

THE EFFICACY OF LINGRAPHICA AAC DEVICES

The positive effects of using a Lingraphica communication device on people with aphasia and other speech and cognitive disorders

An eBook from **Lingraphica**®

The Efficacy of Lingraphica AAC Devices

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888-965-6005 aphasia.com Throughout our history, Lingraphica has earned a reputation as the trusted name in helping adults regain their ability to communicate with the help of a device. All of our communication devices, as well as our online speech therapy platform, are backed by over 30 years of medical research.

Lingraphica's commitment to help individuals with aphasia and other communication disorders is the core of our business. This mission spurs our team to bring together cutting-edge research, technology, rehabilitation, and product development to provide the most advanced tools for people with aphasia. This document highlights decades of medical research and studies, which definitively concludes that stroke survivors improve their functional communication by using a Lingraphica communication device.

This eBook contains summaries and visual representations of collected user data, highlighting device satisfaction, cognitive improvements, and benefits from using a communication device.

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OF USERS IN A 2001 SURVEY WERE "VERY SATISFIED" WITH THEIR DEVICE. Recovery from aphasia and other communication disorders is a lifelong, ongoing process. Active and purposeful engagement by clients with aphasia is crucial during the recovery process. This was a primary goal for Lingraphica when we launched our communication devices back in 1990—to offer a fun and interactive tool that would keep clients engaged. In 2001, Lingraphica's Chief Scientist, Dr. Richard Steele, conducted a survey to determine when and how our devices were used, and how satisfied users were with their experiences.

Dr. Steele polled more than 100 clients who received a Lingraphica communication device. The poll reveals an overall pattern of continuing motivation and ongoing use. Average frequency of use was just under five days per week, and average length of use session was slightly less than an hour per day. User satisfaction with their communication devices was high, with a large majority of users surveyed describing themselves as either "satisfied" (26 percent) or "very satisfied" (57 percent) with their device. Only two percent described themselves as either "disappointed" or "very disappointed" with their device, while the remaining 13 percent described themselves as "neutral." These findings suggest clients continue to experience improvement in their communication due to their device usage.



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IS IT HARD TO LEARN TO USE A DEVICE?

Surveys of persons with aphasia who have received a Lingraphica device show varying levels of satisfaction with their device. However this graph, from a poster presentation at the 2006 national convention of the American Speech-Language Hearing Association, shows that most Lingraphica users were highly satisfied with their devices, with more than 70 percent reporting to be "very satisfied." These numbers reflect an increase of 13 percent from the 2001 survey.

Source: Richard D. Steele. "How Do Persons with Aphasia Use Their Lingraphica SGDs?" Poster Presentation at the American Speech-Language Hearing Association's (ASHA) 2006 Annual Convention. Miami, FL, November 2006.

CAN A PERSON WITH SEVERE APHASIA MAKE IMPROVEMENTS?



This graph demonstrates improvements in natural language among persons with a severe expressive aphasia (specifically, severe Broca's aphasia) after using a Lingraphica device for five months. Lingraphica users in all groups show overall significant improvements.

One quarter of users moved from severe to moderate levels; another 10 percent advanced all the way to mild aphasia; and the 64 percent whose aphasia remained severe improved markedly within that category. This research supports Lingraphica's claim that adults with aphasia of all severity levels can benefit from a communication device.

Source: Richard D. Steele "Improvements in Chronic Broca's Aphasia at Impairment and Functional Communication Levels Following SGD Practice and Use." Presented at the Clinical Augmentative and Alternative Communication (AAC) Conference. September 28, 2007, Lexington, KY: University of Kentucky, 2007.



DOES AGE AFFECT BENEFICIAL OUTCOMES?

Adult users, regardless of age, show significant and comparable improvements in clinical outcome studies that use standard assessment instruments. In plain terms, there is no reason for persons with aphasia to think they are either "too old" or "too young" to benefit significantly.

The results of this study show that users who were ages 90-100 improved more significantly (almost 12%) than users who were younger. It should be noted, however, that each age group improved at least 7%.

Source: Richard D. Steele, Lefkos B. Aftonomos, Marilyn W. Munk. "Evaluation and Treatment of Aphasia Among the Elderly with Stroke." Topics in Geriatric Rehabilitation, vol. 19, no. 2, pp. 98-108, 2003.

CAN A CLIENT STILL IMPROVE FIVE YEARS AFTER A STROKE?



People with aphasia show significant gains in their natural speech communication following the use and practice of a Lingraphica communication device, regardless of how much time has passed since the onset of aphasia. Even years after a stroke, an individual can make substantial and important improvements in their everyday communication.

