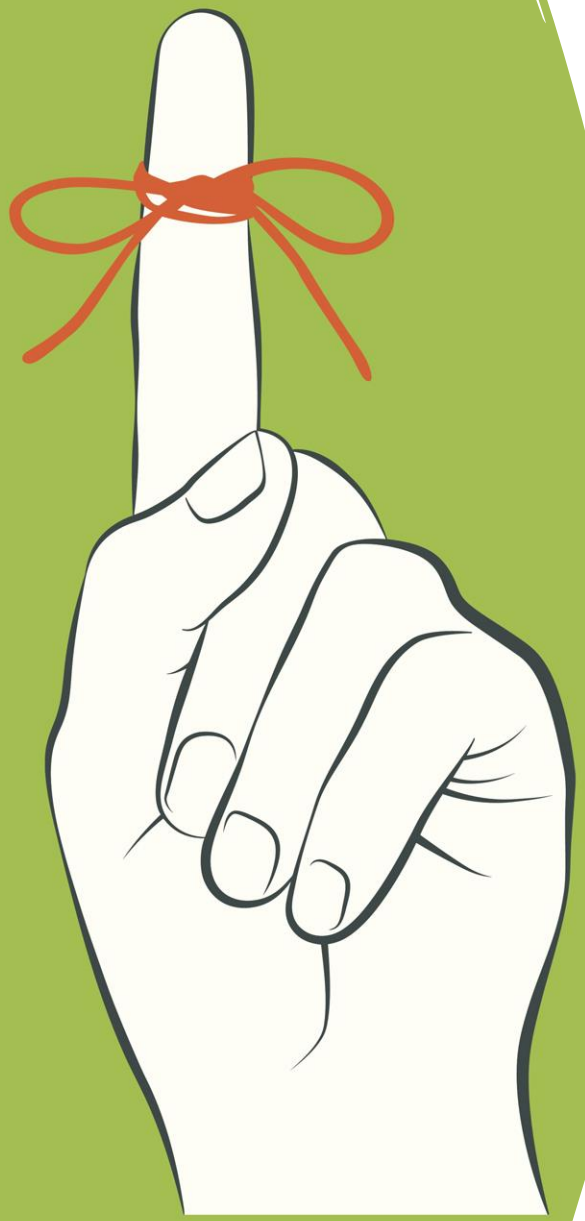

Memory Support Strategies

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UC Davis Department of Neurology

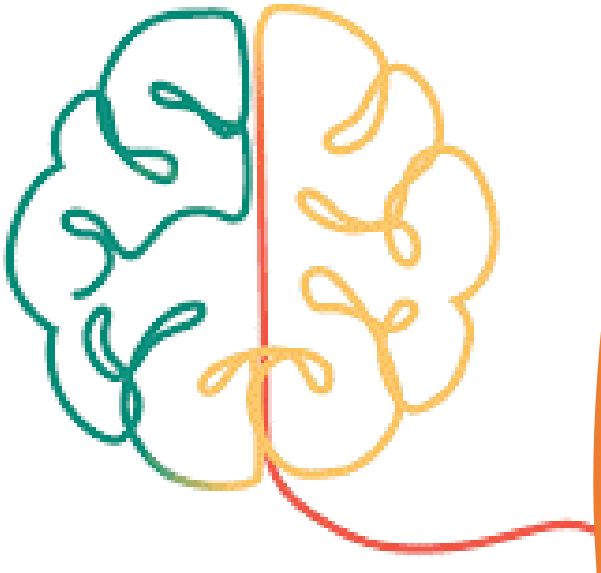
Memory Support / Compensatory Strategies

1. Support Care Receiver's Memory and Independence

2. Support Caregiver's Memory and Everyday Functioning

3. Address Caregiving Challenges

4. Improve Relationships



Compensation

- Alternative tool or action to help complete an activity
- Can be applied in the absence of impairment to make task completion easier or more efficient
- All individuals, regardless of age or cognitive ability, have the potential to benefit
- Strategy use has increasing value with age and with greater task or cognitive difficulty

Research Findings

- Helps individuals with mild cognitive impairment such that they perform similarly to cognitive normal individuals

