The Lidcombe Program Treatment Guide

March 2019

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

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), Logopäd (Germany), orthophoniste (France), logopædagog (Demark) 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

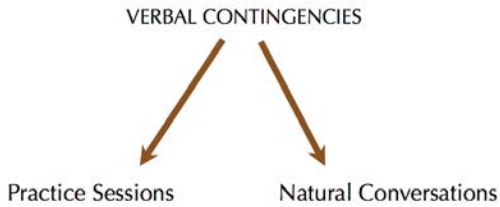
Postgraduate clinician training is available from The Lidcombe Program Trainers Consortium.[4] The Consortium has members in 13 countries and provides training in other countries as well. That training usually involves two days of instruction and demonstration, often with subsequent follow-up.

A behavioural treatment

The Lidcombe Program is a behavioural treatment, which targets children's stuttered speech. During the Lidcombe Program children are not instructed to change their customary speech pattern in any way. Parents do not alter their customary speech pattern or speech and language habits in any way, nor do they change the family lifestyle in 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 stutters or does not 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 9 = *extremely severe stuttering*.[†] Parents and clinicians use the SR scale during the Lidcombe Program.

Parents visit the clinic each week

During each weekly visit, for 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 visit, and in what order.

Treatment goals during Stage 1 and Stage 2

The Lidcombe Program treatment goal during 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 Lidcombe Program Trainers Consortium website there is a downloadable SR chart for parents and clinicians, and a downloadable pamphlet about the treatment for parents, in several languages.[5] 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.[6] The SR chart and the checklist are reproduced at the Appendices of this guide.

Measurement

The severity rating scale

Purposes of severity ratings

Severity ratings (SRs) are used to measure children's stuttering in and outside the clinic. The simplicity of SRs makes them 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 will 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 visit and reiterate this throughout the course of LP treatment.

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

Treatment goals specified with SR scores

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

A flexible measurement

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

[†] Prior to 2015 the Lidcombe Program used a 1–10 scale, and publications before then will contain that version of it.

© 2019 Lidcombe Program Trainers Consortium

Variations of the SR procedure can be used if the clinician thinks it would be useful, commonly one SR for the morning and one for the afternoon. 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 severity ratings are essential

Research shows that parents typically are able to assign SRs accurately[7] 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 SRs, it can result in the child being admitted to Stage 2 prematurely. In an alternative situation, where parent SRs are too high, children will take longer to complete Stage 1 than necessary.

Web based severity ratings

It is not necessary for parents to bring hand-written, hard copy SRs each week to the clinic. A disadvantage of that procedure is that clinicians cannot monitor for whether parents are following their instructions properly and recording a score at the end of each day. Sometimes, parents are not compliant with that instruction and will wait a few days to record scores. This problem can be avoided, along with the need for hard copy, by using one of the many password protected, cost-free Internet document sharing sites.[10]

Another option is for parents to send SRs to the clinician using a phone at regular intervals, such as daily or every few days. Some clinicians find it useful for parents to use their phone to send photos of the SR chart during the week. Those options can be used also for clinicians to obtain SRs on occasions when parents are unable to attend a clinic session.

Parent SR training

The parent is trained to use SRs during the first clinic visit. Training begins when the clinician explains the scale and its end points. The clinician's judgement, based on clinical experience, is used as the yardstick for SR scores. Acceptable agreement is when the parent SR is within one scale value of, or identical to, the clinician SR. It is desirable, however, during the later stages of Lidcombe Program treatment for parent and clinician SR scores to be identical. This is because, during those later stages of treatment, children's severity will be at the lower end of the severity range, and there will be less margin for error for clinical use of the scale. As discussed later (see Stage 2, p. 10), SR scores of 0 and 1 are considered an acceptable range and a score of 2 is outside that range.

During the first clinic visit, 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 visits 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 more time efficient and valid speech sampling method for parents to use a phone to audio (or even 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 visit. That method has the advantage of being able to scan quickly though 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[11,12] uses three prime categories—repeated movements, fixed postures, extraneous behaviours—and seven subcategories 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 visit, because clinical improvement reflected with reducing SR scores often is accompanied by changing types of stuttering moments.

© 2019 Lidcombe Program Trainers Consortium

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.

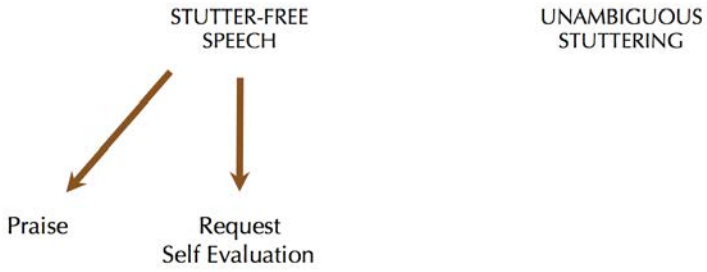
Praise

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

Simply, 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*.

