

# Cognition and Memory Interventions for Older Adults

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## Introduction

### Overview

Older adults who are over the age of 65 often have cognition and memory difficulties [1, 23]. These difficulties can result in detrimental effects to independence, safety, and quality of life. This paper explores the causes of cognition and memory decline with attention to current theories, research and interventions.

Particular attention is given to people with Alzheimer's. A total of 747,000 Canadians had Alzheimer's disease or other dementias in 2011 (14.9% of older adults) [1]. This figure will increase to 1.4 million by 2031. The costs of dementia currently totals \$33 billion per year.

### Objectives

- Discuss cognition and memory research key findings for
- Risk factors for decline
  - Impacts to daily living
  - Interventions
  - Meta-analyses
  - Critical analysis of findings

## Causes and Effects

### Risk Factors for Decline

Biomedical factors

- Chronic diseases can change the neurology and structure of the brain [1].
- Working storage memory is a transient holding place in memory that is used to store and manipulate items such as visual images, verbal information, and numbers [2, 7, 21]. Difficulties can occur when storing and retrieving information from working memory.

Lifestyle

- Lifestyle factors account for 70% of a person's health [1, 11]
- Activities include exercise, sleep, smoking, alcohol, diet, and social activities

## Intervention Approach Examples

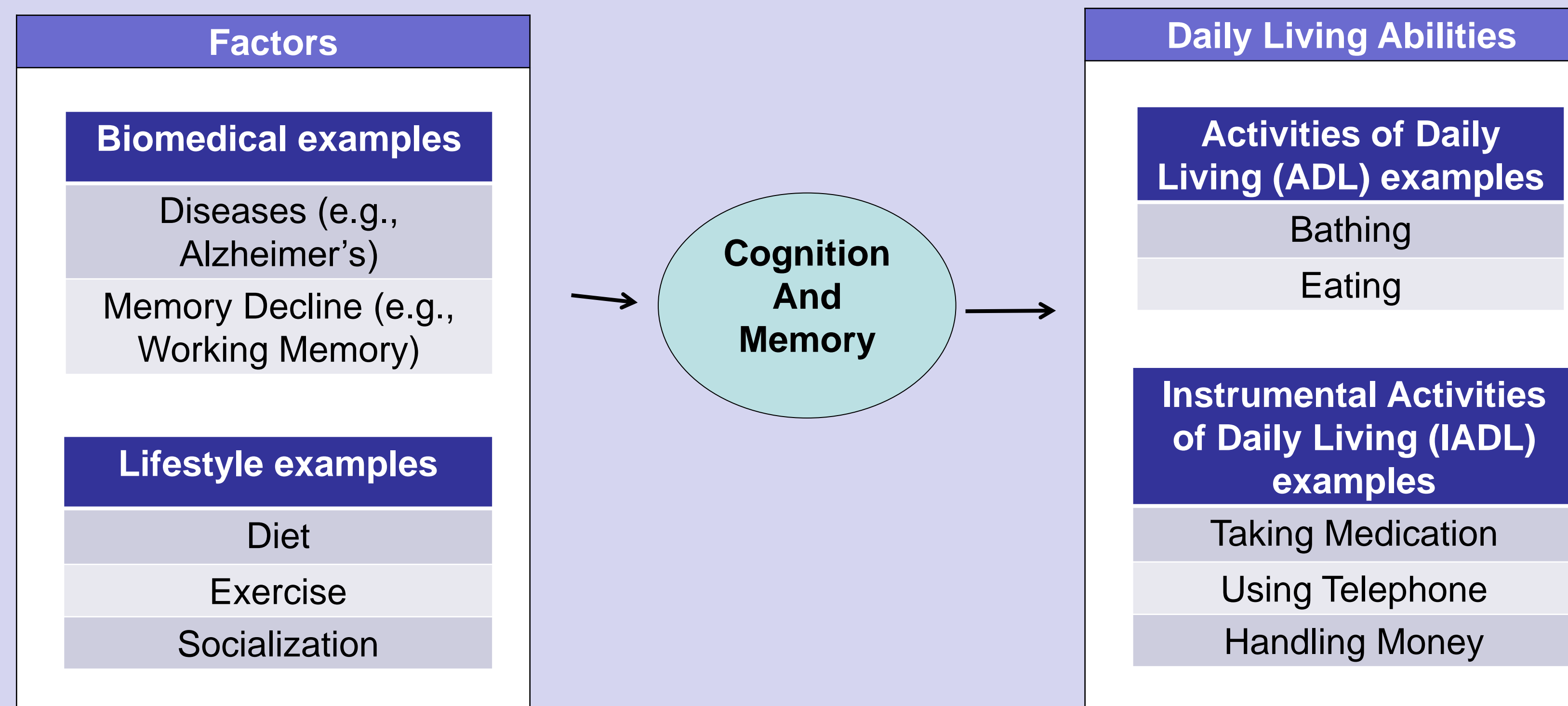
### Common Approaches in Cognition Training [2, 3, 6, 11, 13]

