

The Lidcombe Program Treatment Guide



January 2023 (Version 1.4)

Mark Onslow, Margaret Webber, Elisabeth Harrison,
Simone Arnott, Kate Bridgman, Brenda Carey, Stacey Sheedy,
Sue O'Brian, Verity MacMillan, Wendy Lloyd, Anna Hearne

OVERVIEW

Professional issues

Qualified practitioners

The Lidcombe Program is administered only by speech pathologists, who are known by various terms including, but not limited to, speech pathologist (Australia), speech-language pathologist (North America), speech and language therapist (United Kingdom and Japan), Logopäd (Germany), orthophoniste (France), logopædagog (Denmark) and logopedist (Netherlands). In this guide, the generic term clinician is used. The Lidcombe Program is endorsed by the professional associations of several countries.^{1,2,3}

An important note

It is essential that a professionally qualified clinician trains, guides, and supervises parents during the Lidcombe Program. Neither this guide nor any other written material about the treatment can replace professional Lidcombe Program training. The treatment is not designed for administration by parents independently of clinicians. This guide is intended as a reference tool for use by clinicians and parents during treatment.

The Lidcombe Program Trainers Consortium

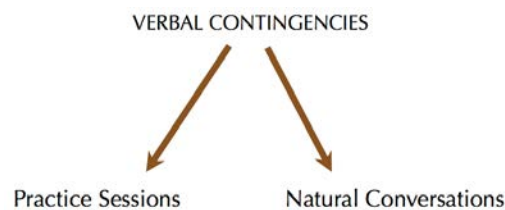
Postgraduate clinician training is available from the *Lidcombe Program Trainers Consortium*.⁴ The Consortium has members in 13 countries and provides training in other countries as well. This training usually involves two days of instruction and demonstration, often with subsequent follow-up. When translators are required, the workshop may involve additional days.

A behavioural treatment

The Lidcombe Program is a behavioural treatment that targets children's stuttered speech. It was designed for children younger than 6 years but, in some circumstances, may be suitable for older children (further details are available in a clinical textbook⁵). During the Lidcombe Program, children are not instructed to change their usual speech pattern in any way. Parents do not alter their usual speech pattern, or their speech and language habits, in any way. Nor do they change the family lifestyle in any way, apart from presenting verbal contingencies as described in this guide. Parents, or sometimes caregivers, deliver Lidcombe Program treatment with the continuing training and supervision of a qualified clinician.

Parents give verbal response contingent stimulation

The term *parent verbal contingencies* refers to when parents comment after a child does not stutter or does stutter. Parents provide verbal contingencies to their child during practice sessions and during natural conversations.



Measuring stuttering

Regular measurement of children's stuttering severity occurs during the Lidcombe Program with a Severity rating (SR) scale: 0 = *no stuttering*, 1 = *extremely mild stuttering*, and 10 = *extremely severe stuttering*.[†] Parents and clinicians use the SR scale during the Lidcombe Program.

Weekly appointments

The Lidcombe Program was developed for the format of weekly clinical appointments. These can occur in the clinic or by video telehealth. During each weekly appointment (45–60 minutes), the clinician teaches the parent how to do the treatment and ensures that it is being done properly. A later part of this treatment guide specifies what occurs during each clinic appointment and in what order.

Treatment goals during Stage 1 and Stage 2

The Lidcombe Program has two stages. The treatment goal of Stage 1 is for the child to speak with no stuttering or almost no stuttering, and the goal of Stage 2 is for no stuttering or almost no stuttering to be sustained for a long time.

Resource materials

At the Australian Stuttering Research Centre website (<https://www.uts.edu.au/asrc/resources>) there is a downloadable SR chart in eForm and PDF formats for parents and clinicians, and a downloadable pamphlet about the treatment for parents. A checklist of reflective clinical questions is available, which clinicians can use to verify that they are doing the treatment as specified in this guide, and to help them with problem-solving.⁶ The SR chart and the checklist are reproduced in Appendix One and Two of this guide.

MEASUREMENT

Purposes of severity ratings (SRs)

SRs are used to measure children's stuttering in and outside the clinic. Their simplicity provides a quick and effective way for clinicians and parents to communicate to each other about children's stuttering severity. They enable progress toward the Lidcombe Program treatment goals to be evaluated constantly. If progress is not satisfactory, then SR scores alert the clinician, and the problem can be resolved. Such problem solving, and subsequent decision making, is a routine part of the Lidcombe Program, and much of it centres on SRs. It is useful if clinicians explain the importance of SRs during the first clinic appointment and reiterate this throughout the course of Lidcombe Program treatment.

Finally, SRs give parents and clinicians a way to plan the presentation of parent verbal contingencies. For example, when implementing verbal contingencies, the parent may wish to target occasions when stuttering is severe, and, on other occasions, they may wish to target situations where stuttering is mild.

[†] Similar versions of the scale have been used in previous versions of the treatment.

Treatment goals specified with SR scores

Parents assign a SR to the child's speech each day, and clinicians assign a SR during each clinic appointment. Lidcombe Program treatment goals are based on those SR scores (see *Treatment goals for Stage 2*, page 10).

A flexible measurement

SRs are a flexible way to measure stuttering severity. Each day, parents record SRs for the whole day to reflect the child's typical speech for that day. Parents often do not hear their children speaking all day. An example is when their children are at pre-school or childcare. In such cases, parents assign SRs based only on the speech they do hear during the day.

Variations of the SR procedure can be used, involving more than one SR per day, if the clinician thinks it would be useful. For example, one SR could be used for typical severity and another for highest severity during the day. Additionally, clinicians may wish parents to use supplementary SRs for a particular speaking situation that occurs each day, such as dinner, bath time, and shopping. These are recorded in addition to the daily SRs. Other options are for parents to record a highest and lowest SR for each day.

Accurate parent SRs are essential

Research shows that parents are typically able to assign SRs accurately⁷ and that parents have close agreement with clinicians.^{8,9} It is essential for clinicians to ensure that this occurs. If parents underestimate a child's stuttering severity with their SRs, it can result in the child being admitted to Stage 2 prematurely. In the opposite situation, where parent SRs are too high, children take longer to complete Stage 1 than is necessary.

Web based SRs

Parents may bring handwritten hard copy SRs to the clinic each week, although it is not necessary. An alternative is using a downloadable SR chart for parents and clinicians (see *Resource materials*, above). Another option is for parents to send SRs to the clinician at regular intervals, such as daily or every few days, using a digital device. The key to collecting SR scores is for parents to do this consistently and accurately. The method that is used to record SRs should be guided by parent preference and convenience.

Parent SR training

The parent is trained to use SRs during the first clinic appointment. Training begins when the clinician explains the scale. The clinician's judgement, based on clinical experience, is used as the benchmark for SR scores. Acceptable agreement is when the parent SR is within one score, or identical to, the clinician SR. However, it is desirable during the later stages of Lidcombe Program treatment for parent and clinician SR scores to be identical. This is because children's severity is at the lower end of the SR range during those later stages of treatment, and there is less margin for error for clinical use of the scale. This is discussed later (see *Stage 2*, p. 10).

During the first clinic appointment, after the clinician has explained the SR scale, the parent or the clinician, or both, converse with the child for a few minutes until the child displays a reasonably representative amount of stuttering. After a few minutes, the clinician asks the parent to assign a SR to the speech sample. The clinician indicates whether that is an appropriate score and, if necessary, suggests a different score. All subsequent clinic appointments begin with the parent conversing with the child, the parent assigning a SR score, and the clinician either confirming that the score is appropriate or providing corrective feedback.

Another time-efficient and valid speech sampling method is for parents to audio or video record the child during one or more conversations of everyday life, and for the clinician and parent to listen to the recording and consider a SR score at the start of the clinic appointment. That method has the advantage of being able to scan quickly through a long and representative set of recordings of the child's speech.

