



## **The Importance of Multiple-Component Remediation for Children and Adolescents with Reading Disabilities**

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English is a complex language and the ability to read English well requires many different skills. Our understanding of the basic processes underlying reading skill development has increased dramatically in the past 30 years, as has our understanding of why some students struggle with learning to read. Researchers have identified several main areas of difficulty, often called core deficits, which contribute to the development of a reading disability. There are two fundamental processes that are involved in learning to read: the understanding that words are made up of individual sounds and the ability to manipulate sounds in words (what is called “phonological awareness”). It is widely accepted that those who have a reading disability have poor phonological awareness; they are said to have a core “phonological deficit.” Several studies looked at the benefit of remediation that targeted only this phonological deficit through instruction of sound-blending skills and letter-sound knowledge and it was found that phonologically-based remediation resulted in significant improvement in students’ reading skills. Further research showed, however, that this was not the entire story.

Struggling readers often have additional difficulties outside of the realm of phonological deficits. Many also have trouble naming a series of visually-presented colors, numbers and letters rapidly – often referred to as a “naming speed deficit.” Research suggests that problems in developing reading fluency are linked to underlying deficits in naming speed. A third area of difficulty or deficit observed in many with reading problems is a strategy learning deficit. Struggling readers often have few, if any, effective strategies for reading and understanding text. Even if they learn an effective strategy, children with reading disabilities often fail to transfer this knowledge when faced with new and unknown words.

Armed with a better understanding of the multiple causes of reading problems, our research team at the Hospital for Sick Children in Toronto has looked at the benefit to students of receiving remediation that targets more than one area of deficit. Studies show that remediation that targets more than one area of deficit consistently results in greater gains and faster growth in reading ability, as compared to an intervention that focuses solely on one deficit, such as phonologically-based reading instruction. There is now general consensus that teachers should offer multiple-component reading remediation that integrates multiple areas of reading skill instruction—decoding, word recognition, fluency and text comprehension.

What, specifically, should multiple component reading interventions include? It is essential that an intervention include training in phonological awareness (awareness of and ability to manipulate the sounds of spoken words), which should include explicit instruction in the alphabetic system (the sounds the letters make) and how to blend sounds to read words. This component of instruction is necessary to directly remediate the phonological deficit of students with reading disabilities and will improve students’ ability to figure out unknown regular words. However, recognizing that the English language is often unpredictable, simply targeting this deficit is not enough for successful remediation. Intervention should also directly target the core deficit in strategy learning. Struggling readers, armed with several word identification strategies, experience more success at reading words and text. An example of the strategies that we teach struggling readers in our Empower™ Reading Program is provided in the sidebar.

An effective reading program also offers opportunities to build fluency in reading and to enrich vocabulary, and also provides instruction in reading comprehension strategies (to help students understand text). Less is known about what improves reading fluency and reading comprehension and about the role of vocabulary instruction in the development of these skills. Some researchers believe that reading fluency and comprehension are interconnected, such that improvement in one results in improvement in the other. In the area of reading comprehension, research suggests that the most effective interventions teach individual strategies such as comprehension monitoring, clarifying, predicting, generating questions about the text, summarizing and using graphic organizers. As in word reading, the greatest gains in reading comprehension occur when students learn to use many strategies.

Current research has shown that systematic, intense, linguistically-informed interventions are necessary for students with reading disabilities. Although there may be more than one approach to addressing each of the core deficits of students

with reading disabilities, multiple-component reading interventions that target a range of core deficits result in greater improvement in the reading skills of struggling readers than programs that target only one area of reading deficit. The advantage of multiple-component remediation can be seen across a range of reading skills, from decoding and word identification to reading fluency and text comprehension.

For more information on Empower™ Reading and the Learning Disabilities Research Program at The Hospital for Sick Children, please call 416-813-6329 or e-mail [ldrp@sickkids.ca](mailto:ldrp@sickkids.ca), or [nbadger@sickkids.ca](mailto:nbadger@sickkids.ca)