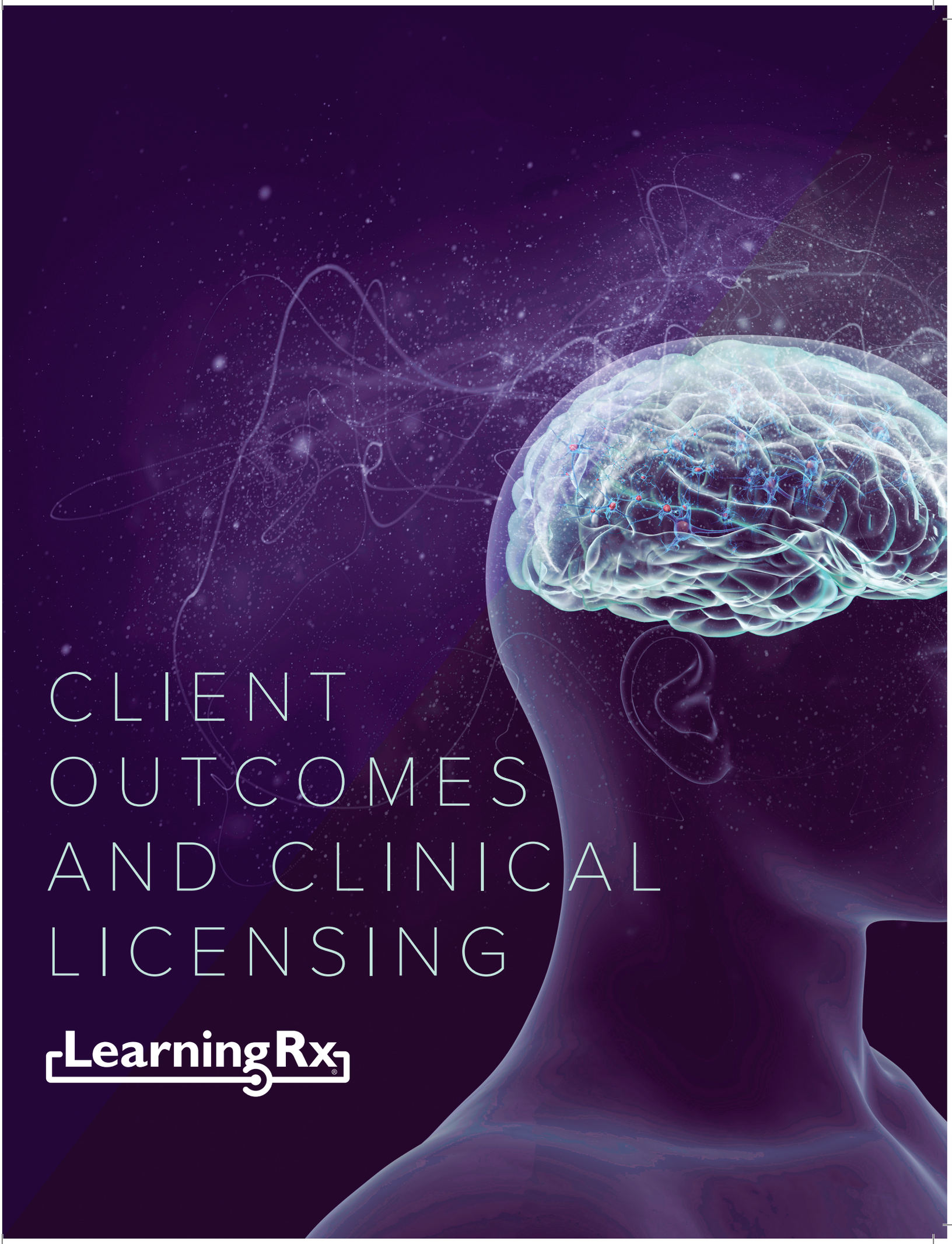

CLIENT OUTCOMES AND CLINICAL LICENSING

LearningRx®

LEARNINGRX ONE-ON-ONE BRAIN TRAINING

LearningRx is the leader in applying the latest in brain science to cognitive training. Our research-based, one-on-one brain training programs typically take 12 to 32 weeks to complete, and have resulted in dramatically and measurably improved cognitive performance for thousands of clients of all ages. In addition to experiencing measurably improved cognitive function, our clients have reported improved grades, increased confidence, less academic difficulty, as well as better relationships with friends, teachers, and family members. (To see the studies on these and other real-life benefits, see pages 36, 37, 38, and 41.)

LearningRx®

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How does one-on-one brain training work?

LearningRx is a pioneer and leader in the field of one-on-one brain training, and is currently the largest one-on-one brain training company in the world. Here's how it works: LearningRx partners each client with a personal trainer for intense mental workouts. Our procedures train all major cognitive skills, including working memory, attention, executive function, processing speed, logic & reasoning, and visual & auditory processing.

THE SEVEN KEY INGREDIENTS OF EFFECTIVE BRAIN TRAINING

Brain training must be practiced. Because brain training builds skills, it can't be taught in the classroom. It must be practiced, like learning to play tennis or the piano.

Brain training that gets the best results is done one-on-one with a personal trainer. Teaming with an experienced trainer provides accountability, motivation and—ultimately—life changing results.

Brain training exercises need to be intense, requiring concentrated repetitions in order to train skills quickly.

Brain training exercises need to be targeted in order to address specific weak cognitive skills.

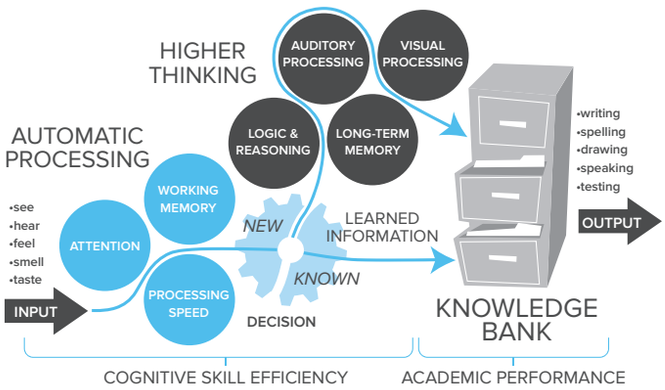
Brain training exercises need to be done in a particular sequence. Small challenging steps don't overwhelm the client, but allow the trainer to continually challenge the client incrementally and keep them engaged in the training.

Brain training exercises must be progressively loaded. Loading incorporates multitasking and is a fast-track way to take a new skill and make it a more automatic skill.

Brain training, to be effective, requires immediate, accurate feedback. Instant, effective reinforcement and adjustments keep training focused and intense.

The Science Behind LearningRx One-on-One Brain Training

The LearningRx Learning Model is grounded on the Cattell-Horn-Carrol (CHC) theory of intelligence, which describes thinking as a set of seven broad abilities: comprehension knowledge, long-term retrieval, visual-spatial thinking, auditory processing, fluid reasoning, processing speed, and short-term memory.

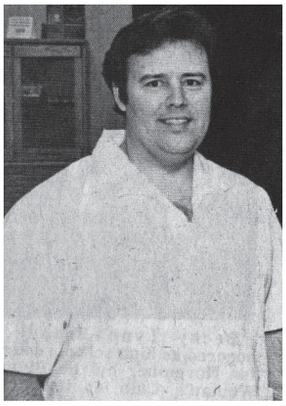


According to the Learning Model, a person takes information in through the senses (input) that must be recognized and analyzed by the active processing system (working memory, processing speed, and attention). This executive control system determines which information is unimportant, easily handled, or requires thinking. Unimportant information is discarded from working memory. If the input contains important information about data that have already been stored in the knowledge bank, it is quickly retrieved and converted to output, such as speaking or writing. If the information has not been previously stored, higher thinking processes must then occur. Reasoning, auditory processing, and visual processing must be used to solve the problem or complete the task. If the task is practiced often enough, however, the information is stored in the knowledge bank, which will decrease the time between input and output. This occurs because the higher thinking processes can then be bypassed.

LearningRx trains the following key cognitive skills needed for fast, efficient learning and processing:

- **Attention:** Pay attention over time and despite distraction
- **Processing Speed:** Think more quickly and efficiently
- **Working Memory:** Hold on to and use information during the learning process
- **Auditory Processing:** Distinguish, blend, and segment sounds accurately
- **Visual Processing:** Create and picture mental images while thinking or reading
- **Logic & Reasoning:** Associate concepts and images accurately when problem solving
- **Long-Term Memory:** Efficiently recall facts and stored information
- **Executive Function:** The organization and regulation of mental tasks

About the Founder



Dr. Ken Gibson, founder of LearningRx, has been on a lifelong journey to help people learn and read better. From a young age, Ken struggled to read. Even though he was smart enough to skip kindergarten, he was put in the lowest reading group due to his struggles. Ultimately, Ken became an optometrist like his father, and he chose to focus his work exclusively on children. He specialized in visual processing, and gathered clinical experience about learning difficulties in his practices, preschools, learning centers, and schools he founded and directed. In 1985, Dr. Gibson brought together a group of medical and educational professionals to answer one question, “How can we best help individuals experiencing learning difficulties to learn easier and faster?” This led to a complete review of the existing research on brain function, memory, and learning theory, and created a new energy toward finding an answer to the question.

Based on the results of those efforts, Dr. Gibson developed a series of exercises that rapidly improved concentration and recall abilities. The initial test results showed significant improvements. After 10 weeks of training, the initial 35 cases post-tested with almost three years of improvement in only three months, and 98.7% of the subjects remained at the post-program level a year later. Between 1985 and 2002, approximately 700 professionals in more than 500 training locations, clinics, and schools used the training systems successfully. His training program resulted in cognitive skill and reading gains for his students.

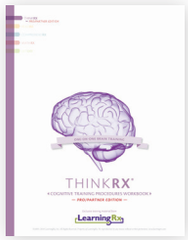
LearningRx was founded in 2002 in Colorado Springs, Colorado to bring one-on-one training to a wider group of people. In 2015, LearningRx celebrated its 95,000th student completing the cognitive skills training program.

Today, Dr. Gibson is the author of several books, in addition to his life changing work with LearningRx. To learn more, please visit www.drkengibson.com.

LearningRx Clinical Cognitive License Programs

LearningRx Clinical Cognitive License Information

The LearningRx cognitive training programs target and train the seven primary cognitive skills and multiple sub-skills through repeated engagement in game-like mental tasks delivered one-on-one by a clinician or cognitive trainer. The tasks emphasize visual or auditory processes that require attention and reasoning throughout each 60- to 90-minute training period. Using a synergistic “drill for skill” and meta-cognitive approach to developing cognitive skills, the program incorporates varying levels of intensity, hierarchical sequencing of tasks, multiple-task loading, and instant feedback from the clinician. Training sessions are focused, demanding, intense, and tightly controlled by the clinician to push students to just above their current cognitive skill levels. Deliberate distractions are built in to the sessions to tax the brain’s capacity for sorting and evaluating the importance of incoming information. This ability to correctly handle distracting information and interruptions is the foundation for focus and attention skills.

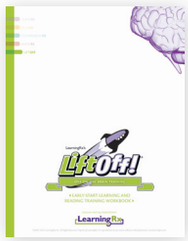


THINKRX®

ThinkRx is our foundational cognitive skills training program and can be used with any student, aged six through senior adults. ThinkRx uses 35 different procedures to train all major cognitive (learning) skills through intense one-on-one training. These skills include: attention, memory, processing speed, auditory & visual processing, and logic & reasoning.

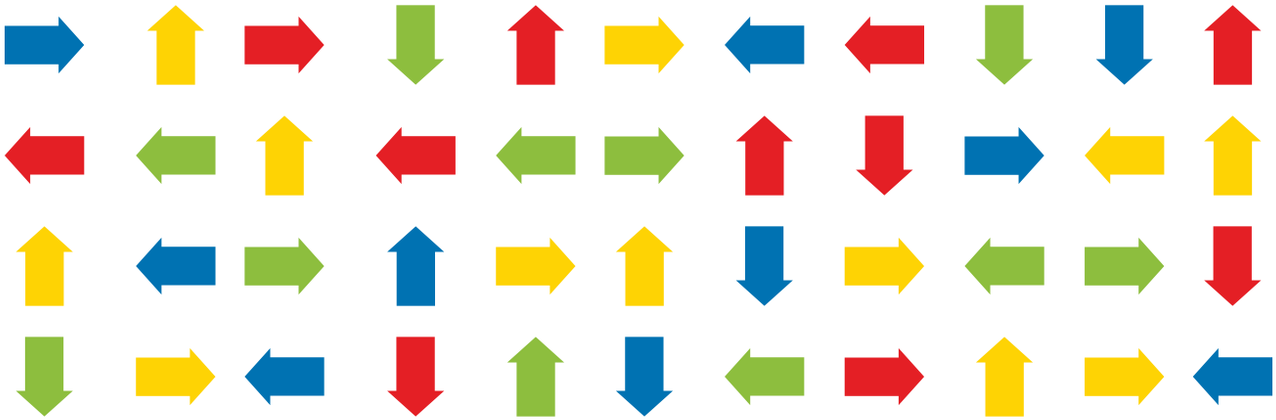
BRAIN BOOSTER

Created for adults who value sharp mental skills, Brain Booster pairs you with a personal brain trainer for mental workouts using 16 different procedures that train the way your brain thinks, learns, reads, remembers, and pays attention. Each session includes an invigorating hour of mental exercise that incorporates intensity, loading, and instant feedback.