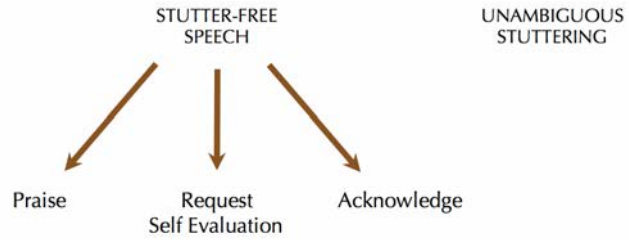


This verbal contingency can be used when a child does not stutter for a certain time interval. This can be as brief as a single utterance or as long as several hours. When no stuttering occurs during this time, the parent can ask the child to evaluate speech. The parent could say something like "was 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*.

© 2019 Lidcombe Program Trainers Consortium



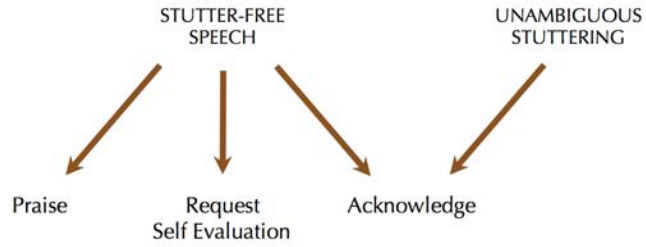
The difference between this and the previous two verbal contingencies is that it does not evaluate the child's speech in any way. Acknowledging stutter free speech is different from praise for stutter-free speech because it is a matter-of-fact statement rather than a positive comment. Examples would include "that was smooth" and "no bumpy words." It 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 that 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 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 will need to receive verbal contingencies for stuttering in different ways.

Acknowledge

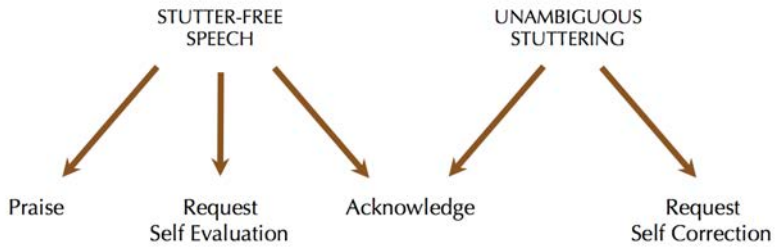
The first verbal contingency for unambiguous stuttering is *acknowledge*.



As with the verbal contingency acknowledge stutter-free speech, this verbal contingency is not at all 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* used for stutter-free speech, it has clinical value because it can be used in a brief manner that does not disrupt the flow of a conversation.

Request self-correction

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



© 2019 Lidcombe Program Trainers Consortium

Here the parent asks the child to say the utterance again without the stuttering moment. Mostly the child can do that, but if the child fails to do so, it is usually best for the parent not to persist. If a child reacts in any way negatively to requests for self correction, then it is essential that they be stopped immediately and the matter is 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. The exception to that rule is that 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 which 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 will 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 listening for 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 listening for 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 probably 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 visit. 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, great job."

Examples of parent verbal contingencies

The table 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."*

© 2019 Lidcombe Program Trainers Consortium

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 do verbal contingencies for stutter-free speech so that children can become comfortable with the treatment. Then, they implement the parent verbal contingencies for stuttered speech with children when they are sure they 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 them correctly

Clinicians need to be sure that parents are using verbal contingencies correctly according to their instructions. At each clinic visit, 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 on their phone examples of themselves doing verbal contingencies during practice sessions and play them to the clinician during the clinic visit. The clinician could also watch parents doing verbal contingencies in the clinic. In either event, 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.

They 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 stutter, then they do not use a verbal contingency. At the start of the program, children typically will have many unambiguous stuttering moments each day, and parents will have plenty of them to work with. Giving verbal contingencies for ambiguous disfluencies normally only becomes 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.

They 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 cannot 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 in order to be sure that the child is receiving supportive and enjoyable verbal contingencies. Otherwise, during clinic visits it will be obvious that the child is not happy with the treatment. The child needs to experience the verbal contingencies as enjoyable and sincere. It is a rule of thumb that there should be far more verbal contingencies for stutter-free speech than for stuttered speech.

Have parents give as many of them 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

© 2019 Lidcombe Program Trainers Consortium

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 in the event that 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, though, verbal contingencies during natural conversations would occur no fewer than several times each hour that the parent is with the child.