Figure 1: Quality Score by group

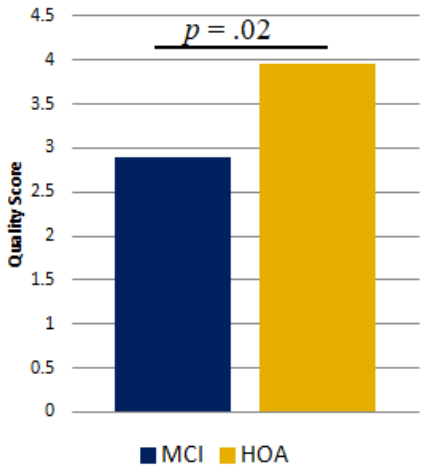


Figure 2: Compensation by group

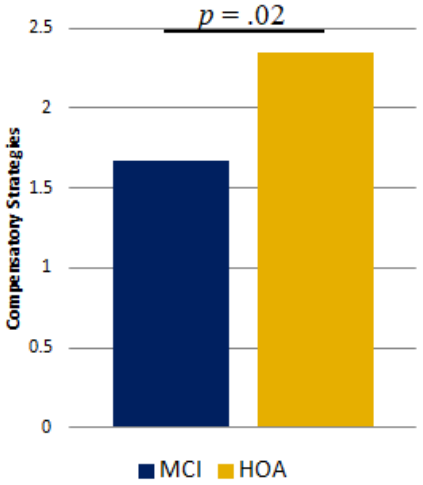
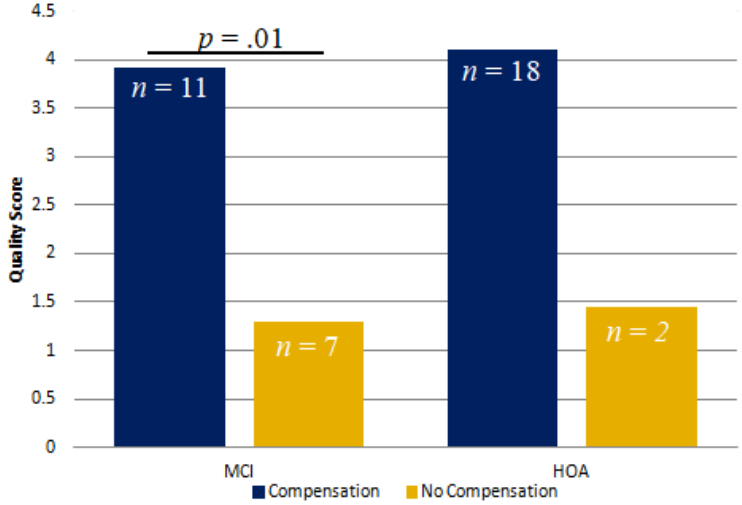


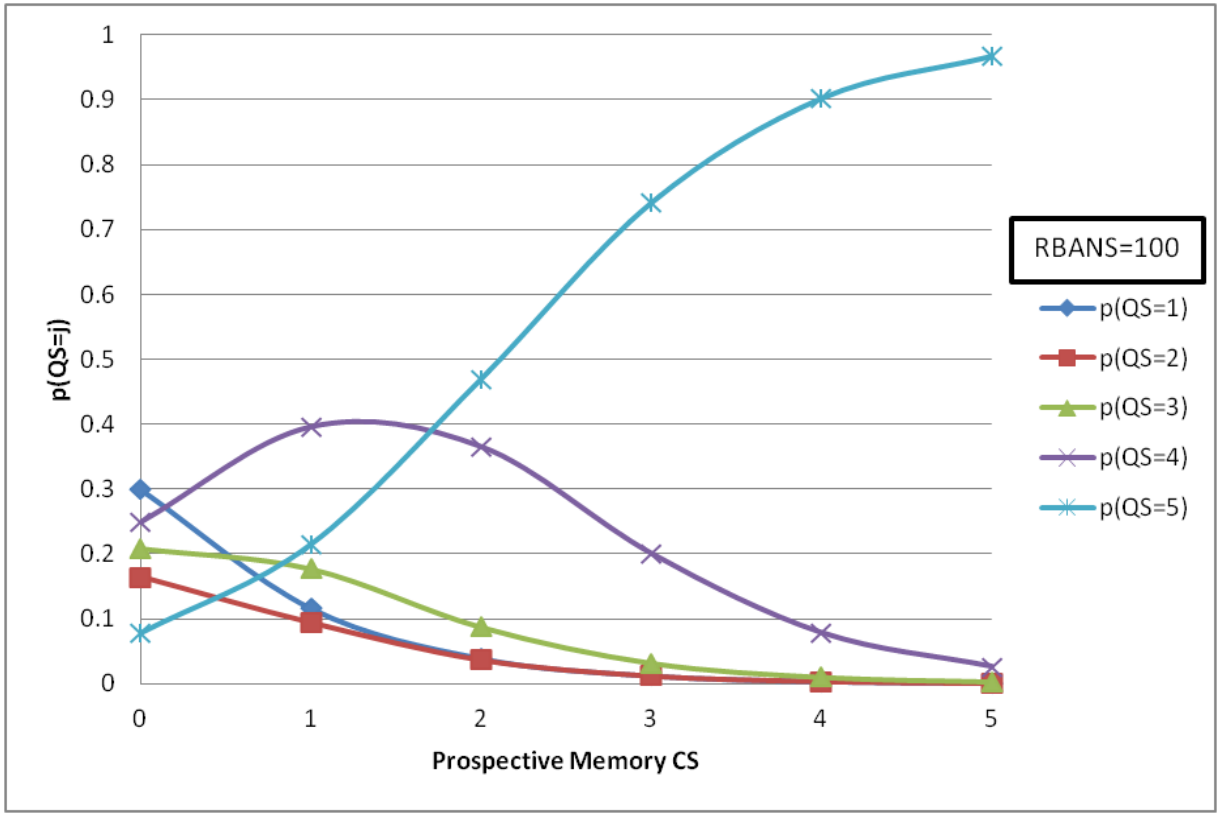
Figure 2: Effect of Compensation on Quality Score



Weakley et al., 2019, *Neuropsychology*

Success increases with number of strategies used

Older adults with low global cognitive status perform similarly to those with higher cognitive abilities with the assistance of strategies.



Potential

- Improve daily functioning and independence
- Delay or prevent conversion to dementia
- Enhance self-efficacy, mood, and quality of life
- Reduce caregiver burden and stress.
- Enhance relationship between caregiver and care receiver

Memory Support Strategies

- **Internal:** mental approach to assist in completing an activity.

