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ABSTRACT

Written for speech-language clinicians in the school setting, the manual describes therapy techniques used in the Keystone Adolescent Program for Stutterers (KAPS). KAPS emphasizes the Airflow Technique, a self-regulatory approach consisting of two parts: (1) a quiet breathing in and out allowing the breath to flow out a distance before initiating phonation, and (2) a slowing of the first syllable of the utterance. Factors involved in implementing the technique are described along with an 11-step hierarchy of increasingly complex language patterns. Students are taught several techniques to handle dysfluencies as well as other rate control techniques. Relaxation training is also featured, as is electromygraphic biofeedback training and the use of an automatic masker activated when the stutterer speaks and deactivated when silent. Appendixes include sample individualized education program forms and a list of suggested readings. (CL)

ADOLESCENT PROGRAM FOR STUTTERERS

KEYSTONE ADOLESCENT PROGRAM FOR STUTTERERS

K.A.P.S.

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of the

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Office of Special Education Program

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Division of Special Education

Keystone Area Education Agency
Division of Special Education

We wish to acknowledge the contribution of Steve Peterson, who saw a need for change in servicing stutterers in the public school setting and helped develop this program.

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Table of Contents

Introduction

This is a manual describing therapy techniques used in the Keystone Adolescent Program for Stutterers (K.A.P.S.). The program originated in the summer of 1981 to provide intensive speech therapy for adolescent stutterers and was motivated by the frustration of trying to schedule stutterers for therapy during the average school day.

This manual was written for speech-language clinicians serving in the school setting. Among the subjects discussed will be: program design, Airflow Technique, stuttering modification techniques, rate control techniques, relaxation training, EMG biofeedback training and the Edinburgh Masker.

While this therapy regimen was designed for an intensive program, we feel the techniques are applicable for a 30 to 40 minute, twice-a-week therapy schedule.

Program Design

The Keystone Adolescent Program for Stutterers, although varying from year to year, has provided at least two to three and a half hours of therapy daily, four days a week.

The advantages of a summer program are:

1) The student's schedule is more flexible during the summer.
2) More complex therapies can be used because of multiple-hour sessions.
3) The clinician can devote full time and attention to just stuttering therapy.
4) The student can devote full time and attention to stuttering therapy.
5) Increased therapy time allows the clinician to take the stutterer through a greater variety of communicative experiences.

At this time, we are not aware of any disadvantages of a summer schedule.

Sample copies of our original and present schedules are shown below.

1981, 1982, 1983

Time	Student A	Student B	Student C	Student D
8:30	Warm-up	Warm-up	Warm-up	Warm-up
8:50	Individual-ized Work	Group Work	Group Work	Group Work
9:10	Group Work	Individual-ized Work	Group Work	Group Work
9:30	Break	Break	Break	Break
9:50	Group Work	Group Work	Individual-ized Work	Group Work
10:10	Group Work	Group Work	Group Work	Individual-ized Work
10:30	Group Experiences	Group Experiences	Group Experiences	Group Experiences

1984

Time	Student A	Student B	Student C	Student D
8:30	Warm-up	Warm-up		
8:40	Biofeedback	Individual Drill		
9:00	Individual Drill	Biofeedback		
9:30	Group Experiences	Group Experiences	Group Experiences	Group Experiences
10:30			Biofeedback	Individual Drill
11:00			Individual Drill	Biofeedback

The clinician originally required the students to participate in either group or individual sessions during the entire time of the program. However, because of divergent maturity levels, it was decided to modify the format to a schedule that provides for less group work and more individual attention. Some of the stutterers had individual needs that could not be dealt with in the group setting.

In the 1984 schedule, the clinician begins by warming up the stutterers. This entails short drills using the Airflow Technique; i.e., single words, sentences, and oral reading. Next, the clinician has individualized sessions which include biofeedback training and specific drills on pattern usage. The clinician follows this training with group therapy which consists of speeches, conversation practice, role plays or actual communicative experiences. This hour block is followed by more individual sessions or a continuation of communicative experiences.

The basic fluency technique in this program is the Airflow Technique. Stuttering modification techniques and rate control techniques are adapted to students' specific problems, while relaxation and EMG biofeedback training are considered adjunctive therapies.

The remainder of this manual will be devoted to describing the approaches included in the therapy regimen.

Airflow Technique

This therapy regimen was developed by Martin Schwartz, Ph.D. The clinician's interpretation of this technique is derived through training at the Colorado Center for Stuttering Therapy with JoAnn Lee, M.S.

The Airflow Technique is a self-regulatory therapy which depends ultimately upon the stutterer's motivation and commitment to controlling his/her fluency. The Airflow Technique consists of a two part pattern:

1) A quiet breathing in and out allowing the breath to flow out a distance before initiating phonation
2) A slowing of the first syllable of the utterance.