They are accurate

It is essential that the clinician is satisfied that parents, before they attempt to use verbal contingencies, can present them accurately. 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 visit the clinician needs to observe, either during clinic real time or on recordings, parents providing immediate and accurate verbal contingencies.

Verbal contingencies during practice sessions

What they are

Using verbal contingencies during practice sessions allows the parent to learn how to use verbal contingencies safely and correctly in a positive way. This positive manner is particularly important when children have experienced negative social reactions about their stuttering. The practice sessions also allow the clinician and parent to determine the child's optimal response rate of speaking without stuttering. In other words, the desired behavioural response of stutter-free speech should predominate during practice sessions; however, allowing limited stuttering to occur allows parents to learn how to use verbal contingencies for stuttered speech. In order to keep the practice sessions a positive experience for the child, stuttering moments should occur only occasionally during a practice session.

Maximising stutter-free speech

There is research evidence that the chance of a stuttering moment increases with increased syntactic complexity and utterance length[13,14] and those findings have been replicated with children.[15,16,17,18,19,20,21,22,23,24] Clinicians can use that information to teach parents to alter the likelihood of stuttering moments during practice sessions. Parents can do that by giving children options of conversing with a range of utterance durations with differing syntactic complexities: from one and two word responses to several utterances. Clinicians make those management decisions based on the child's stuttering severity at the time of the activity.

Techniques to reduce stuttering during practice sessions may include turn taking, word imitation, sentence completion, closed questioning, and binary choice questions. The length and complexity of a child's utterances may also be influenced by the extent to which what is talked about is real or imagined. Examples of "real" topics are books and toys that the child is playing with; examples of imagined topics are those that occur during pretend play or when discussing a future event. Clinicians teach parents how to change these variables to ensure that only occasional stutters occur during practice sessions.

The choice of activity for each practice session requires careful consideration. Some toys or activities may be inherently exciting for a child and consequently may increase the chance of stuttering. In order to maximise stutter-free speech with such children, early in Stage 1, or when SR is higher, some toys and activities may need to be chosen so that they are less stimulating.

The fundamental task for the parent during practice sessions is to constantly use the techniques described above to ensure that stutter-free speech is maximised. It is essential that the parent changes the techniques and the way they are used during practice sessions: practice sessions are not all the same throughout. The aim is for children to be predominantly stutter-free during the practice session, but to have them produce the most complex speech that they are capable of producing.

Clinicians find that the following situations during practice sessions can be challenging and require work with the parents to find ways to deal with them:

© 2019 Lidcombe Program Trainers Consortium

- 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

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 will 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.

Verbal contingencies for stutter-free speech during practice sessions can be supplemented with nonverbal contingencies if the clinician thinks that they would be helpful. Examples would be stickers, stamps, ticks on a page, and blocks. Those nonverbal contingencies are not useable during everyday conversations, but gestures are, such as high-fives, fist-pumps, thumbs-ups, and nods. As such, it makes clinical sense to use them, if they are suitable for the child, as alternatives or supplements to verbal contingencies during everyday conversations as well as during practice sessions. Normally, nonverbal contingencies do not replace verbal contingences but only supplement them, unless there is a sound clinical reason to do so. One situation where it 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 nonverbal 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 that time, the child's SRs will be showing improvement.

The transition between treatment during practice sessions and natural conversations

For a period, parents provide treatment during practice sessions, and 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. During 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 each second day. Similarly, during the period when parents are providing verbal

© 2019 Lidcombe Program Trainers Consortium

contingencies during practice sessions and natural conversations, the clinician may direct many changes to the number and type 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 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.[46] Half the children in that report showed some transient signs of stuttering 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 visits that are 1 week apart: *[1]* parent SRs of 0–1 during the week preceding the clinic visit with at least four of those seven SRs being 0, *[2]* clinician SRs of 0–1 during the clinic visit. A minimal requirement during Stage 2 is for parents to record SRs only during the week preceding the clinic visit. 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.[25] 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 visits 2 weeks apart, then two visits 4 weeks apart, then two visits 8 weeks apart and, finally, one or two visits 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 children during Stage 2 fail to meet treatment targets at least once during Stage 2.[26]

Ideally, in the case of early signs of relapse during Stage 2 clinic visits, parents will be 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. In the event that such attempts to restore SRs to the target 0–1 range are not successful, parents are to contact the clinician for advice prior to the next scheduled Stage 2 clinic visit.

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 that relapse will occur. 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-up[46] suggested that clinicians encourage parents to watch and listen carefully for any signs of post-treatment stuttering during and after completion of Stage 2.