LIFTOFF®

LiftOff gives preschool, kindergarten, and first grade students the jumpstart that only strong underlying learning skills can produce. Training designed specifically for this age group lays the foundation for learning to read easily, grasping fundamental learning principles quickly, and maintaining the enthusiasm for school with which most students begin their learning career.



FEEL YOUR BRAIN AT WORK:

Try a LearningRx Procedure

Follow the directions below for a fun way to work on your attention, working memory, and visual processing skills. Each level increases the difficulty by adding a second mental challenge. Don't worry...your brain can adapt! Try it alone or try it with your child.

Directions

1. From the top row, moving left to right, call out the color of each of the arrows without a mistake.
2. Call out the direction of each arrow. Do it without error in 40 seconds. Keep practicing until you can do it in only 20 seconds.
3. Next, call out the direction of the arrows as if they were turned a ¼-turn clockwise. Get that time down to 20 seconds without error.
4. Now comes the fun part! Call out the color of the UP and DOWN arrows, and call out the direction of the LEFT and RIGHT arrows (this requires divided attention). Once mastered, increase the difficulty by saying red for yellow and blue for green. Try substituting different colors. Keep track of your time and stay with it until each exercise flows quickly and smoothly.
5. Finally, call out the direction of the arrow as if red and green arrows were turned a ¼-turn clockwise and yellow and blue were turned ¼-turn counterclockwise. You will find yourself not only doing the familiar ones more easily, but mastering each new variation faster as well.

FEEL YOUR BRAIN AT WORK:

Try a LearningRx Procedure

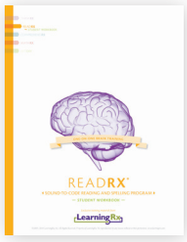
All LearningRx students learn the presidents forward and backward using a memory strategy called mnemonics. By using silly pictures and fun links, students can remember almost anything. Once they have completed the presidents, they learn how to visualize their own pictures and links, creating stronger memory and visualization skills. These skills are important for test-taking and reading comprehension. Have fun using this technique to learn the first 10 presidents.

Here is the script our trainers use to help students associate the linked images with the names they want to memorize:

What is the man watching? (the man is WATCHING-a-TON). If a ton was hanging over my head, I'd be watching it too, wouldn't you? WATCHING-a-TON will remind you of WASHINGTON. (WATCHING-a-TON; WASHINGTON). What is funny about the lady who is holding the ton? (Her head). Her head is superpowered! Do you know where the superpowers are coming from? (ATOMS). ATOMS will remind you of ADAMS. (ATOMS; ADAMS). Who is the woman patting on the head? (a CHEF). The chef is HER-SON. CHEFHER-SON will remind you of JEFFERSON. (CHEF-HER-SON; JEFFERSON). What is the chef grilling? (a SUN). Does the sun look happy or mad? (MAD). So, the sun is a…MAD-SUN. (MAD-SUN; MADISON). What do you see on one of the sunbeams? (a MAN-ROWing a boat). (MANROW; MONROE). What superpowered thing do you see at the end of his oar? (ATOMS). (ATOMS; ADAMS). What little toys are flying out of the atoms? (JACKs). What did one of the jacks stab? (a SUN). (JACK-SUN; JACKSON). The sun is very hot and is melting the tires of what kind of vehicle? (a VAN). The van is about to run over what kind of animal? (a BEAR). If a van was trying to run you over, would you walk or run? (RUN). (VAN-BEAR-RUN; VAN BUREN). What does the bear run into? (a SUN). And what does the sun have a lot of on his head? (HAIR). So he is a…HAIRY-SUN. (HAIRYSUN; HARRISON). What do you see the hairy sun stacking? (TILES; TYLER).

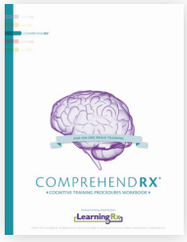
LearningRx Clinical Reading License Information

After decades of clinical and scientific research, LearningRx has developed two proprietary training programs, ReadRx™ and ComprehendRx™, that train auditory processing, visual processing, attention skills, memory skills, processing speed, logic & reasoning, and comprehension. These are not traditional reading instruction or remedial tutoring programs. Instead, LearningRx programs work one-on-one with clients using intense, focused training to produce significant results within weeks.



READRX®

Many parents are looking for reading help for their child, something that many traditional tutoring centers offer. So how does LearningRx differ? Results! The government spent $200 million to find out why people fail to read. Using that research, we created a reading program that begins by training the cognitive weakness underlying the reading struggle, and then provides a systematic reading program that makes reading easier.



COMPREHENDRX®

ComprehendRx targets the brain skills critical for reading comprehension. Going far beyond decoding written words, this program trains the skills necessary for better understanding and reading retention.

Reading Is Complicated

The National Reading Panel examined 115,000 reading research studies. The panel concluded "... that the research conducted to date strongly supports the concept that explicitly and systematically teaching children to manipulate phonemes significantly improves children's reading and spelling abilities." *

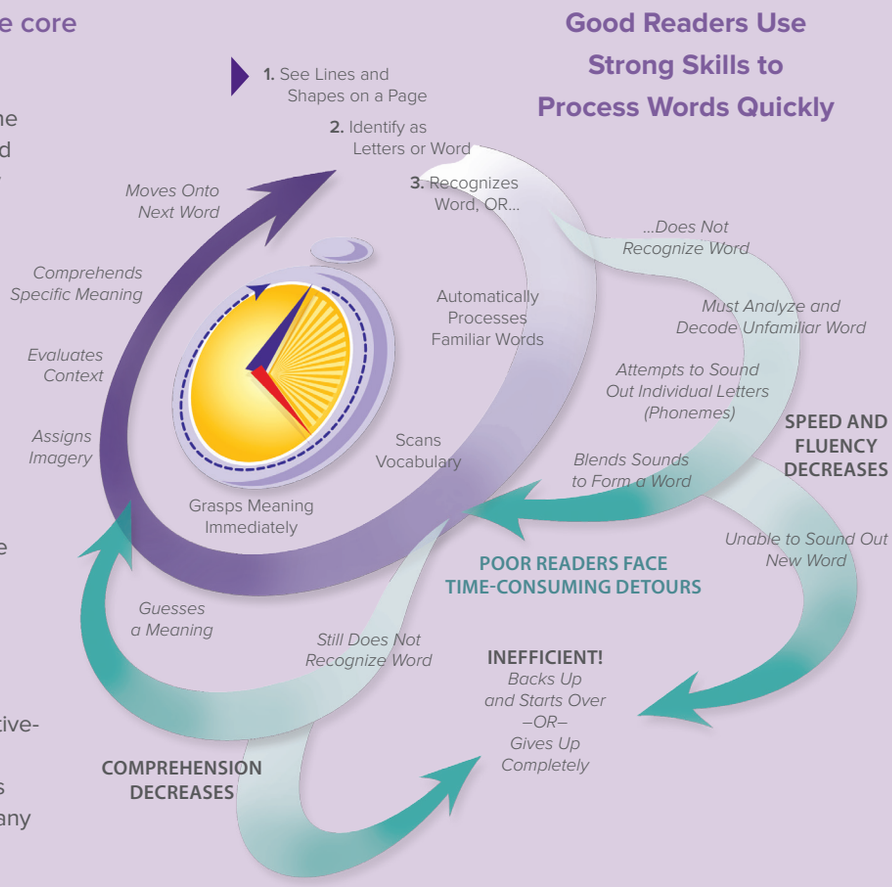
The evidence is undeniable. Training cognitive skills, such as auditory processing and phonemic awareness, is essential to transforming poor readers. LearningRx recognizes that the root of most reading problems is a cognitive skill weakness and offers a solution that targets and trains that weak skill.

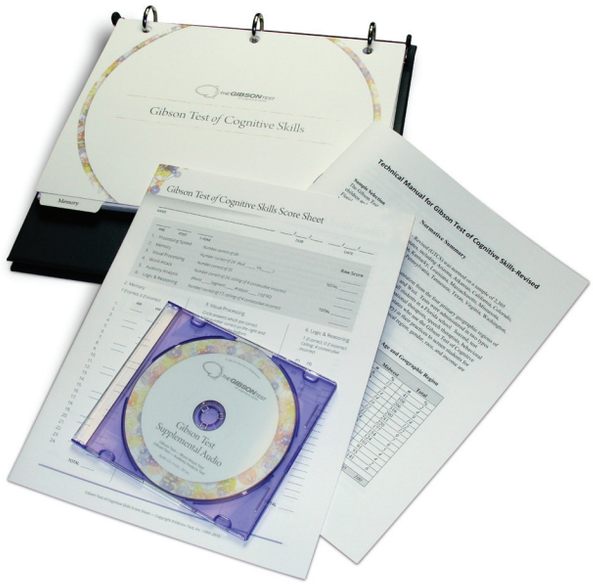
For anyone who has ever struggled to read, no matter what age, here's the core reason why:

As adults we're usually unaware of the skill sets required to learn to read and comprehend efficiently. But for every word you learned to read as a child, you first completed one of the paths in the diagram.

Fast, efficient readers have the underlying skills and reading system to stay in the tight inner circle. Good readers complete this cycle in 150 milliseconds—or less—for each word! This increases reading speed, comprehension, and, of course, enjoyment. Poor readers take numerous, time-consuming detours.

Inefficiencies at the cognitive level (as opposed to academic content) are difficult to detect by traditional outcome-based assessments. Cognitive-specific instruments, such as the Woodcock-Johnson and Gibson tests offered by LearningRx, can pinpoint any unknown weaknesses.





Gibson Test Information

The Gibson Test was designed by Dr. Ken Gibson, a specialist in pediatric visual processing, who has devoted his entire career to helping people with learning disabilities. The Gibson Test is used to identify cognitive strengths and weaknesses in children and adults ages six and older. The test scientifically measures key foundational learning skills: memory, processing speed, auditory processing, visual processing, logic & reasoning, and word attack skills. Once cognitive weaknesses are identified, they can be trained, which typically addresses the root of the problem and removes frustrating obstacles to learning. Administered more than 85,000 times, The Gibson Test has been validated and normed twice by experts in the fields of learning and cognition, and has strong psychometric properties. Whether you are the parent of a struggling student, a parent or adult looking for a baseline test of current skills levels, an adult seeking help for yourself, a clinician seeking to help a client or patient, or an educator or school looking for answers for one or more students, or baseline testing for your whole class or school, The Gibson Test will give you invaluable information about brain performance, and help you determine the next best step.

The Gibson Test of Cognitive Skills - Revised (GTCS) was normed on a sample of 2,305 children and adults (ages 5–22) in 24 states, including Arizona, Arkansas, California, Colorado, Florida, Georgia, Idaho, Illinois, Indiana, Kentucky, Louisiana, Massachusetts, Minnesota, Missouri, New Jersey, New York, Ohio, Pennsylvania, Tennessee, Texas, Virginia, Washington, Wisconsin, and Wyoming. Norming sites were selected based on representation from the four primary geographic regions of the United States: Northeast, South, Midwest, and West. Tests were administered in two types of settings. First, the test was administered to all students in a Florida school. Second, test results were collected from psychologists, occupational therapists, speech therapists, behavioral optometrists, and PACE program providers in 24 states who use The Gibson Test of Cognitive Skills-R (formerly The Gibson Cognitive Test Battery) in their practices to screen students for learning problems.

Clients Love Us!

Our Customer Satisfaction Score is collected after a student finishes a LearningRx program. We ask parents (or adults clients), “On a scale of 0 to 10, how likely would you be to refer a friend or family member to LearningRx?” Many of the Fortune 500 companies use the referral question to determine customer loyalty.

From 2005–2015, over 19,000 of our 21,836 customers rated us a 9 or a 10. 71% rated us a 10, and another 24% rated us an 8 or a 9. And in 2015, our average score across all of our centers was a 9.6 out of 10!

Our score is comparable to top companies, such as USAA, Harley Davidson, and Southwest Airlines.

Reviews and Ratings

Over the last 12 months, we have had over 800 unpaid testimonials from our clients, who gave us an overall rating of 4.5 out of 5 stars. Here is just one of our hundreds of parent testimonials:

“Before LearningRx, this marathon called life was only uphill for my son. For years, I have watched him struggle to learn. He would put out five times more effort than others, but he was just “spinning his wheels,” going nowhere. To say he was frustrated is an understatement. The meltdowns were getting worse with time, and his behavior started going downhill. My heart was breaking for him. I was determined to find help.”

“We tried several avenues that did not help; then we found LearningRx. Tears come to my eyes when I think about how helpful this brain training has been for him. The bad behavior is gone, meltdowns are rare, and he is reading at or above his grade level. He has gained traction and he is running this race on more level ground. Thank you LearningRx!”

— Mother of Ethan, 13 years old

LearningRx Licensing Options

LearningRx brain training specializes in addressing the cause—not the symptoms—of learning struggles. In 2015, LearningRx celebrated its 95,000th student completing the cognitive skills training program. Our students' results have been gathered from more than 90 locations and 500 professionals over a 12-year period. An observational study of 6,000 graduates is available in the company's biennial Results Report. LearningRx brain training and testing has been administered by hundreds of cognitive and educational professionals to children, teens, adults and seniors seeking faster, more efficient brains.