Parent training methods can include scoring SRs from recorded or real-time speech samples, practice with identifying numbers of stuttering moments, and discussion of types of stuttering moments. One taxonomy of stuttering moments^{10,11} uses three core categories—repeated movements, fixed postures, and extraneous behaviours—to describe types of stuttering moments. Discussion of the types of stuttering

moments for the child's speech is a useful part of a clinic appointment because clinical improvement, which is reflected by reducing SR scores, is often accompanied by changing types of stuttering moments.

PARENT VERBAL CONTINGENCIES

There are five Lidcombe Program verbal contingencies. Three of the verbal contingencies are for stutter-free speech, and two are for moments of unambiguous stuttering.

Verbal contingencies for stutter-free speech

Verbal contingencies for stutter-free speech are central to the Lidcombe Program because, above all else, children must enjoy the treatment. Therefore, parent verbal contingencies for stutter-free speech need to be inherently positive, supportive, and enjoyable.

Praise

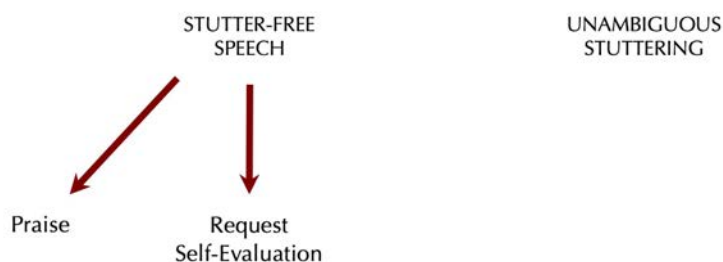
The first parent verbal contingency for stutter-free speech is *praise*.



Clinicians teach parents to praise their children for stutter free speech. Parents can be taught to say things such as “That was lovely smooth talking” or “Good talking, no bumps.” It is essential for parents to do this in their own way. Every parent has a different style, and different children like to be praised in different ways. Clinicians also need to be sure that parents are genuine with their praise and don’t overdo it to the point that it ceases to be enjoyable for the child.

Request for self-evaluation

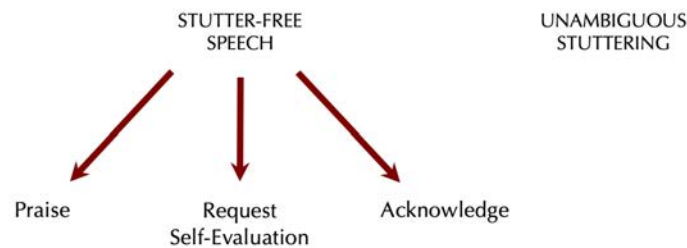
The second parent verbal contingency for stutter-free speech is *request self-evaluation*.



This verbal contingency can be used when a child does not stutter for a period as brief as a single utterance or as long as several hours. When no stuttering occurs during this time, the parent can ask the child to evaluate speech. The parent could say something like “Was that smooth?” and expect the response “Yes,” or “Were there any bumps there?” and expect the response “No.” This verbal contingency is used only for stutter-free speech, and not for stuttering.

Acknowledge

The third verbal contingency for stutter-free speech is *acknowledge*.



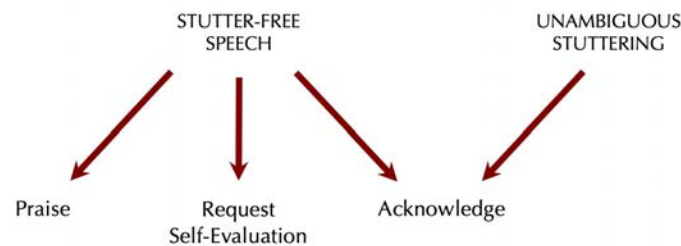
Acknowledging stutter-free speech is different from praise for stutter-free speech because it is a matter-of-fact statement rather than a positive comment. Examples would include “That was smooth” and “No bumpy words.” *Acknowledge* is also different from *praise* and *request self-evaluation* because it can be used in a brief manner that does not disrupt the flow of a conversation. From this perspective, it has clinical value.

Verbal contingencies for unambiguous stuttering

These need to be introduced carefully because some children can initially respond negatively to them. They are used much less frequently than verbal contingencies for stutter-free speech. In other words, most of the verbal contingencies that children receive during the Lidcombe Program are for stutter-free speech. As is the case with verbal contingencies for stutter-free speech, every parent has a different style with their child, and different children need to receive verbal contingencies for stuttering in different ways.

Acknowledge

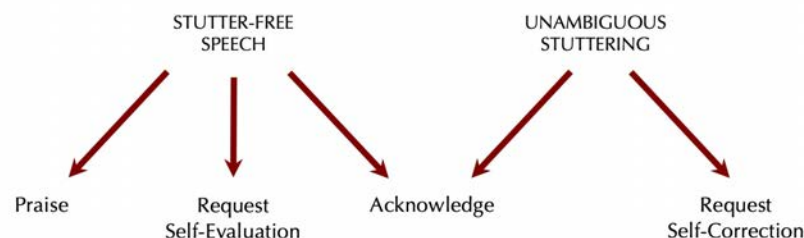
The first verbal contingency for unambiguous stuttering is *acknowledge*.



As with the verbal contingency *acknowledge* (for stutter-free speech), this verbal contingency is not evaluative. The parent just notes that stuttering has occurred and moves on, saying something like “That was bumpy” or “That was a stuck word.” As is the case with *acknowledge* (for stutter-free speech), it does not disrupt the flow of a conversation.

Request self-correction

The second verbal contingency for unambiguous stuttering is *request self-correction*.



Here, the parent asks the child to say the utterance again without the stuttering. Mostly, the child can do this, but, if the child fails to do so, it is usually best for the parent not to persist. If a child reacts negatively in any way to requests for self-correction, then it is essential that these requests be stopped immediately and the matter discussed and resolved with the clinician.

Examples of requests for self-correction would be “Can you say it again?”, “Can you say that smoothly?”, or “Can you say that without the bump?” Request for self-correction occurs occasionally in response to stuttering moments. The exception to that rule is when the child only has a few stuttering moments each day, which occurs toward the end of Stage 1. At that time, it might be appropriate for the clinician to direct a parent to request self-correction for all stuttering moments.

Optional parent verbal contingencies

The Lidcombe Program has two additional verbal contingencies that parents can use, but are optional.

Praise for spontaneous self-evaluation of stutter-free speech

The first of these is *praise for spontaneous self-evaluation of stutter-free speech*. Older pre-school children receiving the Lidcombe Program sometimes spontaneously self-evaluate their speech as stutter-free, saying something like “I did smooth talking”, in which case, a parent may say something like “Great, you’re noticing your smooth talking.”

The parent needs to be sure that the praise is for self-evaluation of stutter-free speech, not praise for stutter-free speech. Parents need to understand the subtle difference between the two. In the previous example, “Great, you’re noticing your smooth talking” is praise for self-evaluation of stutter-free speech and “Great, that was smooth talking” is praise for stutter-free speech.

It is not useful to praise spontaneous self-evaluation of stuttered speech, such as “I just did a bump.” The reason for this is that it might confuse a child if parent praise follows a moment of stuttering. If a child does spontaneously self-evaluate stuttering, parents can note that it occurred and tell the clinician at the next clinic appointment. Naturally, this may be a desirable thing to be happening and, therefore, may be a sign that the Lidcombe Program treatment process is working well.

Praise for spontaneous self-correction.

The second optional verbal contingency is *praise for spontaneous self-correction*. When children correct stuttered utterances without being asked by a parent to do so, the parent can offer praise. Again, older pre-school children are those most likely to do this. The verbal contingencies that parents might use here include “Great job, you fixed that bumpy word all by yourself” and “You fixed that stuck word, well done.”

Examples of parent verbal contingencies

The table below contains examples of some of the ways that parents can provide verbal contingencies.

