

SCOPE of NICHD RESEARCH STUDIES on READING DISABILITY

- Since 1985, the **National Institute of Child Health and Human Development (NICHD)** has conducted over \$100,000,000 of Congressionally funded research into the nature of learning disabilities and reading problems.
- Studies of treatments are long term and typically last at least one year with one to three years of post-treatment follow up. In some studies, children's growth in reading has been observed from five years of age until 23 years of age.
- To date the studies have involved over 50,000 children, and leading researchers at 18 research sites (including such institutions as Harvard, Yale, Johns Hopkins), and have published over 2,000 refereed journal articles in the language and reading research program.
- 21,800 good readers have participated in the investigations, many for as long as 12 years.
- A major focus has been to understand why many children do not learn to read. Within this context, 12,641 individuals with reading difficulties have been studied, for as long as 12 years.
- Over 7,500 children at 11 sites in U.S. and Canada have participated in long term studies focusing on reading failure prevention, early intervention, and remediation.
- 3,600 children are currently enrolled in longitudinal intervention trials in 9 states. These studies involve the participation of 1,012 classroom teachers, working in 266 schools and 985 classrooms.

RESEARCH FINDINGS on PREVALENCE of READING DISABILITIES

- **NICHD population-based, epidemiological longitudinal studies indicate that 20% of all school children, or 1 child in 5, experiences reading disability (dyslexia).**
- Assessments by the federally funded National Assessment of Educational Progress (NAEP) place reading failure at even higher levels ranging from 20 percent in some states to 59 percent in others.
- **That means 10 million children currently experience significant difficulties** learning to read well enough to utilize reading to learn and for enjoyment.
- 2.8 million students currently receive special education service for learning disability in the public schools. **Thus only 25% of the students with reading disability receive special education services.** (Source: US Department of Education)
- 32% of the fourth grade children across the nation who were reading below the basic levels **were from homes where the parents had graduated from college.** These data **contradict the common assumption that reading failure can be largely be attributed to poverty, immigration, or the learning of English as a second language.**
- **As many girls as boys have difficulties learning to read.** While public schools identify approximately four times as many boys as girls with reading disability, NICHD studies show that as many girls manifest reading disability as boys.
- Despite substantial increases in funding, the availability of services for students with learning disabilities in the public schools has actually declined. In 1977, there were 18 students with learning disabilities per special education teacher serving them through the public school system. In 1994, there were 26 students with learning disabilities per special education teacher. (Source: National Center for Education Statistics)
- NICHD studies show reading disability (dyslexia) to be a persistent deficit rather than a developmental lag in linguistic (phonological) skills and basic reading skills. **Longitudinal studies show that of the children who are diagnosed with reading disability in the third grade, 74 percent remain disabled in the ninth grade.**

RESEARCH FINDINGS on the NATURE of READING DISABILITIES

- Deficits in phonemic awareness and phonological processing have been established as core deficiencies in reading disability (dyslexia).
- Phonemic awareness and phonological processing depend upon the the ability to segment words and syllables into individual sound units (phonemes).
- Deficits in phonological processing appear to be largely inherited, as shown in both behavioral and molecular genetic studies.
- The best predictor of reading ability/disability from kindergarten and first grade test performance is phoneme segmentation ability.
- The ability to read and comprehend depends upon rapid and automatic recognition and decoding of single words. **Slow and inaccurate decoding in the early years are the best predictors of later difficulty in reading comprehension.**
- Some youngsters can read a word only once to recognize it again with greater speed. The average child needs between four and 14 exposures to automatize the recognition of a new word. Students with reading disability typically require over 20 or more exposures.

RESEARCH FINDINGS on the EFFECTS of READING DISABILITIES

- **35% of children with learning disabilities drop out of high school.** This is twice the rate of students without learning disabilities. (Source: National Longitudinal Transition Study)
- Of students with a learning disability who do graduate from high school, **less than 2% attend a four-year college, despite the fact that many are above average in intelligence.** (Source: National Longitudinal Transition Study)
- Several studies have shown that between 50-60% of adolescents in treatment for substance abuse have learning disabilities. (Sources: Hazelden Foundation; NICHD)
- When eighth graders were asked about their educational aspirations, 17.8% of students with learning disabilities expected to complete some high school or graduate. (Source: National Center for Education Statistics)
- Only 14% of students with learning disabilities (compared to 53% of students in general population) have attended a post-secondary school program within two years of leaving high school. (Source: National Longitudinal Transition Study)
- Numerous studies of incarcerated youth and adults have reported the incidence of significant reading failure among this population to be from 50% to above 80%.

RESEARCH FINDINGS on EARLY IDENTIFICATION and INTERVENTION

- NICHD studies have established the importance of early identification and intervention with children at-risk for reading failure. **Procedures now exist to identify such children with good accuracy.**
- **Phonemic awareness skills assessed in kindergarten and first grade serve as the best predictors of difficulties learning to read.** NICHD has demonstrated that a test that takes only 15 minutes to administer will measure phonemic awareness skills as early as the beginning of kindergarten, and will predict with approximately 92% accuracy who will have difficulties learning to read.
- Deficits in phonological processing can be identified in late kindergarten and first grade, and the presence of these deficits is a strong indicator that difficulties in learning to read will follow
- NICHD estimates that the average cost of assessing each child during kindergarten or first grade with the effective predictive measures is approximately \$10 to \$15 including materials.
- NICHD studies demonstrate that for 85 to 90% of poor readers, **prevention and early intervention programs that combine instruction in phoneme awareness, phonics, spelling, reading fluency, and reading comprehension strategies provided by well-trained teachers can increase reading skills to average reading levels.**
- 44% of parents who noticed their child exhibiting signs of problems with learning waited a year or more before acknowledging their child might have a serious problem. (Source: Roger Starch Poll: Measuring Progress in Public and Parental Understanding of Learning Disabilities)
- **The most powerful interventions that have been identified for reading disabilities to date consist of a combination of explicit instruction in phonemic awareness, explicit instructions in sound-symbol relationships (phonics), and direct and integrated instruction in text reading and comprehension.**