

# An Effective Speech Therapy Method for School-Aged Children with Down Syndrome

## A Research Report for Families

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### Introduction

Most people with Down syndrome experience life-long difficulties in being understood by people outside of their immediate circle. In previous studies, there was not high-quality evidence that speech therapy could improve speech comprehensibility of children with Down syndrome. However, a recent research study shows that a relatively new therapy method improves speech comprehensibility in a subgroup of children with Down syndrome. Additionally, this study identified the “active ingredient” of this therapy method that was responsible for the gains in speech comprehensibility that children experienced.

In the study (see the report: *Treating Speech Comprehensibility in Students with Down Syndrome*), investigators compared a new therapy known as Broad Target Speech Recast with a traditional therapy method that combines several different techniques that are frequently used to treat speech sound disorders.

Broad Target Speech Recast treatment has two parts. First, the therapist uses familiar games and activities, as well as questions about the child’s actions, to encourage the child to talk. Then, when the child talks using a word that is understandable, but not clearly pronounced, the therapist provides a speech recast for the child. A speech recast is an adult utterance that immediately follows a child’s utterance, and that is an exact or reduced imitation of the word(s) that the child attempted to say, but that uses adult pronunciation. For example, if the child says, “Ah wa du,” the speech recast might be “Yes. You want juice.” The “broad target” part of Broad Target Speech Recast is that the therapist uses speech recasts for any word the child attempts to say that is inaccurately produced and that affords a speech sound that is developmentally appropriate.



The investigators had two predictions. First, they predicted that Broad Target Speech Recast would be better than the traditional therapy method in helping children with Down syndrome talk more clearly, at least in children who had relatively good verbal imitation skills prior to starting the round of treatment sessions. A child with relatively good imitation skills is able to hold in mind and reproduce what an adult says. Thus, a good imitator is likely to have the ability to hold in mind a word that a therapist “recasts,” to compare it to how he or she pronounced the word that he or she said previously, and to refine how he or she says the word to talk more clearly in the future. Additionally, they expected the amount of speech recasts that children experienced to be responsible for the gains that children made in speech comprehensibility that are due to the Broad Target Speech Recast treatment package.

## The Study’s Two Questions

- ❑ In children who have relatively good verbal imitation skills when they enter therapy, does Broad Target Speech Recast therapy work better than a traditional speech therapy to help school-age children with Down syndrome learn to speak clearly?
- ❑ In the subgroup of children benefiting more from Broad Target Speech Recast than the traditional therapy method, is the amount of speech recasts provided the primary reason that Broad Target Speech Recast works?

## Who Took Part?

Fifty-one 5- to 12-year olds with Down syndrome participated in the study. All children in the study (a) used speech in which fewer than 75% of attempted utterances were understood by a stranger in a 20-minute speech sample and (b) were below the 10th percentile on a test that measures how accurately children produce speech sounds. Additionally, children used a minimum of 20 different words in a 20-minute speech sample and were from a home where English was the primary language.

## Study Design

Twenty-three children were randomly assigned to the group receiving Broad Target Speech Recast. The rest of the children were randomly assigned to the traditional speech therapy group. The degree to which research staff could understand the children’s conversational speech was measured at four time periods separated by 2 months each. Before and after the

therapy phase, children’s verbal imitation skills were tested. During therapy sessions, the number of speech recasts that the therapists provided was measured. Each child received individual (1:1), 1-hour therapy sessions, twice a week, for 6 months in his or her school setting. The therapists were licensed and certified SLPs who were highly trained in, and monitored for adherence to, the treatment approach that they implemented throughout the treatment phase.

## Findings

Both of the investigators’ predictions were confirmed. Children with relatively high verbal imitation prior to treatment benefited most from the Broad Target Speech Recast treatment, and the use of speech recasts was a major reason for the benefit. Together, these findings suggest that using speech recasts after child utterances that are understandable, but incorrectly pronounced, improves children’s ability to make themselves understood in a variety of situations to relative strangers. Speech recasts work best for children with relatively good verbal imitation skills at the time they enter treatment. However, we would like to note that verbal imitation is a skill that can change in children with Down syndrome, even when they are school age.

Verbal imitation skills improved about equally in both the Broad Target Speech Recast and traditional speech therapy groups over the six months of the study. Thus, a child who is not a relatively good imitator when he or she is first assessed may become a relatively good imitator, and thus a good candidate for Broad Target Speech Recast therapy, with time and further development.

## Heartfelt Thanks

We are grateful to the families who took part in this study. They are our partners in discovery. Without families taking part in research, we could not advance our society’s understanding of how children with and without disabilities grow and learn.

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