

Evaluation of the Habitual Visual Acuity in Drivers and No Drivers in an Elderly Spanish Population

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Abstract

Purpose: : To obtain habitual corrected visual acuity (HCVA) which usually does not coincide with the best corrected visual acuity (BCVA) and to compare driver vs no driver population.

Methods: : The HCVA was measured in a sample of 2449 subjects ranging in age from 55 to 90 years old. The 62.6% of the sample were habitual drivers and the 37.4% were no-drivers. The average age and standard deviation (SD) of the two groups were 67.9 years (6.4 SD) and 66.6 years (6.5 SD) respectively. The sample was divided into seven age categories. All participants were free from significant ocular pathology. We tested the monocular visual acuity (VA) under photopic and mesopic conditions. The measurements were evaluated in right eyes with habitual optical correction under standardized conditions.

Results: : The HCVA is lower than the expected BCVA for each age category. The photopic decimal value of HCVA was 0.69 (0.24 SD) in drivers group and it was 0.60 (0.24 SD) for no-drivers ($p < 0.001$). Mesopic decimal value of HCVA was 0.26 (0.10 SD) in drivers group and it was 0.25 (0.10 SD) for no-drivers ($p = 0.003$). In Figure 1 the seven age categories are represented.

Conclusions: : There is a global decrement of HCVA with age with a significant difference between the HCVA of drivers and no-drivers groups under photopic conditions but no significant difference was found between HCVA of both groups under mesopic conditions. However, the study suggests that HCVA of elderly subjects, both

driver and no drivers, can improve with the suitable refractive correction. In fact, these results surprisingly were different to other ones from studies using the best corrected visual acuity.

Keywords: aging • visual acuity • clinical (human) or epidemiologic studies:
treatment/prevention assessment/controlled clinical trials

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