STUTTER-FREE SPEECH	
Praise	“Wow, that was so smooth!” “Fantastic smooth talking.” “I’m loving your smooth speech.” “That was so super-smooth.”
Request self-evaluation	“Was that smooth?” “Were there any bumps there?” “Did you say that smoothly?”
Acknowledge	“Smooth talking” “That was smooth.” “Smooth again.”
UNAMBIGUOUS STUTTERING	

*Acknowledge**"A little bump then."**"That was a bit bumpy."**"That was a stuck word."**Request self-
correction**"Can you try that again?"**"Can you say [stuttered word] smoothly?"**"See if you can say that without the bump."*

Some essential things about parent verbal contingencies

Teach verbal contingencies for stutter-free speech first

Clinicians don't teach parents how to do the verbal contingencies all at once. Normally, they first teach parents to give verbal contingencies for stutter-free speech so that children can become comfortable with the treatment. Then, they teach parents to give verbal contingencies for stuttered speech when they are sure that children are ready for it. It makes clinical sense to introduce verbal contingencies for stutter-free speech before verbal contingencies for stuttering because the former are inherently positive.

Be sure parents are using parent verbal contingencies correctly

Clinicians need to be sure that parents are using verbal contingencies correctly, consistent with the instructions given to them. At each clinic appointment, parents demonstrate how they have been doing the verbal contingencies with the child during the previous week, and the clinician gives them feedback. Parents may audio or video record examples of themselves providing verbal contingencies during practice sessions at home and play them to the clinician during the clinic appointment. The clinician could also watch parents providing verbal contingencies during the clinic appointment. In either case, the clinician gives constructive feedback and then watches parents give verbal contingencies as they take account of that feedback. Parents delivering contingencies incorrectly is a common reason that children do not progress as expected through Stage 1. This problem can persist and undermine the treatment process if the clinician does not detect it by direct observation of parents.

Parent verbal contingencies are for unambiguous stuttering moments

Lidcombe Program verbal contingencies for stuttering are for unambiguous stuttering moments. If parents have any doubt about whether a disfluency is actually a stuttering moment then they do not use a verbal contingency. At the start of the program, children typically have many unambiguous stuttering moments each day, and parents have plenty of them to work with. Parents giving verbal contingencies for ambiguous disfluencies can become an issue at the end of Stage 1 when children have SR 0–1; that is, when there is no stuttering or there is only extremely mild stuttering during most days.

Parent verbal contingencies are a positive experience for the child

All verbal contingencies, whether for stutter-free or stuttered speech, must be a positive experience for the child. They must not be constant, intensive, or invasive. It is essential to identify when they are not a positive experience or, even better, to anticipate when this might occur and prevent it. For some parents, it is necessary to introduce the verbal contingencies slowly and carefully, to be sure that the child is receiving supportive and enjoyable verbal contingencies. Otherwise, during clinic appointments, it will be obvious that the child is not happy with the treatment. A rule of thumb is that there should be far more verbal contingencies for stutter-free speech than for stuttered speech.

Have parents give as many parent verbal contingencies as are needed

There is no standard number of verbal contingencies each day that is known to ensure success for all children. All that is known from laboratory research is that verbal contingencies can control stuttering and that clinical trials show that the Lidcombe Program, which contains parent verbal contingencies, is an efficacious treatment. The parent and clinician need to establish how many verbal contingencies are suitable for the individual child. This is a clinical variable that could be targeted for change if the child does not show signs of improvement. Verbal contingencies should be given as frequently as the child is happy to receive them, without being a burden to the parent. As a rule of thumb, throughout Stage 1 and Stage 2, verbal contingencies during natural conversations would occur no fewer than several times each hour that the parent spends with the child.

Parent verbal contingencies are accurate

It is essential that the clinician is satisfied that parents can present verbal contingencies accurately in the clinic with the clinician before they attempt to use them with a child. The clinician needs to be sure that parents can distinguish between unambiguous stuttering moments and stutter-free speech. It is also essential that parents are able to present verbal contingencies immediately after periods of stutter-free speech and stuttering moments. Delayed and inaccurate verbal contingencies are unlikely to be effective. At each clinic appointment, the clinician needs to observe parents providing immediate and accurate verbal contingencies either during clinic in real time or on recordings.

Verbal contingencies during practice sessions*What they are*

Using verbal contingencies during practice sessions allows the parent to learn how to use them safely and correctly in a positive way. This positive manner is particularly important when children have experienced negative social reactions towards their stuttering. The practice sessions also allow the desired behavioural response of stutter-free speech to predominate. To maintain a positive experience for the child during practice sessions, stuttering moments should only occur occasionally during them.

Maximising stutter-free speech

There is research evidence that the chance of a stuttering moment increases with increased syntactic complexity and utterance length, and these findings have been replicated with children. An overview of that evidence is given in Lecture One of a downloadable clinical textbook.⁵ Clinicians can use this information to teach parents to alter the likelihood of stuttering moments occurring during practice sessions. Parents can do this by giving children options of conversing with a range of utterance durations with differing syntactic complexities: from one and two words to several consecutive utterances in a conversation. Clinicians make those management decisions based on the child's stuttering severity at the time of the activity.

Methods to reduce stuttering during practice sessions may include the following:

- turn taking
- word or phrase imitation
- sentence completion
- closed questioning
- binary choice questions
- talking about the here and now
- concrete stimulus materials.

The child's utterances may also be influenced by the

- choice of conversation partners
- context where the practice session occurs
- excitement level generated by the conversation partner, the context, the toys, or the talking activities.

Clinicians teach parents how to change these variables to ensure that only occasional stuttering occurs during practice sessions. The fundamental task for the parent during practice sessions is to consistently use the methods above to ensure that stutter-free speech is maximised. It is essential that the parent changes the methods and the way they are used during practice sessions. The aim is for children to be predominantly stutter-free during the practice sessions but, at the same time, produce the most complex stutter-free speech that they are capable of producing at that time.

Clinicians find that practice sessions can be challenging when the following situations occur:

- Stuttering is severe.
- Children talk about abstract or imaginative topics in detail and at length.
- Parents are uncomfortable leading conversations with their children.
- Children do not comply with a turn-taking format.
- Children quickly become bored with each activity.

These situations require the clinician to discuss and problem-solve with parents to find solutions.

How often practice sessions occur

The clinician teaches the parent to do a practice session usually once, or sometimes twice, per day. Practice sessions usually last for 10–15 minutes. In some rare cases, though, it may suit some children to have shorter practice sessions if that works better for them. In such cases, the clinician may feel that more than one or two a day would be useful.

The parent typically sits with the child at a table or on the floor in a quiet place with suitable activities, such as books and games. Such activities are not essential, and treatment during practice sessions can be done in many situations, such as meal preparation, bath time, and shopping. However, in many cases—perhaps most—the formality of sitting at a table or on the floor at home is useful for the treatment to be done optimally. This allows parents to focus on, and to monitor, the child's speech with fewer distractions.

Verbal contingencies for stutter-free speech during practice sessions can be supplemented with non-verbal contingencies if the clinician thinks that they would be helpful. Examples would be stickers, stamps, ticks on a page, and blocks. Such non-verbal contingencies are not useable during everyday conversations, but non-verbal contingencies with gestures can be: high-fives, fist-pumps, thumbs-ups, and nods. As such, it makes clinical sense to use these during everyday conversations if they are suitable for the child. They can be alternatives or supplements to verbal contingencies during everyday conversations as well as during practice sessions. Normally, non-verbal contingencies do not replace verbal contingencies but only supplement them, unless there is a sound clinical reason to do so. One situation where that might be appropriate is during the latter portions of Stage 2.

Verbal contingencies during natural conversations*What they are*

The fundamental premise of the Lidcombe Program is that parent verbal contingencies are the active treatment agent for eliminating or greatly reducing stuttering. So, when the clinician feels it to be appropriate, it is logical for those parent verbal contingencies to occur during natural conversations with children. Unlike practice sessions, the natural conversations of everyday childhood life are never modified to optimise the occurrence of stutter-free speech. Instead, parents take advantage of naturally occurring periods of reduced stuttering severity during each day to present verbal contingencies.

Examples of natural conversations with children, during which parents typically give verbal contingencies, are food preparation, meal times, in the bath, on the way to pre-school, in the park, and shopping. As with verbal contingencies during practice sessions, they can be supplemented with non-verbal contingencies if the clinician thinks that they would be helpful.

