A practical guide for parents and therapists working with children who have Williams syndrome.

Inside:

Strategies for evaluation and implementation of Occupational, Physical, Speech, and Music Therapy methodologies to help individuals with WS of all ages.

Building Skills to Achieve Milestones

A preliminary guide for parents and therapists working with individuals who have Williams syndrome.

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Music Therapy in a School Setting

“Music therapy (MT) is the clinical and evidence-based use of music interventions to accomplish individualized goals within a therapeutic relationship. Music therapy interventions can be designed to promote wellness, manage stress, alleviate pain, express feelings, enhance memory, improve communication, and promote physical rehabilitation.” Research in music therapy supports its effectiveness in a wide variety of healthcare and educational settings, and specifically for children with Williams syndrome.

Music Therapy & IDEA

The Individuals with Disabilities Education Act (IDEA) is a federal law, with state education agency oversight, that supports the provision of public education for all children—regardless of the nature or severity of their disability. IDEA stipulates that eligible children and youth with disabilities shall receive special education and related services. The US Department of Education recognizes Music therapy as a related service under IDEA - that means that when deemed necessary for a child’s education*, music therapy must be put into the IEP, with costs covered by the school.

- It is critically important to be able to document the child’s response to music, and to include the documentation in your written request for an assessment. If properly documented, the school district is far less able to deny the initial assessment.
- While they are not required to perform every assessment requested in writing, the district can not site precedence or funding as reasons to deny.

Music therapists should work collaboratively with a student’s IEP team and the family throughout the screening, evaluation, program planning, and intervention process.

Areas of Concern for Students with WS

The interest and emotional responsivity toward music among children with Williams syndrome combined with their relatively intact music abilities suggest music can be a valuable tool in their education.

Music as a therapeutic support can aide in the development of vocalization and address speech and language goals as well as support motor development through instrument play and rhythmic movement exercises.

Obtaining Services

The Individualized Education Program (IEP) process involves planning and decision making by the IEP team including parents/caregivers, students, and therapists (if indicated). The components of the process are:

1. Problem identification - identify the areas in which the student is not able to meet the environmental demands or the demands of the curriculum.
2. Referral - the team identifies the resources needed to meet the need including related service frequency and duration, location, and specific criteria.
   - Music therapy is indicated as a related service only when necessary to access and participate in education and the educational environment.
3. Evaluation/Eligibility/Individual Plan - the MT will complete an evaluation and, if appropriate, will write goals for areas in need of specific skill development.
4. Services - will be provided to support the development or achievement of a skill area as needed. Services can be vary by type (direct or consultative) frequency (# of minutes per time period) and environment (private or group; pull out or classroom based).

*Hospital-based and private therapeutic sessions (out side of school) can address areas of concern not covered in the school-based sessions.
Music Therapy (MT)

MT for Very Young Children
MT can be used to address:
- Vocalization and speech and language goals through singing
- Motor development through instrument play and rhythmic movement experiences

Sample goal & objective areas
The child will demonstrate improved language skills:
- Ability to sing a 3-4 line song
- Ability to verbally identify objects in a song
The child will demonstrate improved fine and/or gross motor skills:
- Ability to strum guitar held by therapist
- Ability to beat drum rhythmically

MT for Pre-school Children
MT can be used to:
- Address understanding of syntax and grammar patterns in speech using melodic structure
- Develop organizational capabilities with the use of melodic and rhythmic patterns

Sample goal & objective areas
The child will improve social skills:
- Improve turn-taking
- Use appropriate greeting
- Improve ability to label & describe
The child will improve academic concepts:
- Letter identification/sounds
- Calendar concepts
- Colors, shapes, sizes
The child will improve daily living & safety skills:
- Hand washing
- Manners
- Phone number/address

MT for School Age Children
MT can be used to:
- Address higher level social and academic skills such as empathy, turn taking, compromise and problem solving skills in social situations.

Sample goal & objective areas
Improve academic understanding in mathematics:
- Math facts
- Telling time
- Money concepts
Improve behavior/well-being:
- Learn classroom rules
- Improve attention & focus
Improve social and communication skills:
- Conversation skills
- Presentation skills

MT for Teenagers
MT can be used to:
- Help promote healthy emotional expression & continue to support academic goals
- Improve self concept/self esteem through task mastery of an instrument or relevant musical experience

Sample goal & objective areas
Improve emotional expression:
- Anger management
- Self expression
- Self-regulation and relaxation
Improve social and communication skills:
- Conversation skills
- Interview skills
- Understanding emotions

MT for Adults
MT can be used to:
- Support moving toward independence; balance emotions & anxiety
- Songwriting can be used to process feelings, plan and problem solve relevant issues

Sample goal & objective areas
Improve emotional expression:
- Anger management
- Self expression
- Self-regulation and relaxation
Improve social and communication skills:
- Conversation skills
- Interview skills
- Understanding emotions

Resources
Coast Music Therapy http://www.coastmusictherapy.com/who-music-helps/williams-syndrome/

Common Evaluation Tool
Special Education Music Therapy Assessment Process (SEMTAP)
A word about “objectives”

Most children with Williams syndrome will benefit from therapeutic interventions as young children, and some will continue to benefit from some therapies throughout most of their education.

Just as it is important for therapists to learn about Williams syndrome in order to establish the most valuable goals and realistic objectives, it is important for parents to understand the elements of a good objective so that they can be sure their children will get the most benefit from therapeutic intervention.