  - Mental Retracing
    - where did I last see my keys
    - Visualize self completing past activity

  - Self-talk
    - Talk out load / internal monologue
    - Thinking about thinking
    - Ask yourself questions
    - “I need to do x before y”

Internal Strategies

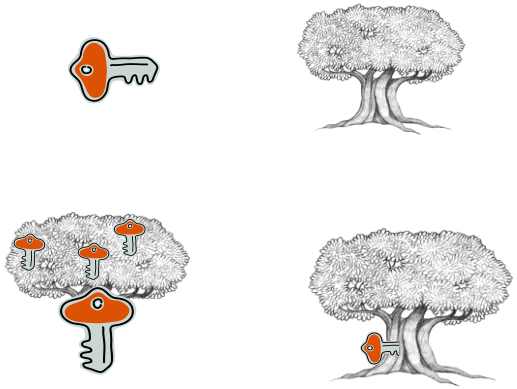
- Repeat/Rehearse information
  - Research shows that when rehearsal is prevented, the contents of memory is lost
  - Recall information to be remembered over increasingly longer time intervals

- Structure and Chunking
  - Divide into meaningful chunks
  - Phone numbers
  - When grocery shopping, think about categories of items you will need
    - produce, meat, dry goods, frozen foods
    - focus on one category at a time as you collect items

- Mnemonic Strategy
  - First letter mnemonics
  - ROY G BIV

Internal Strategies

- Imagery/Visualization
  - Research shows that memory is improved if create a visual image
  - Use your imagination and visualize what you want to remember



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Face-Name Pairing

- Name finding declines with age
- Remember someone's name by linking their name with:
  - Interesting fact about them
  - Word association
  - Unique physical feature
  - Combination of these and other techniques (e.g., visualization)

  - John Black's Job is a Blacksmith
  - Rey Martinez – Sunny rays of light in Martinez, CA

Ivan Gray

EYE-van Gray Glasses

Ivan-tually will have Gray Hair

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Other tips for names

Remembering new names

- Repeat name when introduced and when you say goodbye.
- Associate other biographical information with name
  - Occupation
- Associate person, or object or place with a similar name

How to remember names of someone you know

- Alphabet search
- Remember any fact associated with name
  - Where you last saw person, occupation, name of friends or relative

Unfortunately…

- internal strategy use decreases and becomes less effective with age
- This may be because internal strategies are effortful and error prone

Fortunately…

- Use of external aids tend to increase with age
- External strategy use is a strong (negative) predictor of activity limitations after a TBI
- When use of external aids is prevented, performance typically suffers
- Cicerone et al. (2011) recommend training in external strategies as a cognitive rehabilitation practice guideline.

Memory Support Strategies

- **External**: some form of assistance outside of oneself
  - Visual or Auditory
  - Smart or Assistive Technology

Assistive Technology

- Even individuals with dementia endorse positive attitudes toward assistive technology particularly when senior-specific adaptations are made to support usability and engagement

- Improve performance of daily activities and reduce rates of functional decline and caregiver assistance

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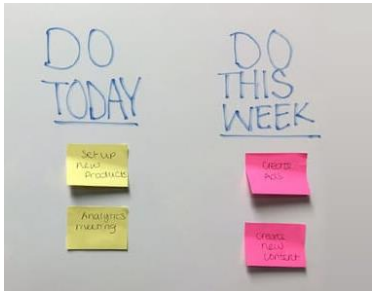
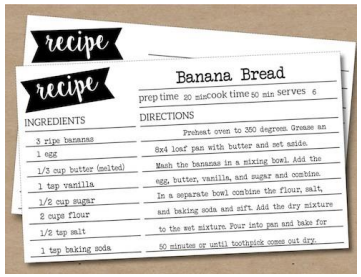
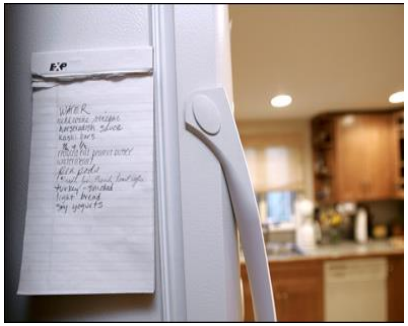
- External Reminders





- Environmental Cues



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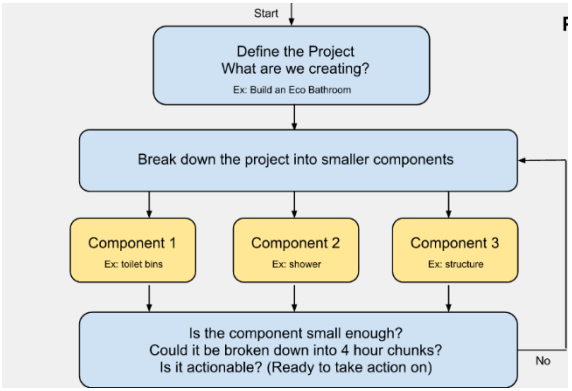
- Organize