When they are introduced

Verbal contingencies during natural conversations are introduced when the clinician observes that the parent is consistently giving verbal contingencies safely and correctly during practice sessions. Usually, at this time, the child's SRs are showing improvement.

The transition between treatment during practice sessions and natural conversations

For a period, parents provide treatment during practice sessions and also during natural conversations. Eventually, treatment during natural conversations replaces treatment during practice sessions, and treatment during practice sessions does not occur at all. The clinician may decide that this transition should not be completed until as late as some time during Stage 2.

This transition is a flexible process. Throughout the period when parents are providing verbal contingencies during practice sessions and natural conversations, the clinician may recommend several changes to the number and duration of practice sessions. An example would be changing from one practice session each day to one every second day. Similarly, during the period when parents are providing verbal contingencies during practice sessions and natural conversations, the clinician may direct many changes to the number, type, and timing of verbal contingencies that parents give during natural conversations.

STAGE 2

The purpose of Stage 2

There are two purposes of Stage 2. The first is to systematically hand over complete responsibility for the management of children's stuttering to their parents. Second, Stage 2 is designed to maintain the absence or low level of stuttering that was attained during Stage 1. Relapse after successful Lidcombe Program treatment can occur.¹² Half of the children in that report showed some signs of stuttering relapse, with a mean of 5 years after they began Stage 1.

Systematic withdrawal of verbal contingencies

During Stage 2, the parent progressively withdraws verbal contingences during natural conversations, providing that it can be done without stuttering increasing. The clinician makes suggestions for the timing of the withdrawal of contingencies. Suggestions are based on the child's SRs and discussion with the parent.

Treatment goals for Stage 2

To progress to Stage 2, the following two criteria need to be met for three consecutive clinic appointments that are 1 week apart: (a) parent SRs of 0–1 during the week preceding the clinic appointment, with at least four of those seven SRs being 0, and (b) clinician SRs of 0–1 during the clinic appointment. A minimal requirement during Stage 2 is for parents to record SRs only during the week preceding the clinic appointment. However, the clinician may direct parents to record SRs more often during Stage 2.

Performance-contingent maintenance

The performance-contingent maintenance schedule applied to stuttering treatment, and its potential benefits, have been documented.¹³ Performance-contingent maintenance means that the parent and child return to the clinic and are required to maintain treatment targets for increasingly longer intervals: two appointments 2 weeks apart, then two appointments 4 weeks apart, then two appointments 8 weeks apart and, finally, one or two appointments 16 weeks apart. The schedule normally takes a year or more. The importance of performance-contingent maintenance is shown by a report that half of the children during Stage 2 fail to meet treatment targets at least once during Stage 2.¹²

Ideally, in the case of early signs of relapse during Stage 2 clinic appointments, parents are able to restore SRs to the target 0–1 range, as described above (see *Treatment goals for Stage 2*), by resuming treatment during practice sessions and/or increasing the rate of verbal contingencies. If such attempts to restore SRs to the target 0–1 range are not successful, parents should contact the clinician for advice prior to the next scheduled Stage 2 clinic appointment.

A common Stage 2 problem

When children complete Stage 1 and there is no stuttering or nearly no stuttering, parents or clinicians, or both, can become complacent and not follow through with the prescribed Stage 2 maintenance program. This creates a serious risk of relapse. It is essential that verbal contingencies for stutter-free speech continue to occur during Stage 2 and that any unambiguous stuttering moments that occur receive verbal contingencies from parents. The authors of a long-term clinical follow-up¹⁴ suggested that clinicians should encourage parents to watch and listen carefully for any signs of post-treatment stuttering during and after completion of Stage 2.

LIDCOMBE PROGRAM CLINIC APPOINTMENTS

Stage 1 clinic appointments

During Stage 1, the parent and child have an appointment once per week. Clinic appointments are normally 45–60 minutes. The following events normally occur during a clinic appointment, in the following sequence:

[1] Child conversation

The parent or the clinician, or both, converse with the child until the extent of stuttering, if any, is apparent. Alternatively, the parent and clinician listen to a recording or a selection of recordings of the child conversing during everyday life. The clinician records a SR.[†]

[2] Check parent SR

The clinician checks the parent's use of the SR scale using procedures outlined previously (see *Parent SR training*, page 3).

[3] Discussion of progress during the previous week

The clinician uses SR scores for each day of the previous week to focus an in-depth discussion of severity and treatment responsiveness during the previous week. Discussion questions normally include the following:

- When were practice sessions planned, did they occur as planned, and how often did they occur and for how long?
- With verbal contingencies during practice sessions, how was the required low stuttering severity achieved?
- How frequently did the parent give verbal contingencies during natural conversations?
- What verbal contingencies were used during practice sessions and/or natural conversations?
- During what periods of the day did the practice sessions occur?
- What were the child and parent doing at the time of verbal contingencies during natural conversations?
- Where did the verbal contingencies during natural conversations occur?
- How long were the natural conversations in which verbal contingencies occurred?
- How much was the child speaking during these conversations?
- Does the parent think anything did or did not work particularly well during the week?

The following issues commonly emerge:

- The child's stuttering was too severe during practice sessions because they were not structured optimally.
- The parent did not present verbal contingencies during practice sessions each day as planned.
- The parent did not present verbal contingencies during natural conversations each day as planned.

[4] Parent demonstrates a practice session

The parent demonstrates to the clinician how verbal contingencies were conducted during the previous week, as planned in the last clinic appointment. Alternatively, the clinician and parent listen to a

[†] Some clinicians find it helpful to record a percentage of syllables stuttered score at this time.

recording of verbal contingencies delivered to the child during the week. When clinicians observe a practice session, either in the clinic or on a recording, they check for the following:

- The child is enjoying the practice session.
- The parent is accurately identifying stutter-free and stuttered speech.
- The practice session is structured adequately to attain low stuttering severity.
- The practice session is structured optimally.
- The verbal contingencies are appropriate for the child.
- Most verbal contingencies are for stutter-free speech.
- The verbal contingencies are varied.

[5] Parent and clinician discuss the verbal contingencies demonstrated by the parent

The clinician determines the extent to which the practice session demonstration, or the recording of the practice session, accurately represents procedures recommended for the previous week. The clinician asks parents for their comments about the verbal contingencies being used. That discussion includes which verbal contingencies worked well, which did not, and which could be improved. If recommended procedures were not followed, the clinician and parent discuss the reasons for this.

[6] Planning treatment changes for the coming week

The parent and clinician discuss changes to procedures for the coming week. These may include the following:

- the technique to achieve low stuttering severity during practice sessions
- activities to use during practice sessions
- the types and frequencies of verbal contingencies during practice sessions
- when and where to provide verbal contingencies during natural conversations.

The clinician trials and then demonstrates to the parent any changes to treatment procedures for the coming week. Then, the parent practices the changed procedures in front of the clinician, and the clinician gives feedback to the parent.

[7] Concluding the appointment

The clinician concludes the appointment by summarising the plan for the coming week and inviting the parent to raise any matters for discussion.

Stage 2 clinic appointments

A typical Stage 2 clinic appointment is 30 minutes. At the start of the appointment, the clinician obtains parent SRs collected during the previous week and discusses with the parent the extent to which these have been typical of all weeks since the last appointment. The clinician and parent discuss the SRs in detail. In particular, they discuss how the parent has responded to any fluctuations in SRs. Then, after a conversation with the child, or listening to a recording or segments of recordings of the child, the clinician assigns a SR and checks that the parent agrees with that score. The clinician and parent discuss the number of verbal contingencies that have typically been used during natural conversations since the last appointment.

If the child meets the performance criteria, then the clinician arranges progression to the next step in the performance contingent Stage 2 schedule. If the child does not meet the performance criteria, then progress is not recommended. Instead, the clinician either (a) schedules an appointment for the following week, or the week after that, and makes recommendations regarding management for the child's increased stuttering, (b) schedules a return to an earlier stage of the sequence of Stage 2 clinic appointments, or (c) on rare occasions, returns the child to Stage 1.

Stage 2 continues until the child has sustained treatment goals for around a year. After the conclusion of Stage 2, parents are advised to contact the clinician if any relapse occurs that they cannot effectively manage.