Regardless of which therapy a child is receiving, a good objective will follow the same format. Each objective must address 4 key elements:

- **Audience:** who the objective is for
- **Behavior:** what behavior is the objective addressing
- **Condition:** Under what circumstances will the result come about? What will contribute to the change? By when should the results be evident?.
- **Degree:** what measurement determines successful completion of the goal - 8/10 times, 4/5 days etc.

The best objectives are related to the classroom curriculum, or the child’s role as a student, and ALL objectives must be measurable.

Objectives such as “the child will listen to the speaker 80% of the time”, or “the child will attend to a specified task for “X” minutes” are not good goals.

- It is impossible to know for sure when/if a child is listening, or attending. Many children with WS can appear to be unfocused or looking at something other than what they are supposed to be attending to, but when asked about the topic will know the answer. Therefore a much better goal to gauge a child’s ability to attend is a goal directed at answering questions following the exercise. There are several different approaches to the development of music therapy goals:

  1. **Collaborative Approach:** Adding “Music Therapist” as a support to goals that may have been written by a speech-language pathologist, occupational therapist, teacher, or other provider.
  2. **Musical Prompt-Based Approach:** Adding music as the “prompt” that will be utilized in the initial stages of teaching the skill. The musical prompts may then be faded and eventually removed so that the student can generalize the skill to the non-music environment.
  3. **Music Therapy-Specific Approach:** In settings where the music therapist does not have ongoing collaborative opportunities with other providers, the therapist may write specific music therapy goals that blend both musical and non-musical achievement. For example, a child may have a goal to play one song on the piano using color-coded notes, which also supports fine motor skills, sequencing, and color matching.

See more at: http://www.coastmusictherapy.com/how-music-helps/goal-areas/#sthash.IImhVOPq.dpuf

**Occupational Therapy in a School Setting**

**Occupational therapy (OT) is the “therapeutic use of work, self-care, and play activities to increase independent function, and enhance development. It may include adaptation of a task, the environment, or the daily routine to achieve maximum independence and enhance quality of life.”**

**Occupational Therapy & IDEA**

The Individuals with Disabilities Education Act (IDEA) is a federal law, with state education agency oversight, that supports the provision of public education for all children—regardless of the nature or severity of their disability. Part B of IDEA mandates the education of children, 3-21 years old, who have a disability that interferes with their educational performance and their ability to benefit from their educational program. The law guarantees the provision of special education and “related services” as necessary, to meet the students goals.

- Related services, such as OT are provided to support a child’s participation in the general education curriculum and in their role as a student.

Occupational therapists should work collaboratively with a student’s IEP team, and family (especially to gain input on challenges the child is having in daily living skills/daily homework etc.) throughout the screening, evaluation, program planning, and intervention process.

Occupational therapists specialize not only in helping to remediate difficulties, but also find the “work around” when remediation is not an option.

**Areas of Concern for Students with WS**

Individuals with WS require support to complete a myriad of fine motor and life tasks due to the pervasive visual-spatial and fine motor deficits they experience.

Occupational therapy is often helpful to address areas of delay/weakness in Williams syndrome such as sensory sensitivities, motor skill difficulties, self-regulation problems and feeding issues.

**Obtaining Services**

The Individualized Education Program (IEP) process involves planning and decision making by the IEP team including parents/caregivers, students, and therapists (if indicated). The components of the process are:

1. **Problem Identification → Referral → Evaluation → Eligibility → Individual Plan (goals) → Services (when/where) .

   - Problem identification - identify the areas in which the student is not able to meet the environmental demands or the demands of the curriculum.
   - Referral - The team identifies the resources needed to meet the need including related service frequency and duration, location, and specific criteria.
     - Occupational therapy is indicated as a related service in school, only when necessary to help the student access and participate in education and the educational environment. Quality of movement and medically relevant impairment is not a consideration unless it impedes on the educational process. *
   - Evaluation/Eligibility/Individual Plan - the OT will complete an evaluation and, if appropriate, will write goals for areas in need of specific skill development.
   - Services - will be provided to support the development or achievement of a skill area as needed. Services can vary by type (direct or consultative), frequency (# of minutes per time period), and environment (private or group; pull-out or in the classroom).

*Hospital-based and private therapeutic sessions (out side of school) can address areas of concern not covered in the school-based sessions.
**Occupational Therapy (OT)**

**OT for Very Young Children**

OT can be used for:
- Intervention of fine motor and functional needs related to feeding, play, achievement of developmental milestones, and early literacy activities.

**Sample goal & objective areas**

The child will demonstrate improved feeding skills:
- ability to self feed with a spoon
- ability to drink from a cup without spillage

The child will develop independent play:
- ability to activate a cause and effect toy
- ability to correctly use a specific grasp (pincer grasp; key grasp) and begin to develop a tripod grasp
- ability to visually attend to a toy with both eyes
- ability to isolate a pointer finger

**OT for Pre-school Children**

OT can be used for:
- Intervention of fine motor and functional needs related to feeding, self-care, pre-school skills, and achievement of developmental milestones.

**Sample goal & objective areas**

Occupational therapy should be focused on multi-sensory interventions to support the development of handwriting skills and “work-arounds” for the visual-spatial deficits of children with WS, including help to accommodate/modify tasks to support the child’s success in pre-school activities.

Children with WS should also be exposed to technology supports and begin to learn keyboard awareness.

**OT for School Age Children**

OT can be used for:
- Intervention of fine motor and functional needs related to self-care, academic performance, technology utilization, and play skills.

**Sample goal & objective areas**

Occupational therapists can also assist with curriculum accommodations to support student’s struggles with handwriting and visual-spatial deficits.