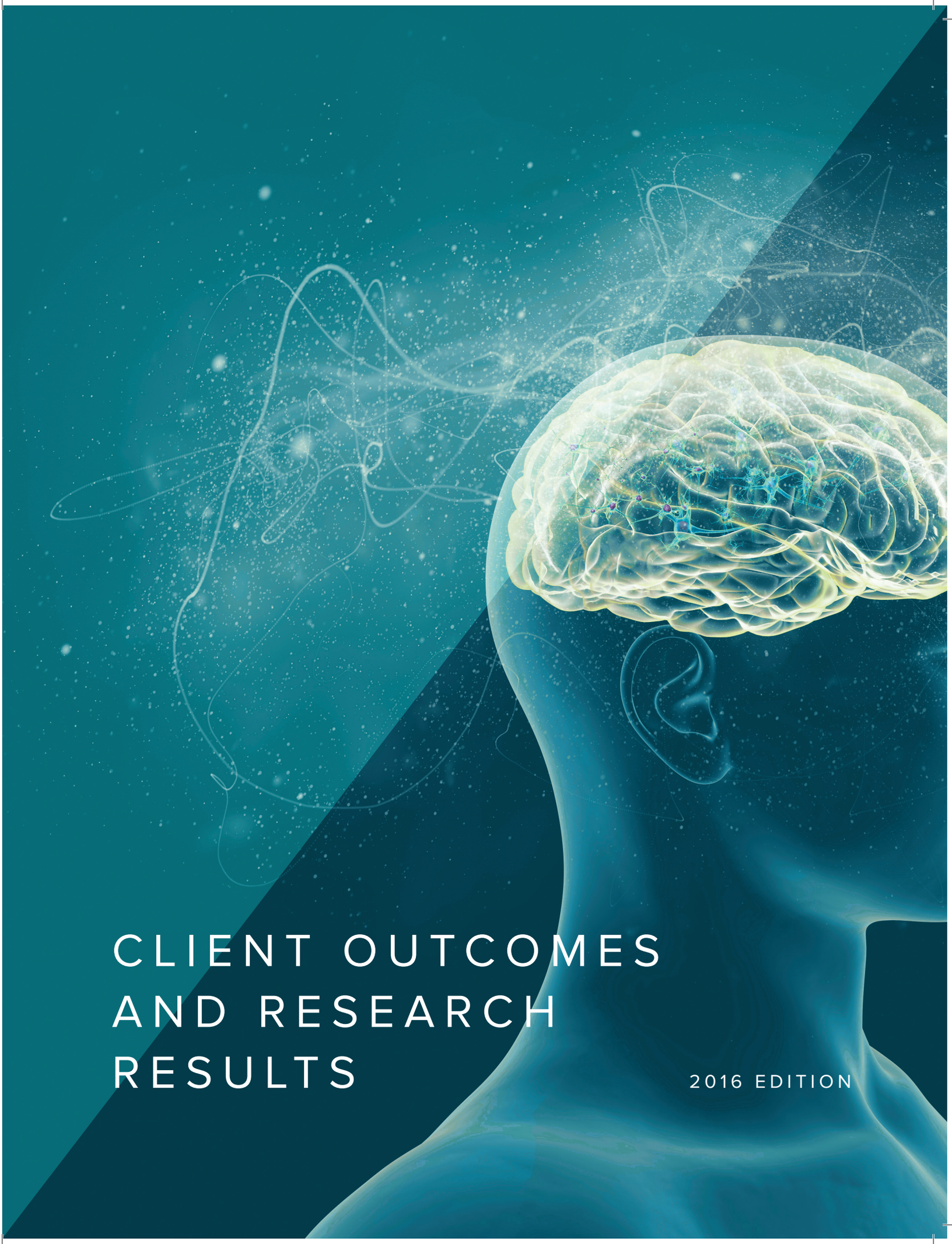
LearningRx Offers Brain Training Programs for:

- Learning Struggles
- Reading Problems
- Attention Issues
- Brain Injury
- Seniors

LICENSING INFORMATION

	Clinical License	Individual License	Franchising
Initial Fee	$10,000–$15,000	$3,900–$11,400	$25,000–$45,000
Program Fee Per Student	$280–$640	$300–$500	10% + 2.5% Marketing Development
Programs			
PACE and Master the Code	N/A	Yes	N/A
ThinkRx and LiftOff	Yes	N/A	Yes
ReadRx and ComprehendRx	Yes	N/A	Yes
MathRx and StudyRx	N/A	N/A	Yes
Territory/Trainer Limitations			
Protected Territory Included	N/A	N/A	Yes
Training Provided at LearningRx Headquarters	Three trainers included in licensing fee (then $400–$600 per additional trainer), licensee can provide training to their staff	One trainer included in licensing fee (can purchase additional trainer positions for a fee), trainers must be trained by LearningRx Headquarters	Unlimited, franchisee can provide training to their staff
Training			
Gibson Test (Includes Materials)	Yes	Yes	Yes
Consultations	Yes	Yes	Yes
Online University	Yes	N/A	Yes

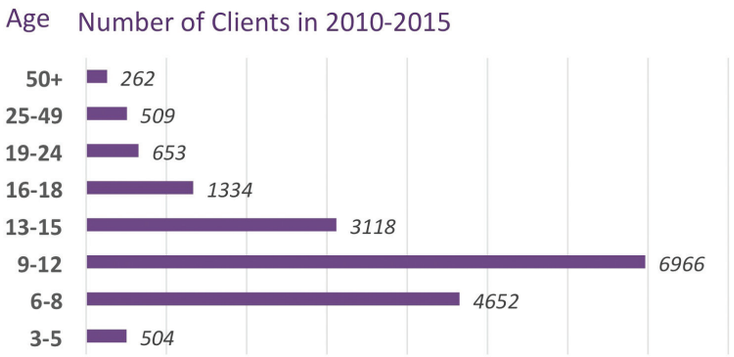
In addition to the above licensing options, International Licensing/Master Licensing is available through BrainRx. BrainRx is our International Brain Training program, focusing on improving cognitive skills for kids and adults around the world. We currently have more than 50 BrainRx centers in 38 countries. This program is half one-on-one, half digital and is achieving great results! BrainRx Initial Investment: $10,000–$50,000. Visit www.brainrx.org, or ask us for our for our free information kit.



CLIENT OUTCOMES AND RESEARCH RESULTS

2016 EDITION

Profile of LearningRx Clients



Percentage with a Prior Diagnosis	
ADHD	30%
Dyslexia	12%
Learning Disability	11%
Speech/Language Delay	10%
Autism Spectrum Disorder	5%
Traumatic Brain Injury	2%
Age-Related Memory Loss	<1%

Gender	
Female	40%
Male	60%

Assessments Used to Evaluate Client Outcomes

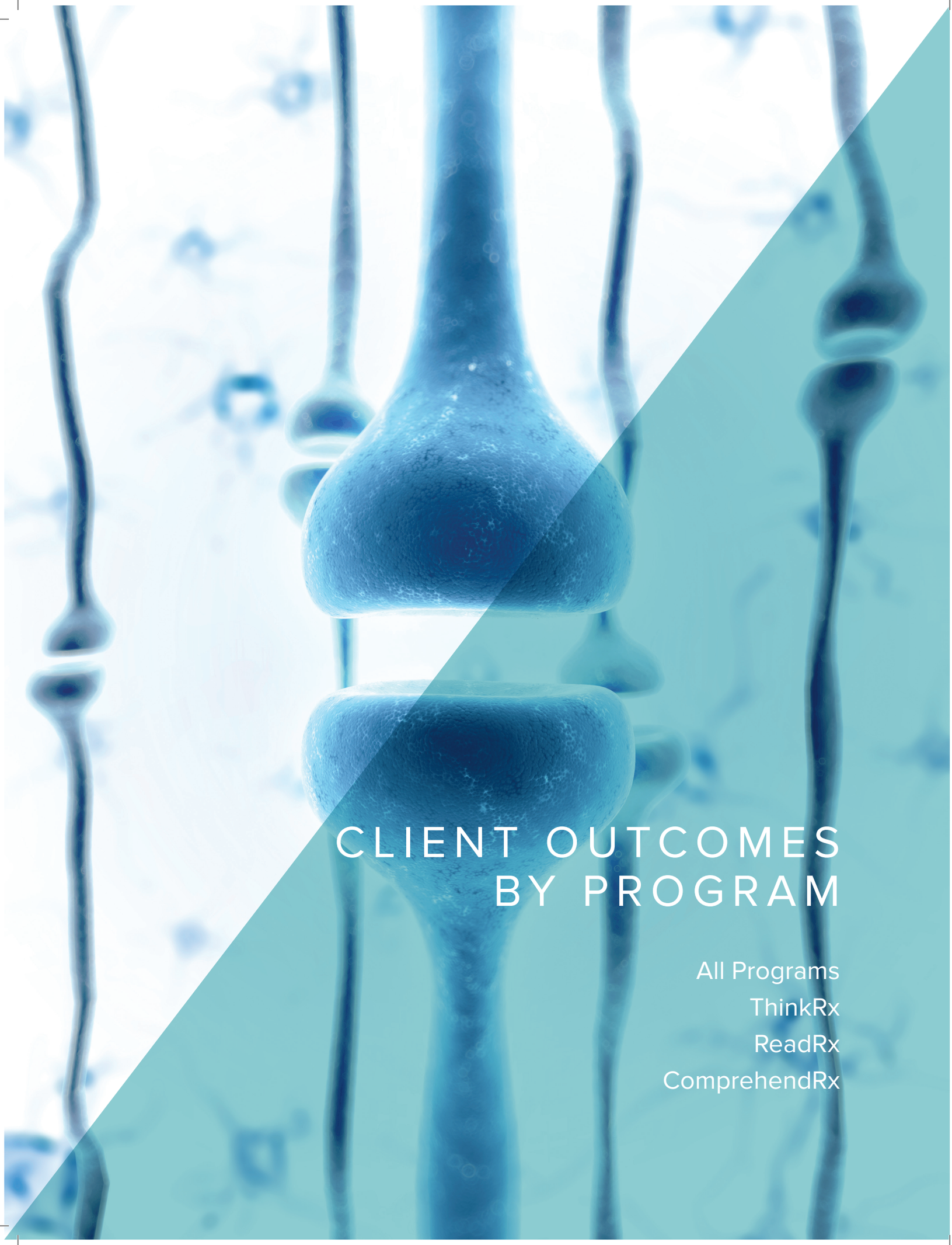
LearningRx clients take a battery of cognitive and achievement tests before they begin a training program, and then again at the end of their training. Test administrators use selected measures from the Woodcock-Johnson III family of tests, including Tests 1–7 of the cognitive battery to derive an IQ score. The selection of achievement tests is determined by the training program in which clients are enrolled. Pre-test to post-test changes are statistically analyzed using paired samples tests.

Woodcock-Johnson III - Tests of Cognitive Abilities

Test	Test Name	Skill Measured	Clients
COG 1	Verbal Comprehension	General Knowledge	All
COG 2	Visual-Auditory Learning	Delayed Recall	All
COG 3	Spatial Relations	Visual Processing	All
COG 4	Sound Blending	Auditory Processing	All
COG 5	Concept Formation	Logic & Reasoning	All
COG 6	Visual Matching	Processing Speed	All
COG 7	Numbers Reversed	Working Memory	All
COG 9	Auditory Working Memory	Auditory Working Memory	ReadRx
COG 20	Pair Cancellation	Broad Attention	All

Woodcock-Johnson III - Tests of Achievement

Test	Test Name	Skill Measured	Clients
ACH 2	Reading Fluency	Broad Reading	ReadRx
ACH 4	Understanding Directions	Listening Comprehension	ReadRx/ComprehendRx
ACH 9	Passage Comprehension	Reading Comprehension	ReadRx/ComprehendRx
ACH 13	Word Attack	Word Attack	All
ACH 20	Spelling of Sounds	Phonemic Awareness	ReadRx
ACH 21	Sound Awareness	Auditory Processing	All



CLIENT OUTCOMES BY PROGRAM

All Programs

ThinkRx

ReadRx

ComprehendRx

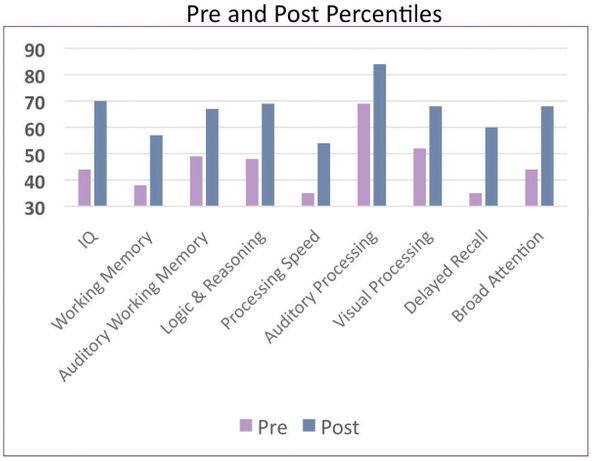
Cognitive Assessment Results: 2010–2015

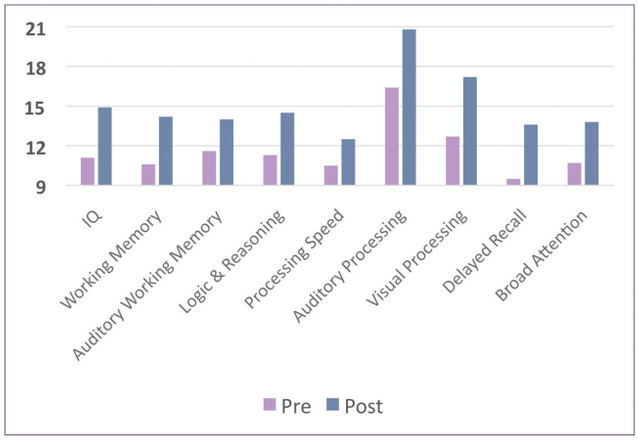
Program: All programs

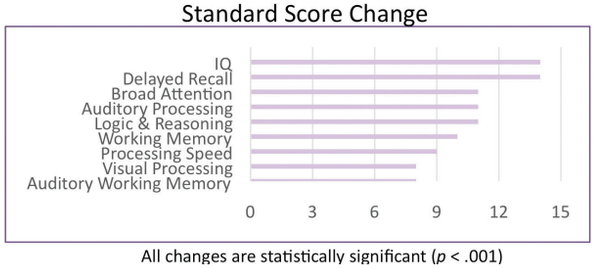
Number of Clients: 17,998

Mean Age: 12.3

Results: LearningRx clients are given pre and post assessments using the Woodcock-Johnson III - Tests of Cognitive Abilities. The changes in standard scores were statistically significant for all measures ($p < .001$). Overall, the largest gains were seen in IQ and delayed recall, followed by broad attention, auditory processing, and logic & reasoning. The average pre-test IQ score was 97 and the average post-test IQscore was 111. In addition, post-training percentiles are well within the range of normal functioning, and the average age-equivalent gain in cognitive skill performance was 3.4 years.