THE LIDCOMBE PROGRAM EVIDENCE BASE AT JANUARY 2023

The Lidcombe Program is supported by basic and clinical research. It is derived from an extensive body of literature showing that stuttering can be controlled by response contingent stimulation and that response contingent stimulation of stuttering can be verbal.^{15,16} The Lidcombe Program was derived directly from research showing that this was a useful clinical option for children.^{17,18,19}

Overview

Details about all aspects of the Lidcombe Program evidence base are available in a downloadable clinical textbook⁵ located on the Resources page of the *Australian Stuttering Research Centre* website (see *Resource materials*, above). Eleven independent reviews, including a Cochrane Review,²⁰ report the evidence base for the Lidcombe Program to be the most comprehensive for early stuttering treatments. An overview of that evidence is given in Lecture Seven of a clinical textbook.⁵ An analysis (N = 134) of randomised controlled clinical evidence and randomised controlled trials for the Lidcombe Program²¹ showed that its odds ratio was 7.5 for attaining below 1.0 percent syllables stuttered at 6.3 months post-randomisation. This means that, at 6.3 months post-randomisation, children who received the Lidcombe Program had 7.5 times greater odds of having no stuttering or almost no stuttering than children who did not receive the Lidcombe Program. A Cochrane Review²⁰ noted that the treatment is the only early intervention with demonstrated superiority over no-treatment controls. However, that review noted that the evidence base for the Lidcombe Program has some limitations.

The evidence base for the treatment includes children from the following countries: Australia, the United Kingdom, New Zealand, the United States, Canada, the Netherlands, Sweden, Malaysia, Kuwait, and Iran. The Lidcombe Program was developed for English speaking cultures. However, a systematic review²² concluded that it is efficacious in different cultures and languages, although it may require a longer treatment time. The review concluded that it is suitable for bilingual contexts.

Some key research findings are presented below.

Clinical trials

The weekly-appointment format

The Lidcombe Program was developed for the format of weekly clinical appointments. This guide describes procedures for that format. The first clinical trial for the weekly-appointment format was published in 1990.²³ Subsequently, there were three non-randomised Phase II trials^{24,25,26} and two Phase III randomised controlled trials.^{27,28} One report followed up children treated in those trials from 3–7 years.¹⁴ A Phase II randomised trial²⁹ with three arms compared the traditional weekly appointment treatment format with two clinic appointments each week and one clinic appointment every 2 weeks. Results provided a preliminary suggestion that outcomes from one clinic appointment every 2 weeks may be non-inferior to one clinic appointment per week. A randomised trial³⁰ has compared 18-month outcomes of the Lidcombe Program in weekly-appointment format with RESTART-DCM treatment, showing little evidence of a difference in outcomes between the treatments. A three-arm randomised controlled trial³¹ compared the Lidcombe Program with two versions of the Westmead Program. No evidence of non-inferiority was found among the treatments.

Telehealth and group treatment formats

To date, there have been four telehealth trials: one Phase I trial,³² one non-randomised Phase II trial,³³ one randomised Phase II trial,³⁴ and one Phase III randomised controlled trial.³⁵ With the publication of telehealth Lidcombe Program trials and the development of webcam technology, telehealth Lidcombe Program presentation is emerging as a viable service provision option. A majority of 106 surveyed United States and Canadian speech-language pathologists (94%) indicated that they would include telehealth in future Lidcombe Program delivery,³⁶ indicating benefits of “time efficiency, flexibility of scheduling, and improved clinical processes” (p. 1).

A randomised controlled trial has been published showing that a rolling-group treatment format is as efficacious as individual treatment, but much more cost efficient.³⁷ That treatment format has been shown to be translatable to clinical settings.³⁸

Randomised clinical experiments

In addition to randomised controlled trials, there have been two randomised clinical experiments that have given children only a part of the Lidcombe Program treatment and compared results with control children who received no treatment.^{39,40} One experiment compared the Lidcombe Program with RESTART-DCM treatment.⁴¹ Other randomised experiments explored the contribution of verbal contingencies to treatment effects.^{42,43}

Translation research

Translation refers to the extent to which the results of clinical trials can be attained in clinical communities. The Lidcombe Program rolling group treatment model³⁷ has been shown to be translatable to clinical settings.³⁸ There have been two reports of Lidcombe Program translation to Australian and English community clinicians.^{44,45} The community clinicians generally matched outcomes reported in clinical trials, although therapist drift from manualised procedures emerged as a clinical issue. Generally, it appears from these results that standard professional preparation or specific Lidcombe Program post-graduate training may be sufficient to attain treatment translation. That statement may be generalisable to other countries besides England and Australia.

Treatment process research

Treatment fidelity refers to whether a treatment is administered as intended. This is an important consideration with treatment in general,^{46,47} and specifically with stuttering treatment.^{48,49} Departure from procedures specified in this guide, or *clinician drift*⁵⁰ to use the correct term, is undesirable. There have been five studies reporting data about Lidcombe Program treatment fidelity that highlighted some important issues with its application.^{44,51,52,53,54}

There are data to confirm that it is a safe treatment if delivered as intended,^{30,55} with no negative psychological outcomes associated with it, such as child anxiety or impaired parent-child attachment. There are data from 277 children about 32 variables as potential predictors of treatment dropout and treatment outcome.⁵⁶ No clinically important predictors emerged from that analysis.

Two studies have provided information about parent experiences with the Lidcombe Program.^{57,58} These studies are informative—perhaps essential—reading about the treatment before attempting it clinically.

Mechanisms of action research

At present, despite considerable research, there is no mechanism established that can account for the treatment effects of the Lidcombe Program. There have been several studies that sought to explain the demonstrated efficacy of the treatment. It appears that post-treatment changes to parent or child language cannot explain its reported treatment effects,^{59,60,61} nor can child post-treatment acoustic changes to speech production.⁶² A preliminary report⁶³ raised the prospect that inter-turn speaker latencies may be involved in Lidcombe Program mechanisms of action.

Currently, researchers are exploring the contribution of parent verbal contingencies to the effects of the treatment. Three reports have raised issues about how verbal contingencies operate during the Lidcombe Program treatment process.^{54,53,54} A non-inferiority trial²⁸ has compared the Lidcombe Program with and without verbal contingencies. Results were inconclusive, prompting the researchers to suggest “it is possible that verbal contingencies make some contribution to the Lidcombe Program treatment effect” (p. 1). Eventually, these and other kinds of treatment process research may lead to changes to the treatment process described in this guide and in other sources.

Number of Stage 1 clinic appointments required

Lidcombe Program treatment benchmarks are based on 17 studies, including file audits and clinical trials. These studies involved a total of 995 children, and an overview is given in Lecture Seven of a clinical textbook.⁵ According to these studies, a median of 17 clinic appointments is required for children

to attain Stage 2 criteria.[†] There is around a one-third reduction of median parent SR scores after four weeks of treatment.⁶⁴

Treatment times for individual clinicians vary according to specialist or generalist clinical status, the nature of their caseloads, and their clinical experience and training. Indeed, the range of median number of clinic appointments in the reports above is 10–30.

It is recommended that these studies be used as broad guidelines for the number of Stage 1 clinic appointments rather than being used as professional benchmarks. They may be useful guidelines to alert clinicians when a child's progress may not be typical of Lidcombe Program caseloads. Such situations commonly prompt clinicians to consult with colleagues.

ACKNOWLEDGEMENTS

The authors of this guide would like to thank Damien Liu-Brennan for his scientific copy-editing contribution.

[†] This means that half of the children in those caseloads attained Stage 2 criteria in more than 17 clinical appointments, and half of the children in those caseloads attained Stage 2 criteria in fewer than 17 clinical appointments.

