Using a personalized digital spaced retrieval program to enhance word relearning

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Anomia Treatment

Most individuals with stroke-induced and progressive aphasia experience word-finding difficulty (anomia).[1]

Efficacy of Word Naming Training:
- Word-naming training can improve language outcomes[2,3]
- Research suggests benefit for increased frequency and functional relevance of treatment[4]

Goal of Anomia Treatment:
- Restore access to functional, personally relevant words
- Prolong language function through word-naming practice[5]

➢ Speech-language therapy is the standard care for retraining or preserving language functioning in aphasia
➢ Direct treatment time is often limited due to health insurance and logistical factors
➢ Crucial to have home-based strategy to maintain language skills

Spaced Retrieval Training

Space retrieval training may be used as a *home practice* and *retention strategy* to preserve the benefits of intensive word retraining.

Spacing Effect[6]:
- Without review, memory retention drops quickly after learning (red line)
- Regular, spaced reviews help slow down this forgetting process (green lines)

Memory / Time remembered (days) / 1 2 3 4 5 6
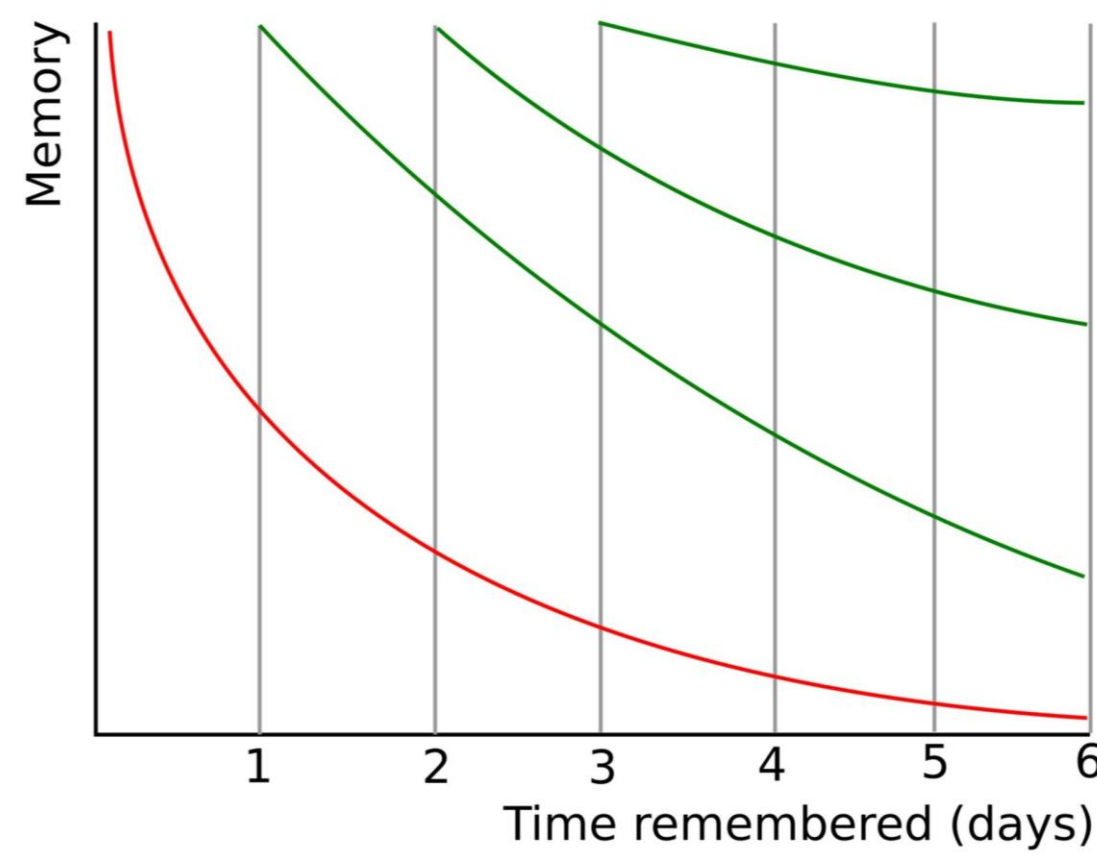
Spaced Retrieval Training (SRT):
- Evidence-based memory enhancement technique [1,7,8]
- Recall information at increasing intervals
  - **Adaptive Recall:** Correctly recalled words are revisited less often, while difficult words are presented more frequently, optimizing recall efficiency
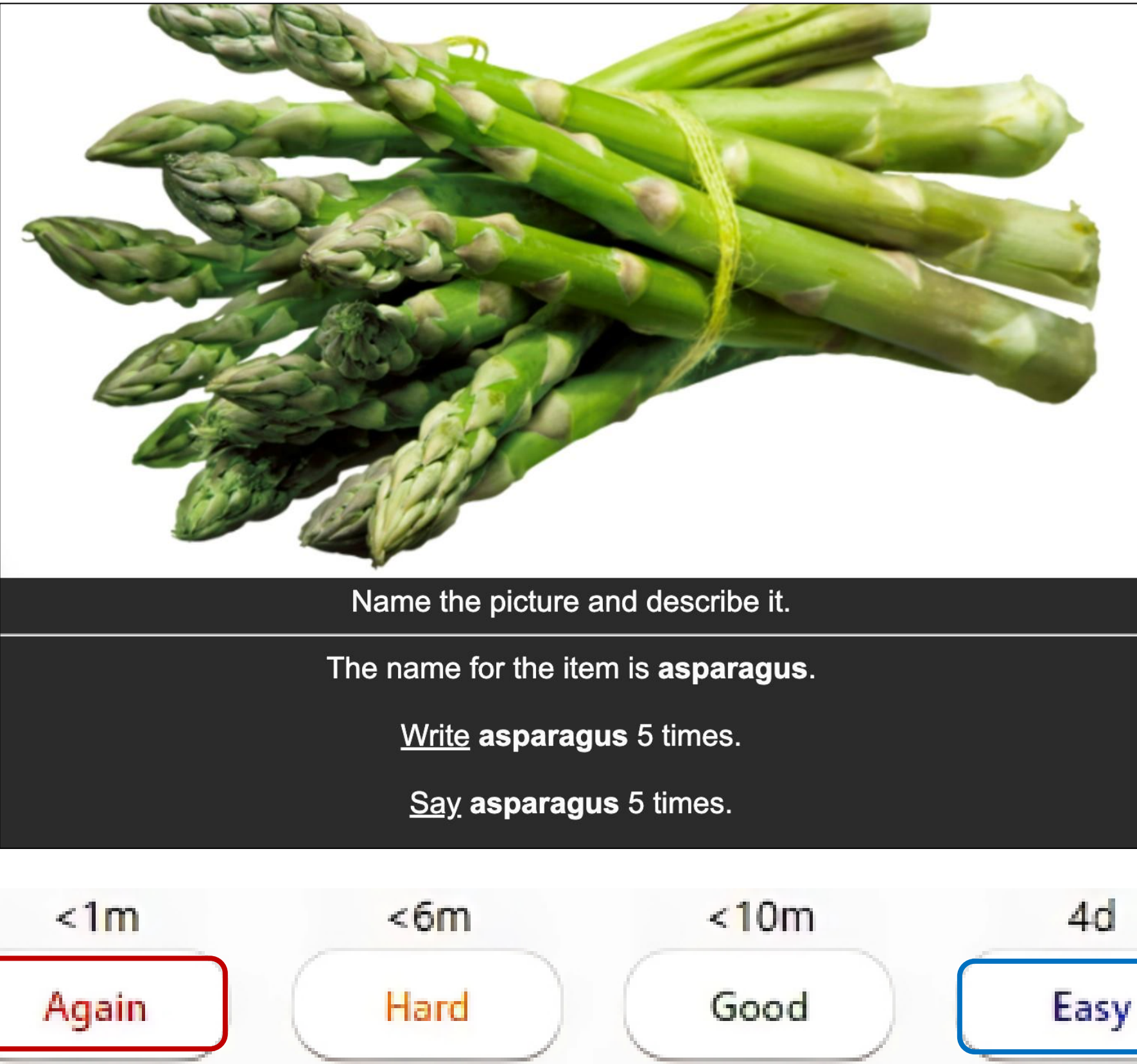- Immediate feedback is provided on recall accuracy, strengthening retention over time