AIRFLOW PATTERN

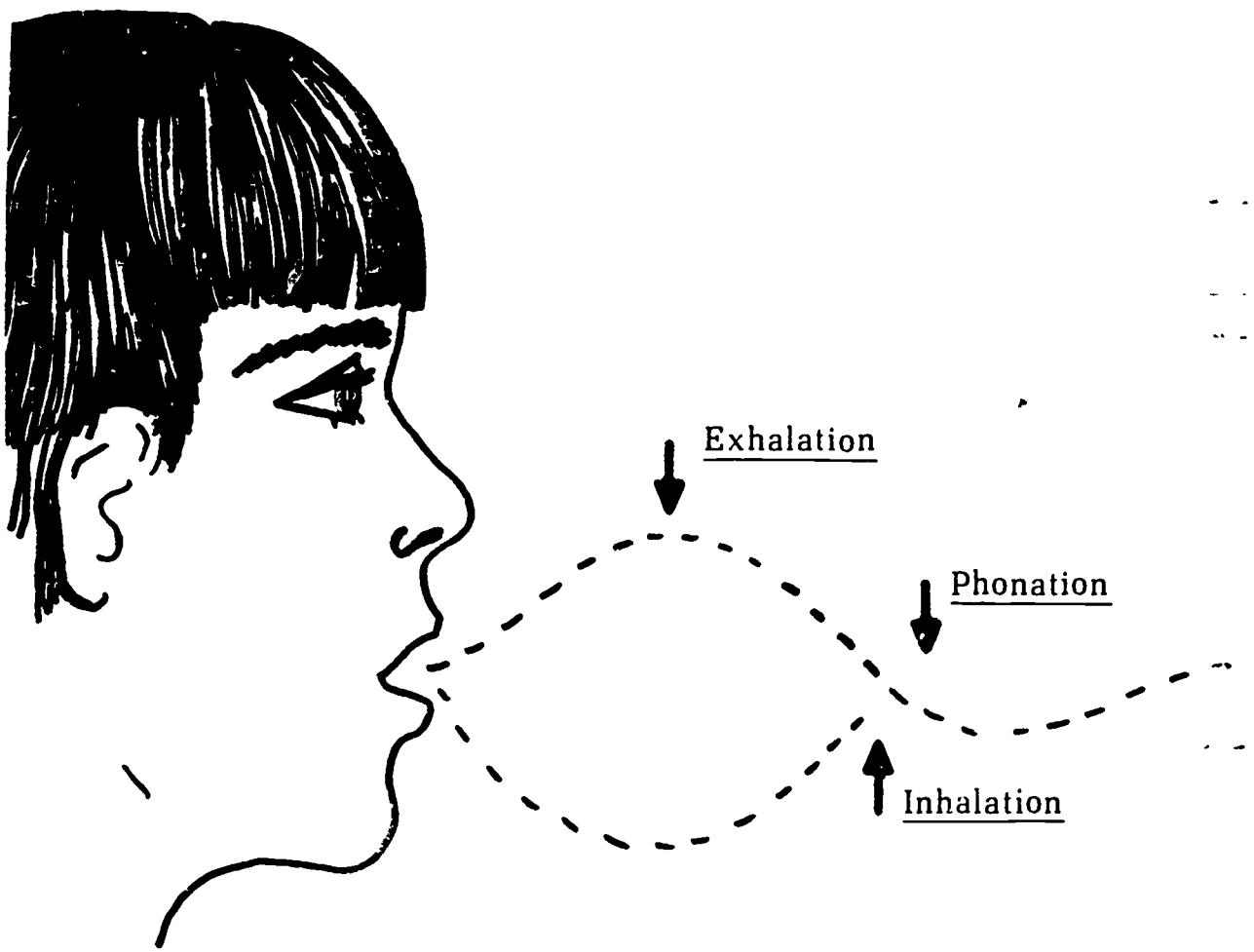

Illustration 1

The airflow pattern is initiated by asking the student to inhale through the mouth in a very quiet, effortless manner. Obvious chest and shoulder movements during inhalation should not be accepted. These extraneous movements are not conducive to habituation of the pattern.

Exhalation should be performed in the same manner, quietly and effortlessly. This quiet breathing should be mastered before advancing to the next step.

After this pattern has been established, phonation is introduced. Initially the student is required to allow the breath to flow out for at least 2.0 seconds before phonating. The first words used are single syllable and begin with the fricatives /s/ or /sh/. Then the student progresses to other phonemes.

The second part of the pattern is now introduced. The student is asked to slow the first syllable of the utterance. Compound and multi-syllabic words are used in this step, again just slowing the first syllable of these words.

The use of gestures to visually cue the steps of the pattern is helpful in facilitating its use. The student is asked to bring his/her hand to his/her mouth as if reflecting inhalation and, without stopping the motion, to move his/her hand in a fashion that resembles a sine wave. Without the use of the gestures, students have a tendency to reduce the airflow time (the time elapsed between the beginning of exhalation and phonation).

At this point, the clinician must watch for five negative behaviors which may appear when using this pattern:

1) breathing noisly
2) stopping between inhalation and exhalation

3) stopping the flow just prior to phonation
4) moving the articulators before allowing sufficient breath to flow out
5) taking multiple breaths before initiating the pattern. The Airflow Technique requires inhalation, exhalation, and phonation. Multiple breaths should not be accepted.