© 2019 Lidcombe Program Trainers Consortium

Lidcombe Program Clinic Visits

Stage 1 clinic visits

During Stage 1 the parent and child visit the clinic once each week. Clinic visits are normally 50–55 minutes. The following events normally occur during a clinic visit 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 topics normally include the following:

- When practice sessions were planned, did they occur as planned, and how often 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?
- What periods during 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 did the verbal contingencies during natural conversations last?
- 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 and/or natural conversations each day as planned
- The parent did not apply sufficient verbal contingencies during natural conversations each day

[4] Parent demonstrates a practice session

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

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

© 2019 Lidcombe Program Trainers Consortium

- The child is enjoying the practice session
- The parent accurately identifies 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 during the previous week. The clinician asks parents for their comments about the verbal contingencies being used. That discussion includes which verbal contingences worked well, which did not, and which could be improved. If recommended procedures were not followed, the clincian 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 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 demonstrates the changed procedures and the clinician gives feedback to the parent.

[7] Concluding the visit

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

Stage 2 clinic visits

A typical Stage 2 clinic visit is 30 minutes. At the start of the visit the clinician obtains parent SRs for the previous week and discusses with the parent the extent to which these have been typical of all weeks since the last visit. The clinician and parent discuss the SRs in detail. Then, subsequent to 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 visit.

If the child meets the treatment goals, then the clinician arranges progression to the next step in the performance contingent Stage 2 schedule. If the child does not meet those goals, progress is not recommended. Instead, the clinician either *[1]* schedules an appointment for the next week, or the week after, and makes recommendations regarding management for the child's increased stuttering, *[2]* schedules a return to an earlier stage of the sequence of Stage 2 clinic visits, or *[3]* on rare occasions, returns the child to Stage 1.

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

© 2019 Lidcombe Program Trainers Consortium

The Lidcombe Program evidence base at March 2019

Overview

Independent reviews report the evidence base for the Lidcombe Program to be the most comprehensive for early stuttering treatments.[27,28,29,30,31,32,33] The evidence base includes children from the following countries: Australia, the United Kingdom, New Zealand, the United States, Canada, The Netherlands, Sweden, Malaysia, and Kuwait. An analysis (N=134) of randomised controlled clinical evidence and randomised controlled trials for the Lidcombe Program[34] showed that its odds ratio was 7.5 for attaining below 1.0 percentage syllables stuttered (%SS) 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. Details of all aspects of the Lidcombe Program evidence base are available at a source that is regularly updated.[35]

Clinical trials

Laboratory origins of the treatment

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.[36,37] The Lidcombe Program was derived directly from research showing that this was a clinical option for children.[38,39,40]

The traditional weekly-visit format

The Lidcombe Program was developed for the traditional format of weekly clinic visits. This guide describes procedures for that traditional format. The first clinical trial for the traditional format was published in 1990.[41] Subsequently, there were three nonrandomised Phase II trials[42,43,44] and one Phase III randomised controlled trial.[45] One report followed up children treated in those trials from 3–7 years.[46] A randomised trial[47] has compared 18-month outcomes of the Lidcombe Program in weekly-visit format and RESTART-DCM treatment, showing little evidence of a difference in outcomes between the treatments.

Telepractice and group treatment formats

To date, there have been three telepractice trials: one Phase I trial,[48] one nonrandomised Phase II trial,[49] one randomised Phase II trial,[50] and one Phase III randomised controlled trial.[51] With the publication of telepractice Lidcombe Program trials and the development of webcam technology, telepractice Lidcombe Program presentation is emerging as a service provision option. 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.[52]

Randomised clinical experiments

In addition to randomised controlled trials, there have been two randomised clinical experiments that have given children a portion of the Lidcombe Program and compared results to control children.[53,54] One experiment compared the Lidcombe Program to RESTART-DCM treatment.[55] Other experiments explored the contribution of verbal contingencies to treatment effects.[56,57]

Information about the Lidcombe Program and its efficacy has been made available beyond the speech-language pathology discipline to medical practitioners.[58,59]

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 model[52] has been shown to be translatable to clinical settings.[60]

© 2019 Lidcombe Program Trainers Consortium

In another investgation of translation of the Lidcombe Program, a report[61] has presented data for 31 community clinicians in Australia who treated 57 pre-school children with the Lidcombe Program. Nine months after the start of treatment, mean stuttering outside the clinic for all the children was 1.7 %SS. However, Consortium trained clinicians attained better outcomes. The mean for children treated by Consortium trained clinicians was 1.1 %SS and the mean for children treated by a clinician without such training was more than twice this, at 2.4 %SS. No other predictors of outcome were found. The researchers concluded that for clinicians with Consortium training, Lidcombe Program community outcomes can match those of clinical trials.