In fact, our research shows that the largest group of participants—those who had a stroke five or more years ago—showed almost 25% improvement in their communication.

Source: Lefkos B. Aftonomos, James S. Appelbaum, Richard D. Steele. "Improving Outcomes for Persons with Aphasia in Advanced Community-based Treatment Programs." Stroke, vol. 30, no. 7, pp. 1370-79, 1999.

WHAT KINDS OF COMMUNICATION IMPROVEMENTS ARE POSSIBLE BY USING A LINGRAPHICA DEVICE?

Percentage Improvement

1. Catch attention 2. Converse in group 3. Answer yes or no 4. Communicate emotions 5. Indicate understanding 6. Converse with visitors 7. Converse one to one 8. Say name 9. Communicate plain 10. Converse spontaneously 11. Communicate without words 12. Start non-family conversations 13. Understand writing 14. Join in rapid fire talk 15. Converse with strangers 16. Discuss in depth



The authors of the 1989 Communicative Effectiveness Index for persons with aphasia identified 16 different communication situations of importance to persons with aphasia. The bar graph shows that people with aphasia who used a Lingraphica device registered notable and often striking improvements in each of these communication situations, without exception.

Source: Richard D. Steele. "Clinical Outcome Studies and Evidence-based Decision-making for AAC in Aphasia." Poster Presentation at the ASHA Division of AAC Conference on Evidence-Based Decision Making in AAC. Atlanta, GA, February 2007.

Effectiveness

Lingraphica's devices are backed by more than 30 years of medical research.

Lingraphica: R&D and Clinical Effectiveness

The first Lingraphica AAC device (a.k.a. speech-generating or communication device) was introduced in 1990—combining new technology with important findings in visual communication systems that demonstrated effectiveness in the rehabilitation of aphasic patients. Over the years, Lingraphica devices were refined and upgraded with the latest technology and advancements in aphasia research. Today, Lingraphica offers three device models: the AllTalk, TouchTalk, and MiniTalk.

The remarkable effectiveness of our devices, as demonstrated in extensive clinical trials, has been reported in scientific journals and at professional conferences. Lingraphica AAC devices are the only ones designed specifically for adults with aphasia, and stand alone as thoroughly researched and proven tools for the functional communication and rehabilitation needs of these users.

What follows is a selected bibliography of the key publications and presentations relating to Lingraphica devices and the line of applied research and development (R&D) that informed our design.

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POSTERS

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"Evidence to Guide Use of the Lingraphica in the Rehabilitation of Persons with Aphasia." Invited presentation to the Institute of Cognitive Sciences and Department of Speech, Lan-guage and Hearing Sciences, University of Colorado, Boulder, CO, April 2006.

"Persons with Aphasia, the Lingraphica, and Data Supporting Evidence-Based Practice." Invited course for professional continuing education units to the Annual Meeting of the New Jersey state chapter, American Speech-Language-Hearing Association, Atlantic City, May 2006.

"How Do Persons with Aphasia Use their Lingraphicas?" Poster presentation at the Annual Convention of the American Speech-Language Hearing Association, Miami Beach, FL, November 2006.

"Clinical Outcome Studies and Evidence-Based Decision-Making for AAC for Aphasia." Poster session presented at 8th Annual Leadership Conference of ASHA Special Interest Division 12 on AAC, Atlanta, GA, February 2007.

"Hands-on Introduction to the Lingraphica Speech Generating Device." Course for Profes-sional Continuing Education, presented at the Florida Speech-Language-Hearing Association Meeting, Marco Island, FL, May 2007.

"Improvements in Chronic Broca's Aphasia at the Impairment and Functional Communication Levels Following SGD Practice and Use." Platform presentation at the 1st Clinical AAC Research Conference, University of Kentucky, Lexington, KY, September 2007.

"Interface Usability: Why Is It a Challenge?" Presentation to the Spokane Information Tech-nology and Special Interest Group Alliance, Spokane, WA, November 12, 2007.

"Improvements in Chronic Global Aphasia at the Impairment and Functional Communication Levels Following SGD Practice and Use." Platform presentation at the 2nd Clinical AAC Research Conference, University of Virginia, Charlottesville, VA, September 2008.

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"Improvements in Chronic Broca's Aphasia Following SGD Practice and Use." Poster pre-sented at the ASHA National Annual Convention, Chicago, IL, November 2008. "SGD Users with Chronic Global Aphasia: Analysis of Improvements Types." Poster session presented at 10th Annual Leadership Conference of ASHA Special Interest Division 12 on AAC, Gaithersburg, MD, February 2009.