All changes are statistically significant ($p < .001$)

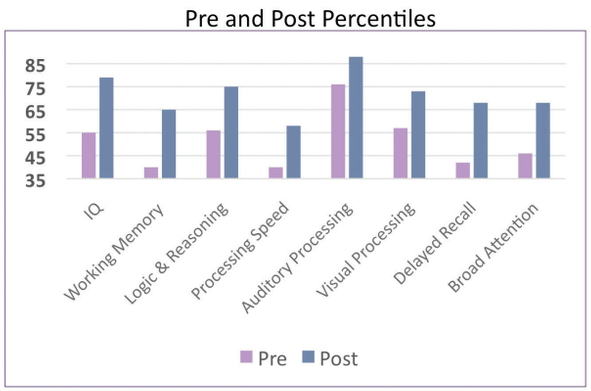
ThinkRx Cognitive Results: 2010–2015

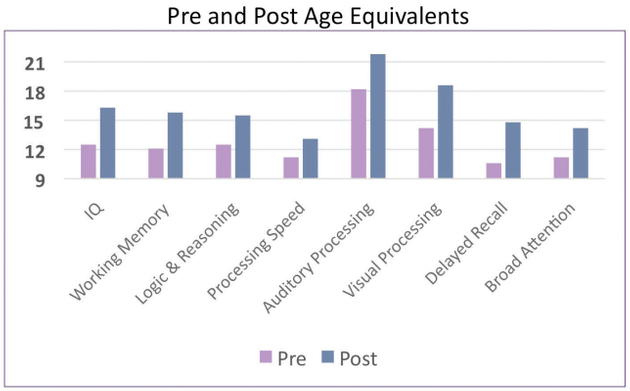
Program: ThinkRx

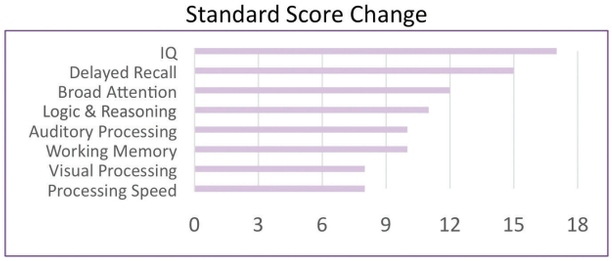
Number of Clients: 7,138

Mean Age: 13.7

Results: The changes in standard scores on the Woodcock-Johnson III - Tests of Cognitive Abilities were statistically significant for all skills ($p < .001$) assessed. Overall, the largest gains were seen in IQ and delayed recall, followed by broad attention, auditory processing, and logic & reasoning. The average pre-test IQ score was 100, and the average post-test IQ score was 117. In addition, post-training percentiles are well within the range of normal functioning, and the average age-equivalent gain in cognitive skill performance was 3.4 years.







All changes are statistically significant ($p < .001$)

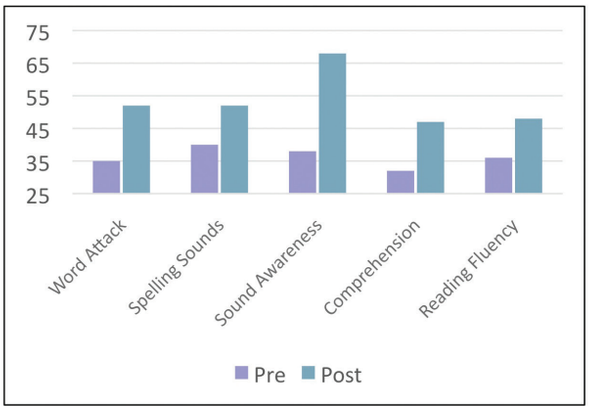
ReadRx Achievement Results: 2010–2015

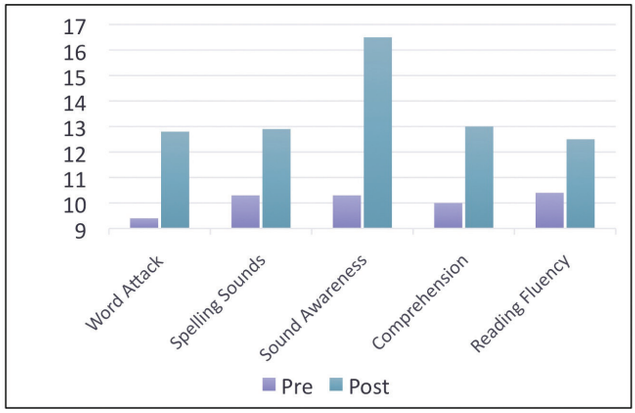
Program: ReadRx

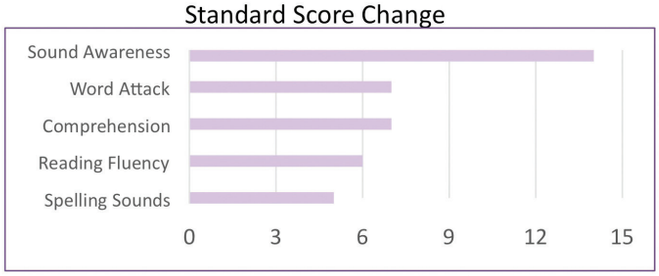
Number of Clients: 6,460

Mean Age: 11.4

Results: Clients who completed the 120-hour ReadRx program achieved statistically significant standard score changes ($p < .01$) on all five reading subtests administered from Woodcock-Johnson III - Tests of Achievement. Overall, the largest gain was seen in sound awareness, the primary skill needed for reading. Post-training percentiles are all within the normal range, and the overall age-equivalent gain in reading achievement was 3.5 years.







All changes are statistically significant ($p < .001$)

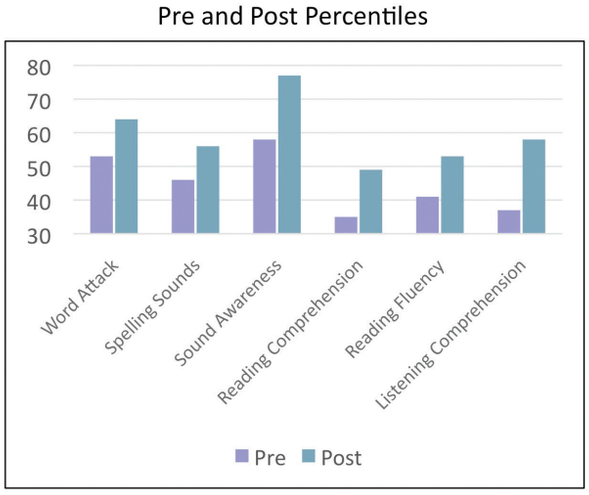
ComprehendRx Achievement Results: 2010–2015

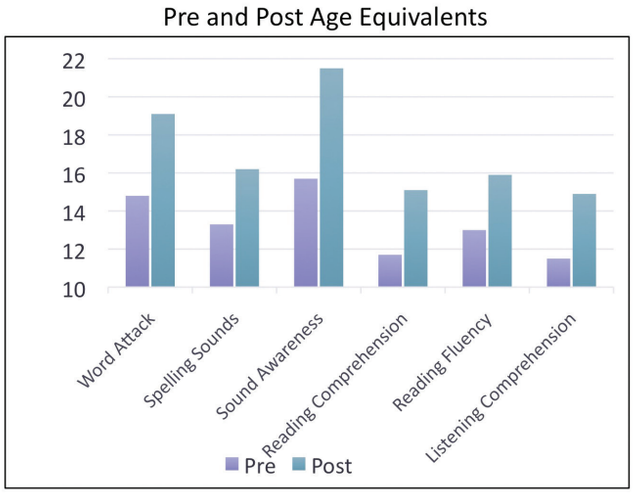
Program: ComprehendRx

Number of Clients: 358

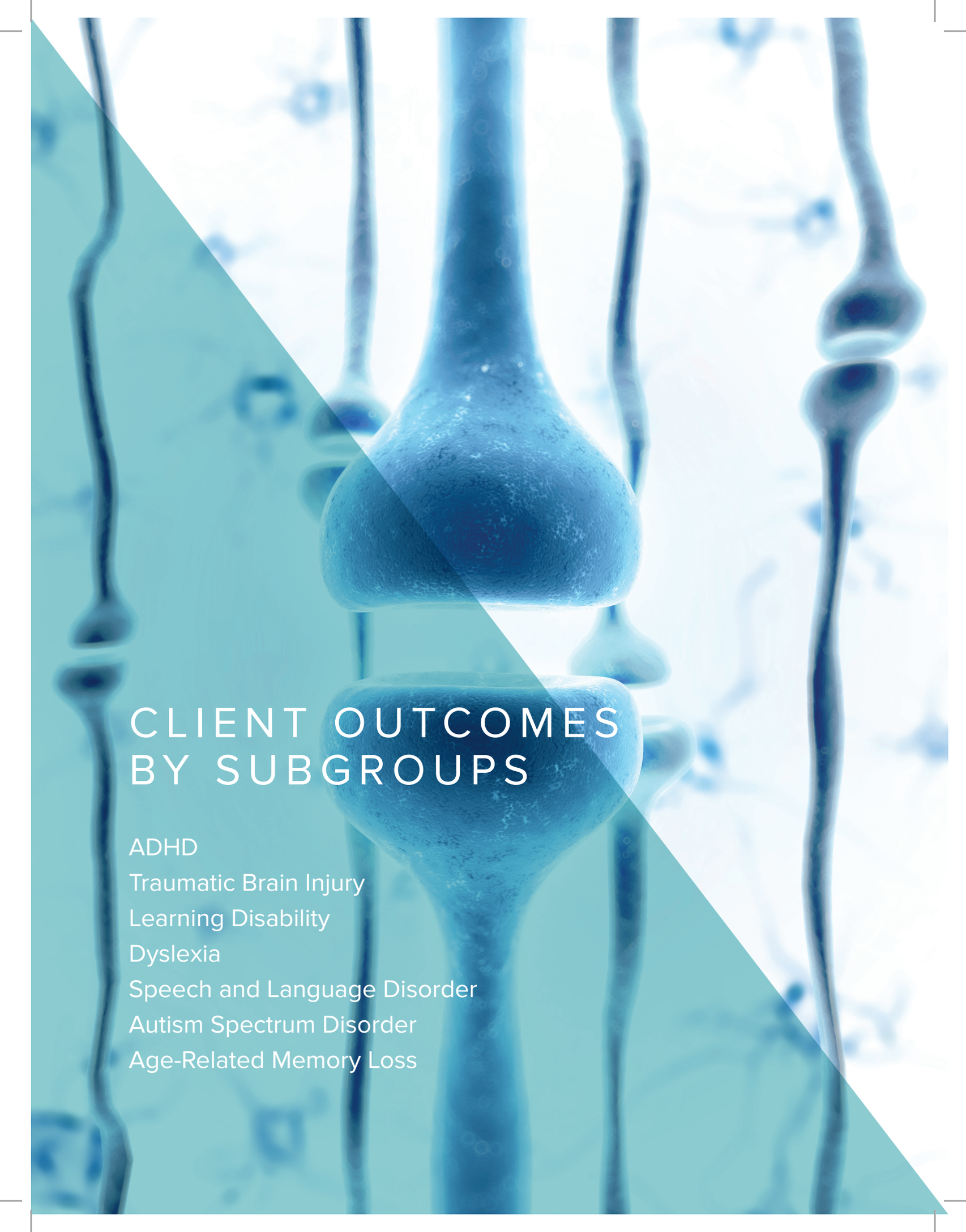
Mean Age: 13.1

Results: Clients who completed the 160-hour ComprehendRx program achieved statistically significant standard score changes ($p < .01$) on five of the six reading subtests administered from Woodcock-Johnson III - Tests of Achievement. Overall, the largest gain was seen in sound awareness, the primary skill needed for reading. Substantial gains were also noted in listening comprehension. Post-training percentiles are all within the normal range, and the overall age-equivalent gain in reading achievement was 3.8 years.