Basic research

Treatment fidelity refers to whether a treatment is administered as intended. This is an important consideration with treatment in general,[62,63] and also with stuttering treatment.[64,65] Departure from manualised procedures, or clinician drift[66] 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.[61,67,68,69,70]

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,[71,72] nor do child post-treatment acoustic changes to speech production.[73] There are data to confirm that it is a safe treatment if delivered as intended,[74] with no negative psychological outcomes associated with it, such as child anxiety or impaired parent-child attachment.

Two studies have provided information about parent experiences with the Lidcombe Program.[75,76] Those studies are informative reading about the treatment before attempting it clinically.

Number of Stage 1 clinic visits required

Lidcombe Program treatment benchmarks are based on five file audits, [8,67,77,78,79] four clinical trials,[42,4751,52] one prospective follow-up,[80] and one translation study.[61] Those studies involved a total of 868 children. According to those studies, a median of 16 clinic visits is required for children to attain Stage 2 criteria and there is around a one-third reduction of median parent SR scores after four weeks of treatment.[81]

Treatment times for individual clinicians will vary according to specialist or generalist clinical status, the nature of their caseloads, and their clinical experience and training. Indeed, the range of medians in the reports above is 11–23.

It is recommended that those studies be used as broad guidelines for the number of Stage 1 clinic visits, 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.

Treatment process research

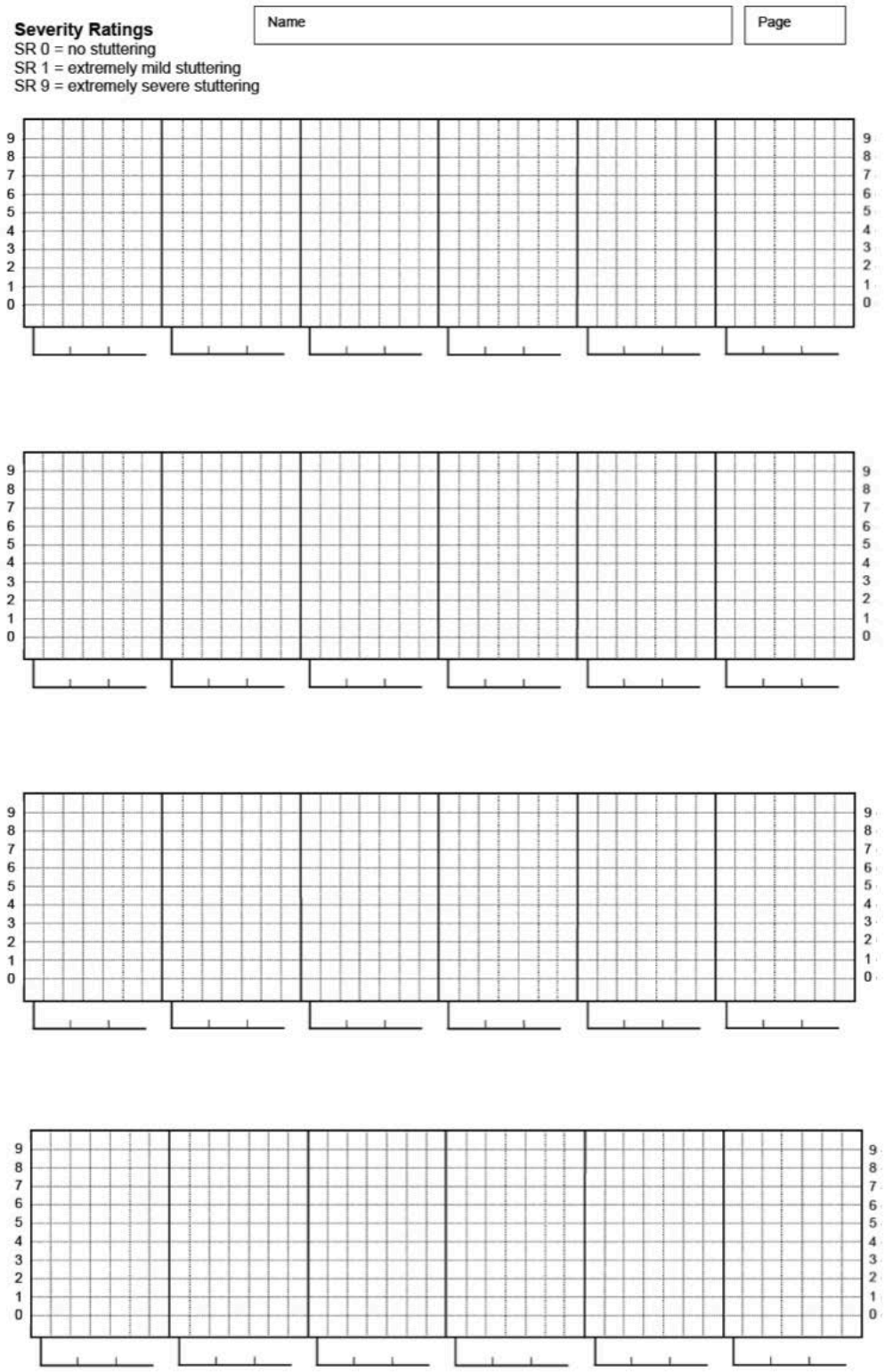
At present, despite considerable research, there is no mechanism established that can account for the treatment effects of the Lidcombe Program. Currently, researchers are exploring the contribution of parent verbal contingencies to the effects of the treatment. Three reports have raised questions about how verbal contingencies operate during the Lidcombe Program treatment process.[82,83,84]