When the student can use the pattern without difficulty, the clinician then moves the student through the following hierarchy:

1) two words
2) three words
3) four words
4) free rein
5) oral reading
6) monologue
7) conversation
8) group speeches on the block
9) telephone
10) conversation with unfamiliar persons
11) large group speeches

When introducing the pattern with more than one word, the clinician must remember that if the airflow is interrupted or stopped, the student must reinitiate the pattern. These stops are usually very subtle, but any stop must be followed by the two part pattern.

In proceeding through the first three steps of the hierarchy, the student practices stopping and initiating the pattern every two, three or four words. Step four, free rein, allows the student to control the number of words in each utterance. When student reaches step four, there is a tendency for him/her to flow through too many words in an utterance.

Step five, oral reading, repeats steps one through four, the difference being that the student reads rather than imitates utterances. The reader is asked to disregard punctuation, since our goal is consistent use of the pattern, not oral reading. If the student has difficulty reading through punctuation, he/she is asked to read from the bottom of the page, reading right to left, until he/she can read and not be effected by punctuation.

When introducing the pattern in monologue, the clinician maintains a listener's role, unless the student fails to use the pattern correctly. At that moment, the clinician will stop the stutterer and demand that he/she use the pattern. If it becomes difficult to transfer a quiet, effortless pattern into monologue, the clinician may choose to use speed drills. In these drills, the clinician asks the student to read a list of words as quickly as possible using both parts of the pattern on each word. Speed and skill levels will increase at a comparable rate.

Conversation differs from monologue only in that the clinician participates in the activity.

In step eight, the clinician has the stutterer give short talks in front of the other students. The entire group monitors the speaker's performance and stops him/her when he/she fails to use the pattern. This exercise serves a dual purpose: it helps to carry over the pattern; and helps to make the stutterer become aware of how this pattern sounds to listeners.

The telephone has proven to be difficult for most stutterers. The clinician begins this step by having the student practice his/her techniques on the tele-trainer. This is a device manufactured by AT&T. It consists of two telephones and a control box. It is used to simulate telephone calls within the therapy room.

After the simulation, the clinician has the student make informational calls, i.e., "What time do you close?", "What time do you start delivering pizza?", "Do you have certain items?", etc.

Then the clinician has the student make calls to familiar persons. During these calls, the stutterer is expected to use the pattern at all times.

In step ten, the clinician has the student hold conversations with unfamiliar persons. It is important that the clinician monitor these discussions and enforce the use of the Airflow Technique.

The final step entails having the stutterer give speeches in front of large groups, i.e.; human relations classes, retirement centers, service organizations, etc. Again, it is important that the clinician monitor the student's performance. Because of the stress of these situations, the clinician tries to modify the cues. Initially, the clinician gestures to signal unsatisfactory control. In certain situations, gestures are not adequate to change the stutterer's behavior. If gestures fail to alter the student's performance, it then takes on its own hierarchy. The next step in the hierarchy would be verbal cues, followed by tactile reminders. If all these fail, the clinician steps in and gives the stutterer a respite before he/she is brought back into the activity. The clinician sometimes has had to go through this hierarchy of responding behaviors several times during a single speech. It is the clinician's goal to elicit as many controlled utterances as possible during this activity. It is crucial that the clinician be assertive and demand use of the technique or else the purpose of the experience is defeated.

Steps ten and eleven are very stressful for the student and he/she is not expected to participate without preparation. This preparation takes the

form of role playing the particular situation in front of the rest of the students. This role play is repeated two or three times each day, a week before the actual experience, so that the student will become more comfortable with the upcoming situation. The clinician wants the student so well rehearsed for these exercises that he/she does not have to think about what he/she is saying, but rather can concentrate on using the Airflow Technique.

The major problem is getting the student to realize that he/she will have to use the pattern every time he/she speaks. Most stutterers arrive at a point where they feel good about their progress, even though they demonstrate significant dysfluency, and will only use the pattern when they perceive difficulty. This is an illusion because there is no way the student can build up the skill level to pull himself/herself out of a dysfluent period when he/she is only using the technique on an intermittant basis. The vigilance the clinician must demonstrate, in requiring the use of the pattern 100% of the time can not be stressed enough. The tendency is that as the stutterer becomes more fluent, the clinician accepts less consistant use of the pattern which sends a message to the student that the clinician is concentrating on dysfluency rather than fluency.

The clinician should realize that, initially, this pattern will sound abnormal, but as the stutterer becomes proficient in its use, both the flow time and slow time will be reduced and result in a more acceptable pattern.

Each of the students is required to do two kinds of home practice. The first type consists of a warm-up, a reading drill, and a monologue exercise using a tape recorder. The second asks the student to use his/her pattern in various communicative settings. Total daily practice time is approximately 30 minutes.

Stuttering Modification Techniques

Since the clinician does not feel that the stutterer will be perfectly fluent when he/she leaves the program, the clinician provides the student with a few techniques to handle dysfluencies. The clinician's first choice is to provide the student with training in the use of the Pull-Out Technique (Van Riper, 1973). The clinician asks the student to stop all phonatory activity when he/she feels a dysfluency and then to flow slowly into the stuttered word if it was unintelligible, or to go on to the next word if it was understood. When the Pull-Out Technique has not been successful, the clinician has used the Cancellation (Van Riper, 1973) and Bouncing (Williams, D.E., 1957) Techniques.