*Changes are statistically significant ($p < .001$)



CLIENT OUTCOMES BY SUBGROUPS

ADHD
Traumatic Brain Injury
Learning Disability
Dyslexia
Speech and Language Disorder
Autism Spectrum Disorder
Age-Related Memory Loss

Cognitive Assessment Results by Client-Reported Diagnosis

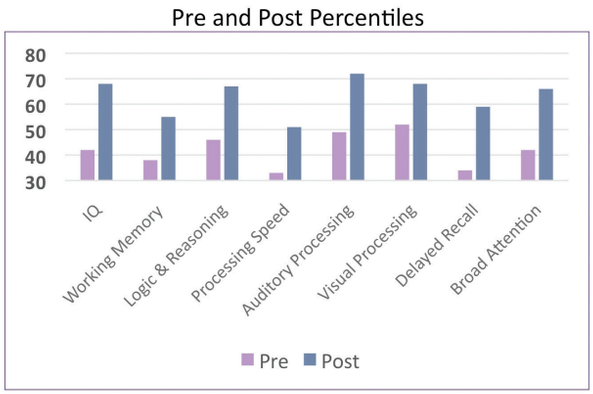
ADHD

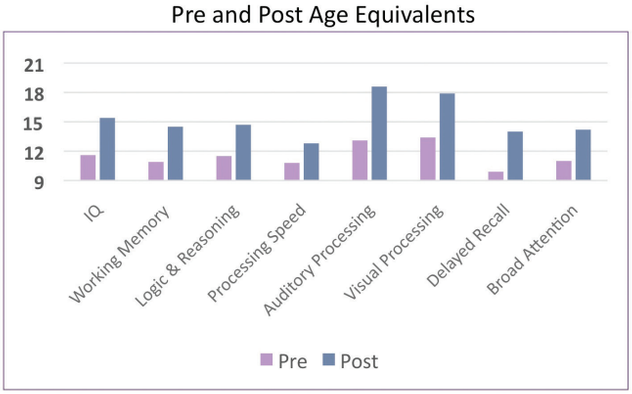
Program: All

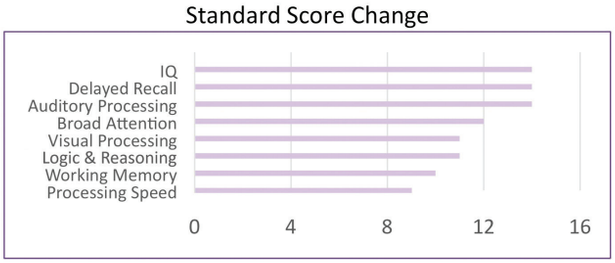
Number of Clients: 5,416

Mean Age: 12.3

Results: The following charts show the changes in cognitive skills for clients who came to LearningRx with a diagnosis of ADHD between2010 and 2015. The changes in standard scores on the Woodcock-Johnson III - Tests of Cognitive Abilities were statistically significant for all skills ($p < .001$) assessed. Overall, the largest gains were seen in IQ, auditory processing, and delayed recall, followed by broad attention and logic & reasoning. The average pre-test IQ score was 96 and the average post-test IQ score was 110. In addition, post-training percentiles are well within the range of normal functioning, and the average age-equivalent gain in cognitive skill performance was 3.7 years.







All changes are statistically significant ($p < .001$)

Cognitive Assessment Results by Client-Reported Diagnosis

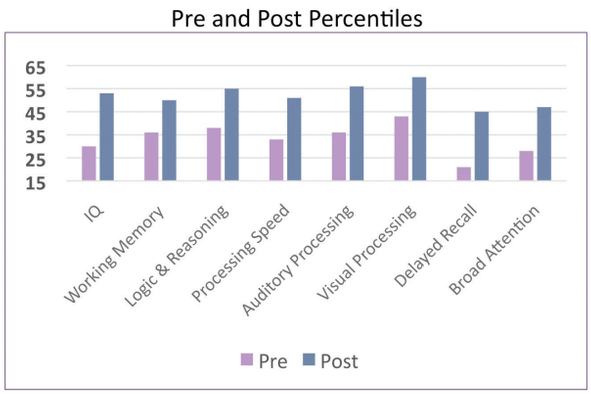
Traumatic Brain Injury

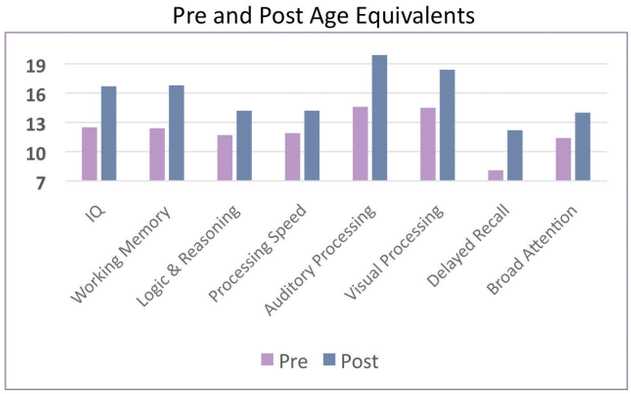
Program: All

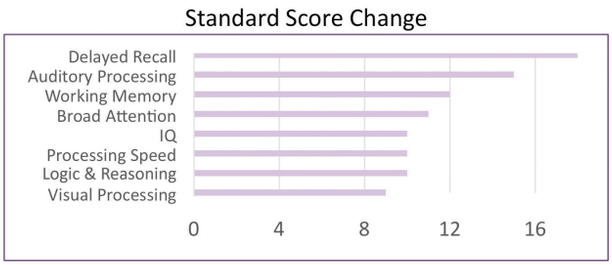
Number of Clients: 273

Mean Age: 25.6

Results: The following charts show the changes in cognitive skills for clients who came to LearningRx with a diagnosis of Traumatic Brain Injury (TBI) between 2010 and 2015. The changes in standard scores on the Woodcock-Johnson III - Tests of Cognitive Abilities were statistically significant for all skills ($p < .001$) assessed. Overall, the largest gains were seen in auditory processing and delayed recall, followed by working memory and broad attention. The average pre-test IQ score was 92, and the average post-test IQ score was 102. In addition, post-training percentiles are within the range of normal functioning, and the average age-equivalent gain in cognitive skill performance was 3.7 years.







All changes are statistically significant ($p < .001$)

Cognitive Assessment Results by Client-Reported Diagnosis

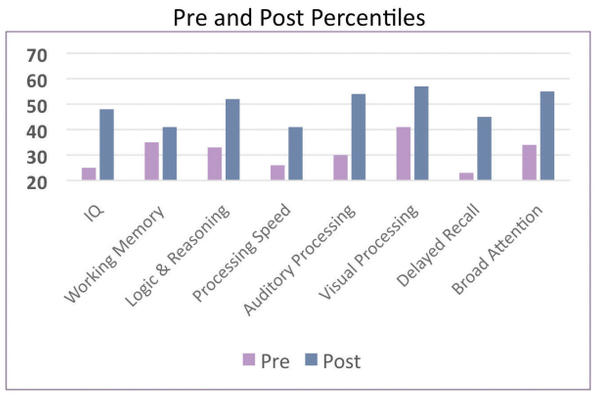
Learning Disability (LD)

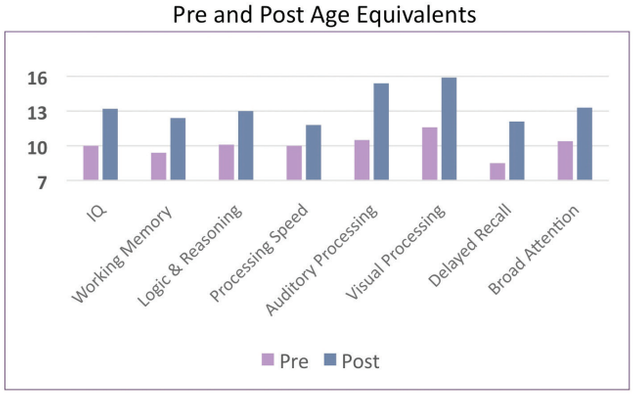
Program: All

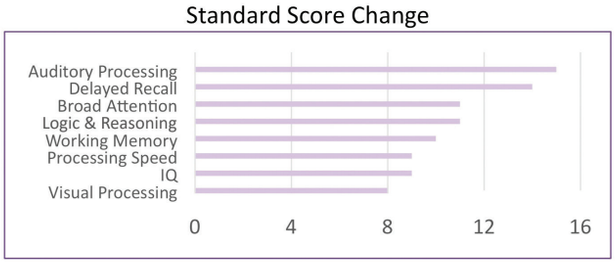
Number of Clients: 2,003

Mean Age: 13.1

Results: The following charts show the changes in cognitive skills for clients who came to LearningRx with a diagnosis of Learning Disability (LD) between 2010 and 2015. The changes in standard scores on the Woodcock-Johnson III - Tests of Cognitive Abilities were statistically significant for all skills ($p < .001$) assessed. Overall, the largest gains were seen in auditory processing and delayed recall, followed by logic & reasoning and broad attention. The average pre-test IQ score was 90, and the average post-test IQ score was 99. In addition, post-training percentiles are within the range of normal functioning, and the average age-equivalent gain in cognitive skill performance was 3.3 years.







All changes are statistically significant ($p < .001$)

Cognitive Assessment Results by Client-Reported Diagnosis

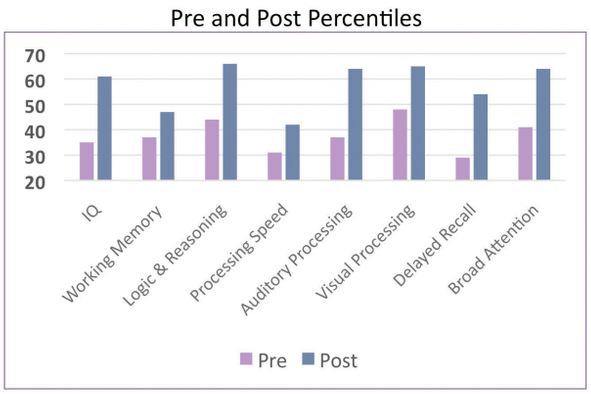
Dyslexia (Cognitive Gains)

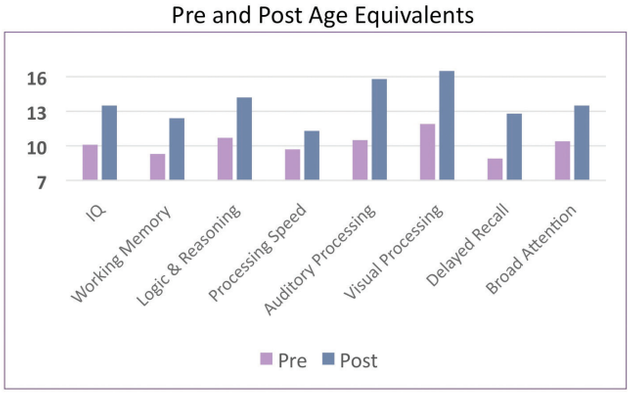
Program: All

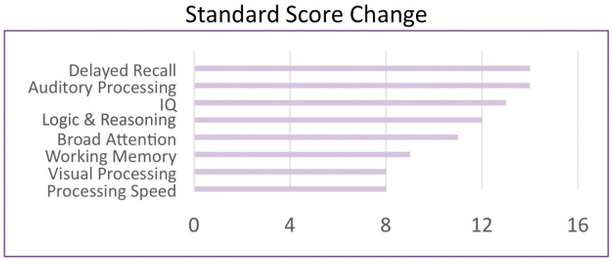
Number of Clients: 2,112

Mean Age: 11.9

Results: The following charts show the changes in cognitive skills for clients who came to LearningRx with a diagnosis of Dyslexia between 2010 and 2015. The changes in standard scores on the Woodcock-Johnson III - Tests of Cognitive Abilities were statistically significant for all skills ($p < .001$) assessed. Overall, the largest gains were seen in auditory processing and delayed recall, followed by logic & reasoning and broad attention. The average pre-test IQ score was 93 and the average post-test IQ score was 106. In addition, post-training percentiles are within the range of normal functioning, and the average age-equivalent gain in cognitive skill performance was 3.6 years.