Eventually, these and other kinds of treatment process research may prompt changes to the treatment process described in this guide and at other sources. However, such changes are not likely in the foreseeable future.

© 2019 Lidcombe Program Trainers Consortium

Appendix One
Lidcombe Program Severity Rating Chart

Downloadable from http://www.lidcombeprogram.org/?page_id=280



© 2019 Lidcombe Program Trainers Consortium

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?	❑	❑			
Did you explain what 0, 1 and 9 are on the severity rating scale?	❑	❑			
Did you explain that the severity rating scale refers to all children who stutter, not just the child in question?	❑	❑			
Did you explain "unambiguous stuttering"?	❑	❑			
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?	❑	❑			
After listening to the child's speech at the start of the clinic visits, did you ask for the parent severity ratings?	❑	❑			
Did you and the parent score severity ratings within one scale value for the child's speech at each session?	❑	❑			
If the parent severity ratings were not within one scale value of yours did you indicate and explain an appropriate score each time?	❑	❑	❑		
Did the parent correctly identify any unambiguous stuttering?	❑	❑	❑		
Did the parent correctly identify non-stuttered speech?	❑	❑			
Validity	**Yes**	**No**			
Were parent beyond clinic severity ratings consistent with parent description of beyond-clinic severity?	❑	❑			
Compliance	**Yes**	**No**			
Did the parent present a severity rating chart?	❑	❑			
Did the parent record severity ratings on all days?	❑	❑			
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?	❑	❑			
Did you use the severity rating chart to guide discussion of progress?	❑	❑			

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?	❑	❑			
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?	❑	❑	❑		
(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?	❑	❑			
Did you suggest any improvements to the parent use of verbal contingencies?	❑	❑	❑		
Did you demonstrate suggested improvements?	❑	❑	❑		
Did the parent demonstrate the treatment change to your satisfaction?	❑	❑			
Did you conclude the session by summarising changes for the coming week?	❑	❑			
Parent skill	**Yes**	**No**		**Parent reported**	**You observed**
Did the parent give verbal contingencies mostly for stutter-free speech?	❑	❑		❑	❑
Did the parent give verbal contingencies in a positive manner?	❑	❑		❑	❑
Did the parent vary the wording of the verbal contingencies?	❑	❑		❑	❑
Did the parent use all of the seven verbal contingencies or those that were recommended by you?	❑	❑		❑	❑
Did the child seem to enjoy parent verbal contingencies for stutter free speech?	❑	❑		❑	❑
Rate	**Yes**	**No**			
Did the parent report using verbal contingencies as often as you directed?	❑	❑			
Did the parent report that verbal contingencies did not disrupt communication with the child?	❑	❑			
Did you suggest changes to the number of verbal contingencies used during each day?	❑	❑			
Presentation	**Yes**	**No**			
In the clinic when they were given, were parent verbal contingencies immediately after stutter-free or stuttered speech?	❑	❑			
In the clinic did the parent appear genuinely pleased when giving verbal contingencies for stutter-free speech?	❑	❑			
In the clinic did the child react in a positive or neutral manner to the verbal contingencies?	❑	❑			
Did the parent report that verbal contingencies were given only by those you trained to do so?	❑	❑			
In the clinic were verbal contingencies given in a manner so that they did not disrupt parent-child communication?	❑	❑			
(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?	❑	❑		❑	❑
Did the parent manage the treatment activity while remaining focused on the child's speech?	❑	❑		❑	❑

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

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. DOI: 10.3238/arztebl.2017.0383

[3] http://www.nedverstottertherapie.nl

[4] Lidcombe Program Trainers Consortium (2018). http://www.lidcombeprogram.org

[5] Lidcombe Program Trainers Consortium (2018). Resources http://www.lidcombeprogram.org/?page_id=280

[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] Google Drive. (n.d.). *Create and collaborate.* Retrieved from http://www.google.com/drive/apps.html?usp=ad_search&gclid=CLC9u_S8nLsCFUQgpQodAFsA9Q

[11] 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.