**OT for Teenagers**

OT can be used for:
- Intervention of fine motor and functional needs related to self-care, adapted living skills and curriculum accommodations.

**Sample goal & objective areas**

Interventions as needed to specifically help the student achieve transition plan goals as they relate to independence and future vocational goals.

**OT for Adults**

OT can be used for:
- Intervention of fine motor and functional needs related to self-care, adapted living skills and vocational accommodations.

**Sample goal & objective areas**

Occupational therapists often work with community service providers, job coaches, vocational and rehabilitation service providers to establish plans and provide services to insure community integration.

**Resources**

American Occupational Therapy Association
http://www.aota.org

OT and Williams Syndrome (A Case Study):

WS Overview
http://www.medicine.nevada.edu/dept/genetics/Williams.html

OT Plan Activities Database
http://www.otplan.com/default.aspx

**Common Evaluation Tools**


Visual Motor Skills: Test of Visual Motor Integration

Motor skills: Bruininks Ostertegy Test of Motor Skill Development;

Nine-Hole Peg Test

Peabody Test of Motor Skills

Sensory Needs: Sensory Profile or Sensory Processing Measure

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*let the data drive the decision
- if difficult goals like shoe tying and handwriting are not met in a reasonable amount of time, “work arounds” are recommended.
A word about “objectives”

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Regardless of which therapy a child is receiving, a good objective will follow the same format. Each objective must address 4 key elements:

- Audience: who the objective is for
- Behavior: what behavior is the objective addressing
- Condition: Under what circumstances will the result come about? What will contribute to the change? By when should the results be evident?
- Degree: what measure will determine successful completion of the goal - 8/10 times, 4/5 days etc.

The best objectives are related to the classroom curriculum, or the child’s role as a student, and ALL objectives must be measureable. For instance, a good objective within the goal area of written expression is: “Student will demonstrate the ability to compose a paragraph with a topic sentence and 3 supporting facts, with initial instructions only, 4/5 times, 4/5 days etc.

Objectives such as “the child will listen to the speaker 80% of the time”, or “the child will attend to a specified task for ‘X’ minutes” are not good goals.

- It is impossible to know for sure when/if a child is listening, or attending. Many children with WS can appear to be unfocused or looking at something other than what they are supposed to be attending to, but when asked about the topic will know the answer. Therefore a much better goal to gauge a child’s ability to attend is a goal directed at answering questions following the exercise.

Goals and objectives are not the child’s curriculum. They are areas that the team has decided will support the child’s progress in the curriculum if they are given focused attention.

For more information on IEPs and Goals and Objectives go to: www.wrightslaw.com/advoc/articles/plan_iep_goals.pf.html

Speech Therapy in a School Setting

“Speech and language pathology is the study of speech and language development, etiology of speech or language disorders, diagnosis of a deficit, and intervention that is specific to the diagnosis.”

Speech-language pathologists (SLPs), often informally known as speech therapists, assess speech, language, cognitive-communication, and oral/feeding/swallowing skills to identify types of communication problems (articulation; fluency; voice; receptive and expressive language disorders, etc.) and the best way to treat them.

Speech Therapy (ST) & IDEA

The Individuals with Disabilities Education Act (IDEA) is a federal law, with state education agency oversight, that supports the provision of public education for all children—regardless of the nature or severity of their disability. Part B of IDEA mandates the education of children, 3-21 years old, who have a disability that interferes with their educational performance and their ability to benefit from their educational program. The law guarantees the provision of special education and “related services” as necessary, to meet the students goals.

- related services, such as ST are provided to support a child’s participation in the general education curriculum and in their role as a student.

Speech therapists should work collaboratively with a student’s IEP team, and family (especially to gain input on challenges the child is having in daily living skills/doing homework etc.) throughout the screening, evaluation, program planning, and intervention process.

Speech therapists work with a child one-on-one, in a small group, or directly in a classroom to overcome difficulties

Areas of Concern for Students with WS

Speech therapy addresses many areas of concern for those with WS. Individuals with WS have feeding problems as infants, develop communication skills slower than normal, and may continue to have language-based difficulties for many years. Although they often develop an excellent expressive vocabulary and are able to learn new and unusual words quickly, comprehension often lags behind. Additionally, social pragmatics, nuance and conversation skills continue to require intervention for many years.

Speech therapists should work collaboratively with a student’s IEP team, and family (especially to gain input on challenges the child is having in daily living skills/doing homework etc.) throughout the screening, evaluation, program planning, and intervention process.

Speech therapists work with a child one-on-one, in a small group, or directly in a classroom to overcome difficulties

Contributors/Contacts
Vanessa Thatcher, CCC-SLP

Obtaining Services
The Individualized Education Program (IEP) process involves planning and decision making by the IEP team including parents/caregivers, students, and therapists (if indicated). The components of the process are:

1. Problem identification - identify the areas in which the student is not able to meet the environmental demands or the demands of the curriculum.
2. Referral - The team identifies the resources needed to meet the need including related service frequency and duration, location, and specific criteria.
3. Speech therapy is indicated as a related service in school, only when necessary to help the student access and participate in education and the educational environment.*
4. Evaluation/Eligibility/Individual Plan - the SLP will complete an evaluation and, if appropriate, will write goals for areas in need of specific skill development.
5. Services - will be provided to support the development or achievement of a skill area as needed. Services can vary by type (direct or consultative), frequency (# of minutes per time period), and environment (private or group; pull-out or in the classroom).