Theoretical Basis:
- SRT may target procedural memory, which is relatively spared in dementia and aphasia, improving recall behaviors, like using memory aids [7,9], or functional everyday activities[10]

Using Anki

Anki is a *free, highly customizable,* digital and adaptive version of spaced retrieval training.

Create *personalized digital flashcards* with text, images, video, and audio files

Name the picture and describe it.
The name for the item is **asparagus**.
Write **asparagus** 5 times.
Say **asparagus** 5 times.

<1m	<6m	<10m	4d
Again	Hard	Good	Easy

Anki selects and sequences flashcards based on difficulty ratings from the previous sessions

Select Again for forgotten information → **quicker** review (e.g., 1 min)
Select Easy for instant recalls → **postpones** review (e.g., 4 days)

Study sessions are *optimized* and *personalized* by targeting individual recall challenges to enhance the learning process and maximize retention.

Tell us what you think!

How would you use Anki?

Support for Anki

Why Anki?
- *Free*, highly customizable and supports large sets of personally relevant words
- Supports personalized lexicons and pictures
- Adaptable to user performance to enhance treatment outcomes
- No cap on the number of targets trained

Research demonstrates:
- Anki may *facilitate word relearning and retention* of personalized core vocabulary in individuals with anomia[8,11]
- Anki's approach has potential to improve anomia treatment outcomes with reduced clinician intervention through a *self-administered, home-based program*

Enhancing Life Participation

Anki supports personalized language relearning to enhance meaningful participation in everyday life.

Aligns with the principles of the Life Participation Approach to Aphasia (LPAA)[12]
- empowers individuals to take control of their own rehabilitation
- emphasizes personal relevance and functional outcomes
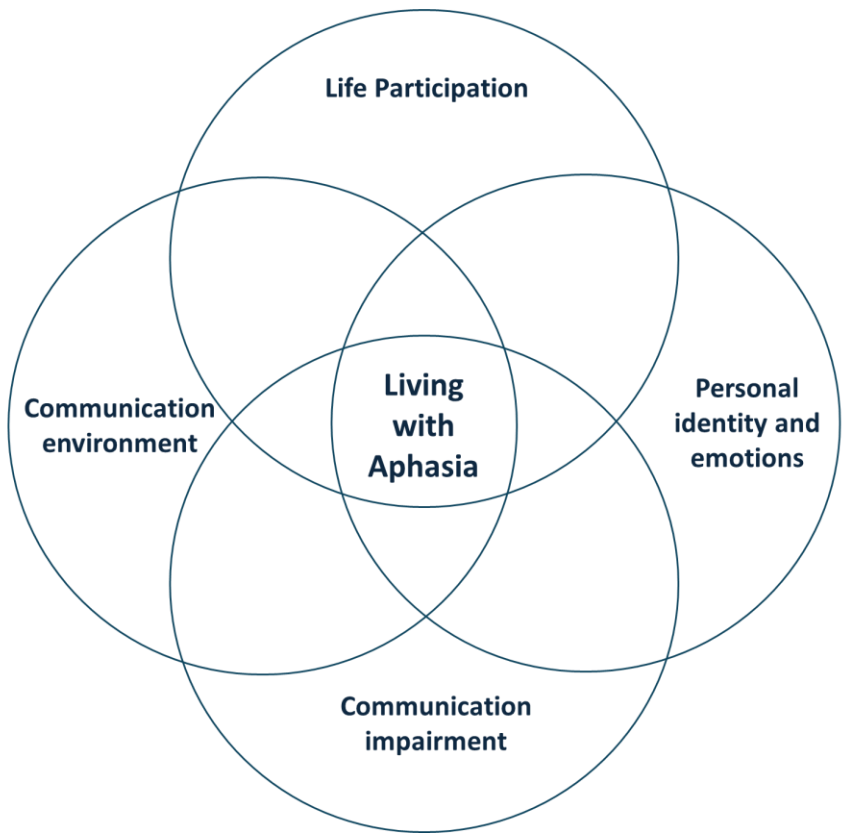
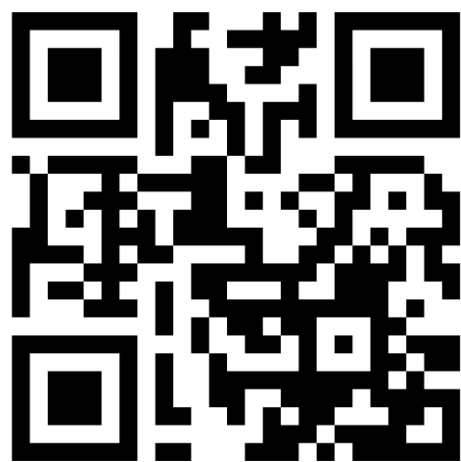| Core Values of LPAA[12]	Application of Anki
1. Enhance life participation.	• Create custom flashcards to target words needed to participate in life activities important for the user
2. Target personal and environmental factors.	• Use images of personal items or environments within flashcards • Engage communication partners to assist with practice sessions
3. Measure success by life enhancement.	• Adaptive algorithm adjusts review schedule based on users ratings of their own successes
4. Everyone with aphasia is entitled to service.	• Free, open-source application • Use multiple modalities including images, text, audio and video to increase accessibility
5. Make services available at all stages of aphasia.	• Tailor and modify prompts and cues as language abilities of user change • Self-directed, home-based practice encourages maintenance of skills and ongoing word retraining

Find out more!

Anki Video Demonstration
Aphasia Access Leadership Summit 2025

Anki Demo - 2025 Aphasia Access Leadership Summit

Anki

References

https://youtu.be/nJRjQ2HXEPI   https://apps.ankiweb.net/   https://shorturl.at/vO6Us