

REVIEW OF RESEARCH ON THE USE OF COLOURED LENSES

While much of the early literature was unpublished and of poor scientific design, there are now numerous controlled studies which have reported positive results for the use of coloured lenses. These studies have all been reported in peer reviewed journals, using reviewers with expertise in this field, who are unlikely to recommend the publication of studies which are methodologically unsound.

I have listed these studies below, with their full references attached. The largest number of controlled studies report improvement in reading when using coloured plastic overlays, coloured computer monitors, and one study which illuminates text with coloured light (Bouldoukian, Wilkins, & Evans, 2002; Chase, Ashourzadeh, Kelly, Monfette, & Kinsey, 2003; Croyle, 1998; Evans & Joseph, 2002; Jeanes, Busby, Martin, Lewis, Stevenson, Pointon et al., 1997; Kriss & Evans, 2005; Noble, Orton, Irlen, & Robinson, 2004; Northway, 2003; Ray, Fowler, & Stein, 2005; Scott, McWhinnie, Taylor, Stevenson, Irons, & Lewis, 2002; Singleton & Trotter, 2005; Solan, Brannan, Ficarra, & Byrne, 1997; Solan, Ficarra, Brannan, & Rucker, 1998; Tyrrell, Holland, Dennis, & Wilkins, 1995; Wilkins, Jeanes, Pumfrey, & Laskier, 1996; Wilkins & Lewis, 1999; Wilkins, Lewis, Smith, Rowland, & Tweedie, 2001; Williams, Le Cluyse, & Littell, 1996).

There are also numerous studies which report improvements in eye strain, headaches and reading when using coloured lenses (Chronicle & Wilkins, 1991; Evans, Patel, & Wilkins, 2002; Good, Taylor, & Mortimer, 1991; Harris & MacRow-Hill, 1999; Lightstone, Lightstone, & Wilkins, 1999; Robinson & Conway, 2000; Robinson & Foreman, 1999; Wilkins, 1993; Wilkins, Patel, Adjajian, & Evans, 2002). In particular, the paper by Chase et al. (2003), describes a series of four studies which found that the accuracy of oral reading was poorer when using red filters in comparison to blue and green filters. These results were used to support physiological evidence that red light suppresses functioning of the Magnocellular visual neural pathway, with reading being better when longer wavelengths of light (red) are removed from the light source by the use of blue filters.

A number of these studies have used placebo controls (Bouldoukian et al., 2002; Evans & Joseph, 2002; Jeanes et al., 1997; Ray et al., 2005; Robinson & Foreman, 1999; Wilkins, Evans, Brown, Busby, Wingfield, Jeanes, & Bald, 1994; Wilkins & Lewis, 1999; Wilkins et al., 2002). Such placebo studies are possible because the effects of coloured filters can be assessed without subjects being aware of the precise chromacity of the colour which provides optimal results for them (Wilkins, Huang, & Cao, 2004).

In addition, people who respond to the use of colour are also likely to have abnormalities in accommodation (Simmers, Gray, & Wilkins, 2001), significant changes in visual evoked potentials when using coloured filters (Huang, Cooper,

Satana, Kaufman, & Cao, 2003; Riddell, Wilkins, Zemori, Gordon, & Hainline, 1998) as well as differences in biochemical profiles (Robinson, Roberts, McGregor, Dunstan, & Butt, 2001; Sparkes, Robinson, Dunstan, & Roberts, 2003; Sparkes, Robinson, Roberts, & Dunstan, 2006), all of which could not be attributed to placebo effects.

I hope this information may be of use.

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