*Hospital-based and private therapeutic sessions (outside of school) can address areas of concern not covered in the school-based sessions.
## Speech Therapy (ST)

### ST for Very Young Children

**ST can be used for:**
- Improving language development in the child as it relates to the production of sound and vocalizations or language.
- Feeding difficulties due to muscle laxity, texture sensitivities and/or swallowing issues.
- Non-verbal cues like eye contact and joint attention.

**Sample Goal and Objective areas**
- Child will improve articulation & word production:
  - increased production of sounds
  - increased length of utterances

**Sample Goal and Objective**
- Child will improve expressive language & pre-reading skills:
  - increase oral motor skills (tongue & jaw movement, swallowing)
  - maintain appropriate positioning
  - increased tolerance of oral sensitivities

**Sample Goal and Objective**
- Child will improve social interactions:
  - role play with toys (dolls etc.) to increase understanding of specific classroom based activities
  - increase understanding and ability of turn-taking
  - increase willingness to share

### ST for Pre-school children

**ST can be used for:**
- Improving language development in the child as it relates to the production of sound and vocalizations or language.
- Improving expressive and receptive language, quality of spoken output, social interactions with peers, sentence length, item identification, ordering items, following directions etc.

**Sample Goal and Objective areas**
- Child will improve expressive language & pre-reading skills:
  - increase verbal labeling
  - increase categorization skills
  - increase ability to name beginning and ending sounds
  - Increase length of utterances

**Sample Goal and Objective**
- Child will improve categorization skills:
  - increase ability to rhyme
  - increase ability to recognize associations
  - increase ability to recognize syllables
  - increase understanding of similarities & differences
  - increase ability to sequence
  - increase ability to answer who & what questions

**Sample Goal and Objective areas**
- Child will improve social interactions:
  - role play with toys (dolls, etc.) to increase understanding of specific classroom based activities
  - increase understanding and ability of turn-taking
  - increase willingness to share

### ST for School Age Children

**ST can be used for:**
- Improving auditory comprehension and processing, expressive output with regard to grammar, mean length of utterance, syntax, semantics, and pragmatics.
- Increasing ability to answer more abstract questions, reason, and problem-solve.

**Sample Goal and Objective areas**
- Child will improve auditory comprehension & language skills:
  - increase ability to rhyme
  - increase ability to recognize associations
  - increase ability to recognize syllables
  - increase understanding of similarities & differences
  - increase ability to sequence
  - increase ability to answer who & what questions

**Sample Goal and Objective**
- Student will improve pragmatics & life skills:
  - increase ability to introduce himself and others
  - increase ability to use appropriate turn taking skills
  - increase ability to observe body language and label the feeling or emotion

### ST for Teenagers

**ST can be used for:**
- Improving verbal comprehension and language use, grammar skills, homonyms, antonyms, synonyms, idioms, metaphors, figurative language, etc.
- Improving social communication skills.

**Sample Goal and Objective areas**
- Student will improve receptive & expressive language:
  - increase understanding of multiple meanings
  - increase understanding of sentence structure
  - increase understanding of idioms

**Sample Goal and Objective**
- Student will improve pragmatics & life skills:
  - increase understanding of specific class
  - increase ability to begin conversations
  - increase ability to respond appropriately within a conversation
  - increase ability to terminate a conversation
  - increase ability to maintain eye contact

**Sample Goal and Objective areas**
- Student will improve pragmatics & language & idioms:
  - role play various situations to be convincing/persuading
  - increase ability to use telephone to request information/make appointments
  - increase ability to explain meaning of figurative language & idioms

### ST for Adults

**ST can be used for:**
- Improving executive functioning skills - the ability to answer open-ended questions, receptive language skills and quality of spoken output, and pragmatic language use
- Increasing receptive language abilities, quality of expressive output.

**Sample Goal and Objective areas**
- Exploring alternative forms of communication, promoting a strong support system at home, and improving the quality of communication during social interactions.

**Sample Goal and Objective**
- Student will improve pragmatics & life skills:
  - increase ability to explain meaning of figurative language & idioms

## Resources

### American Speech Language Hearing Association
- www.asha.org

### Cognitive Connections Therapy
- www.cognitiveconnectionstherapy.com

### Language and Communicative Development in Williams syndrome

### Williams Syndrome
- http://uwash.edu/psychology/mervis/research/WS.html

### Language Abilities in WS

### Add'l Web resources:
- www.socialthinking.com
- www.children.webmd.com

### Common Evaluation Tools
- There are numerous assessment tools for speech and language.
  - CELF: Clinical Evaluation of Language Fundamentals
  - CASL: Clinical Assessment of Spoken Language
  - TOPL: Test of Pragmatic Language

For a complete list of testing instruments go to:
A word about “objectives”

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Just as it is important for therapists to learn about Williams syndrome in order to establish the most valuable goals and realistic objectives, it is important for parents to understand the elements of a good objective so that they can be sure their children will get the most benefit from therapeutic intervention.

Regardless of which therapy a child is receiving, a good objective will follow the same format. Each objective must address 4 key elements:

- **Behavior**: what behavior is the objective addressing
- **Condition**: Under what circumstances will the result come about? What will contribute to the change? By when should the results be evident?
- **Degree**: what measure determines successful completion of the goal - 8/10 times, 4/5 days etc.

The best objectives are related to the classroom curriculum, or the child’s role as a student, and ALL objectives must be measureable. For instance, a good objective within the goal area of Written Expression is: “Student will demonstrate the ability to compose a paragraph with a topic sentence and 3 supporting facts, with initial instructions only, 4/5 opportunities”.

Objectives such as “the child will listen to the speaker 80% of the time”, or “the child will attend to a specified task for “X” minutes” are not good goals.