All changes are statistically significant ($p < .001$)

Reading Assessment Results by Client-Reported Diagnosis

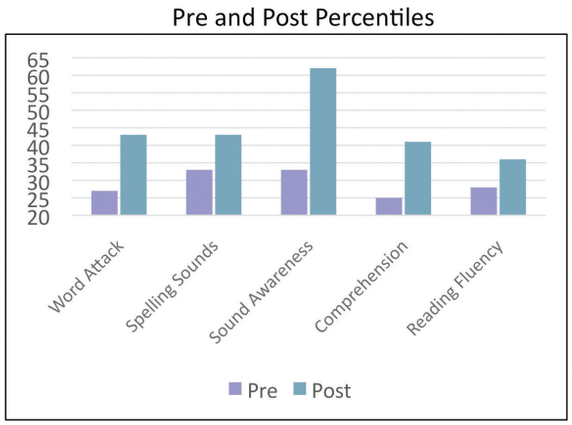
Dyslexia (Reading Gains)

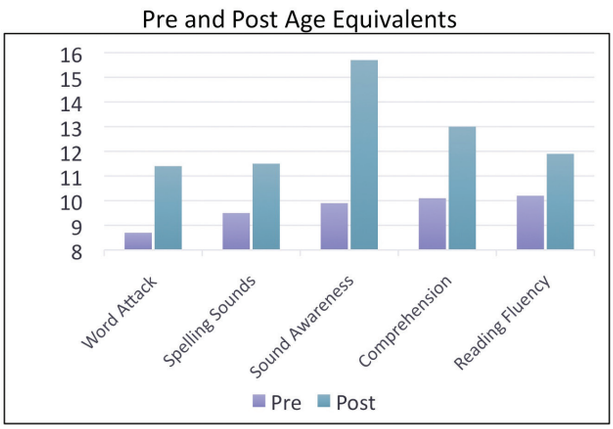
Program: ReadRx

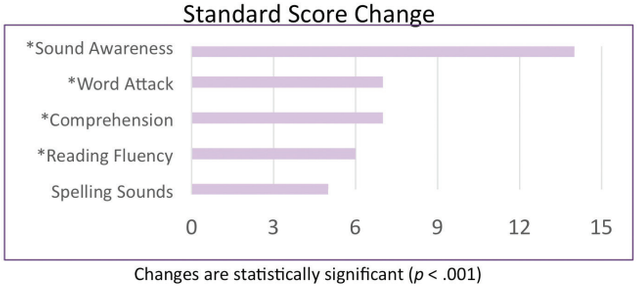
Number of Clients: 1,512

Mean Age: 11.8

Results: The following charts show the changes in reading skills for clients who came to LearningRx with a diagnosis of Dyslexia between 2010 and 2015. The changes in standard scores on the Woodcock-Johnson III - Tests of Achievement were statistically significant for four of five skills ($p < .001$) assessed. Overall, the largest gains were seen in sound awareness, word attack, and comprehension followed by reading fluency and spelling. In addition, the average age-equivalent gain in reading skill performance was 3 years. In sound awareness—the primary skill needed for reading—the average age-equivalent gain was nearly 6 years.







Changes are statistically significant ($p < .001$)

Cognitive Assessment Results by Client-Reported Diagnosis

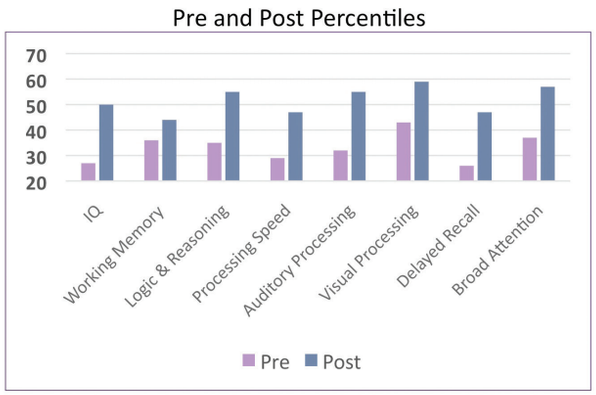
Speech and Language Disorder

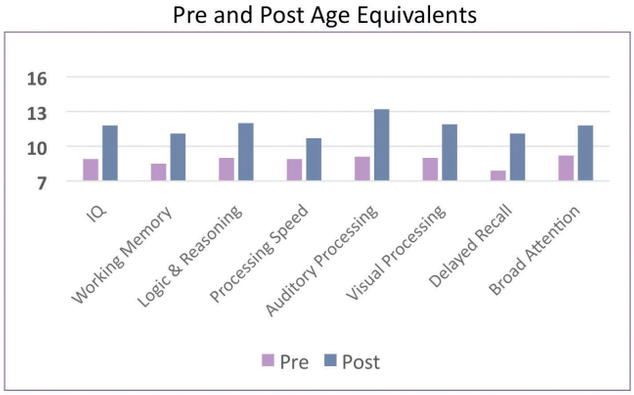
Program: All

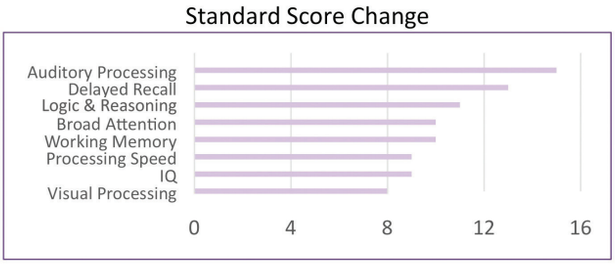
Number of Clients: 1,854

Mean Age: 10.7

Results: The following charts show the changes in cognitive skills for clients who came to LearningRx with a diagnosis of Speech and Language Disorder between 2010 and 2015. The changes in standard scores on the Woodcock-Johnson III - Tests of Cognitive Abilities were statistically significant for all skills ($p < .001$) assessed. Overall, the largest gains were seen in auditory processing and delayed recall, followed by logic & reasoning, working memory, and broad attention. The average pre-test IQ score was 91, and the average post-test IQ score was 100. In addition, post-training percentiles are within the range of normal functioning, and the average age-equivalent gain in cognitive skill performance was 3 years.







All changes are statistically significant ($p < .001$)

Cognitive Assessment Results by Client-Reported Diagnosis

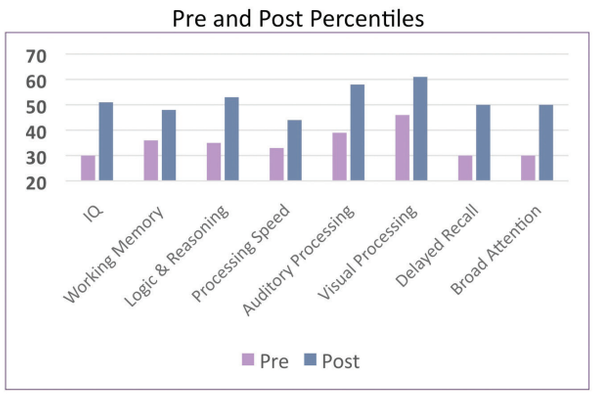
Autism Spectrum Disorder

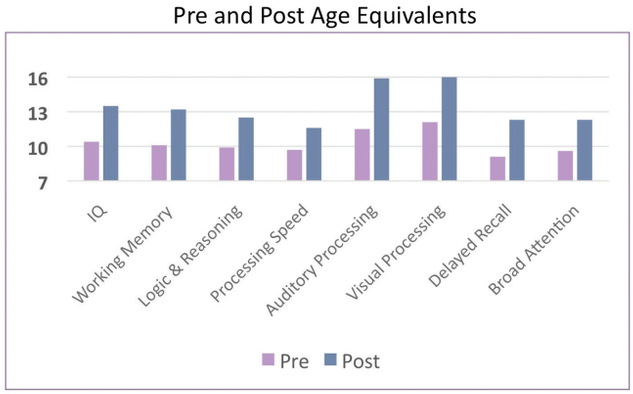
Program: All

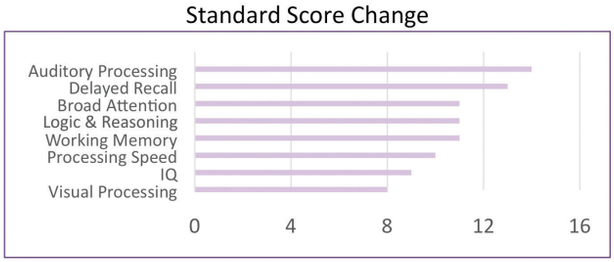
Number of Clients: 857

Mean Age: 11.9

Results: The following charts show the changes in cognitive skills for clients who came to LearningRx with a diagnosis of Autism Spectrum Disorder between 2010 and 2015. The changes in standard scores on the Woodcock-Johnson III - Tests of Cognitive Abilities were statistically significant for all skills ($p < .001$) assessed. Overall, the largest gains were seen in auditory processing and delayed recall, followed by logic & reasoning, working memory, and broad attention. The average pre-test IQ score was 92, and the average post-test IQ score was 101. In addition, post-training percentiles are within the range of normal functioning, and the average age-equivalent gain in cognitive skill performance was 3.1 years.







All changes are statistically significant ($p < .001$)

Cognitive Assessment Results by Client-Reported Diagnosis

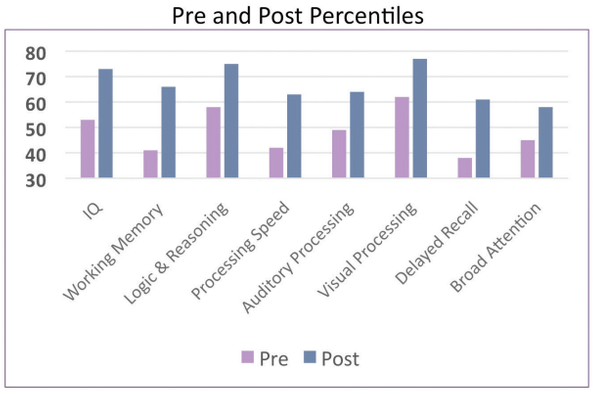
Age-Related Memory Loss

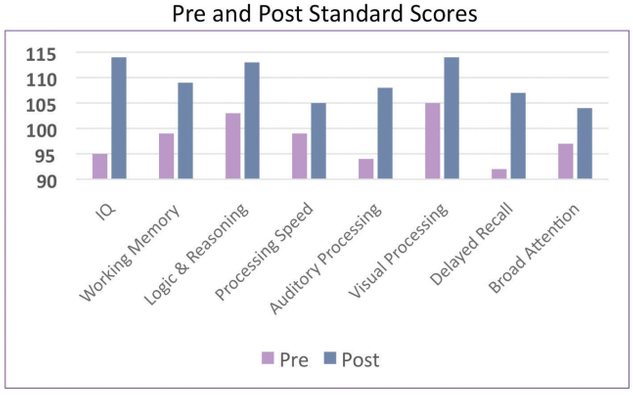
Program: All

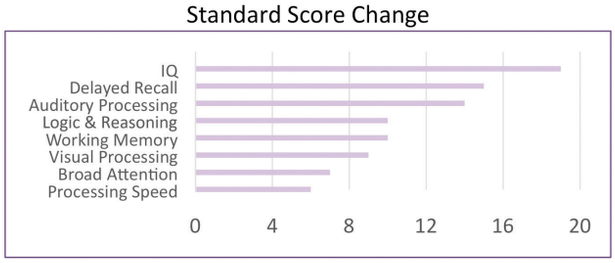
Number of Clients: 262

Mean Age: 60.1

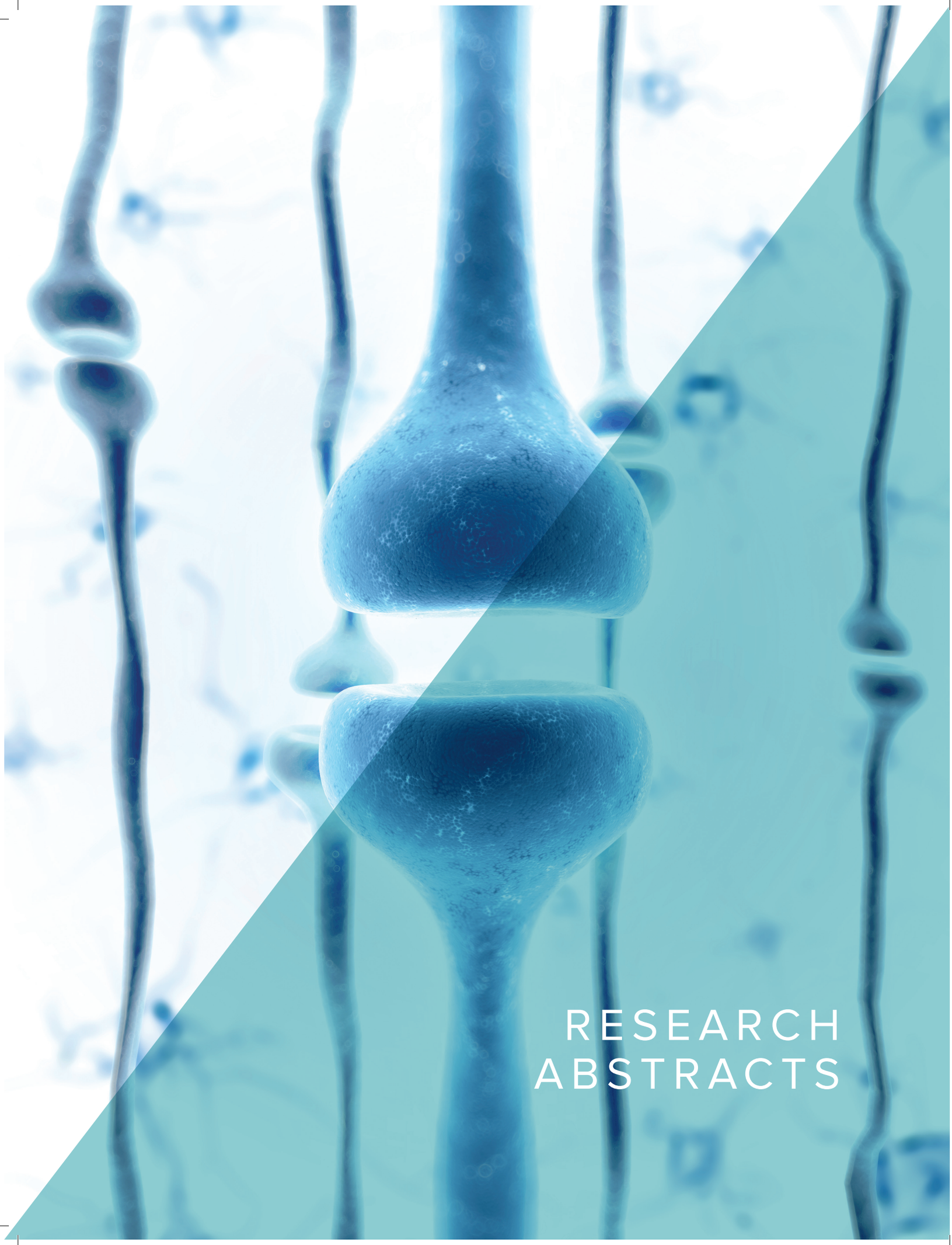
Results: The following charts show the changes in cognitive skills for clients over the age of 50 who came to LearningRx with a self-reported diagnosis of Age-Related Memory Loss between 2010 and 2015. The changes in standard scores on the Woodcock-Johnson III - Tests of Cognitive Abilities were statistically significant for all skills ($p < .001$) assessed. Overall, the largest gains were seen in IQ, auditory processing, and delayed recall, followed by logic & reasoning, working memory, and visual processing. The average pre-test IQ score was 95, and the average post-test IQ score was 114. In addition, post-training percentiles are well within the range of normal functioning.







