Guide to Accessibility and Usability of the Web Interface for Blue Cone Monochromacy users.

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Accessibility of web sites and web interfaces must take account of users' visual problems. In particular people affected by Blue Cone Monochromacy (BCM) are visually impaired and have the following issues:

- Low Vision
- Glare disturbance
- Poor or no color discrimination

People with visual disabilities typically rely on changing the presentation of web content into forms that are more usable for their particular needs. For example by:

- Enlarging or reducing text size and images
- Customizing settings for fonts, colors, and spacing
- Listening to text-to-speech synthesis of the content

For these web browsing methods to work, developers need to ensure that the presentation of web content is independent of its underlying structure, and that the structure is correctly coded so that it can processed by software and presented in different ways. For instance, some people do not see the content and need lists, headings, tables, and other page structures to be properly coded so that they can be identified by software.

Some people are using customized fonts, colors, and spacing to make the content more readable, or they are navigating through the content using keyboard only because they cannot see the mouse-pointer. An accessible design supports different presentations of the web content, and different ways for interaction.

Consequently, for Blue Cone Monochromats a web site must offer the option to customized fonts and colors, by zooming the text and changing the contrast, such as provided in the top bar of this site http://www.istitutoromagnoli.it . However it will be better to chooce fonts that are big and bold.
Moreover background and fonts colors of

- web site
- forms
- figures and pictures
- graphs

must favoring black, dark gray, white, and a few other colors with strong chromatic contrast between text and background. For example black background with white bold text, dark green or dark blue or dark gray background with white or yellow bold text. When necessary it could be possible to have white background with black texts but in this case it is necessary to offer the possibility to change the contrast as in the website http://www.istitutoromagnoli.it

Usability and Accessibility
Usability of a site needs to respect common usability features with the presence of intuitive navigation bars and menu, site's map, standard position for standard elements, etc. Consistency and predictability in navigating and finding content is particularly important in case of low vision users.

Test studies
It could be important to perform usability and accessibility test to evaluate the web site and the interfaces. See https://www.nngroup.com/reports/how-to-conduct-usability-studies-accessibility/ for reference about usability and test studies.

Audio Description
In Blue Cone Monochromacy visual impairment is not so severe to need an Audio description.

Examples of barriers for people with Blue Cone Monochromacy

- Inconsistent, unpredictable, and overly complex navigation mechanisms and page functions
- Text and images with insufficient or too high contrast between foreground and background color combinations
- Websites, web browsers, and authoring tools that do not support use of custom color combinations

See also:

Web usability: https://www.nngroup.com/

Accessibility tests: https://www.nngroup.com/reports/how-to-conduct-usability-studies-accessibility/

Accessibility principles and standards:

https://www.w3.org/WAI/intro/people-use-web/principles

https://www.w3.org/WAI/intro/people-use-web/principles#standards