- It is impossible to know for sure when/if a child is listening, or attending. Many children with WS can appear to be unfocused or looking at something other than what they are supposed to be attending to, but when asked about the topic will know the answer. Therefore a much better goal to gauge a child’s ability to attend is a goal directed at answering questions following the exercise.

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For more information on IEPs and Goals and Objectives go to: www.wrightslaw.com/advoc/articles/plan_iep_goals.html

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**Physical Therapy in a School Setting**

Physical therapists assist students in accessing school environments and benefiting from their educational program; including such environments as:
- Classrooms, hallways, stairs, ramps, elevators, school bus
- Bathrooms, cafeteria, gym, auditorium
- Playground, school trip destinations, extracurricular venues

**Physical Therapy (PT) and IDEA**

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- related services, such as PT are provided to support a child’s participation in the general education curriculum and in their role as a student.

Physical therapists should work collaboratively with a student’s IEP team, and family throughout the screening, evaluation, program planning, and intervention process.

**Areas of Concern for Students with WS**

**Developmental delay**: delays in acquiring milestones and higher level skills

**Musculoskeletal problems**: ranging from hypotonia to stiffness, gait deviations, poor postural control/alignment

**Learning disabilities**: difficulty with visual-spatial input, require increased repetition and multi-sensory strategies

**Attention deficit disorder**: decreased sustained postural stability, under or over responsive to sensory information

**Obtaining Services**

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1. **Problem identification** - identify the areas in which the student is not able to meet the environmental demands or the demands of the curriculum.
2. **Referral** - the team identifies the resources needed to meet the need including related service frequency and duration, location, and specific criteria.
   - Physical therapy is indicated as a related service in school, only when necessary to help the student access and participate in education and the educational environment. Quality of movement and medically relevant impairment is not a consideration unless it impedes the educational process.*
3. **Evaluation/Eligibility/Individual Plan** - the PT will complete an evaluation and, if appropriate, will write goals for areas in need of specific skill development.
4. **Services** - will be provided to support the development or achievement of a skill area as needed. Services can vary by type (direct or consultative), frequency (# of minutes per time period), and environment (private or group; pull-out or in the classroom).

*Hospital-based and private therapeutic sessions (out side of school) can address areas of concern not covered in the school-based sessions.
**Physical Therapy (PT)**

**PT for Very Young Children**

PT can be used for:

Assessment of muscle tone imbalances and supporting the child’s progress through developmental milestones, such as crawling and walking.

**Sample goal and objective areas**

The child will improve body awareness:

- identify body parts by touch

The child will improve locomotion, body movements:

- creep, crawl, walk w/ support
- ball rolling
- visual tracking

**PT for Pre-school children**

PT can be used to:

Support development of milestones, refining walking/running/jumping skills, and beginning to assist with the child’s ability to participate in typical games and activities, e.g. catching/throwing, riding on various toys, etc.

**Sample goal and objective areas**

The child will improve locomotion & balance:

- walk w/without supports
- stand on one foot
- hop in place, forward

The child will improve body movements:

- creep, crawl, walk w/ support
- ball throwing/catching

**PT for School Age Children**

PT can be used to:

Support the child as they begin to participate in playground and gym activities.

- support the child to access the school environment
- support balanced muscle tone and endurance

**Sample goal and objective areas**

The child will increase classroom /school indendence:

- improve ability/endurance on steps
- increase walking speed
- improve ability to carry items while walking (Cafeteria, classroom etc)
- improve posture while sitting

The child will gain ability to participate safely in gym/on playground/after school events:

- increase understanding of “rules of the game” for specific interests
- improve skills needed for sport interests
- increase active participation in activities
- improve general coordination and strength

**PT for Teenagers**

PT can be used for:

Support as the child ages and may need protection against injury during activities or training to strengthen various muscle groups to improve balance and strength so that they can participate in the more sophisticated sports.

- providing training and support in healthy practices, physical fitness, and wellness.

**Sample goal and objective areas**

The student will improve ability to participate in school sports/gym class:

- increase understanding of “rules of the game” for specific interests
- improve skills needed for sport interests
- increase active participation in activities
- improve general coordination and strength

**PT for Adults**

PT can be used to:

Complete an assessment of physical status and provide targeted instruction and support regarding fitness and wellness activities.

- Physical therapists can also provide guidance regarding activities to maintain endurance, mobility, and range of motion.

**Sample goal and objective areas**

The client will improve strength, flexibility & activity level:

- instruction in fitness machine use
- independent participation in activities
- Active Participation in activities
- increase quality, type & number of stretches

**Physical Therapy (PT)**

**Resources**

American Physical Therapy Association
http://www.apta.org

APTA organizations by state
http://apps.apta.org/

Foundation for Physical Therapy
http://foundation4pt.org

Guidelines for Medical Supervision of a patient with Williams syndrome
http://pediatrics.aappublications.org/content/107/5/1192.full

Common Evaluation Tools
Assessments of Functional Skills

School Function Assessment (SFA)
Bruininks-Oseretsky Test of Motor Proficiency
Range of Motion/Strength Assessments
Batelle Inventory
Gait/Balance Analysis

APTA List of Assessment Tools Used in Pediatric Physical Therapy

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Just as it is important for therapists to learn about Williams syndrome in order to establish the most valuable goals and realistic objectives, it is important for parents to understand the elements of a good objective so that they can be sure their children will get the most benefit from therapeutic intervention.