- Plan



Task Modification Strategies

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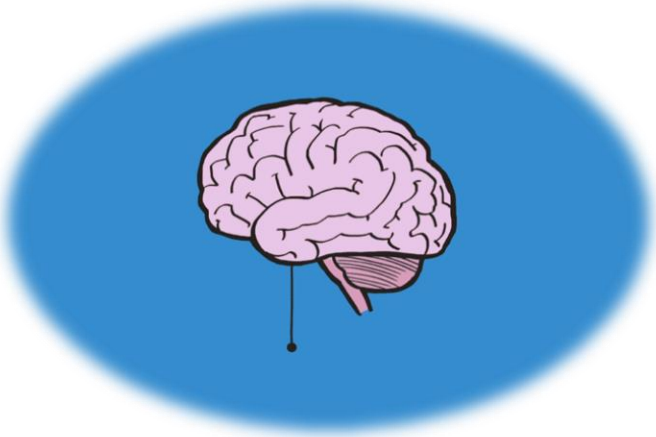
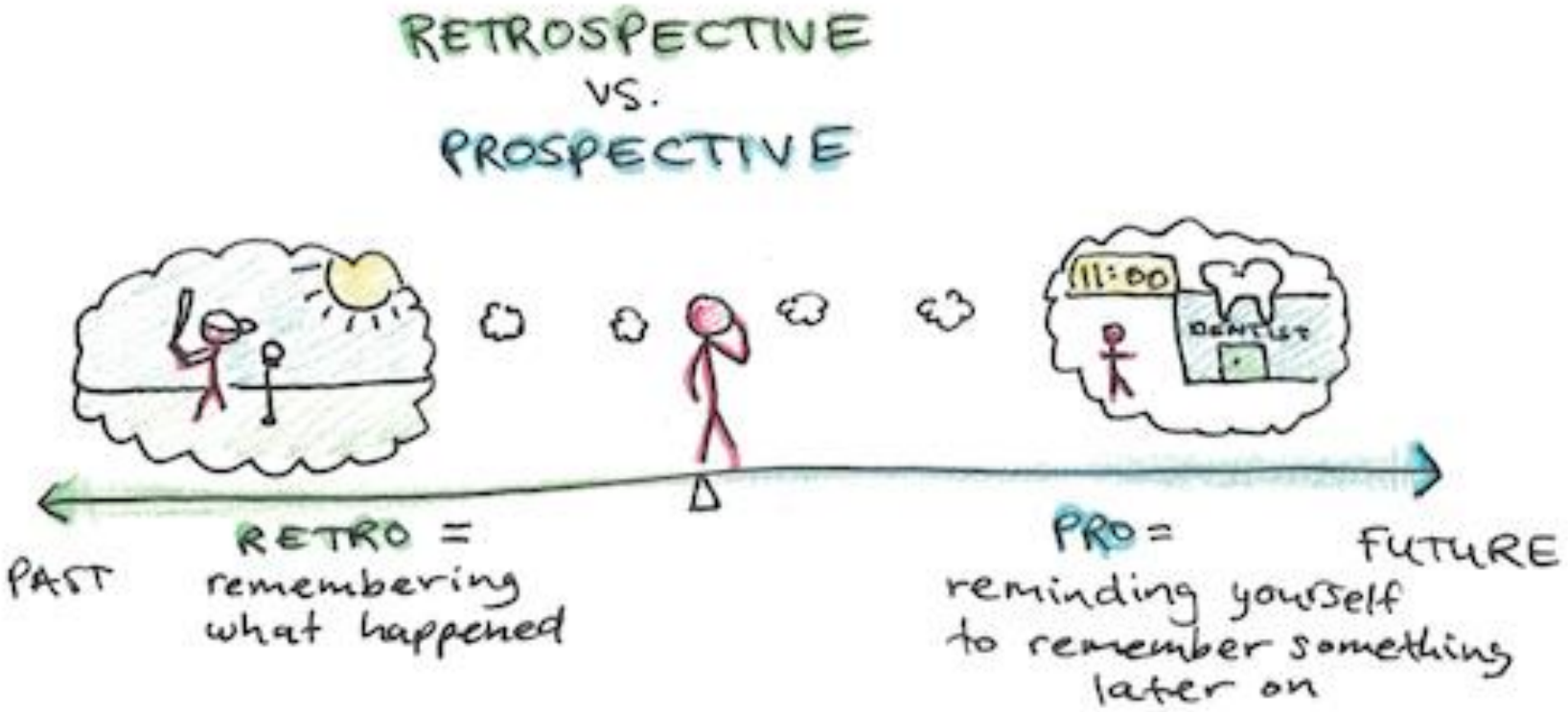
- Increase Effort or Time
  - Double-check checkbook balance
  - Carefully chop vegetables
  - Review recipe multiple times
- Reduce Distraction
  - Clear countertop/work space
  - Turn off radio when in heavy traffic
  - Avoid driving during rush-hour
- Simplify Task
  - Break larger task down in manageable units
  - Automatic bill pay
  - Make simple meals, purchased pre-made meals



Category	Description	Example
Internal Strategy	Mental, visual, or self-talk strategies	Rehearsal, mnemonics, chunking, association, imagery, elaboration, self-guidance, self-questioning, mental retracing, method of loci
External Strategy	Some form of assistance outside of oneself	To-do list, shopping list, journaling, calendar (electronic or paper), reminder alarm
Assistive Technology	Any device, tool, or gadget that is used to aid in the completion of some task	Smartphone application, pillbox, magnifying glass, GPS, calculator
Environmental Cue	Visual reminders used to prompt initiation of a task	Important papers stacked on table, information written on a white board, pillbox on counter, note on front door
Task Modification		
Routine	Habitual pattern of behavior to aid in remembering to complete a task	Take medication with breakfast daily
Pacing	Actions that assist with timing of activities	Slowing down to reduce error, increase time on task, take breaks, spread out activities
Increase Attention	Reduce internal or external distractions to improve focus	Clear table before starting taxes, turn off radio when in heavy traffic
Organize	Categorize/organize materials or steps so similar items are together	Bill filing system, key dish, pill box
Plan	Preparation that reduces reliance on memory or effort later on	Moving garbage can to dinner prep area, creating a to-do list, planning driving route
Simplification	Pairing down a task or making it automatic	Simple, familiar meals, prepared foods, or delivery, automatic bill pay