[12] Teesson, K., Packman, A., & Onslow, M. (2003). The Lidcombe behavioral data language of stuttering. *Journal of Speech, Language, and Hearing Research, 46*, 1009–1015.

[13] Jayaram, M. (1983). Phonetic influences on stuttering in monolingual and bilingual stutterers. *Journal of Communication Disorders, 16*, 287–297.

[14] Jayaram, M. (1984). Distribution of stuttering in sentences: relationship to sentence length and clause position. *Journal of Speech and Hearing Research, 27*, 338–341.

[15] Watson, J. B., Byrd, C. T., & Carlo, E. J. (2011). Effects of length, complexity, and grammatical correctness on stuttering in Spanish-speaking preschool children. *American Journal of Speech-Language Pathology, 20*, 209–220.

[16] Ratner, N. B., & Sih, C. C. (1987). Effects of gradual increases in sentence length and complexity on children's dysfluency. *Journal of Speech and Hearing Disorders, 52*, 278–287.

[17] Kadi-Hanifi, K., & Howell, P. (1992). Syntactic analysis of the spontaneous speech of normally fluent and stuttering children. *Journal of Fluency Disorders, 17*, 151–170.

[18] Gaines, N. D., Runyan, C. M., & Meyers, S. C. (1991). A comparison of young stutterers' fluent versus stuttered utterances on measures of length and complexity. *Journal of Speech and Hearing Research, 34*, 37–42.

[19] Yaruss, J. S., Newman, R. M., & Flora, T. (1999). Language and disfluency in nonstuttering children's conversational speech. *Journal of Fluency Disorders, 24*, 185–207.

[20] Yaruss, J. S. (1999). Utterance length, syntactic complexity, and childhood stuttering. *Journal of Speech, Language, and Hearing Research, 42*, 329–344.

© 2019 Lidcombe Program Trainers Consortium

[21] Weiss, A. L., & Zebrowski, P. M. (1992). Disfluencies in the conversations of young children who stutter: Some answers about questions. *Journal of Speech and Hearing Research, 35*, 1230–1238.

[22] Logan, K. J., & Conture, E. G. (1997). Selected temporal, grammatical, and phonological characteristics of conversational utterances produced by children who stutter. *Journal of Speech, Language, and Hearing Research, 40*, 107–120.

[23] Chon, H., Sawyer, J., & Ambrose, N. G. (2012). Differences of articulation rate and utterance length in fluent and disfluent utterances of preschool children who stutter. *Journal of Communication Disorders, 45,* 455–467.

[24] Brundage, S. B., & Ratner, N. B. (1989). Measurement of stuttering frequency in children's speech. *Journal of Fluency Disorders, 14*, 351–358.

[25] Ingham, R. J. (1980). Modification of maintenance and generalization during stuttering treatment. *Journal of Speech and Hearing Research, 23*, 732–745.

[26] 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.

[27] Yairi, E., & Ambrose, N. G. (2005). *Early childhood stuttering: For clinicians by clinicians*. Austin, TX: Pro-Ed.

[28] Bloodstein, O., & Ratner, N. B. (2008). *A handbook on stuttering* (6th ed). Clifton Park, NY: Delmar.

[29] Blomgren, M. (2013). Behavioral treatments for children and adults who stutter: A review. *Psychology Research and Behavior Management, 6*, 9–19.

[30] Nye, C. & Hahs-Vaughn, D. (2011). Assessing methodological quality of randomized and quasi-experimental trials: A summary of stuttering treatment research. *International Journal of Speech-Language Pathology, 13*, 49–60.

[31] Nye, C., Vanryckeghem, M., Schwartz, J. B., Herder, C., Turner, H. M., & Howard, C. (2013). Behavioral stuttering interventions for children and adolescents: A systematic review and meta-analysis. *Journal of Speech, Language, and Hearing Research, 56,* 921–932.

[32] Wallace, I. F., Berkman, N. D., Watson, L. R., Coyne-Beasley, T., Wood, C. T., Cullen, K., & Lohr, K. N. (2015). Screening for speech and language delay in children 5 years old and younger: A systematic review. *Pediatrics*, *136,* e448-e462

[33] Baxter, S., Johnson, M., Blank, L., Cantrell, A., Brumfitt, S., Enderby, P., & Goyder, E. (2015). The state of the art in non-pharmacological interventions for developmental stuttering. Part 1: A systematic review of effectiveness. *International Journal of Language and Communication Disorders, 50,* 676–718.