Regardless of which therapy a child is receiving, a good objective will follow the same format. Each objective must address 4 key elements:

Audience: who the objective is for
Behavior: what behavior is the objective addressing
Condition: Under what circumstances will the result come about? What will contribute to the change? By when should the results be evident?
Degree: what determines successful completion of the goal - 8/10 times, 4/5 days etc.

Objectives such as “the child will listen to the speaker 80% of the time”, or “the child will attend to a specified task for “X” minutes” are not good goals.

• It is impossible to know for sure when/if a child is listening, or attending. Many children with WS can appear to be unfocused or looking at something other than what they are supposed to be attending to, but when asked about the topic will know the answer.

Therefore a much better goal to gauge a child’s ability to attend is a goal directed at answering questions following the exercise.

Goals and objectives are not the child’s curriculum. They are areas that the team has decided will support the child’s progress in the curriculum if they are given focused attention.

Hippo-therapy is not a riding lesson. In contrast, therapeutic riding provides recreational riding lessons adapted for individuals with disabilities.

Hippotherapy is a physical, occupational, and speech-language therapy treatment strategy that utilizes equine movement as part of an integrated intervention program to achieve functional outcomes. Equine movement provides multidimensional movement, which is variable, rhythmic and repetitive. The horse provides a dynamic base of support, making it an excellent tool for increasing trunk strength and control, balance, building overall postural strength and endurance, addressing weight bearing, and motor planning.

Hippotherapy is a great private therapy option for improving physical well-being, balance and self-confidence.

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For more information on IEPs and Goals and objectives go to: www.wrightsblau.com/advoc/articles/plan_iwp_goals_pf.html

Obtaining Services

The Individualized Education Program (IEP) process involves planning and decision making by the IEP team including parents/caregivers, students, and therapists (if indicated). The components of the process are:

Problem Identification → Referral → Evaluation → Eligibility → Individual Plan (goals) → Services (when/where)

1. Problem identification - identify the areas in which the student is not able to meet the environmental demands or the demands of the curriculum.

2. Referral - The team identifies the resources needed to meet the need including related service frequency and duration, location, and specific criteria.

• AT is indicated as a support when necessary to access and participate in education and the educational environment.

3. Evaluation/Eligibility/Individual Plan - The evaluator (it is recommended that the evaluator be RESNA certified, and/or have graduated from a college program for assistive technology) will complete an evaluation if appropriate and write a suggested plan of supports.

4. Services - Services are generally consultative and are supportive to the teacher and other service providers as they implement the recommended accommodations and/or modifications.

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Assistive Technology

Assistive technology devices are identified in IDEA 2004 as: “Any item, piece of equipment or product system, whether acquired commercially off the shelf, modified, or customized, that is used to increase, maintain, or improve the functional capabilities of children with disabilities.”

An assistive technology service is: “Any service that directly assists a child with a disability in the selection, acquisition, and use of an assistive technology device.” (See back page for more info.)

Assistive Technology & IDEA

The Individuals with Disabilities Education Act (IDEA) is a federal law, with state education agency oversight, that supports the provision of public education for all children—regardless of the nature or severity of their disability. Part B of IDEA mandates the education of children, 3-21 years old, who have a disability that interferes with their educational performance and their ability to benefit from their educational program.

• Children with disabilities are entitled to a free, appropriate public education in the least restrictive environment. The school must have data to support changing placement to a more restrictive environment.

AT consultants should work collaboratively with a student’s IEP team throughout the screening, evaluation, program planning, and intervention process.

Areas of Concern for Students with WS

Individuals with WS frequently struggle with fine motor and visual perceptual/visual spatial deficits. These deficits can significantly impact their ability to be successful in a typical print-based school environment. The implementation of assistive technology supports can greatly enhance the student’s ability to function independently and be fully engaged in their life and learning experiences.

Due to the significant handwriting difficulties, technology is often the great mediator between what the individual with Williams syndrome would actually like to write and what they are capable of getting on the paper due to the “mechanical” problems they encounter when trying to write.
### Assistive Technology

**Assistive Technology at every age**

will be utilized to help the individual access curriculums and/or complete tasks in the most independent means available to him/her.

Assistive technology should not have goals related to its use. It is designed to be a support to the individual’s ability to do something else - the curriculum, self care skills, communication, or another goal area.

It should, however, be documented as a necessity in the Individual Education Plan (IEP); the Present Level statement (PLAAFP*); and on the Supplementary Aides & Services page.

* Do not list specific devices. (if you do, you are locked into that device and won’t be able to try other things) Instead, list the needed features of support; word prediction, word banks, auditory support, one-button mouse, drag & drop etc.

**PLAAFP** - description of skill deficit and/or areas which require accommodation.

**THE BOX:** the “Needs Assistive Technology” Box should almost ALWAYS be checked for students with WS.

### AT for Pre-School Children

AT can be used to:

- encourage use of the keyboard and the mouse (typically, a one-button mouse is most appropriate).
- encourage children to begin to “write” using the keyboard just as they would with pencil and paper.

**PLAAFP Example:**

- student struggles with handwriting, it is often illegible and laborious.
- Student is unable to print small enough to complete worksheets in a legible fashion.
- Due to these difficulties student is unable to keep pace with his peers when completing classwork. Student is adept at using a word processor with word prediction.

### AT for School Age Children

AT can be used to:

- increase development through a variety of tools/strategies.
- access and progress in the curriculum. Supports may include use of technology for writing, digital accommodations for worksheets and assignments, and supports for math skill development.

Support OT with ideas for accommodations for self-care and independence.