Types of Memory

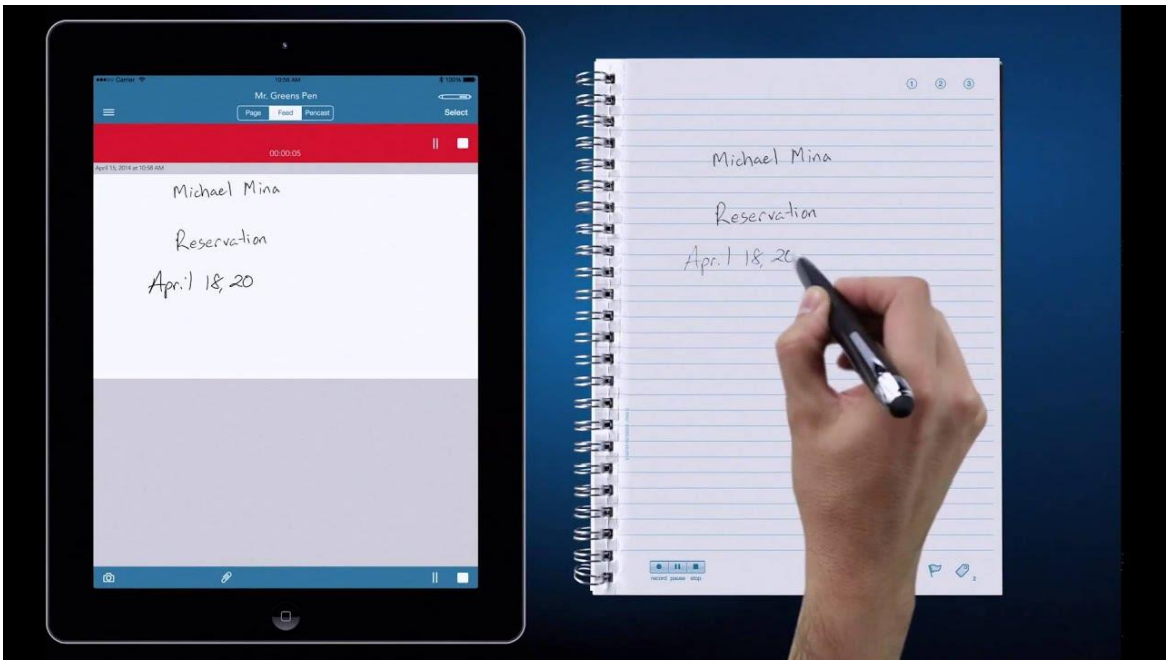


Retrospective Memory

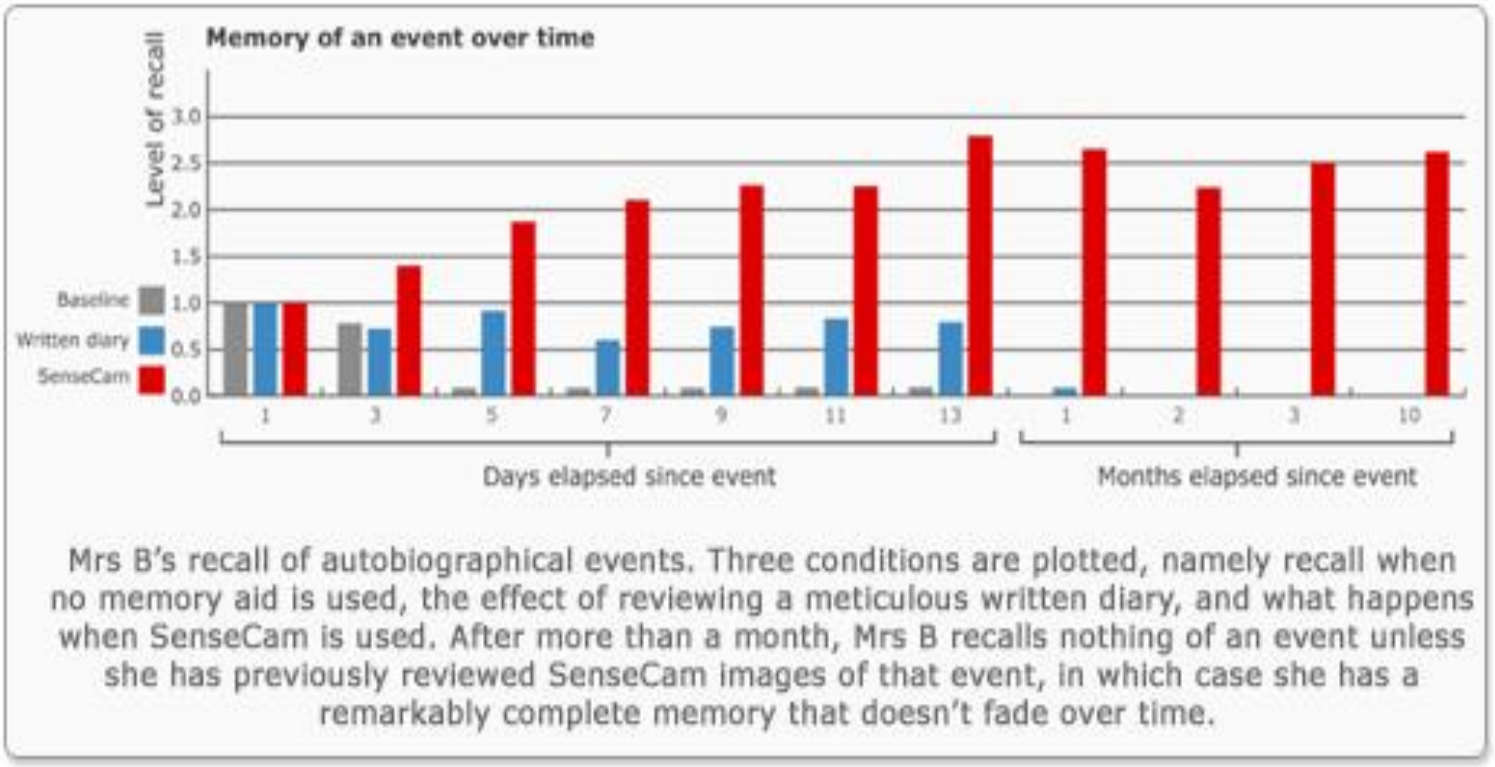
Object Locators / Key Finders

Retrospective Memoery

Recording Devices



Wearable Camera



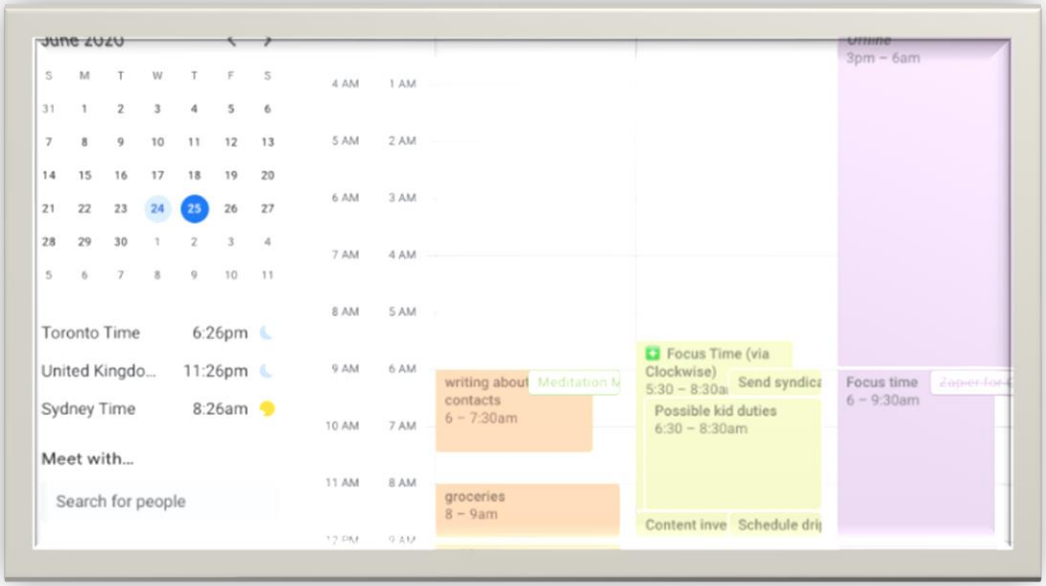
Mrs B's recall of autobiographical events. Three conditions are plotted, namely recall when no memory aid is used, the effect of reviewing a meticulous written diary, and what happens when SenseCam is used. After more than a month, Mrs B recalls