

# Cognitive Rehabilitation in TBI: Techniques for Improving Your Memory

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# Improving Memory After TBI

- Internal strategies
- External aids and environmental adaptations

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# Modified Story Memory Technique (mSMT)

- Uses **imagery** and **context** to facilitate learning
  - 10 sessions
    - 2x per week for 5 weeks
    - 30-90 minutes in duration



# mSMT

- Session 1-4: Imagery
  - Each story contains capitalized words to remember
  - Create mental images of each story line
  - Picture the characters, setting, etc.

\*note: context is provided



# Story Example

(skill: imagery)

Mr. Jones pulled a fresh APPLE from a tree. This made him think of his childhood summers with the flowers in BLOSSOM and his mother churning BUTTER sitting on a CHAIR drinking COFFEE. Mr. Jones was a DIAMOND salesman but his father worked in a FACTORY using a pitch FORK and a HAMMER. On Saturdays his mother would KISS him and send him to the MARKET. The goods there reminded him of a PALACE. On Sundays he went to church to visit his PRIEST making sure to get a SEAT in the first row. One day Mr. Jones' father left boarding a STEAM boat with a TICKET that his WIFE had bought. Her BETRAYAL by not using DISCRETION in their personal lives led him to mistrust members of the opposite GENDER.

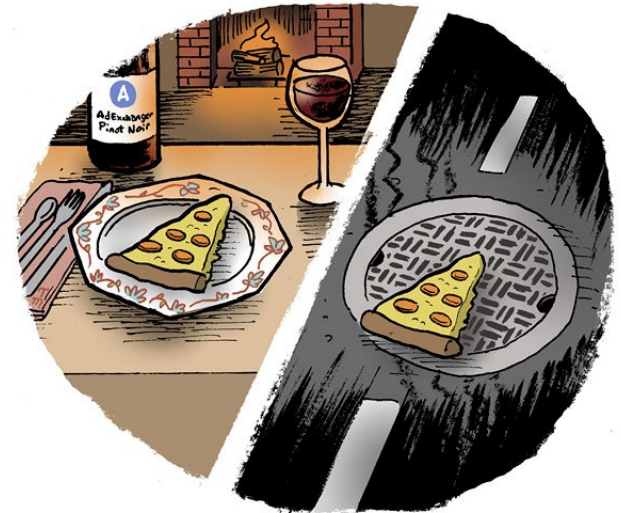
# mSMT

- Guidance for imagery
  - Concentrate on forming a mental image of a chunk of the story
  - *Several pieces* of information into images
  - Verbal information transformed into pictures

# mSMT

- Session 5-8: Context
  - Make up story using a provided list of words
  - Create easy to visualize story

\*Continue using imagery –  
adding meaningful context.



Context Matters



# mSMT

AUTOMOBILE BOTTLE CASH CHURCH

Sunday after **CHURCH** I need to take my **AUTOMOBILE** to the bank to get **CASH** for a **BOTTLE** of wine.

# mSMT

- Guidance for context (with imagery)
  - Keep the story simple
  - Chunk several target words with meaningful information

# mSMT

Sunday after \_\_\_\_\_ I need to take my  
\_\_\_\_\_ to the bank to get \_\_\_\_\_ for a  
\_\_\_\_\_ of wine.