APPENDIX ONE

CHILD STUTTERING SEVERITY CHART

Child Stuttering Severity eForm

Name: _____

Other Information:

Stuttering Severity (x)

0 = No stuttering

1 = Extremely mild stuttering

10 = Extremely severe stuttering

[illegible][illegible][illegible][illegible]

APPENDIX TWO

LIDCOMBE PROGRAM REFLECTIVE CLINICAL QUESTIONS

Adapted and reproduced with permission: Sheedy, S., MacMillan, V., O'Brian, S., & Onslow, M. (2017). Lidcombe Program: Development and validation of reflective questions. *Journal of Clinical Practice in Speech-Language Pathology*, 19, 151–156, © 2017 Speech Pathology Australia.

(Give responses for the past month)				
Measurement				
Rationale	Yes	No		
Did you explain rationale of speech measures is to monitor progress and guide treatment changes?	<input type="checkbox"/>	<input type="checkbox"/>		
Did you explain what 0, 1 and 9 are on the severity rating scale?	<input type="checkbox"/>	<input type="checkbox"/>		
Did you explain that the severity rating scale refers to all children who stutter, not just the child in question?	<input type="checkbox"/>	<input type="checkbox"/>		
Did you explain "unambiguous stuttering"?	<input type="checkbox"/>	<input type="checkbox"/>		
Accuracy	Yes	No	NA	
Did you and the parent listen to the child's speech until the extent of the stuttering was apparent at the start of each session?	<input type="checkbox"/>	<input type="checkbox"/>		
After listening to the child's speech at the start of the clinic visits, did you ask for the parent severity ratings?	<input type="checkbox"/>	<input type="checkbox"/>		
Did you and the parent score severity ratings within one scale value for the child's speech at each session?	<input type="checkbox"/>	<input type="checkbox"/>		
If the parent severity ratings were not within one scale value of yours did you indicate and explain an appropriate score each time?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Did the parent correctly identify any unambiguous stuttering?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Did the parent correctly identify non-stuttered speech?	<input type="checkbox"/>	<input type="checkbox"/>		
Validity	Yes	No		
Were parent beyond clinic severity ratings consistent with parent description of beyond-clinic severity?	<input type="checkbox"/>	<input type="checkbox"/>		
Compliance	Yes	No		
Did the parent present a severity rating chart?	<input type="checkbox"/>	<input type="checkbox"/>		
Did the parent record severity ratings on all days?	<input type="checkbox"/>	<input type="checkbox"/>		
Interpretation	Yes	No	NA	
Did you review the parent severity rating chart each week to identify whether there is a trend, which direction, and what it means clinically?	<input type="checkbox"/>	<input type="checkbox"/>		
Did you use the severity rating chart to guide discussion of progress?	<input type="checkbox"/>	<input type="checkbox"/>		

Interpretation (continued)	Yes	No	NA		
Did you collect and document detailed information about the child's stuttering: severity, type of stuttering, frequency of stuttering, and whether it is intermittent or continuous?	<input type="checkbox"/>	<input type="checkbox"/>			
If you are using percent syllables stuttered (it is an optional Lidcombe Program measure), did you collect and graph them each week within the clinic?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
(Give responses for the past month)					
Verbal contingencies general					
Demonstration	Yes	No	NA		
Did the parent demonstrate the verbal contingencies used during the previous week?	<input type="checkbox"/>	<input type="checkbox"/>			
Did you suggest any improvements to the parent use of verbal contingencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Did you demonstrate suggested improvements?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Did the parent demonstrate the treatment change to your satisfaction?	<input type="checkbox"/>	<input type="checkbox"/>			
Did you conclude the session by summarising changes for the coming week?	<input type="checkbox"/>	<input type="checkbox"/>			
Parent skill	Yes	No		Parent reported	You observed
Did the parent give verbal contingencies mostly for stutter-free speech?	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
Did the parent give verbal contingencies in a positive manner?	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
Did the parent vary the wording of the verbal contingencies?	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
Did the parent use all of the seven verbal contingencies or those that were recommended by you?	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
Did the child seem to enjoy parent verbal contingencies for stutter free speech?	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
Rate	Yes	No			
Did the parent report using verbal contingencies as often as you directed?	<input type="checkbox"/>	<input type="checkbox"/>			
Did the parent report that verbal contingencies did not disrupt communication with the child?	<input type="checkbox"/>	<input type="checkbox"/>			
Did you suggest changes to the number of verbal contingencies used during each day?	<input type="checkbox"/>	<input type="checkbox"/>			
Presentation	Yes	No			
In the clinic when they were given, were parent verbal contingencies immediately after stutter-free or stuttered speech?	<input type="checkbox"/>	<input type="checkbox"/>			
In the clinic did the parent appear genuinely pleased when giving verbal contingencies for stutter-free speech?	<input type="checkbox"/>	<input type="checkbox"/>			
In the clinic did the child react in a positive or neutral manner to the verbal contingencies?	<input type="checkbox"/>	<input type="checkbox"/>			
Did the parent report that verbal contingencies were given only by those you trained to do so?	<input type="checkbox"/>	<input type="checkbox"/>			
In the clinic were verbal contingencies given in a manner so that they did not disrupt parent-child communication?	<input type="checkbox"/>	<input type="checkbox"/>			
(Give responses for the past month)					
Verbal contingencies during practice sessions					
Presentation	Yes	No	NA	Parent reported	You observed
Did the child appear to enjoy the activity?	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
Did the parent manage the treatment activity while remaining focused on the child's speech?	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>

Presentation (continued)	Yes	No	NA	Parent reported	You observed
Was the child's speech a low severity rating during the treatment conversation?	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
Did the parent modify the interaction to retain a low severity rating?	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
Did the parent keep the child's speech at a low severity rating whilst decreasing the structure during the practice session as much as possible?	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
Did the parent report that activities were varied from day to day at home?	<input type="checkbox"/>	<input type="checkbox"/>			
Did the parent report that the time and place for the practice sessions varied?	<input type="checkbox"/>	<input type="checkbox"/>			
If tangible reinforcers were used, did they increase the impact of the verbal contingencies without distracting the child?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If tangible reinforcers were used, was it because they were necessary?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Consistency	Yes	No			
Did the parent report that practice sessions occurred each day?	<input type="checkbox"/>	<input type="checkbox"/>			
Did the parent report that the practice sessions occurred for 10–15 minutes once or twice daily?	<input type="checkbox"/>	<input type="checkbox"/>			
Did the parent report that practice sessions occur during the morning most days of the week?	<input type="checkbox"/>	<input type="checkbox"/>			
Did the parent who did most of the practice sessions attend most clinic visits?	<input type="checkbox"/>	<input type="checkbox"/>			
(Give responses for the past month)					
Verbal contingencies during natural conversations					
Presentation	Yes	No	NA		
Did the parent report that time and place varied?	<input type="checkbox"/>	<input type="checkbox"/>			
Did the parent report that verbal contingencies were presented as often as you recommended?	<input type="checkbox"/>	<input type="checkbox"/>			
Did the number of verbal contingencies used result in improvement in severity ratings?	<input type="checkbox"/>	<input type="checkbox"/>			
Consistency	Yes	No	NA		
Did the parent report that the verbal contingencies occurred throughout the day?	<input type="checkbox"/>	<input type="checkbox"/>			
Did the parent report that the verbal contingencies for stutter-free speech occurred more often than the verbal contingencies for stuttering?	<input type="checkbox"/>	<input type="checkbox"/>			
Did the parent report that the ratio of verbal contingencies for stutter-free speech and stuttering were given as recommended by you?	<input type="checkbox"/>	<input type="checkbox"/>			
(Give responses for the past month)					
Parent issues	Yes	No	NA	Parent reported	You observed
Did the parent express confidence with giving verbal contingencies when asked?	<input type="checkbox"/>	<input type="checkbox"/>			
Did the parent independently problem-solve?	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
Did the parent independently make appropriate treatment adjustments?	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
Did the parent seem positive about treatment?	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
(Give responses for the past month)					
Stage 2	Yes	No	NA		
Did the parent report continuing with verbal contingencies as recommended?	<input type="checkbox"/>	<input type="checkbox"/>			
Did the parent report withdrawing verbal contingencies systematically as recommended?	<input type="checkbox"/>	<input type="checkbox"/>			
Did the parent report increasing the number of verbal contingencies if severity increased?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Did the parent report continuing to give verbal contingencies for stutter-free speech as recommended?	<input type="checkbox"/>	<input type="checkbox"/>			
Did the parent independently solve problems during Stage 2?	<input type="checkbox"/>	<input type="checkbox"/>			

