

# Age-Related Cognitive Impairment and Home Technology Design

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**Abstract:** Ability of older adults to use an appliance depends on their mental model of operation. This may depend on transfer of understanding from similar, more familiar technology. Leveraging established mental models creates affordances for operating new technology but may constrain the discovery of advanced functionality. Familiar mental models may also interfere with developing appropriate mental models or interaction behavior. Older adults experience cognitive decline in attention, perceptual encoding, memory (cueing and recall), and self-efficacy. Designing appliances to extend cognitive abilities provides opportunity to prolong functional independence. Concepts from cognitive psychology, human factors, and gerontology are reviewed to explain age-related behavior towards technology to support innovative product development of technologies for older adults with cognitive impairment.

*Keywords:* cognitive impairment, domestic appliances, elderly, human-centred design, human factors, human-machine interface, man-machine interaction, mental model, working memory, gerontechnology

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