Rate Control Techniques

While the Airflow Technique is in itself a rate control technique, the clinician sometimes feels that the stutterer needs additional help with controlling his/her rate of speaking. Sometimes the clinician has the student calculate his/her rate of speech and find a rate that is comfortable to the student and the clinician. Video tapes are used to provide the stutterer with audio-visual feedback. This enables the student to experience how he/she sounds when talking at a slower rate.

Most of the time the speech-language pathologist acts as a sophisticated observer, stopping the stutterer when his/her rate becomes too fast.

Another approach the clinician has implemented to help the stutterer control his/her rate of speaking is the Finger Pacer as described by Micham-Henson and Townsend (ASHA, 1983). This is a finger cast made out of Kay-splint material.

The following are the steps involved in making a Finger Pacer:

1) Cut a three inch piece of Kay-splint material.
2) Immerse the material in hot water until pliable.
3) Shape the material around the student's index finger, making sure it will slide off and on easily.
4) While the material is still pliable, punch three medium-sized holes, equally spaced, in the side facing the thumb.
5) Run cold water over the Finger Pacer to harden the material.

The stutterer moves the thumb from hole to hole per syllable. Initially, the rate should be very slow but, as the skill increases, the rate will become faster with better intonation. The expectation is that through consistent use, the stutterer will generalize this slower rate to spontaneous speech without actually wearing the Pacer. This technique proved to be unpopular with the adolescent stutterer but very effective in controlling his/her rate and reducing dysfluent behavior.

Relaxation Training

Another part of the therapy regimen is relaxation training. The majority of the students are so active that it seems to interfere with their ability to concentrate on therapy. The stutterer is trained to discriminate between tension and relaxation through the use of tense-slow release exercises (Budzinski, 1975, Modification of Progressive Relaxation, Jacobson, 1938). The stutterer sits or lies in a comfortable position. The exercises are presented in a soft, relaxing voice using much pause time. This can either be done in a live format or recorded on tape. The following is a sample of a typical script used for a tense-slow release exercise:

Tense - Slow Release Exercise

Lie back and relax to the best of your ability.....Let's begin by taking a slow deep breath.....Breathe in one, two three...exhale...one, two three.....And again, breathe in one, two, three...exhale ..one, two three.....

Now I want you to tighten your left leg, tighten, one, two, three, four, five and release very slowly.....visualize the tension leaving those muscles..... and your leg becomes very heavy.....and relaxed.....
Now tighten your right leg, tighten, one, two, three, four, five, and release very slowly.....Your muscles become limp and heavy...and relaxed.....
Now both of your legs feel very heavy..... and relaxed.....Now tighten your bottom muscles, tighten, one, two, three, four, five, and release very, very slowly..... Visualize the tension leaving those muscles....They become heavy, heavier and heavier.....Feels like your bottom is sinking into the chair.....The bottom part of your body feels very relaxed and very heavy.....Now let's tighten your stomach muscles, tighten, one, two, three, four, five, and release very slowly.....Think about your stomach just sinking into the chair....These muscles are very relaxed... ....very limp....feeling good....Now let's tighten your chest, tighten one, two, three, four, five, and relax slowly..... Feel your chest dropping because it is so heavy and relaxed.....The muscles are limp .....Feeling good....Tighten your left arm, tighten, one, two, three, four, five and relax very slowly....Feel the arm muscles go very limp and heavy...Visualize the tension continuing to leave those

muscles...being replaced by a feeling of relaxation....Now let's pull back the shoulders, tighten, one, two, three, four, five, and release very slowly..... Concentrate on the ends of your shoulders .....They become very heavy.....very heavy and so relaxed.....Continue to feel them drop because the muscles become limp and relaxed..... Now tighten the neck muscles, tighten, one, two, three, four, five, and relax very slowly.....Release the tension..... Visualize the muscles becoming flabby..... so relaxed.....becoming longer and flabby .....and very relaxed....Now let's tighten the jaw muscles, tighten, one, two, three, four, five, and release..... Your jaw feels very heavy.....Your muscles become very limp....and relaxed... Continue to visualize the tension leaving those muscles.....Now let's tighten the forehead muscles, tighten, one, two, three, four, five, and release very slowly.....Visualize those muscles becoming heavier and heavier.....

You're feeling very relaxed at this point.....Your back feels like it's sinking through the chair....Your legs are very relaxed....and it feels good.

Now I want you to take a nice, easy, slow breath in...Breathe in...one, two, three, exhale, one, two, three.

Now open your eyes and try to maintain this feeling of relaxation.

The clinician would expect to observe the stutterer tensing and relaxing various parts of his/her body during this exercise. This should result in the student become more relaxed.

After the stutterer demonstrates some success with the tense-slow release training, the clinician introduces autogenic exercises (Schultz & Luthe, 1959). In these exercises, the clinician asks the student to concentrate on relaxing a particular muscle group and to move this feeling through other parts of the body. The following is a typical script used for autogenic exercises:

Autogenic Exercise

I would like you to get as comfortable as possible....Allow yourself to become very comfortable and relaxed...Close your eyes and think of only pleasant things.....