**Typical Accommodations for school age students:**

- word prediction
- screen readers
- label maker/stickers
- drop & drag
- auditory support
- key vs. combination lock
- PDF Editing
- Digitally accessible worksheets and study guides
- tools to help with self-care

### AT for Teenagers

AT can be used for:

- Access to word processor with word prediction
- Ability to produce assignments in a digital fashion
- Use of PDF editor

**Supplemental Aides & Services Example:**

- Access to word processor with word prediction
- Ability to produce assignments in a digital fashion
- Use of PDF editor

### AT for Adults

AT can be used to:

- support adults as they move into post-secondary options, jobs, and other life interests.
- provide intervention to support independence and a self-determined life.
- aid individuals in maintaining independence and their quality of life.
- provide accommodations/modifications/tools/tips/strategies which may make the difference between an individual needing assistance and being able to do something on his or her own.
- help individuals stay connected to others, thereby reducing social isolation.

### Resources

- “Rehabilitation Engineering Society of North America www.resna.org
- Assistive Technology Industry Association www.atia.org
- Center for Applied Special Technologies www.cast.org
- The Family Center on Technology & Disability www.fctd.info
- Closing the Gap www.closingthegap.com

### Common Evaluation Tools

- TVPS-3: Test of Visual Perceptual Skills 3rd Edition
- COMPASS: Computer Use - keyboarding/mouse skill assessment

### Observation and Analysis following SETT Framework by Joy Zabala, Ed.D.
*Assistive Technology services:*

The term includes:
- evaluation of the needs of a child with a disability, including a functional evaluation of the child in the child's customary environment;
- Purchasing, leasing, or otherwise providing for the acquisition of assistive technology devices by children with disabilities;
- selecting, designing, fitting, customizing, adapting, applying, retaining, repairing, or replacing assistive technology devices;
- Coordinating and use of other therapies, interventions, or services with assistive technology devices, such as those associated with existing education and rehabilitation plans and programs;
- Training or technical assistance for a child with a disability or, if appropriate, that child's family; and
- training or technical assistance for professionals (including individuals or rehabilitation services), employers, or other individuals who provide services to employ, or are otherwise substantially involved in the major life functions of individuals with disabilities.

A word about “objectives”

Most children with Williams syndrome will benefit from therapeutic interventions as young children, and some will continue to benefit from some therapies throughout their education.

Just as it is important for therapists to learn about Williams syndrome in order to establish the most valuable goals and realistic objectives, it is important for parents to understand the elements of a good objective so that they can be sure their children will get the most benefit from therapeutic intervention.

Regardless of which therapy a child is receiving, a good objective will follow the same format. Each objective must address 4 key elements:

- **Audience:** Who the objective is for
- **Behavior:** What behavior is the objective addressing
- **Condition:** Under what circumstances (condition) will the result come about? What will contribute to the change? By when should the results be evident?
- **Degree:** What determines successful completion of the goal - 8/10 times, 4/5 days etc.

The best objectives are related to the classroom curriculum, or the child’s role as a student, and all objectives must be measurable. Objectives such as “the child will listen to the speaker 80% of the time, or “the child will attend to a specified task for ‘X’ minutes” are not good goals. Why? There is no clear way offered to measure “attending” or “listening”. A better goal for attending might state: “The child will answer 3 or 4 questions correctly, 80% of the time after listening to a classroom presentation.

For more information on IEPs and goals and objectives go to: www.wrightslaw.com/advoc/articles/plan_iep_goals.pdf.html

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“Quick Facts” for Teachers

Students with Williams syndrome have extraordinary gifts and unique challenges - in life and in the classroom. Their uneven learning profile of verbal strengths coupled with non-verbal difficulties make IQ scores a poor indicator of capability. Additionally, challenges with filtering out background noise and attending to difficult tasks often require special consideration in the classroom. On the flip side, their friendly, endearing personality, and excellent verbal skills often result in children with WS becoming the unofficial “Mayor” of the school, known to everyone and loved by many.

Williams Syndrome Learning Profile

**Strengths**
- Emotional connection to materials
- Learns best with audio and dynamic visual supports
- Can learn most anything when it is presented with rhyme, rhythm, or cadence
- Very Social
- Generally, very few significant behavior concerns; responds well to social stories and consistency
- Very Participatory
- Excellent with Role Play
- Eager to please adults
- Excellent expressive and receptive language
- Generally can decode at or near grade level when provided consistent phonics-based instruction.

**Weaknesses**
- Hyperacusis/Sensitive Hearing
- Visual spatial & visual perceptual skills
- Fine Motor & Visual Motor
- Abstract Reasoning
- Perceptual Reasoning (concepts of time)
- Math skills (often require accommodation throughout school years)
- Handwriting (sometimes shows little improvement - even with intervention)
- Attention and focus (short attention span but not necessarily hyperactive)
- Difficulty modulating emotions - may have high anxiety related to a variety of topics (fire drills, alarms, balloons popping, whistles, power tools, etc.)
- Difficulty sustaining friendships
- Poor understanding of Pragmatic language
- Reading Comprehension lags behind decoding skills
Classroom Strategies

Developmental of students with Williams syndrome vs. Development of their Peers

**PRESCHOOL - WS**
- Sensitive hearing
- Many milestones behind schedule
- Walking at age 2-3
- Talking at age 3-4
- Toilet trained at age 4-5
- Poor Fine motor skills
- Overly friendly & social
- Often picky eaters
- Autistic tendencies for some
- Love of music often appears
- Preference for musical toys
- Sensitivity
- Overly friendly & social
- Sensitive hearing
- Decoding
- Comprehension behind
- Reading skills develop later
- Good verbal skills: Excellent
difficult
- Shoe tying; buttoning very
difficult
- Poor spatial skills
- Mild to Moderate learning
development of students with Williams syndrome

