

N. Itoh, K. Sagawa, Y. Fukunaga. Useful field of view for older people. *Gerontechnology* 2008; 7(2):132. Most of public visual signs, indoor or outdoor, are seen in our peripheral visual field and it is not always easy to detect them. For example, some of the traffic signs appear in far periphery of our visual field so that drivers have difficulties seeing them during their driving. This problem may be much worse for older people as their visual field is considered to become smaller with aging. In this study, quantitative data were collected experimentally on how large is the useful field of view (UFOV) for older people in comparison with that of younger people. **Methods** A large white uniform screen was illuminated by a rear projection which consists of a circular test field (of variable luminance, color and size) and a background field. The participants had to detect a single test target which was presented in different longitudinal directions (8 directions) and different eccentricities (0-60 degrees in 10 degree steps). The probability of detection of the target for each position in the visual field was calculated and the contour of the 50% detectability was obtained. A total of 52 older and 46 younger people with normal vision were participated. **Results and discussion** Figure 1 shows the data of UFOV for detecting targets (a) only with luminance differences (upper figures) and (b) only with colour differences (bottom figures). In both conditions, the data for younger (left side figures) and older people (right side figures) are shown for comparison. It is clear that for all the experimental conditions older people show smaller useful field of view than younger people do. There is no directional difference in the extent of the reduction of UFOV. It should be also mentioned that similar changes of UFOV with parameters such as the effect of contrast and the effect of colour are seen for both age groups. The smaller size of UFOV for older people was confirmed for other experimental conditions using natural scenes as background in a separate experimental study. **Conclusions** The layout of visual information or placing visual signs in public space should take into account this aging effect in UFOV to make the information or signs are detectable and visible.

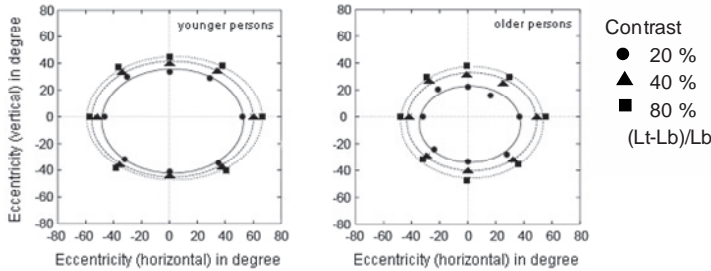
References

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Keywords: vision, useful field of view, aging

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a) Useful field of view for a target only with luminance contrast (50% detectability)



b) Useful field of view for a colored target on white background (50% detectability)

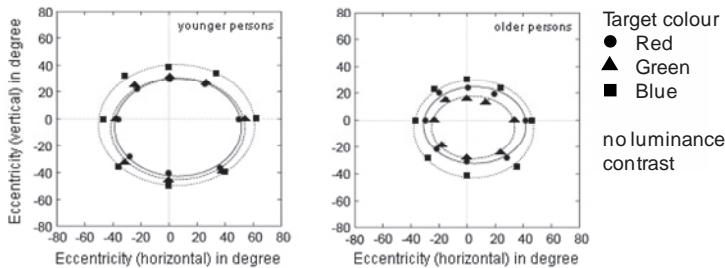


Figure 1. Useful field of view of younger and older people for detecting a target from a uniform white background that has (a) only luminance difference and (b) colour difference