**The Impact of Vision Improvement on Montreal Cognitive Assessment Scores.**

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# Abstract

# Introduction

# Sensory deficits can impact on cognitive performance and Cognitive screening test (CST) scores, but vision and hearing are not routinely assessed.

The aim of the study was to examine whether visual impairment has a significant impact on the Montreal Cognitive Assessment score, a CST with visual components. The study used a within subject design to determine whether improved vision following cataract surgery resulted in better MoCA scores and whether any improvement could be attributed to better vision or was the result of a confounder such as reduced depression.

**Methods**

Participants, ≥60yo, presenting for cataract pre-admission in South Auckland were recruited over nineteen weeks. Distance and near acuity were measured and the Geriatric Depression Scale, Geriatric Anxiety Inventory (short form) and Montreal Cognitive Assessment were administered preoperatively and 2-6 months after operation.

**Results**

The study found, after cataract surgery, modest improvements in acuity and small improvements in scores for: the Montreal Cognitive Assessment, the visual component, the visuospatial domain, the memory domain and the MoCA-blind. Only changes in the visual component of the MOCA could be attributed to the improvement in vision: the change in near acuity correlated with changes in the visual component score.

Improved distance acuity correlated with fewer depression symptoms.

**Conclusions**

Improvement in near acuity had a significant effect on performance of the visual component of the MoCA but the total MoCA score was not affected by change in either distance or near acuity. Improved distance acuity was associated with lower depression scores.

Near acuity is not equivalent to distance acuity in older individuals; near vision must be assessed prior to cognitive testing and in studies of cognition.