All changes are statistically significant ($p < .001$)

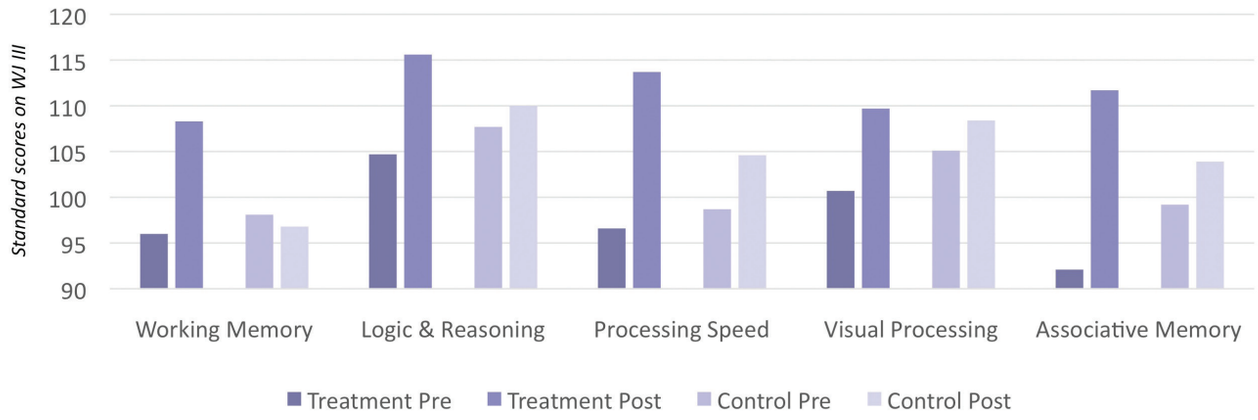


RESEARCH ABSTRACTS

Training the Brain to Learn: Beyond Vision Therapy

Abstract: The purpose of this study was to investigate the effectiveness of the ThinkRx cognitive training program. Sixty-one children (ages 6–18) were given pre-test and post-test assessments using seven batteries from the Woodcock-Johnson III Tests of Cognitive Abilities and Tests of Achievement. Thirty-one of the students were enrolled in, or had completed, a 24-week cognitive training program in a Colorado Springs-based LearningRx Center. A propensity matched control group of 30 students was selected from a group who had pre-tested but chosen not to enroll in the cognitive training program. Students who completed the ThinkRx cognitive training program realized greater gains than the control group on all measures. Statistically significant differences between groups were noted in six of the seven sets of scores (ps < .001). There were no significant differences based on age, gender, or learning disability.

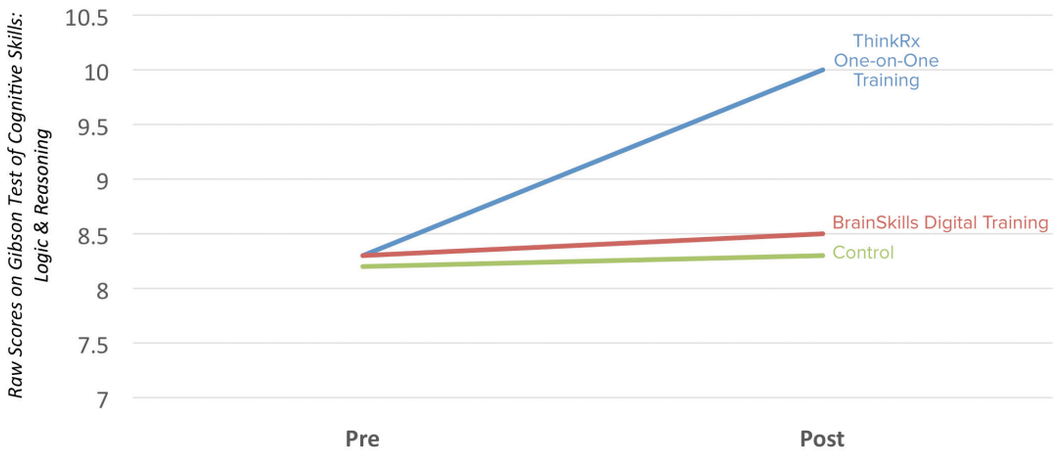
Multiple regression analyses indicated that treatment group membership was a statistically significant predictor of pre-test to post-test score differences in associative memory (R^2= .445), logic & reasoning (R^2= .233), working memory (R^2= .265), processing speed (R^2= .409), auditory processing (R^2= .352), and word attack (R^2= .359). Completion of the cognitive training program was not a significant predictor of scores on visual processing.



Reference: Gibson, K., Carpenter, D., Moore, A.L., & Mitchell, T. (2015). Training the Brain to Learn: Beyond Vision Therapy. *Vision Development and Rehabilitation, 1*(2), 119–128.

The Efficacy of the LearningRx Cognitive Training Program: Modality and Transfer Effects

Abstract: This article reports two studies testing the efficacy of a one-on-one cognitive training program (ThinkRx) and its digital version (BrainSkills) in laboratory and school settings. Study 1 tested BrainSkills in a laboratory setting with 322 middle school students. Paired t-tests revealed significant gains on all cognitive measures and math performance after three weeks of training. Study 2, a randomized control study, included 225 high school students randomly assigned to one of three conditions: ThinkRx, BrainSkills, or study hall (control) in a school setting for a 15-week training period. Univariate ANCOVAs revealed significantly higher scores for the treatment groups compared with controls on working memory, logic & reasoning, and three of four math attitude measures, but not for math performance. Because the intervention did not include the MathRx program, the results are as expected. (R^2= .352), and word attack (R^2= .359). Completion of the cognitive training program was not a significant predictor of scores on visual processing.



Reference: Hill, O.W., Zewelanji, S., & Faison, O. (2015). The Efficacy of the LearningRx Cognitive Training Program: Modality and Transfer Effects. *Journal of Experimental Education: Learning, Instruction, and Cognition, 1–21.* doi: 10.1080/00220973.2015.1065218

LearningRx Cognitive Training Effects in Children Ages 8–14: A Randomized Controlled Trial

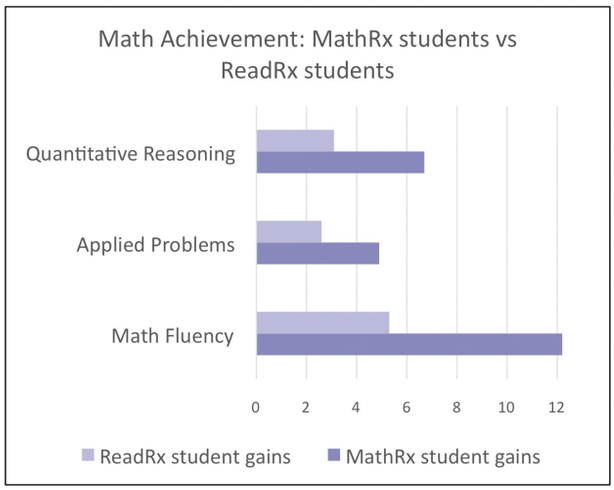
Abstract: In a randomized controlled study with students ages 8–14, we examined the effects of the ThinkRx cognitive training program on IQ, memory, visual and auditory processing, processing speed, and reasoning as measured by the Woodcock-Johnson III - Tests of Cognitive Abilities, and on attention as measured by the NIH Toolbox Cognitive Battery. Participants were randomly assigned to either an experimental group (n= 20) to complete 60 hours of cognitive training, or to a wait-list control group (n= 19). The purpose of the study was to examine changes in general intelligence and individual cognitive skills after completing cognitive training with ThinkRx, a LearningRx program. Results showed statistically significant differences between groups on all outcome measures except for attention. (R^2= .352), and word attack (R^2= .359). Completion of the cognitive training program was not a significant predictor of scores on visual processing.

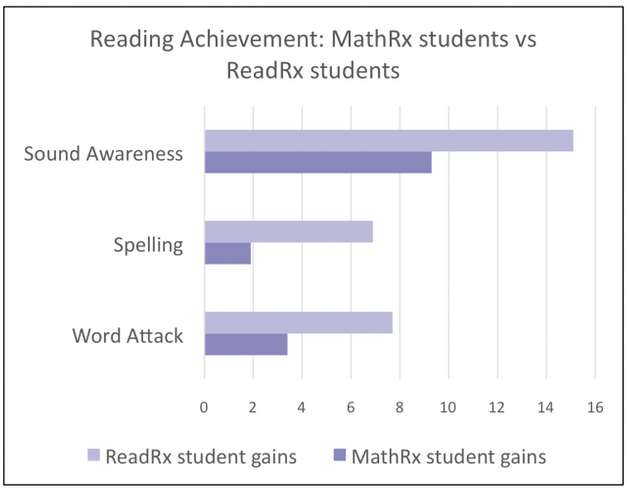
	CONTROL	TREATMENT	CASUAL EFFECT
	Pre-Post Difference	Pre-Post Difference	Treatment-Control
Logic & Reasoning	-7	21	**28**
IQ	-5	21	**26**
Long-Term Memory	7	28	**21**
Working Memory	-8	13	**21**
Auditory Processing	-4	13	**17**
Associative Memory	8	23	**15**
Visual Processing	4	11	**7**
Processing Speed	7	13	**6**
Attention	3	5	**2**
Average Standard Score Gain	1	17	**16**

Reference: Carpenter, D., Ledbetter, C., & Moore, A.L. (2015). *LearningRx Cognitive Training Effects in Children Ages 8–14: A Randomized Controlled Trial*. Manuscript submitted for publication.

Achievement Outcomes for LearningRx Students: A Differential Effects Analysis of Math and Reading Achievement Before and After Cognitive Training

Abstract: To assess the outcomes of the ReadRx and MathRx programs for 2,096 students in 2008 to 2014, pre-intervention reading and math achievement scores were compared to post-intervention scores on the Woodcock-Johnson III - Tests of Achievement. To add a measure of control, we conducted a differential effects analysis of performance on achievement tests measuring the opposite skills from which the students were trained. MathRx students made nearly twice the gains in math than the ReadRx students, and ReadRx students made nearly twice the gains in reading as the MathRx students. The results indicate that the reading and math interventions are indeed targeting the skills they are intended to remediate.

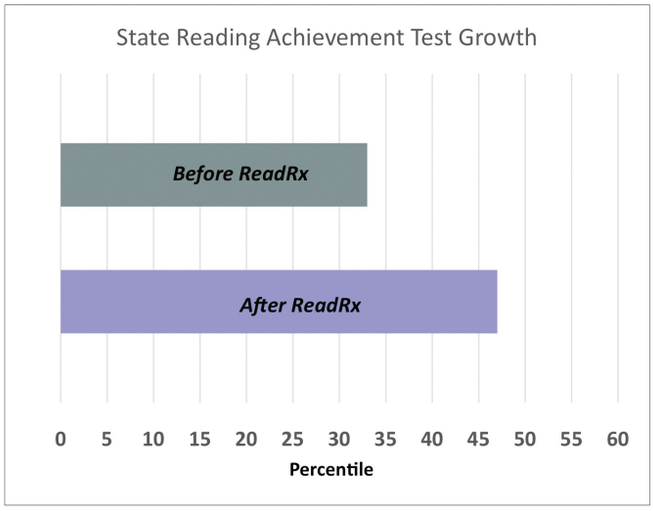




Reference: Moore, A. (2015). *Achievement Outcomes for LearningRx Students: Math and Reading Achievement Before and After Cognitive Training*. Colorado Springs, CO: Gibson Institute of Cognitive Research. (Full manuscript in preparation for publication.)

State Achievement Test Results for ReadRx Clients

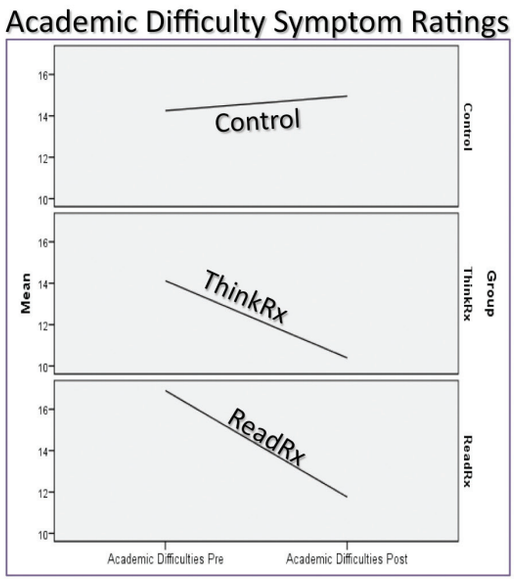
Abstract: In 2010, LearningRx collected state reading achievement test records from 65 ReadRx graduates. Prior to training, the mean percentile for this group was 33. After training, the group had jumped to the 47th percentile in reading—nearly average for their age. Further, 91% of students who completed the ReadRx program (59 of 65) showed improvement on state reading achievement tests after the intervention.