REFERENCES

- ¹ Speech Pathology Australia (2017). *Stuttering management*. Retrieved from http://www.speechpathologyaustralia.org.au/SPAweb/Members/Clinical_Guidelines/SPAweb/Members/Clinical_Guidelines/Clinical_Guidelines.aspx?hkey=0fc81470-2d6c-4b17-90c0-ced8b0ff2a5d
- ² Neumann, K., Euler, H., A., Bosshardt, H. G., Cook, S., Sandrieser, P., & Sommer, M. (2017). Clinical practice guideline: The pathogenesis, assessment and treatment of speech fluency disorders. *Deutsches Arzteblatt International*, 114, 383–390.
- ³ Nederlandse Vereniging voor Stotteringtherapie (2020). Retrieved from <http://www.nedverstottertherapie.nl>
- ⁴ Lidcombe Program Trainers Consortium (2018). Retrieved from <http://www.lidcombeprogram.org>
- ⁵ Onslow, M. (2022, December). *Stuttering and its treatment: Twelve lectures*. Retrieved December 9, 2022, from <https://www.uts.edu.au/asrc/resources>
- ⁶ Sheedy, S., MacMillan, V., O'Brian, S., & Onslow, M. (2017). Lidcombe Program: Development and validation of reflective questions. *Journal of Clinical Practice in Speech-Language Pathology*, 19, 151–156.
- ⁷ Eve, C., Onslow, M., Andrews, C., & Adams, R. (1995). Clinical measurement of early stuttering severity: The reliability of a 10-point scale. *Australian Journal of Human Communication Disorders*, 23, 26–39.
- ⁸ Onslow, M., Harrison, E., Jones, M., & Packman, A. (2002). Beyond-clinic speech measures during the Lidcombe Program of early stuttering intervention. *ACQuiring Knowledge in Speech, Language, and Hearing*, 4, 82–85.
- ⁹ Onslow, M., Andrews, C., & Costa, L. (1990). Parental severity scaling of early stuttered speech: Four case studies. *Australian Journal of Human Communication Disorders*, 18, 47–61.
- ¹⁰ Packman, A., & Onslow, M. (1998). The behavioral data language of stuttering. In A. Cordes & R. J. Ingham (Eds.), *Treatment efficacy in stuttering: a search for empirical bases*. (pp. 27–50). San Diego, CA: Singular.
- ¹¹ Teesson, K., Packman, A., & Onslow, M. (2003). The Lidcombe behavioral data language of stuttering. *Journal of Speech, Language, and Hearing Research*, 46, 1009–1015.
- ¹² Webber, M., & Onslow, M. (2003). Maintenance of treatment effects. In M. Onslow, A. Packman, & E. Harrison (Eds.), *The Lidcombe Program of early stuttering intervention: A clinician's guide* (pp. 81–90). Austin, TX: Pro-Ed.
- ¹³ Ingham, R. J. (1980). Modification of maintenance and generalization during stuttering treatment. *Journal of Speech and Hearing Research*, 23, 732–745.
- ¹⁴ Jones, M., Onslow, M., Packman, A., O'Brian, S., Hearne, A., Williams, S., Ormond, T., & Schwarz, I. (2008). Extended follow-up of a randomized controlled trial of the Lidcombe Program of Early Stuttering Intervention. *International Journal of Language and Communication Disorders*, 43, 649–661.
- ¹⁵ Quist, R. W., & Martin, R. R. (1967). The effect of response contingent verbal punishment on stuttering. *Journal of Speech and Hearing Research*, 10, 795–800.
- ¹⁶ Cooper, E. B., Cady, B. B., & Robbins, C. J. (1970). The effect of the verbal stimulus words wrong, right, and tree on the disfluency rates of stutterers and nonstutterers. *Journal of Speech and Hearing Research*, 13, 239–244.
- ¹⁷ Manning, W. H., Trutna, P. A., & Shaw, C. K. (1976). Verbal versus tangible reward for children who stutter. *Journal of Speech and Hearing Disorders*, 41, 52–62.
- ¹⁸ Reed, C., & Godden, A. (1977). An experimental treatment using verbal punishment with two preschool stutterers. *Journal of Fluency Disorders*, 2, 225–233.
- ¹⁹ Martin, R. R., Kuhl, P., & Haroldson, S. (1972). An experimental treatment with two preschool stuttering children. *Journal of Speech and Hearing Research*, 15, 743–752.
- ²⁰ Sjøstrand, Å., Kefalianos, E., Hofslundsen, H., Guttormsen, L. S., Kirmess, M., Lervåg, A., & Bottegaard Naess, K. -A. (2021). Non-pharmacological interventions for stuttering in children six years and younger. *Cochrane Database of Systematic Reviews*, 9, Article CD013489.
- ²¹ Onslow, M., Jones, M., Menzies, R., O'Brian, S., & Packman, A. (2012). Stuttering. In P. Sturmey & M. Hersen. (Eds.), *Handbook of evidence-based practice in clinical psychology: Vol 1. Child and Adolescent Disorders* (pp. 185–207). Hoboken, NJ: Wiley.
- ²² Subasi, M., Van Borsel, J., & Van Eerdenbrugh, S. (2021). The Lidcombe Program for early stuttering in non-English-speaking countries: A systematic review. *Folia Phoniatrica et Logopaedica*. Advance online publication. <https://doi.org/10.1159/000517650>