nothing of an event unless she has previously reviewed SenseCam images of that event, in which case she has a remarkably complete memory that doesn't fade over time.

Retrospective Memory

- Memory Notebook / Journal
- Pair with an alarm or routine to write in and review multiple times per day

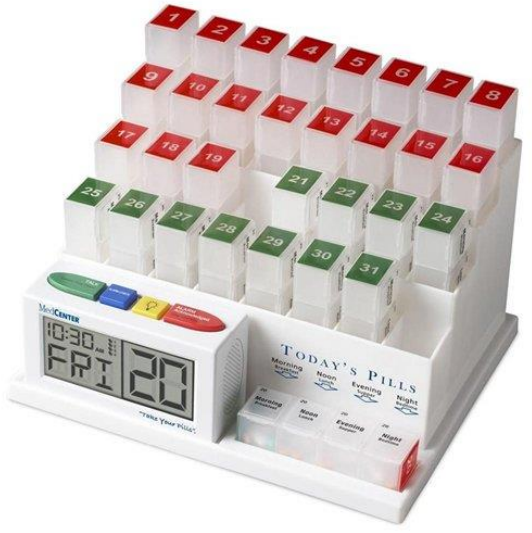
Prospective Memory

- Calendar Systems
- Google Calendar has been shown to be more effective than a paper-and-pencil diary in prospective memory performance