Now, I want you to visualize the muscles of your feet.....I want you to think about those muscles becoming very limp and heavy...very relaxed..... Now I want you to think about that feeling of heaviness moving slowly over your ankles...and up your legs....your muscles feel very limp.....and very relaxed....Now the feeling is moving through your knees and into your thighs...and it feels good... Your legs are very, very heavy and so relaxed...Now the feeling moves through your bottom....and your bottom muscles become very heavy and limp....Now the feeling moves into your stomach and lower back muscles...release the tension..... Visualize the tension leaving those muscles ...and they become very heavy and very relaxed...Now the feeling moves into your chest muscles...release the tension..... The muscles become very limp and heavy..... Your back feels like it is sinking into the chair....and its feels so good....Now you move this feeling into your shoulders..... release the tension....Visualize the muscles becoming very limp and relaxed..... The ends of your shoulders are very, very

heavy and feel very relaxed.....The feeling moves into your neck muscles..... and your neck muscles feel like they are becoming longer and slightly flabby..... very limp and relaxed.....Now you move the feeling into your jaw muscles..... release the tension....feel as though your chin is very heavy and the muscles become very, very relaxed.....Your body is feeling very heavy and relaxed....and feels so good....Now let the feeling move into your forehead muscles....release the tension....allow the muscles to become very heavy....and very relaxed...Now your entire body feels heavy....limp and relaxed.

Now open your eyes, and try to maintain this feeling of relaxation throughout your day.

The expected results of the autogenic exercises would be the same as for the tense-slow release exercises; that the student would assume a more relaxed posture.

EMG Biofeedback Training

After the stutterer knows some techniques that allow him/her to relax, the clinician begins working with EMG biofeedback. This technique provides greater accountability to relaxation training. Without it, the clinician has no way of knowing if a person is truly relaxing except through subjective observation.

Biofeedback has been applied in two ways in therapy; a non-specific and a specific manner (Bio-feedback Society of America, 1980).

EMG BIOFEEDBACK
Frontalis Placement

Illustration 2

The purpose of non-specific EMG biofeedback training is to reduce the stutterer's overall tension level. In this training, the surface electrodes are placed on the student's forehead (See Illustration 2). A baserate of electro-muscular activity is taken, during which no feedback is given to the student. Actual treatment is initiated with both visual and auditory feedback. Visually, the stutterer tries to reduce the reading on the meter which indicates micro-volts per second. Auditorily, his/her goal is to reduce the volume and frequency of

the clicks heard via the earphones. The readings are recorded every minute during this training. If the stutterer is exhibiting difficulty in reducing the amount of electromuscular activity, he/she is referred back to previously learned relaxation techniques.

EMG BIOFEEDBACK

Masseter Placement

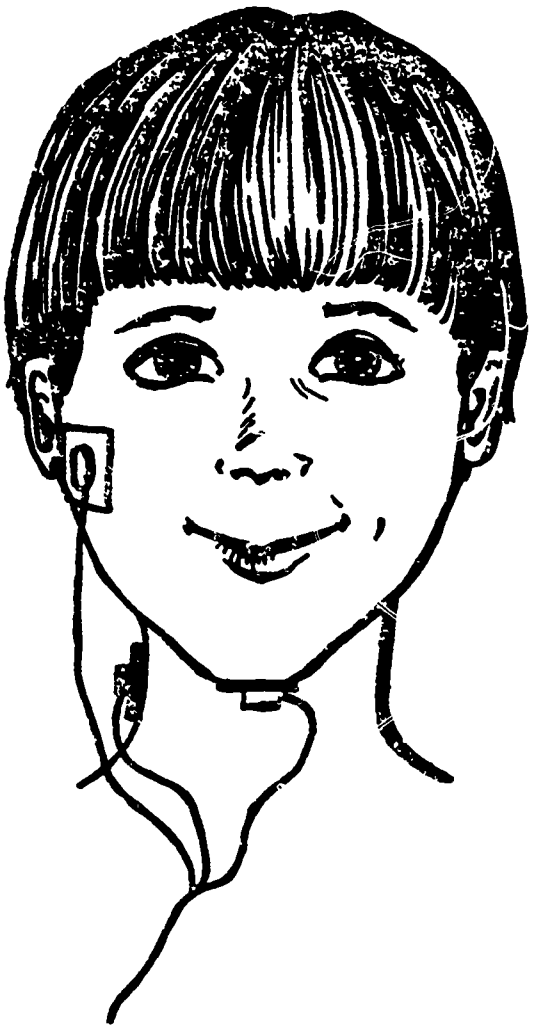

Illustration 3

Specific EMG biofeedback is used to reduce electromuscular activity in certain speech related muscle groups. During this training, surface electrodes are placed on the masseter muscles (See Illustration 3). The stutterer is asked to reduce

electromuscular activity to 3 micro-volts per second. At this point the student repeats a word provided by the clinician and tries to return the reading to 3 micro-volts per second as quickly as possible. This is a modification of a technique described by Lanyon (1977). The criteria is returning the reading to 3 micro-volts per second within 3.0 seconds. This activity can proceed through a hierarchy ranging from single syllable words to spontaneous speech.