Approach	Description
Memory Recall	Read numbers, words or stories. Test recall.
Mnemonics	Use learning strategies such as acronyms
Reality Orientation	Repeat teaching tasks during day
Spaced Retrieval Technique	Repeat teaching at increasing intervals
Calendars and Notebooks	Log appointments and diary information
Generative Naming	Name types of transportation in one minute
Confrontation Naming	Name items on a picture

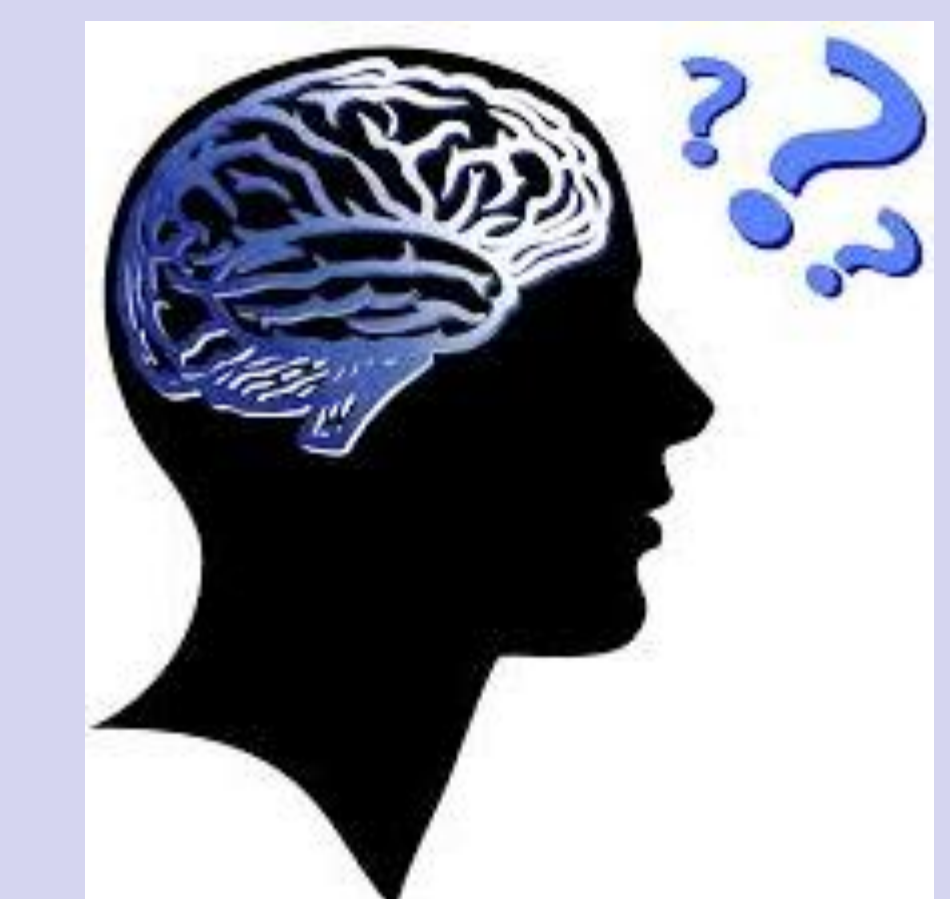
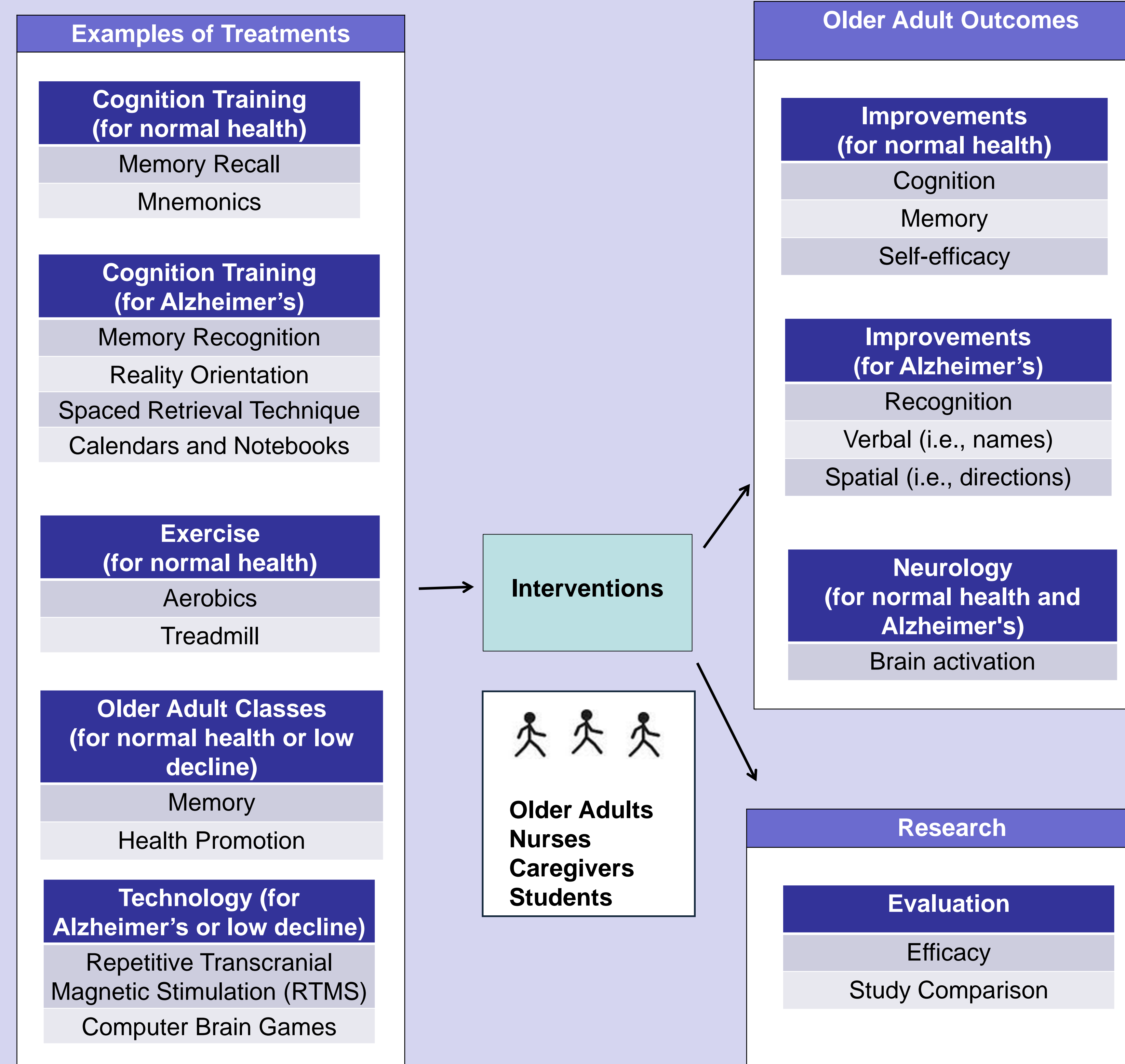
### Tips:

- short commands
- simple language
- active declarative tense
- moderate speech rate
- repetition
- one item at a time
- use of positive stimuli (i.e., happy faces, positive words)

## Cognition and Memory Decline [11, 26]



## Meta-analyses for Older Adults [3, 6, 9, 11, 15, 18, 28]



## Meta-analyses Review

### Investigation

- Meta-analyses were investigated for older adults with Alzheimer's, Mild Cognitive Impairment, and normal health [8, 13, 16, 18, 24, 26, 27, 28]
- Interventions used different treatments and may have included cognition training, exercise, or classes
- Effects were mild to moderate

## Critical Analysis

### Breadth of Aging Research

- Diverse literature including lifestyle factors, theories and interventions
- Thorough documentation of difficulties (i.e., ADL, IADL)
- Different populations addressed (e.g., normal health, Alzheimer's)

### Gaps

- Most interventions are non-standard for training and outcome measures
- Some interventions do not address theories on memory

### Future research

- Interventions tailored to actual daily difficulties
- Influence of Lifestyle choices
- More training for caregivers and health professionals
- Solutions that are cost effective (e.g., use students)

### Conclusion

Cognition and memory interventions are efficacious. Systemization of standard interventions are needed for widespread use.

## Questions or Comments?

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