# mSMT



*Example of poor context:*

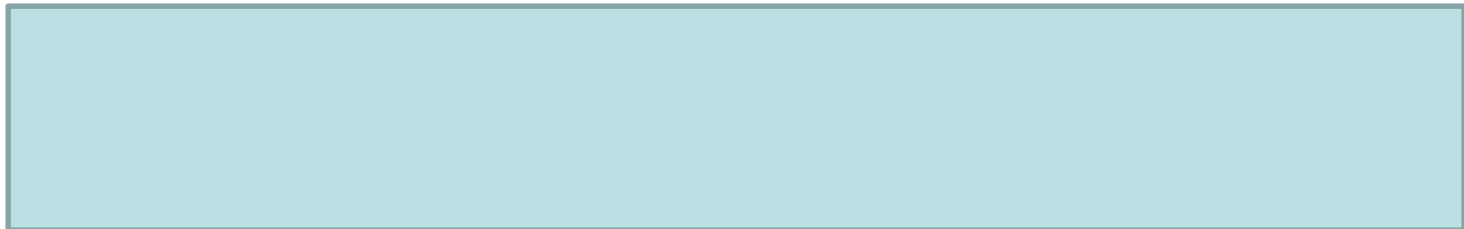


There was \_\_\_\_\_ on the \_\_\_\_\_ next  
to the \_\_\_\_\_.

# mSMT



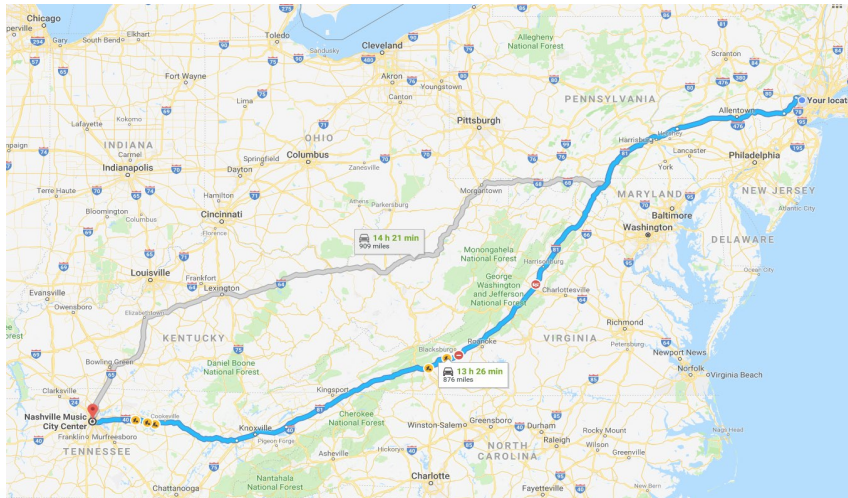
Example of more effective context:



In the winter, the green \_\_\_\_\_ was covered in  
\_\_\_\_\_ from shoveling the \_\_\_\_\_.

# mSMT

- Session 9-10: Everyday life
  - Words from shopping list, to-do list, or directions
  - Make up story using a provided list of words
  - Create easy to visualize story



# Method of Loci (Memory Palace)



<https://www.wikihow.com/Build-a-Memory-Palace>

# Method of Loci (Memory Palace)

- Step 1:
  - Identify a memorable place
    - Childhood home
    - Your house of 25 years
    - Favorite oft-visited vacation spot
  - Define a route
    - Take your mind for a walk!
  - Pick specific locations to use
    - Fireplace in the corner of the living room
    - Vegetable patch in side yard





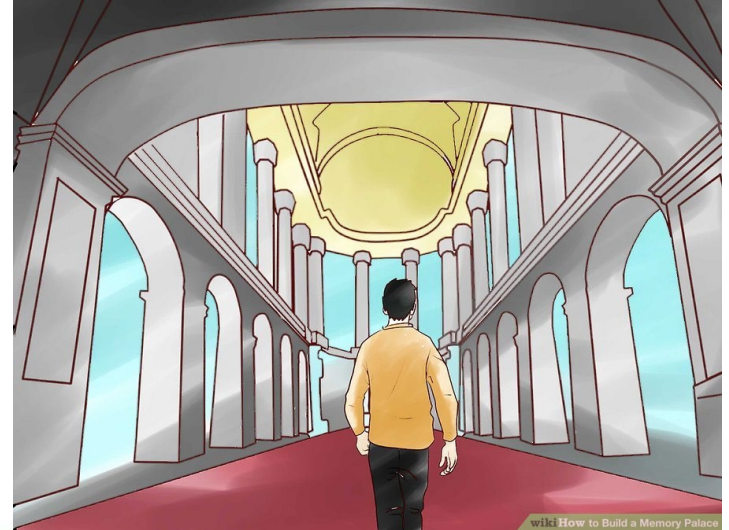
# Method of Loci (Memory Palace)