"Movement from Global to Broca's Aphasia in the Chronic State: Who Moves? And How? Platform presentation at the 3rd Clinical AAC Research Conference, University of Pittsburgh, Pittsburgh, PA, October 2009.

"Two Improvement Profiles in SGD Users with Chronic Global Aphasia." Poster presented at the ASHA National Annual Convention, New Orleans, LA, November 2009.

"iPod Touch™ and AAC Materials for Persons with Aphasia." Platform presentation at the ASHA National Annual Convention, New Orleans, LA, November 2009.

"Computer Interaction Design: Contributions to Aphasia Rehabilitation." Platform presen-tation at the International Neuropsychological Society, Midyear Meeting, Kraków, Poland, July 2010.

"Correlating Intake Assessment Scores with Outcome Aphasia Categories in Chronically Global SGD Users." Platform presentation at the 4th Clinical AAC Research Conference, University of Iowa, Iowa City, IA, October 2010.

"Who Moves from Global to Broca's Aphasia after SGD Use?" Poster presented at the ASHA National Annual Convention, Philadelphia, PA, November 2010.

"Advanced PDAs and AAC Materials for Persons with Aphasia." Platform presentation at the ASHA National Annual Convention, Philadelphia, PA, November 2010.

"Relating Intake Assessment Data to Aphasia Categories at Discharge in Persons with Chronic Broca's Aphasia." Platform presentation at the 5th Clinical AAC Research Confer-ence, University of Minnesota, St. Paul, MN, October 2011.

"Improvements from Chronic Broca's Aphasia After SGD Use." Poster presentation at ASHA National Annual Convention, San Diego, CA, November 2011.

"Designing Handheld Device Apps for Aphasia Rehabilitation." Platform presentation at ASHA National Annual Convention, San Diego, CA, November 2011.

"Prognostic Indicators of Speech Generating Device Benefits for Persons with Chronic Aphasia." Poster session at ISAAC 2012 Biennial Conference, Pittsburgh, PA, August 2012.

"User Interface Design of Speech Generating Devices for Persons with Aphasia." Platform presentation at ISAAC 2012 Biennial Conference, Pittsburgh, PA, August 2012.

"Relating Intake Data to Discharge Aphasia Categories in Persons with Chronic Severe Expressive Aphasia." Platform presentation at the 6th Clinical AAC Research Conference, St. Louis, MO, October 2012.

"Designing Handheld Device Apps for Aphasia Therapy." Platform presentation at ASHA National Annual Convention, Atlanta, GA, November 2012.

"Improvement Patterns in Severe Chronic Expressive Aphasia Following SGD Use." Poster presentation at ASHA National Annual Convention, Atlanta, GA, November 2012.

"Changes in Persons with Chronic Wernicke's Aphasia Following SGD Practice and Use." Platform presentation at the 7th Clinical AAC Research Conference, Bloomington, IN, September 2013.

"Improvements in Chronic Wernicke's Aphasia Following SGD Use: an Outcome Study An¬alyzing WAB and CETI Data." Poster presentation at ASHA National Convention, Chicago, IL, November 2013.

"Combining Apps, Interaction Design, and Learning Analytics for Aphasia Therapy." Platform presentation at ASHA National Annual Convention, Chicago, IL, November 2013.

"Changes in Persons with Chronic Conduction Aphasia Following SGD Practice and Use." Platform presentation at the 8th Clinical AAC Research Conference, St. Louis, MO, September 2014.

"Integrating Teletherapy, Group Treatment, and Web Exercises in an Aphasia Outcome Study at SCALE." Platform presentation with Denise McCall, Allison Baird, and Lisa Haynes at the ASHA National Annual Convention, Orlando, FL, November 2014.

"Improvement Patterns in Chronic Conduction Aphasia Following SGD Practice and Use." Platform presentation at the ASHA National Annual Convention, Orlando, FL, November 2014.

"Combining LPAA Center Activity with Teletherapy and On-Line Language Exercises or Expanded Engagement, Improved Outcomes, & Higher User Satisfaction." Poster presented at the Aphasia Access Leadership Conference, Boston, MA, March 2015.

"Chronic Aphasia Treatment Outcomes after Teletherapy & Online Exercises: A Comprehensive A-FROM Analysis." With Denise McCall, Allison Baird, and Lisa Haynes, Clinical Aphasiology Conference, Monterey, CA, May 2015.