

# Visual Factors Influencing Balance and Falls in Mild Glaucoma Patients.

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- **Abstract:** In this paper, vision and balance measurement methods were used for factors affecting balance and falls in mild glaucoma patients. The mean age of twenty mild glaucoma subjects was  $69.5 \pm 5.28$  years have mild ( $-3.38 \pm 2.37$  dB) VF damage. The high contrast (100%), low contrast (10%) visual acuities and stereoscopic vision were measured. The balance is formed the integrated information due to the state of change of posture. The postural balancing is consisted of subsystems such as included the better and worse eye of NO/PO function. The balance method is measured the range of the Fourier Index by the F2~F8 status that is measured the NO/PO function from the better and worse eye. The results were observed as following: The low contrast visual acuity was low and the 12 cpd spatial frequency was higher in the high fall index group. In the better eye's contrast sensitivity, special frequencies were normal on the NO function, 9cpd was the highest at  $0.263 \pm 0.28$  Hz, and 12cpd was the lowest ( $-0.27$ )  $\pm 0.08$  Hz. In the worse eye's contrast sensitivity, special frequencies were abnormal, 12cpd was the lowest at ( $-0.27$ )  $\pm 0.08$ Hz. In the better eye's special frequencies were normal on the PO function, 6cpd was the highest at  $0.2 \pm 0.44$  Hz, and 3cpd was the lowest ( $-0.17$ )  $\pm 0.48$ / Hz. In the worse eye's special frequencies were abnormal, 9cpd was the highest at  $0.027 \pm 0.69$  Hz, and 12cpd was the lowest at ( $-0.353$ )  $\pm 0.13$ Hz. The equilibrium index is related to contrast sensitivity of the better and worse eye. The fall index calculated from the Fourier index was compared with visual function and confirmed that fall index was correlated with low contrast visual acuity and spatial frequency.
- **Keywords:** Visual acuity, Contrast sensitivity function, Balance control, Fall risks