[34] 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.

[35] Onslow, M. (2018). *Stuttering and its treatment: Eleven lectures.* Retrieved from https://www.uts.edu.au/research-and-teaching/our-research/australian-stuttering-research-centre/asrc-resources/resources

[36] 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.

[37] 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.

[37] Christensen, J., & Lingwall, J. (1982). Verbal contingent stimulation of stuttering in laboratory and home settings. *Journal of Fluency Disorders, 7*, 359–368.

[38] 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.

[39] Reed, C., & Godden, A. (1977). An experimental treatment using verbal punishment with two preschool stutterers. *Journal of Fluency Disorders, 2*, 225–233.

[40] 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.

© 2019 Lidcombe Program Trainers Consortium

[41] Onslow, M., Costa, L., & Rue, S. (1990). Direct early intervention with stuttering: Some preliminary data. *Journal of Speech and Hearing Disorders, 55*, 405–416.

[42] 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.

[43] Lincoln, M., & Onslow, M. (1997). Long-term outcome of early intervention for stuttering. *American Journal of Speech-Language Pathology, 6*, 51–58.

[44] 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.

[45] Jones, M., Onslow, M., Packman, A., Williams, S., Ormond, T., Schwarz, I., Gebski, V. (2005). Randomised controlled trial of the Lidcombe programme of early stuttering intervention. *British Medical Journal, 331,* 659–661.

[46] 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.

[47] De Sonneville-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/

[48] Harrison, E., Wilson, L., & Onslow, M. (1999). Distance intervention for early stuttering with the Lidcombe Programme. *Advances in Speech Language Pathology, 1,* 31–36.

[49] 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.

[50] 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.

[51] 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.

[52] 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.

[53] 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.

[54] 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.

[55] 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.

[56] 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.

[57] 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.

[58] O'Brian, S., & Onslow, M. (2011). Clinical management of stuttering children and adults. *British Medical Journal, 342,* 35–38.

[59] Onslow, M., & O'Brian, S. (2013). Management of childhood stuttering. *Journal of Paediatrics and Child Health, 49,* e112–e115.

[60] Rappell, N., Schmidt, D., & Rolfe, M. (2017). Rolling-group Lidcombe Program delivery. Journal of Clinical Practice in Speech-Language Pathology, 19, 76–81.

© 2019 Lidcombe Program Trainers Consortium

[61] 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.

[62] 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.

[63] 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.

[64] Thomas, C., & Howell, P. (2001). Assessing efficacy of stuttering treatments. *Journal of Fluency Disorders, 26*, 311–333.

[65] 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.

[66] Walter, G. (2009). Evidence-based treatment and therapist drift. *Behaviour Research and Therapy, 47,* 119–127.

[67] 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.

[68] 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.

[69] 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.

[70] 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.

[71] 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.

[72] 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.

[73] 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.

[74] 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.

[75] Hayhow, R. (2009). Parents' experiences of the Lidcombe Program of early stuttering intervention. *International Journal of Speech-Language Pathology, 11,* 20–25.

[76] 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.

[77] Kingston, M., Huber, A., Onslow, M., Jones, M., & Packman, A. (2003). Predicting treatment time with the Lidcombe Program: Replication and meta-analysis. *International Journal of Language and Communication Disorders, 38*, 165–177.

[78] Jones, M., Onslow, M., Harrison, E., & Packman, A. (2000). Treating stuttering in young children: Predicting treatment time in the Lidcombe Program. *Journal of Speech, Language, and Hearing Research, 43*, 1440–1450.

[79] Guitar, B., Kazenski, D., Howard, A., Cousins, S. F., Fader, E., & Haskell, P. (2015). Predicting treatment time and long-term outcome of the Lidcombe Program: A replication and reanalysis. *American Journal of Speech-Language Pathology*, *24,* 533–544.

[80] Miller, B., & Guitar, B. (2009). Long-term outcome of the Lidcombe Program for early stuttering intervention. *American Journal of Speech-Language Pathology, 18*, 42–49.

[81] 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.

© 2019 Lidcombe Program Trainers Consortium

[82] 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.

[83] Packman, A., Onslow, M., Webber, M., Harrison, E., Arnott, S., Bridgman, K., Carey, B., Sheedy, S., O'Brian, S., MacMillan, V., & Lloyd, W. (2015). *The Lidcombe Program treatment guide*. Retrieved from http://www.lidcombeprogram.org/?page_id=280 : THIS citation IS OUTDATED

[84] 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.

© 2019 Lidcombe Program Trainers Consortium