Reducing electromuscular activity has proven to be a major challenge for most of the stutterers in the program, but is helpful in habituating a fluent speech pattern.

Edinburgh Masker

This is an automatic masker which means that it is activated when the stutterer speaks and de-activated when he/she is silent. It was developed at the University of Edinburgh, Scotland, and is distributed by Foundation for Fluency, Inc., Chicago, Illinois.

EDINBURGH MASKER

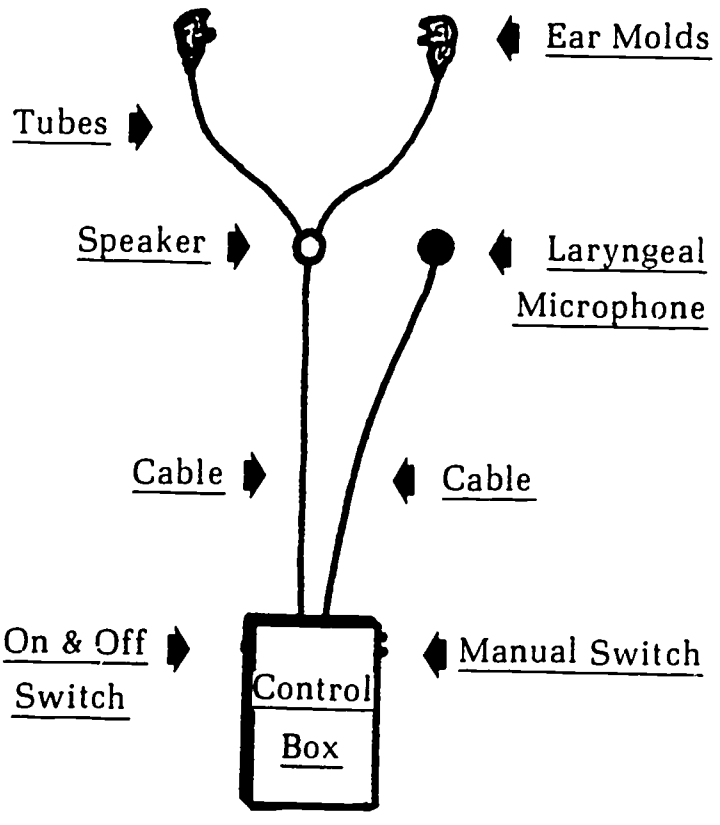

Illustration 4

The stutterer is fitted with bilateral skeletal ear molds with tubes running between the molds and a miniature speaker. This speaker is connected to a control box by a thin cable. The other part of the system is a laryngeal microphone that is attached to the throat with double stick tape. When the stutterer speaks the masker sends a complex noise signal into the ears to cover the voice. This device is only effective when it can totally mask-out the stutterer's voice.

This device is recommended when the stutterer meets the following criteria:

1) The student has to demonstrate a severe fluency disorder that is definitely handicapping communication.
2) The student has not responded to behavioral approaches.
3) The student has to be in full agreement with the concept of wearing a device that will alter the appearance and manner of speaking.
4) The student is willing and able to invest approximately $350 in the masker.

Is there any therapeutic effect? Only in that it is hoped that when the stutterer finds more and more success with the masker, he/she will be able to turn it off frequently and still maintain fluency, although the stutterer will always be expected to wear the masker.

While no one considers this device a cure, for certain stutterers, it is a feasible alternative to behavioral approaches.

On the following pages we include a sample individualized educational plan, a biofeedback recording chart, and a list of suggested readings.

Budzinski, T.H., *Systems Approach to Biofeedback Training*, Cassette tape produced by BMA Audio Cassettes; New York, New York, (1975).

Jacobson, E., *Progressive Relaxation*, University of Chicago Press, Chicago, (1938).

Lanyon, R.I., "Effect of Biofeedback-Based Relaxation on Stuttering During Reading and Spontaneous Speech", *Journal of Consulting and Clinical Psychology*, 45, 860-866, (1977).

Micham, Hensen P. and Townsend, K., "Pacing Devices Developed", *ASHA*, 25, 16, (1983).

Rubow, Rick, *Biofeedback in the Treatment of Speech Disorders*, Biofeedback Society of America, (1980).

Schultz, J.H., and Luthe, W., *Autogenic Training*, Grune & Stratton, New York, (1959).

Van Riper, C., *The Treatment of Stuttering*, Englewood Cliffs, New Jersey, Prentice-Hall, Inc., (1973).

Williams, D.E., "A Point of View About Stuttering", *Journal of Speech and Hearing Disorders*, 22, 390-397, (1957).

