

The intersection of memory and active vision in aging.

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Where we look in our visual world is influenced by what we remember. Older adults tend to have difficulties in forming new memories that consist of the arbitrary associations within and among items, including the relative arrangements of features within an item, and/or the relative spatial arrangements of items within a broader scene. Such difficulties in memory are reflected in the eye movements of older adults, even when the older adults are not asked to comment on the contents of their memory. Age-related changes in the eye movement expression of memory are related to age-related changes in the underlying structure and function of the hippocampus and broader medial temporal lobe system. However, additional aging research suggests that eye movements do not merely passively reflect the contents of memory; rather, older adults may use eye movements in a functional manner to broadly reinstate a previously encoded stimulus or event. In the face of declining memory function, older adults increase visual exploration, and increase the reinstatement of prior viewing patterns, in an effort to up-regulate the hippocampal memory system and support explicit memory judgments.