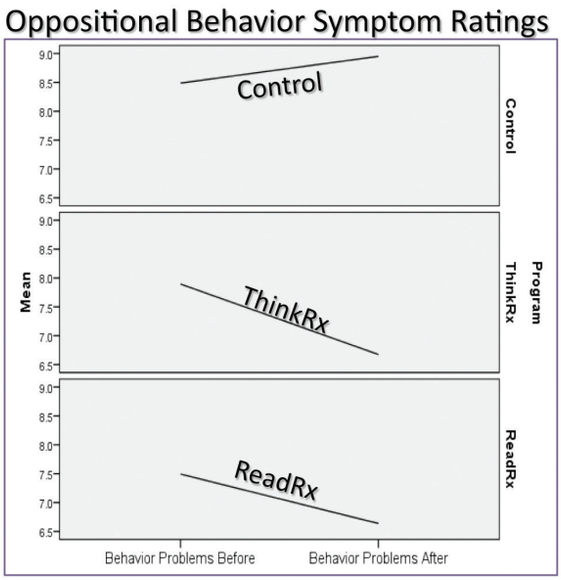


Reference: Moore, A. (2015). *Achievement Outcomes for LearningRx Students: Math and Reading Achievement Before and After Cognitive Training*. Colorado Springs, CO: Gibson Institute of Cognitive Research. (Full manuscript in preparation for publication.)

Real-Life Benefits of LearningRx Cognitive Training: A Controlled Study

Abstract: This study investigated whether a one-on-one cognitive training program reduced academic difficulties and oppositional behavior for 226 school-age children. Using a standardized parent rating scale, Learning Skills Rating Scale (LSRS), three groups were surveyed: 77 students who had completed the 60-hour ThinkRx cognitive training program, 69 students who had completed the 120-hour ReadRx cognitive training program, and 80 students who completed initial testing but chose not to complete a training program. Results indicated there were statistically significant differences between the treatment groups and the control group on all measures of academic difficulties. Both treatment groups saw a reduction in academic difficulty ratings following training while the control group saw an increase in academic difficulty during a comparable time interval. Further, both treatment groups improved on ratings of oppositional behavior while the control group ratings worsened.

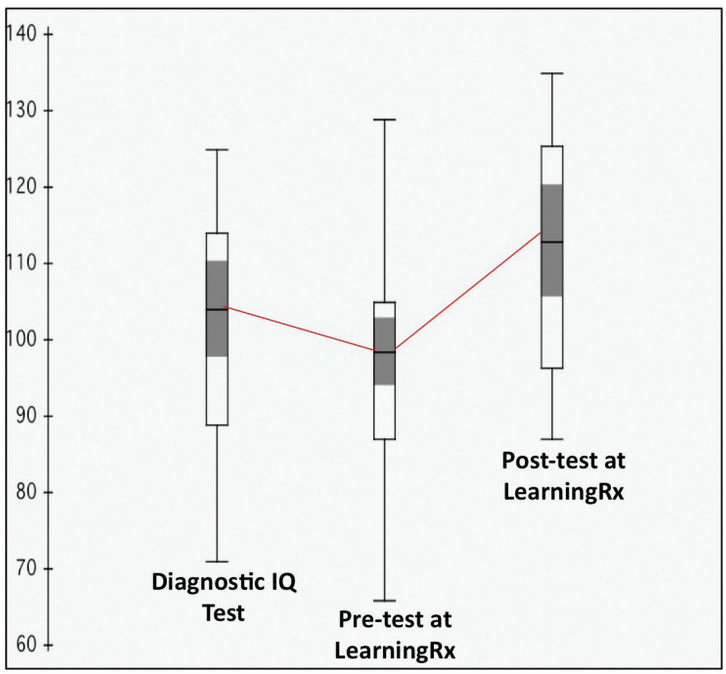




Reference: Jedlicka, E. (2015). *Real-Life Benefits of LearningRx Cognitive Training: A Controlled Study*. Based on 2012 dissertation; manuscript submitted for publication.

LearningRx Training and IQ Gains: Multiple Baseline Study

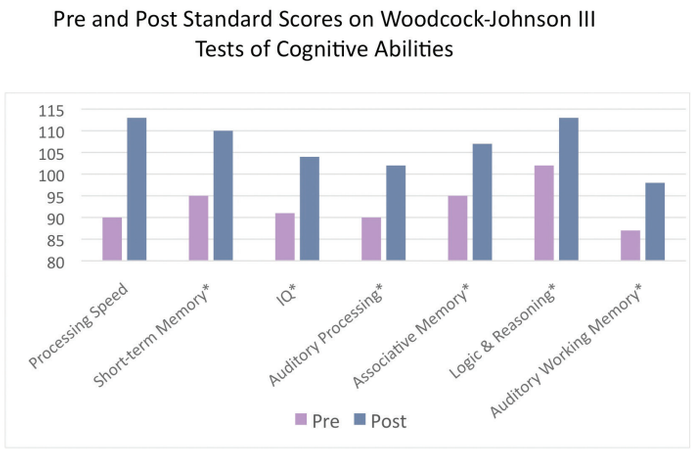
Abstract: For this study, we used multiple IQ baselines to allow students to serve as their own controls. We collected diagnostic test results of 40 students to establish their baseline IQ. These tests were given by independent psychologists within 18 months prior to initial contact with LearningRx. Comparing the diagnostic IQ score to the LearningRx pre-test score, we saw a slight decline in IQ from an average of 102 to an average of 96 during the time students waited to begin training at LearningRx. Thus, it is apparent they were not spontaneously improving after their initial diagnosis; in fact, they were getting worse. However, this changed after treatment. From LearningRx pre-test to post-test, they not only regained the ground they had lost previously, but had also made significant improvements. The average IQ after training had increased to 112—a gain of 16 points.



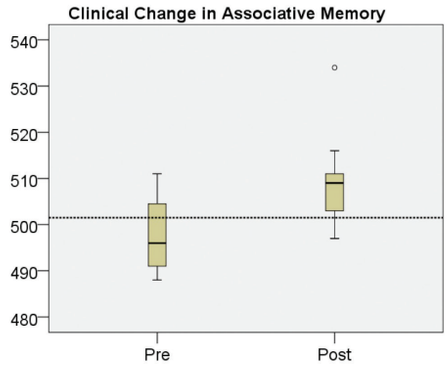
Reference: Moore, A.L. (2015). *LearningRx Training and IQ Gains*. Colorado Springs, CO: Gibson Institute of Cognitive Research

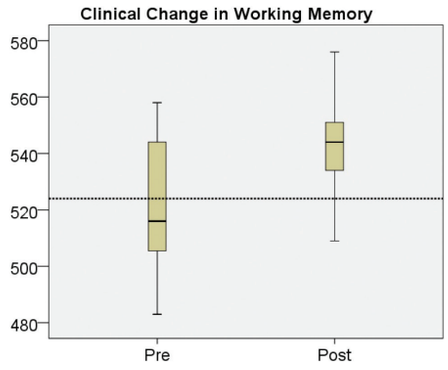
Feasibility Study of One-on-One Cognitive Training with Supplemental Digital Delivery for Soldiers with Traumatic Brain Injury

Abstract: In this quasi-experimental, pre-test-post-test feasibility study, 11 soldiers between 3 and 36 months post-traumatic-brain-injury completed half of ThinkRx through one-on-one cognitive training at an occupational therapy clinic and half through computer-based cognitive training sessions at home. Participants achieved statistically significant gains in short-term memory, associative memory, executive processing, auditory processing, and fluid reasoning with very large effect sizes; and self-reported improvements in attention, memory, and organization. Further, they achieved significant clinical changes, restoring function to normal levels in nearly all cognitive skills. Examples of clinically significant changes in memory are shown in the box plots.



*change significant at $p < .005$





Reference: Ledbetter, C., Moore, A. L., & Mitchell, T. (2016). *Feasibility Study of One-on-One Cognitive Training with Supplemental Digital Delivery for Soldiers with Traumatic Brain Injury*. Manuscript submitted for publication.

Mixed Methods Study on LearningRx Results for Students with Dyslexia

Abstract: To assess the real-life changes following training, we surveyed parents of former clients who had been previously diagnosed with Dyslexia and later completed a LearningRx training program. The survey results from the 109 respondents indicated that a large percentage of clients saw classroom improvements, such as faster reading, reading comprehension, and memory for details. Almost 50% reported achieving better grades after training, and more than 50% reported increased confidence for school. Clients also reported more positive relationships with others, more independence in completing homework, and increased participation and performance in sports.

SOCIAL/RECREATIONAL IMPROVEMENTS

Answer Options	Response
More positive relationships with family	48%
More positive relationships with teachers	47%
More positive relationships with friends	43%
Increased confidence in extra-curricular activities	34%
Increased participation in extra-curricular activities	28%
Increased confidence about playing sports	26%
Increased participation in sports	18%
Better performance in extra-curricular activities	16%
Better performance in sports	15%

SCHOOL-RELATED IMPROVEMENTS

Answer Options	Response
Reads faster	59%
Completes homework more independently	56%
Is more confident about school	55%
Remembers details from reading	53%
Understands what is read	52%
Achieves better grades	46%
Completes homework faster	45%
Has a better memory	40%
Solves math problems more quickly	39%
Pays attention longer	38%
Is more organized	34%
Is eager to read	33%
Is more focused	33.%
Achieves higher standardized test scores	30%
Finishes classwork on time	29%

Reference: Ledbetter, C., Moore, A. L. , & Mitchell, T. (2016). *Mixed Methods Study on LearningRx Results for Students with Dyslexia*. Technical report in preparation.

One-Year Retention Results for LearningRx Clients

Abstract: To assess retention of training gains for LearningRx clients, we analyzed the results for 516 clients who opted to return for a one-year follow-up assessment on the Woodcock-Johnson III - Tests of Cognitive Abilities. The average age of clients who completed the follow-up testing was 10.8. Retention rates ranged from 96% to 99%, with the greatest retention of skills in visual processing, auditory processing, and logic & reasoning.

PRE, POST, AND FOLLOW-UP STANDARD SCORES

Skill	Pre	Post	One Year Later	Retention
IQ	95	111	107	97%
Long-Term Memory	94	107	106	98%
Visual Processing	102	109	108	99%
Auditory Processing	111	122	121	99%
Logic & Reasoning	100	111	111	99%
Processing Speed	91	99	94	96%
Working Memory	94	104	101	98%

All scores are rounded to the nearest whole number

Reference: Cameron, K. & Moore, A.L. (2014). *2014 Report of LearningRx Training Results*. Colorado Springs, CO: LearningRx. Available at LearningRx.com

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Carpenter, D., Ledbetter, C., & Moore, A. (2015). *LearningRx cognitive training effects in children ages 8–14: A randomized controlled study.* Manuscript submitted. Summary of results available at http://downloads.learningrx.com/2015-RCT-Study-Results.pdf

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Pfister, B. (2012). *The effect of cognitive rehabilitation therapy on memory and processing speed in adolescents.* Doctoral dissertation. Available at http://downloads.learningrx.com/dissertation-2012-pfister-final-pdf.pdf

LearningRx Clinical and International Licensing Options

LearningRx brain training specializes in addressing the cause—not the symptoms—of learning struggles. In 2015, LearningRx celebrated its 95,000th student completing the cognitive skills training program. Our students' results have been gathered from more than 90 locations and 500 professionals over a 12-year period. An observational study of 6,000 graduates is available in the company's biennial Results Report. LearningRx brain training and testing has been administered by hundreds of cognitive and educational professionals to children, teens, adults and seniors seeking faster, more efficient brains. LearningRx offers brain training programs for:

- Learning Struggles
- Reading Problems
- Attention Issues
- Brain Injury
- Seniors

Contact

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CLINICAL LICENSE OPTIONS

Cognitive License:
$10,000 License & Training Fee for up to 3 Trainers (Licensee can train additional trainers) + $280–$320 Program Fee.

- ThinkRx
- LiftOff
- 50% One-on-one 50% Digital

Reading License:
$5,000 License & Training Fee for up to 3 Trainers (Licensee can train additional trainers) + $190–$210 Program Fee. Can only be purchased in conjunction with Cognitive License.

- ReadRx
- ComprehendRx

LearningRx Training will cover:

- LearningRx Procedures (ThinkRx, LiftOff, ReadRx, ComprehendRx)
- Hiring & Training Trainers
- Consultations
- Gibson Testing

INTERNATIONAL LICENSING/MASTER LICENSING OPTIONS

BrainRx®

Initial Investment: $10,000–$50,000. BrainRx is our International Brain Training program, focusing on improving cognitive skills for kids and adults around the world. We currently have more than 50 BrainRx centers in 38 countries. This program is half one-on-one, half digital and is achieving great results! Visit www.brainrx.org, or ask us for our free information kit.

LearningRx®

www.learningrx.com