- ²³ Onslow, M., Costa, L., & Rue, S. (1990). Direct early intervention with stuttering: Some preliminary data. *Journal of Speech and Hearing Disorders*, 55, 405–416.
- ²⁴ Rousseau, I., Packman, A., Onslow, M., Harrison, E., & Jones, M. (2007). An investigation of language and phonological development and the responsiveness of preschool age children to the Lidcombe Program. *Journal of Communication Disorders*, 40, 382–397.
- ²⁵ Lincoln, M., & Onslow, M. (1997). Long-term outcome of early intervention for stuttering. *American Journal of Speech-Language Pathology*, 6, 51–58.
- ²⁶ Onslow, M., Andrews, C., & Lincoln, M. (1994). A control/experimental trial of an operant treatment for early stuttering. *Journal of Speech and Hearing Research*, 37, 1244–1259.
- ²⁷ Jones, M., Onslow, M., Packman, A., Williams, S., Ormond, T., Schwarz, I., Gebiski, V. (2005). Randomised controlled trial of the Lidcombe programme of early stuttering intervention. *British Medical Journal*, 331, 659–661.
- ²⁸ Donaghy, M., O'Brian, S., Onslow, M., Lowe, R., Jones, M. & Menzies, R. G. (2020). Verbal contingencies in the Lidcombe Program: A noninferiority trial. *Journal of Speech, Language, and Hearing Research*, 63, 3419–3431.
- ²⁹ Koushik, S., Hewat, S., Onslow, M., Shenker, R., Jones, M., O'Brian, S., Packman, A., Menzies, R., Harrison, L., & Wilson, L. (2019). Three Lidcombe Program service delivery options: A Phase II trial. *Journal of Communication Disorders*, 82, Article 105919.
- ³⁰ De Sonnevile-Koedoot, C., Stolk, E., Rietveld, T., & Franken, M-C. (2015). Direct versus indirect treatment for preschool children who stutter: The RESTART randomized trial. *PLoS One*, 10, e0133758. Retrieved from <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4517884/>
- ³¹ Trajkovski, N., O'Brian, S., Onslow, M., Packman, R., Lowe, R., Menzies, R., Jones, & M., Reilly, S. (2019). A three-arm randomized controlled trial of Lidcombe Program and Westmead Program early stuttering interventions. *Journal of Fluency Disorders*, 61, Article 105708.
- ³² Harrison, E., Wilson, L., & Onslow, M. (1999). Distance intervention for early stuttering with the Lidcombe Programme. *Advances in Speech Language Pathology*, 1, 31–36.
- ³³ Wilson, L., Onslow, M., & Lincoln, M. (2004). Telehealth adaptation of the Lidcombe Program of Early Stuttering Intervention: Five case studies. *American Journal of Speech-Language Pathology*, 13, 81–93.
- ³⁴ Lewis, C., Packman, A., Onslow, M., Simpson, J. A., & Jones, M. (2008). A Phase II trial of telehealth delivery of the Lidcombe Program of Early Stuttering Intervention. *American Journal of Speech-Language Pathology*, 17, 139–149.
- ³⁵ Bridgman, K., Onslow, M., O'Brian, S., Jones, M., & Block (2016). Lidcombe Program webcam treatment for early stuttering: A randomized controlled trial. *Journal of Speech, Language, and Hearing Research*, 59, 932–939.
- ³⁶ Santayana, G., Carey, B., & Shenker, R. C. (2021). No other choice: Speech-Language Pathologists' attitudes toward using telepractice to administer the Lidcombe Program during a pandemic. *Journal of Fluency Disorders*, 70, Article 105879.
- ³⁷ Arnott, S., Onslow, M., O'Brian, S., Packman, A., Jones, M., & Block, S. (2014). Group Lidcombe Program treatment of early stuttering: A randomized controlled trial. *Journal of Speech, Language, and Hearing Research*, 57, 1606–1618.
- ³⁸ Rappell, N., Schmidt, D., & Rolfe, M. (2017). Rolling-group Lidcombe Program delivery. *Journal of Clinical Practice in Speech-Language Pathology*, 19, 76–81.
- ³⁹ Lattermann, C., Euler, H. A., & Neumann, K. (2008). A randomized control trial to investigate the impact of the Lidcombe Program on early stuttering in German-speaking preschoolers. *Journal of Fluency Disorders*, 33, 52–65.
- ⁴⁰ Harris, V., Onslow, M., Packman, A., Harrison, E., & Menzies, R. (2002). An experimental investigation of the impact of the Lidcombe Program on early stuttering. *Journal of Fluency Disorders*, 27, 203–214.
- ⁴¹ Franken, M. J., Kielstra-Van der Schalk, C. J., & Boelens, H. (2005). Experimental treatment of early stuttering: A preliminary study. *Journal of Fluency Disorders*, 30, 189–199.
- ⁴² Harrison, E., Onslow, M., & Menzies, R. (2004). Dismantling the Lidcombe Program of early stuttering intervention: Verbal contingencies for stuttering and clinical measurement. *International Journal of Language and Communication Disorders*, 39, 257–267.
- ⁴³ Donaghy, M., Harrison, E., O'Brian, S., Menzies, R., Onslow, M., Packman, A., & Jones, M. (2015). An investigation of the role of parental request for self-correction of stuttering in the Lidcombe Program. *International Journal of Speech-Language Pathology*, 17, 511–517.
- ⁴⁴ O'Brian, S., Iverach, L., Jones, M., Onslow, M., Packman, A., & Menzies, R. (2013). Effectiveness of the Lidcombe Program for early stuttering in Australian community clinics. *International Journal of Speech-Language Pathology*, 15, 593–603.

- ⁴⁵ O'Brian, S., Hayhow, R., Jones, M., Packman, A., Iverach, L., Onslow, M., & Menzies, R. (2022). Lidcombe Program translation to community clinics in Australia and England. *International Journal of Language and Communication Disorders*. Advance online publication. <https://doi.org/10.1111/1460-6984.12785>
- ⁴⁶ Kaderavek, J. N., & Justice, L. M. (2010). Fidelity: An essential component of evidence-based practice in speech-language pathology. *American Journal of Speech-Language Pathology*, 19, 369–379.
- ⁴⁷ Baker, K. D., & Neimeyer, R. A. (2003). Therapist training and client characteristics as predictors of treatment response to group therapy for depression. *Psychotherapy Research*, 13, 135–151.
- ⁴⁸ Thomas, C., & Howell, P. (2001). Assessing efficacy of stuttering treatments. *Journal of Fluency Disorders*, 26, 311–333.
- ⁴⁹ Ingham, J. C., & Riley, G. (1998). Guidelines for documentation of treatment efficacy for young children who stutter. *Journal of Speech, Language, and Hearing Research*, 41, 753–770.
- ⁵⁰ Walter, G. (2009). Evidence-based treatment and therapist drift. *Behaviour Research and Therapy*, 47, 119–127.
- ⁵¹ Koushik, S., Hewat, S., Shenker, R., Jones, M., & Onslow M. (2011). North-American Lidcombe Program file audit: Replication and meta-analysis. *International Journal of Speech-Language Pathology*, 13, 301–307.
- ⁵² Carr Swift, M., O'Brian, S., Hewat, S., Onslow, M., Packman, A., & Menzies, R. (2011). Investigating parent delivery of the Lidcombe Program. *International Journal of Speech-Language Pathology*, 13, 308–316.
- ⁵³ Rousseau, I., Packman, A., Onslow, M., Dredge, R., & Harrison, E. (2002). Australian speech pathologists' use of the Lidcombe Program of early stuttering intervention. *ACQuiring Knowledge in Speech, Language and Hearing*, 4, 67–71.
- ⁵⁴ Swift, M. C., Jones, M., O'Brian, S., Onslow, M., Packman, A., & Menzies, R. (2015). Parent verbal contingencies during the Lidcombe Program: Observations and statistical modeling of the treatment process. *Journal of Fluency Disorders*, 47, 13–26.
- ⁵⁵ Woods, S., Shearsby, J., Onslow, M., & Burnham, D. (2002). Psychological impact of the Lidcombe Program of early stuttering intervention. *International Journal of Language and Communication Disorders*, 37, 31–40.
- ⁵⁶ Park, V., Onslow, M., Lowe, R., Jones, M., O'Brian, S., Packman, A., Menzies, R., Block, S., Wilson, L., Harrison, E., & Hewat, S. (2020). Predictors of Lidcombe Program treatment dropout and outcome for early stuttering. *International Journal of Language and Communication Disorders*, 56, 102–115.
- ⁵⁷ Hayhow, R. (2009). Parents' experiences of the Lidcombe Program of early stuttering intervention. *International Journal of Speech-Language Pathology*, 11, 20–25.
- ⁵⁸ Goodhue, R., Onslow, M., Quine, S., O'Brian, S., & Hearne, A. (2010). The Lidcombe Program of early stuttering intervention: Mothers' experiences. *Journal of Fluency Disorders*, 35, 70–84.
- ⁵⁹ Bonelli, P., Dixon, M., Ratner, N. B., & Onslow, M. (2000). Child and parent speech and language following the Lidcombe Programme of early stuttering intervention. *Clinical Linguistics and Phonetics*, 14, 427–446.
- ⁶⁰ Lattermann, C., Shenker, R. C., & Thordardottir, E. (2005). Progression of language complexity during treatment with the Lidcombe Program for early stuttering intervention. *American Journal of Speech-Language Pathology*, 14, 242–253.
- ⁶¹ Imeson, J., Lowe, R., Onslow, M., Munro, N., Heard, R., O'Brian, S., & Arnott, S. (2018). The Lidcombe Program and child language development: Long-term assessment. *Clinical Linguistics and Phonetics*, 32, 860–875.
- ⁶² Onslow, M., Stocker, S., Packman, A., & McLeod, S. (2002). Speech timing in children after the Lidcombe Program of early stuttering intervention. *Clinical Linguistics and Phonetics*, 16, 21–33.
- ⁶³ Amato Maguire, M., Onslow, M., Lowe, R., O'Brian, S., & Menzies, R. (2022). Searching for Lidcombe Program mechanisms of action: Inter-turn speaker latency. *Clinical Linguistics and Phonetics*. Advance online publication. <https://doi.org/10.1080/02699206.2022.2140075>
- ⁶⁴ Onslow, M., Harrison, E., Jones, M., & Packman, A. (2002). Beyond-clinic speech measures during the Lidcombe Program of early stuttering intervention. *ACQuiring Knowledge in Speech, Language and Hearing*, 4, 82–85.