- Step 2:
  - Put information in specific places in palace
    - Make it weird!
      - Bizarre, graphic, memorable, funny
        - » Need to remember: grape jelly
        - » Put in palace: Mom stepping in pool of grape jelly by the kitchen sink and making purple footprints on the tile, with the dog trying to clean it up as she walks



# Method of Loci (Memory Palace)

- Step 3:
  - Explore your palace
    - Envision yourself walking through each room and interacting with each object
    - Add new details
    - Clean up when necessary



# Improving Memory After TBI

- Internal strategies
- **External aids and environmental adaptations**

# Prospective Memory

- Remembering to perform an intended action at a specific moment in the future
  - “Remembering to remember”
  - Always has:
    - **Intention** – *what* you need to do
    - **Cue** – *when* you need to do it (specific time or event)
    - **Ongoing activity** – *what you’re doing* while you’re waiting to do that task

## *Remembering to mail birthday card on the way home*

- Intention (what): mail birthday card
- Ongoing activity: driving home
- Cue (when, event-based): seeing mailbox

## *Remember to call TBI clinic at 11am on Monday*

- Intention (what): call TBI clinic
- Ongoing activity: morning activities (breakfast, work, errands)
- Cue (when, time-based): 11am on Monday



# External Aids & Environmental Adaptations

- Offload memory demands
  - Write it down! (helps with the *what*)
    - Memory notebook
    - Calendars
  - Alarms (helps with the *when*)
    - Electronic
    - People



# External Aids & Environmental Adaptations

- \*Can't miss\* reminders
  - Obvious
  - Interactive and tactile



# External Aids & Environmental Adaptations

- Utilize habits to help you remember
  - Linking tasks with existing habits
    - Medications with meals
      - Pillbox on kitchen table
    - New vitamin with teeth brushing
      - Toothbrush on vitamins





# External Aids & Environmental Adaptations

- Utilize habits to help you remember
  - Create a “home” for objects you need to remember
    - Keys, wallet, phone



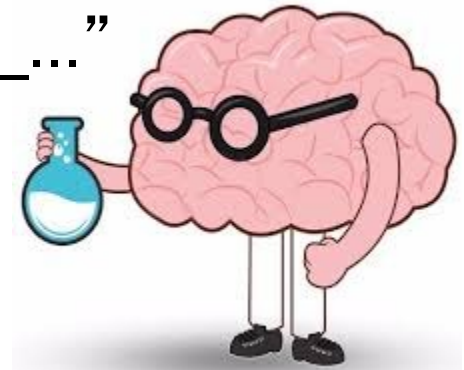


# \*Can't Miss\* Reminder w/ "Home"



# Practical Considerations

- Act like a scientist
  - Collect data
    - “Does this strategy work for me? When?”
    - Ask a loved one what they observe
  - Test your theories
    - “Maybe it will work better if I try \_\_\_\_\_...”
  - Explore new options
    - Ask others what works for them



# Practical Considerations

- Do what works for you and your:
  - Lifestyle
    - Tech savvy? Prefer routine? Always on the go?
  - Significant others
    - What's a strategy you can both use?
  - Care team
    - Access to a cognitive rehabilitation specialist? Use them!
  - Memory sticking points
    - Tailor to your needs



**DON'T  
KNOCK IT  
UNTIL YOU'VE  
TRIED  
IT**

# Collaborators

Nancy D. Chiaravalloti, PhD

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Nancy Moore, MA

Angela Smith, MA

**All of our TBI research participants and patients**

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