

## The Research

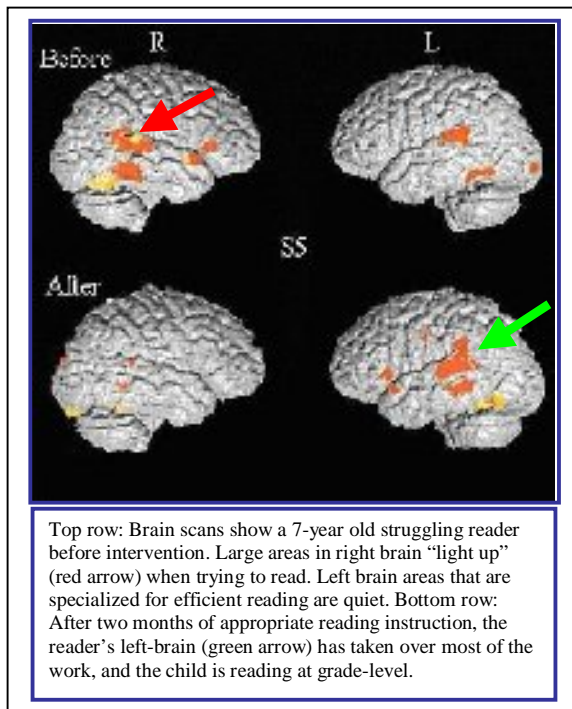
Written language is an invention, a secret code that the learner must crack. English has a particularly tricky code: One letter group (e.g., [ea]) can represent many sounds (e.g., sea, bread, great, ear, earn, pear, area, azalea, ocean, chateau...). One sound can be represented by many letter groups (e.g., toe, tow, tofu, boat, soul, dough, chateau...). Because of this complex code, English is the most difficult European language to learn to read: International studies show that it takes English students 2.7 years to develop the same level of reading accuracy and fluency that children learning other languages develop in their first year of instruction [7]!

Some children do learn to read the English code in a way that appears effortless, but many struggle mightily. In 2005, only 33% of US 4<sup>th</sup> and 8<sup>th</sup> graders were reading at grade level [2].

In 2000, Dr. Bergman and the Texas Reading Institute worked with the University of Texas in groundbreaking NICHD studies that used brain scans to show how the visual, sound, and language centers of the brain interact during learning to read. The studies were the first to show a distinctly different pattern of brain activity for struggling readers [8] and normalization after effective instruction [9].

Average readers show strong activity in left-brain areas (arrow in the After scans). Struggling readers strongly activate the wrong side (arrow in the Before scans). Looking at the scans, Dr. Papanicolaou, the principal investigator, was not surprised that these children were struggling. "It's like trying to paint with your toes" [6], he stated.

The good news is that 60-80 hours of explicit reading instruction will bring most children to grade-level reading [3] and normalize the brain scans [9]. For years dyslexia had been considered a hardwired disability. These NICHD studies show that dyslexia and the brain patterns are best viewed as variations of development that respond to appropriate intervention and support. So many children struggle with learning to read English that our schools are swamped [2, 3, 10]. In our interventions, we provide materials, training and feedback for those parents wanting to learn coaching skills that will accelerate their child's fluency and confidence and help their child generalize reading skills across all subjects, including writing and homework.



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**Table Demographic information**

S#/Group	Gender/ Age (yr/mo)	WJ-III (%)		IQ	ADD	Medication
		Pre	Post*			
1/D	M/15(1)	13	55	103	Yes	Adderal
2/D	M/10(7)	2	59	95	Yes	Ritalin
3/D	M/10(11)	2	38	110	No	Ritalin
4/D	F/8(8)	3	55	105	Yes	Ritalin
5/D	F/7(4)	2	50	110	Yes	Ritalin
6/D	M/7(10)	18	60	101	No	--
7/D	M/11(1)	1	38	98	Yes	Ritalin
8/D	M/17(1)	1	45	102	No	--
9/Ni	M/10(2)	38	39	99	No	--
10/Ni	F/8(1)	50	48	107	No	--
11/Ni	M/9(7)	85	83	122	No	--
12/Ni	M/14(1)	82	85	101	No	--
13/Ni	M/10(1)	60	60	113	No	--
14/Ni	M/9(8)	52	50	95	No	--
15/Ni	M/10(2)	49	53	99	Yes	Ritalin
16/Ni	M/12(4)	75	74	121	No	--

\*Follow up testing was performed using alternate forms. Abbreviations, D: dyslexic, Ni: non-impaired, WJ-III; Woodcock-Johnson PsychoEducational Test III, ADD: Attention Deficit disorder.