Prospective Memory

Reminder Devices



Prospective Memory

- Reminder Devices

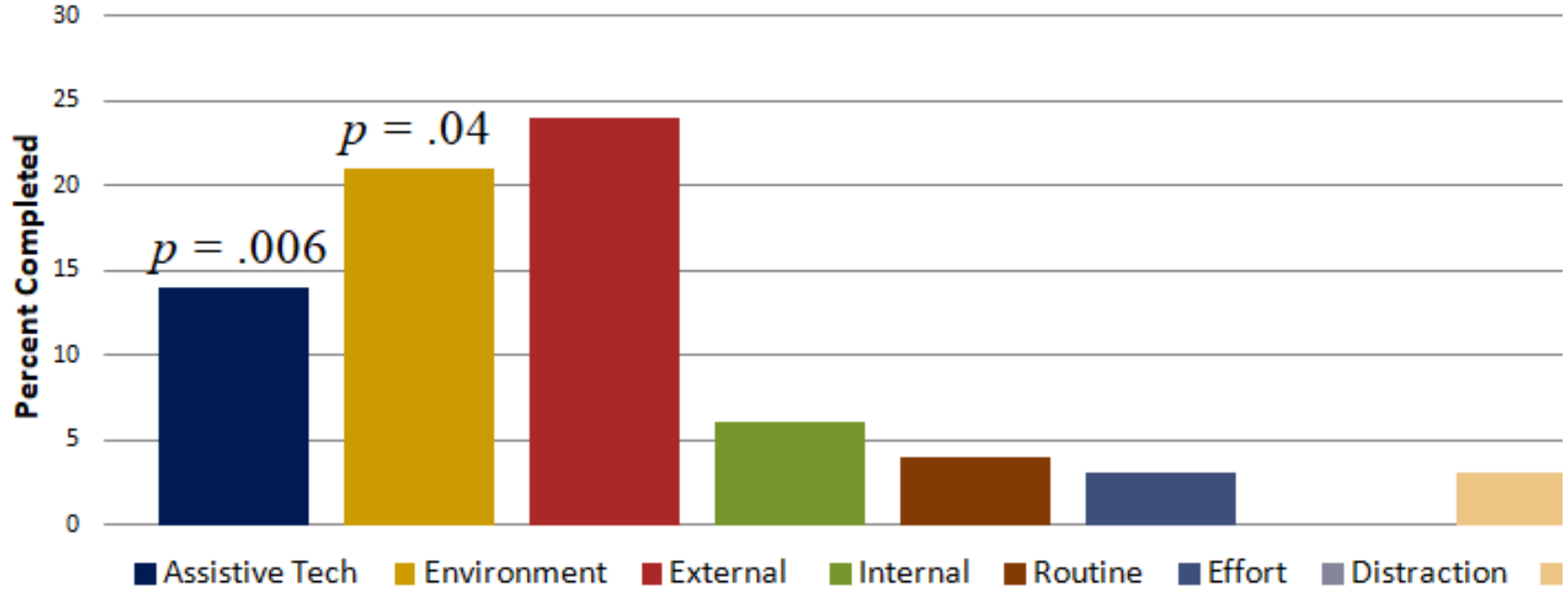
Prospective Memory

Environmental Cues

Match Making

- Use of assistive technology (e.g., alarm) and environmental cues (e.g., pill bottle in plain sight) are most predictive of prospective memory performance.

Figure 4: Compensatory Strategy Counts

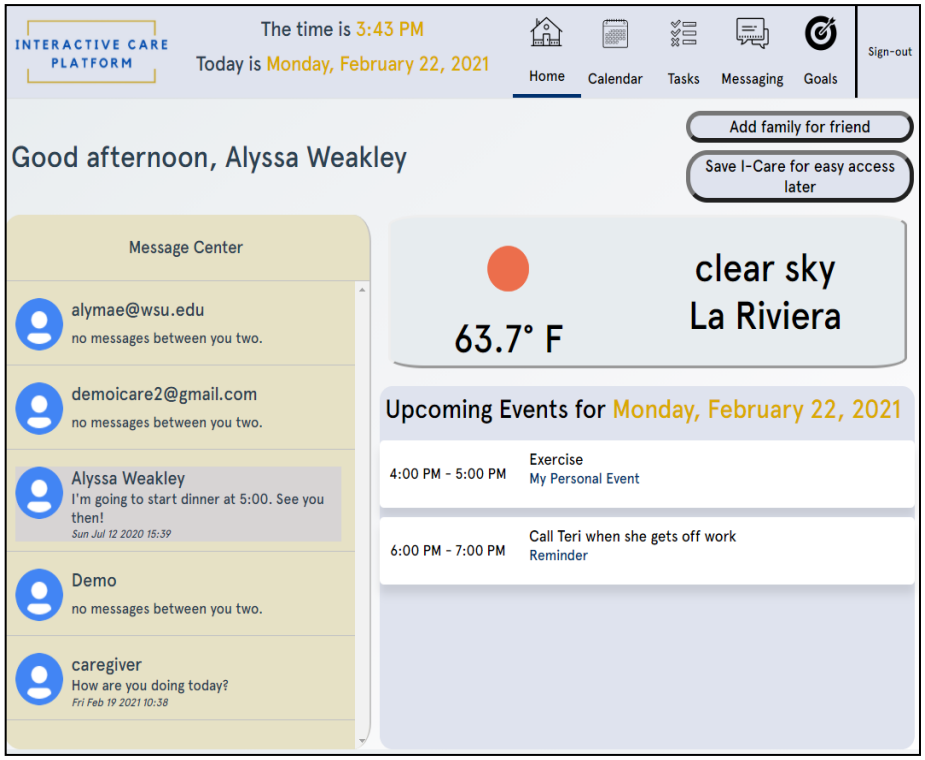


Match Making

Area of Impairment	Potential Strategies
Cognitive	
Retrospective Memory	Item locators, electronic or paper journaling, taking/storing/labeling pictures, tracking exercise and other goals, mnemonics, audio/video recorder
Prospective Memory	Alarms, environmental cue, visual imagery, association techniques
Attention	Enhance self-monitoring, reduce distractions, simplification, self-talk, mental rehearsal
Functional	
Medication	Routine, environmental cue (pill box in visual location), alarms, automatic dispenser, medication management smartphone application
Finances	Automatic payment, online or physical organization tool, electronic calendar,
Cooking	Automatic stove shut-off, induction stove, digital assistants, recipe checklist
Driving	Way-finding application/GPS, keyless entry/start, breaking assistance

