPad etc.) through aural output | Mac and iOS supported free screen reader with is bundled with Apple products. For mobile interface is a gesture-based interface and is the most common screen reader used for this market. It should be noted that VoiceOver does operate differently between mobile and mac and when testing should be considered almost as different products. I always recommend testing physical tech on both Mac and iPhone/iPad with VoiceOver |
| [TalkBack](https://support.google.com/accessibility/android/answer/6283677?hl=en) | Component Application | Screen Reader | Supports mobile technologies through gesture control to operate and navigate mobile Android products (mobile phones, tablets etc.) through aural output | Android device supported free screen reader with is bundled with android products or can be downloaded from the play store. It is a gesture-based screen reader.  |
| [Windows Narrator](https://support.microsoft.com/en-us/windows/complete-guide-to-narrator-e4397a0d-ef4f-b386-d8ae-c172f109bdb1) | Component Application | Screen Reader | Free proprietary screen reader which allows users to operate and navigate a PC through aural output.  | While bundled as default in windows this screen reader does not have the same features of many other screen readers available, is seen as more complex or difficult to operate and does not provide features such as element highlighting which is increasingly useful for sighted testers unfamiliar with assistive tech who are testing web sites and web applications for accessibility, is not intuitive and user friendly for users with learning disabilities such as dyslexia.Later versions of Narrator (from Windows 10+) support braille displays.  |
| [Open Dyslexic](https://chrome.google.com/webstore/detail/opendyslexic-for-chrome/cdnapgfjopgaggbmfgbiinmmbdcglnam?hl=en-US) | Plug-in | ﻿ | Allows a user to overwrite web page fonts with a “dyslexic friendly” font | A user can toggle on set three different types of OpenDyslexic fonts.These fonts have been seen to assist some users with dyslexia by making font weighted differently to better encourage eye tracking and discriminate between similar character formats. At least that is the pitch, I have not yet encountered someone using this tool for assisting with their dyslexia, but that does not mean they do not exist. |
| [Read Aloud](https://chrome.google.com/webstore/detail/read-aloud-a-text-to-spee/hdhinadidafjejdhmfkjgnolgimiaplp?hl=en-US) | Plug-in | Text Reader | Allows text presented on a webpage to be read to a user | The read aloud interface will open the text on the page in a separate window without images, graphics etc. and will highlight words and sentences as they are being read.  |
| [Accessibility - A Powerful Web Assistant](https://chrome.google.com/webstore/detail/accessibility-a-powerful/nnmmmhcflgbendklbhknkkacnjempijd?utm_source=ext_app_menu) | Plug-in | Overlay | Allows a user to apply multiple accessibility features often discovered in overlays. | Features allowed include:Text manipulation, text to speech, configurations for zoom, reading and mouse, configurations, contrast, filters, dyslexia tools, image and animation settings. |

## Accessibility Tools The Hairbow Hippie Recommends Avoiding.

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| Tool | Type | Purpose | When to Avoid |
| Colour Contrast Analyser | Plug-in | To highlight areas on a page or section of a page or screen of a website to highlight the areas which meet correct colour ratios. | If you require information on a small section or just particular colours without needing to display a page to business stakeholders visibly. The tool is slow to progress screens or pages, it's accuracy personally I have found hit and miss and the way it displays is not always visibly clear. It can not show colour contrast for hidden items or for mouse hovers. |
| Funkify Disability Simulator | Plug-in | To simulate different types of disability to users. | Some of the simulations are inaccurate. The tool has a timeline for freeware and the freeware version does have some bugs which are intermittent and affected by different screen zoom levels. |
| User Agent Switcher | Plug-in | Simulate different underlying technologies including operating system and browser combinations so a user can test conditional logic. | Not able to test features such as Apple Pay or Google Pay portals which are conditional based off your technology. The simulator is unable in these cases to fully trick those widgets. |