APPENDICES

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KEYSTONE AREA EDUCATION AGENCY
DIVISION OF SPECIAL EDUCATION
INDIVIDUALIZED EDUCATIONAL PROGRAM

I. DATE_____ DISTRICT_____ BUILDING_____

STUDENT_____ GRADE/LEVEL_____ PROGRAM/SERVICE_____

INITIATION OF THIS SERVICE_____ DATE OF ANNUAL REVIEW_____ TIME IN SPECIAL PROGRAM/SERVICE_____

II. ANNUAL GOAL(s):

Increase use of the Airflow Pattern

PRESENT PERFORMANCE LEVEL:

PERSON(s) RESPONSIBLE FOR MEETING THIS GOAL:

III. SHORT TERM OBJECTIVES (Include evaluation criteria and procedures) (State what the student will do, how well and by when)	MATERIALS/STRATEGIES	COMMENTS
1. Student will demonstrate use of the "Airflow Technique" with 100% accuracy while repeating 25 - two word phrases. 2. Student will demonstrate use of the "Airflow Technique" with 100% accuracy while repeating 25 - three word phrases. 3. Student will demonstrate use of the "Airflow Technique" with 100% accuracy while repeating 25 - four word phrases. 4. Student will demonstrate use of the "Airflow Technique" with 100% accuracy when formulating sentences with a given word (free rein). 5. Student will demonstrate use of the "Airflow Technique" with 90% accuracy during a five minute reading sample. 6. Student will demonstrate use of the "Airflow Technique" with 60% accuracy during a five minute monologue. 7. Student will demonstrate use of the "Airflow Technique" with 85% accuracy during a five minute monologue.	1. Stop Watch 2. Record Sheets Technique Airflow Technique (Schwartz)	

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KEYSTONE AREA EDUCATION AGENCY
DIVISION OF SPECIAL EDUCATION
INDIVIDUALIZED EDUCATIONAL PROGRAM
CONTINUATION SHEET

CONTINUATION OF Airflow Technique Goals (Section) STUDENT _____ DISTRICT _____

8. Student will demonstrate use of the "Airflow Technique" with 60% accuracy during a five minute conversation.
9. Student will demonstrate use of the "Airflow Technique" with 85% accuracy during a five minute conversation.
10. Student will demonstrate use of the "Airflow Technique" with 60% accuracy during a five minute speech in front of the class.
11. Student will demonstrate use of the "Airflow Technique" with 85% accuracy during a five minute speech in front of the class.
12. Student will demonstrate use of the "Airflow Technique" with 60% accuracy when holding a conversation using the teletrainer.
13. Student will demonstrate use of the "Airflow Technique" with 85% accuracy when holding a conversation using the teletrainer.
14. Student will demonstrate use of the "Airflow Technique" with 60% accuracy when holding a conversation on the phone.
15. Student will demonstrate use of the "Airflow Technique" with 85% accuracy when holding a conversation on the phone.
16. Student will demonstrate use of the "Airflow Technique" with 60% accuracy when holding a five minute conversation with an unfamiliar person.
17. Student will demonstrate use of the "Airflow Technique" with 85% accuracy when holding a five minute conversation with an unfamiliar person.
18. Student will demonstrate use of the "Airflow Technique" with 60% accuracy when giving a five minute speech in front of a large group.
19. Student will demonstrate use of the "Airflow Technique" with 85% accuracy when giving a five minute speech in front of a large group.

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KEYSTONE AREA EDUCATION AGENCY
DIVISION OF SPECIAL EDUCATION
INDIVIDUALIZED EDUCATIONAL PROGRAM

I. DATE_____ DISTRICT_____ BUILDING_____

STUDENT_____ GRADE/LEVEL_____ PROGRAM/SERVICE_____

INITIATION OF THIS SERVICE_____ DATE OF ANNUAL REVIEW_____ TIME IN SPECIAL PROGRAM/SERVICE_____

II. ANNUAL GOAL(s):

Increase ability to relax masseter muscles during speech.

PRESENT PERFORMANCE LEVEL:

PERSON(s) RESPONSIBLE FOR MEETING THIS GOAL:

III. SHORT TERM OBJECTIVES (Include evaluation criteria and procedures) (State what the student will do, how well and by when)	MATERIALS/STRATEGIES	COMMENTS
1. Student will reduce his UV reading to 3, tighten and release his masseter muscles, and return the reading to 3 within 3 seconds in 10 successive trials. 2. Student will reduce his UV reading to 3, say 1 - one syllable word and return the reading to 3 with 3 seconds in 10 successive trials. 3. Student will reduce his UV reading to 3, say a three word sentence and return the reading to 3 within 3 seconds in 10 successive trials. 4. Student will reduce the UV reading to 3, say a four to five word sentence and return the reading to 3 within 3 seconds in 10 successive trials.	1. EMG Biofeedback Unit 2. Record Sheets	

Copies to:
WHITE: AEA
YELLOW: LEA
PINK: PARENT

KEYSTONE AREA EDUCATION AGENCY
DIVISION OF SPECIAL EDUCATION
INDIVIDUALIZED EDUCATIONAL PROGRAM

1. DATE_____ DISTRICT_____ BUILDING_____

STUDENT_____ GRADE/LEVEL_____ PROGRAM/SERVICE_____

INITIATION OF THIS SERVICE_____ DATE OF ANNUAL REVIEW_____ TIME IN SPECIAL PROGRAM/SERVICE_____

II. ANNUAL GOAL(s):

Reduce rate of speech.