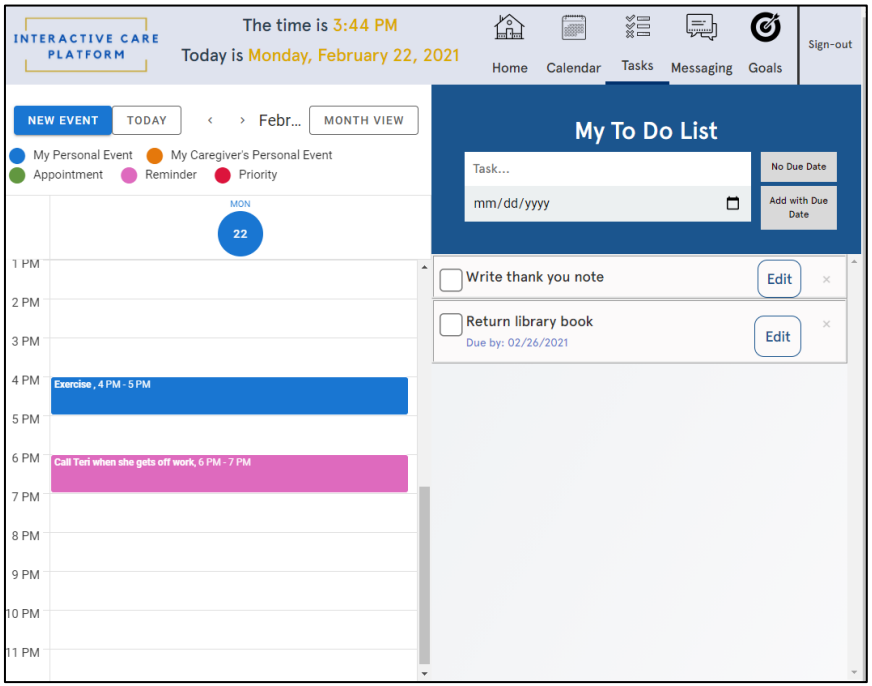
Prospective & Retrospective Memory

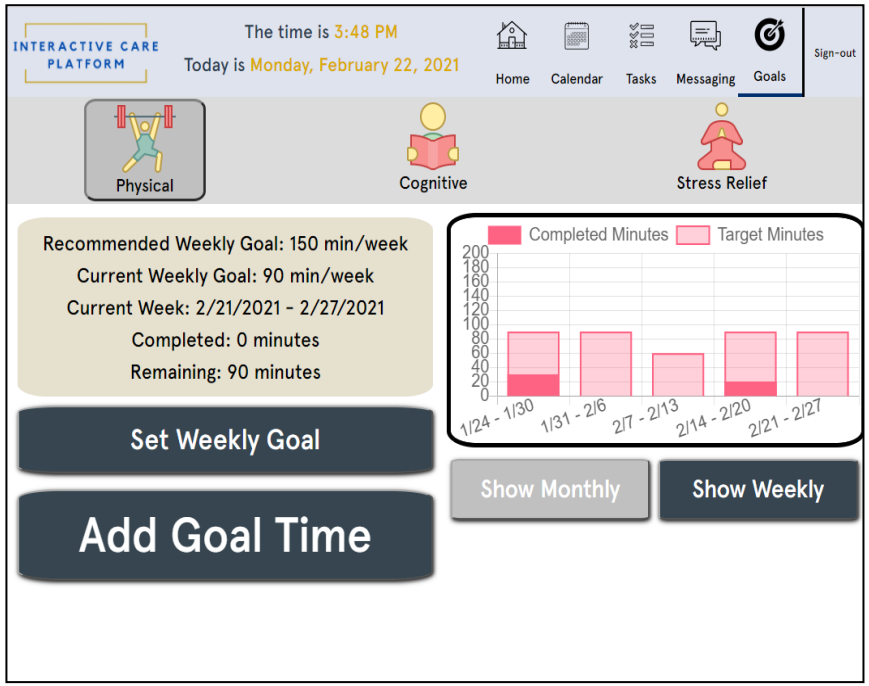
- Interactive Care (I-Care)
  - Caregiving Tool designed for remote caregivers
  - Both caregiver and care receiver can use dynamically
  - Features:
    - Calendar with Reminders
    - To Do List function
    - Collaborative Notes
    - Video and Chat features
    - Brain Health Behavior Tracking



I-Care Feedback

- “Amazing Product”
- “It’s set-up for those with non-technical skills can grasp it.”
- “It’s above and beyond anything that is available”
- “This is a reference Manual for your mind”
- “Interactive nature is amazing”
- “It will back me up where I’ve lost cognition and put me back in charge of what I’ve forgot”
- “Google should hire you”
- “It’s very intuitive”





- Recruitment underway
- If interested contact

Dr. Alyssa Weakley at aweakley@ucdavis.edu

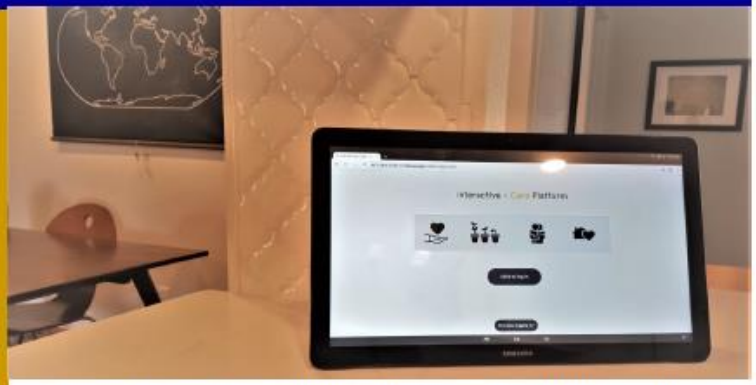
UNIVERSITY OF CALIFORNIA, DAVIS MEDICAL CENTER

Remote Caregiver Technology to Promote Independence, Social Connection, and Brain Health in Older Adults with Cognitive Impairment

Qualifications:
- 60-years-old or older
- Mild difficulty with memory or thinking
- Have a family member or friend living separately from you who would to be willing to be your study partner
- Wireless internet connection
- No experience with technology necessary

If you are interested in participating or would like more information, please contact
Dr. Alyssa Weakley
Phone: 916-734-6452
E-mail:
aweakley@ucdavis.edu

This research is funded by Healthy Aging in a Digital World, A "Big Idea" at UC Davis.



Purpose: To train individuals with memory/thinking problems and their study partner (adult child, friend) to use an internet-based tool called the Interactive-Care (**I-Care**) platform.

What will I be asked to do?

- If you choose to participate in the interview portion of the project, you will be asked to review the I-Care program and respond to questions either in-person or over video. The in-terview will last approximately 60 minutes.
- If you choose to participate in the intervention component of this project, you will be provided with an 18" touch-screen tablet or iPad to use during the study. You and your study partner will be trained to use I-Care in a 4-week course. Each session will last approximately 2-hours and will take place either in your home or over video. You and your study partner will be asked to continue to use I-Care for an additional 2 months. Participating in the study will also involve completing questionnaires at 3 different time points (i.e.,week 1, week 4, week 12).
- If you like using I-Care, you can continue to use it for free.

Thank you!

Alyssa Weakley, PhD
aweakley@ucdavis.edu