PRESENT PERFORMANCE LEVEL:

PERSON(s) RESPONSIBLE FOR MEETING THIS GOAL:

III. SHORT TERM OBJECTIVES (Include evaluation criteria and procedures) (State what the student will do, how well and by when)	MATERIALS/STRATEGIES	COMMENTS
1. Student will demonstrate a speech rate of 60 words per minute while using the finger pacer during a five minute speech sample.	1. Finger Pacer	
2. Student will demonstrate a speech rate of 80 words per minute while using the finger pacer during a five minute speech sample.		
3. Student will demonstrate a speech rate of 75 words per minute when not using the finger pacer during a five minute speech sample		
4. Student will demonstrate a speech rate of 100 words per minute when not using the finger pacer during a five minute speech sample		

NAME _____ BIRTHDATE _____ TODAY'S DATE _____

ADDRESS _____ RESIDENCE PHONE NO. _____

PARENTS NAME _____ PLACE OF EMPLOYMENT _____

BUSINESS PHONE NO. _____ REFEREED BY _____

PREVIOUS THERAPY _____

DATE 19		EMG THERAPY CHART																Next Session
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	

SUGGESTED READINGS

Andrews, G., Guitar, B. and Howie, P., "Meta-analysis of the Effects of Stuttering Treatment", *Journal of Speech and Hearing Disorders*, 45, 287-307, (1980).

Andrews, G., and Tanner, S., "Stuttering: The Results of 5 Days Treatment With an Airflow Technique", *Journal of Speech and Hearing Disorders*, 47, 427-429, (1982).

Beaty, D., "A Multimodal Approach to Elimination of Stuttering", *Perceptual and Motor Skills*, 50, 51-55, (1980).

Brenner, N., Perrkins, W., and Soderberg, G., "The Effect of Rehearsal on Frequency of Stuttering", *Journal of Speech and Hearing Research*, 15, 483-486, (1972).

Falkowski, G., Guilford, A., and Sandler, J., "Effectiveness of a Modified Version of Airflow Therapy: Case Studies", *Journal of Speech and Hearing Disorders*, 47, 160-164, (1982).

Gaarder, K., and Montgomery, P., *Clinical Biofeedback: A Procedural Manual*, The Williams and Wilkins Company, Baltimore, (1977).

Guitar, B., "Reduction of Stuttering Frequency Using Analog Electromyographic Feedback", *Journal of Speech and Hearing Research*, 18, 672-685, (1975).

Hanna, R., Wilfling, F., and McNeil, B., "A Biofeedback Treatment for Stuttering", *Journal of Speech and Hearing Disorders*, 40, 270-273, (1975).

Hutchinson, J., "A Review of Rhythmic Pacing as a Treatment Strategy for Stuttering", *Rehabilitation Literature*, 37, 297-303, (1976).

Ingham, R., "The Effects of Self-Evaluation Training on Maintenance and Generalization During Stuttering Treatment", *Journal of Speech and Hearing Disorders*, 47, 271-280, (1982).

Ladouceur, R., Boudreau, L., and Theberge, S., "Awareness Training and Regulated-Breathing Method in Modification of Stuttering", *Perceptual and Motor Skills*, 53, 187-194, (1981).

Ladouceur, R., and Martineau, G., "Evaluation of Regulated-Breathing Method With and Without Parental Assistance in the Treatment of Child Stutterers," *J. Behav. Ther. and Exp. Psychiat.*, 13, 301-306 (1982).

Lanyon, R., "Effect of Biofeedback-Based Relaxation on Stuttering During Reading and Spontaneous Speech", *Journal of Consulting and Clinical Psychology*, 45, 860-866, (1977).

Lanyon, R., Barrington, C., and Newman, A., "Modification of Stuttering Through EMG Biofeedback: A Preliminary Study", *Behavior Therapy*, 7, 96-103, (1976).

Lee, J., "Application of Martin Schwartz's Airflow Technique in the Treatment of Stuttering", *Journal of Speech and Hearing Disorders*, 41, 133-134, (1976).

Manschreck, T., Kalotkin, M., and Jacobson, A., "Utility of Electromyographic Biological Feedback in Chronic Stuttering: A Clinical Study With Follow-up", *Perceptual and Motor Skills*, 51, 535-540, (1980).

Pedrini, B., and Pedrini, D., *Stuttering: Overview in Outline Form, Etiology and Therapy, Conditioning Approaches to Treatment*, Dept. of Health, Education, and Welfare, (1972).

Perkins, W., "Replacement of Stuttering With Normal Speech: 1. Rationale", *Journal of Speech and Hearing Disorders*, 38, 283-303, (1973).

St. Louis, K., Clausell, P., Thompson, J., and Rife, C., "Preliminary Investigation of EMG Biofeedback Induced Relaxation With a Preschool Stutterer", *Perceptual and Motor Skills*, 55, 195-199, (1982).

Schwartz, M., "The Core of the Stuttering Block", *Journal of Speech and Hearing Disorders*, 39, 169-177, (1974).

Starkweather, C. Woodruff, *Stuttering: An Account of Intensive Demonstration Therapy*, Speech Foundation of America, Memphis, (1971).

Turnbaugh, K., and Guitar, B., "Short-Term Intensive Stuttering Treatment in a Public School Setting", *Language, Speech and Hearing Services in the Schools*, 12, 107-114, (1981).