Heavy emphasis on therapy to develop skill sets
- Occupational Therapy for fine motor skills
- Physical Therapy for gross motor skills
- Speech Therapy for language

**PRESCHOOL - Typical Peers**
- Asks questions, repeats
- rhymes
- Begins to use scissors
- Engages in fantasy play
- Repeats three numbers
- Builds tower of 9-10 cubes
- Toilet trained
- Less negative, More friendly
- Draws “almost perfect” circles
- Learning to share/take turns
- Makes a bridge with cubes
- Learning to follow rules
- Demonstrates hand washing
- Says sounds a, m, b, p, n, l, w
- Runs easily, Rides a tricycle
- Nine word sentences
- Vocabulary of about 900 words

Accommodate to Close the Gap?
- Adaptive scissors
- Headphones to help with
- noises
- Use stickers/stamps/labelmaker (focus on
- cognitive vs. mechanical)
- Social stories to help with
- skill development & anxiety
- Visual schedules to decrease anxiety
- May need to support
- communication - always
- support at the level of
- RECEPITIVE language NOT
- expressive language

**MIDDLE SCHOOL - Typical Peers**
- Development & maturity falls further behind “typical”
- interests not as varied as peers
- Increased anxiety and depression
- Don’t understand why they’re different
- Decreasing activity levels
- Continue to acquire new skills

They value fair play and expect adults to adhere to rules. Many students are peer-conscious and may be very concerned about what classmates think. They like participating in group activities. They are often inquisitive and need to express their opinions. Boys and girls begin to discover one another and begin to interact.

**MIDDLE SCHOOL - Typical Peers**
- Wide range of intellectual development
- Begin to transition from
- concrete/ manipulative stage
- Intellectual at-risk; face decisions with potential to affect major academic values
- Prefer active over passive
- learning experiences; favor interaction with peers
- Willingness to learn things;
- Enjoy solving real life problems
- Metacognition- ability to know what you know & do not know
- Intensely curious

Therapies Continue!
- Occupational Therapy for fine motor
- Physical Therapy for gross motor
- Speech Therapy for language
- Reading Intervention for early phonics skills
- Social Work for development of social skills
- Music Therapy can help too!

Accommodations to Close the Gap
- Ensure broad exposure to grade level content and intervention at instructional level
- Touch Math
- Capitalize on RtI intervention time – Orton-Gillingham for phonics instruction
- Adaptive scissors, etc.
- Headphones to help decrease interference
- Use stickers/labelmaker (cognitive vs. mechanical)
- Social stories to help with social skill development
- Utilize audio books
- Introduce computer EARLY (KG) to ensure strong development of composition skills

**ELEMENARY - WS**
- Poor motor skills: printing/ handwriting/drawing
- Poor Attention Span and difficulty focusing - especially on new/difficult task
- Hard to block out unrelated thoughts or movements
- Need emotional component for concentration
- Auditory learning style
- Very concrete interpretations
- Desire to keep adults happy
- Everyone is friendly, few are true friends
- Friendships with WS peers extremely helpful if available

**ELEMENARY - Typical Peers**
*Kindergarten, First, and Second graders* are very active and don’t sit still for long; they enjoy moving around the classroom. They are very talkative. Their attention span is short and they may have a hard time finishing what they start. These students are very curious and they tend to get excited and love to learn. Most students are very honest at this age and they love to play.

*Third, Fourth, and Fifth graders* can be very competitive and tend to get noisy and excited.

<table>
<thead>
<tr>
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10 Strategies to use right now...

1. Assess reading instruction methods and ensure that the student is receiving intensive phonics instruction.
2. Assess assignment demands to ensure that the mechanics of writing are not interfering with the child demonstrating what they know. When possible, allow the child to answer orally or use a computer to drop & drag or type the answer.
3. Place student at the front of the room near the teacher or somewhere where the teacher can make frequent eye contact. This will tap into the child’s need to please and decreases inattentive behaviors.
4. Increase progress monitoring of math skills - student may top out in some skills (coins, time) and continue to make progress in other areas. Provide instruction according to progress data.
5. Ensure that the student is receiving speech therapy to increase vocabulary and pragmatic language comprehension. This directly impacts their ability to understand instructions given in the classroom and increases reading comprehension.
6. Ensure the child has clear, concise directions as to what their “job” is for any group work. The child may not be able to garner this information from the typical group conversation or from the initial instructions given to the group.
7. Provide audio versions of stories to increase the child’s comprehension and ability to sequence a story.
8. A visual schedule or checklist is especially helpful with reducing anxiety and decreasing the ever-present “what’s next?” question.
9. Pre-teach gym and/or outdoor games. The child may struggle with learning the “rules” in the typical fashion and may need the added instruction in order to participate fully.

And Most Importantly...
10. Enjoy them! This child will be one of the brightest spots in your day. ;)

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HIGH SCHOOL - WS
- Development & maturity falls further behind “typical” peers
- Academic skills lag
- Difficulty “fitting in”
- Social skills less appropriate
- Interests not as varied as peers
- Increased anxiety and depression
- Don’t understand why they’re different
- Decreasing activity levels
- Can continue to acquire new skills

HIGH SCHOOL - Typical Peers
- Desire to understand the purpose & relevance of instructional activities
- Internally and externally motivated
- Self-imposed cognitive barriers poor self-confidence from years of academic failure
- May have “shut down” in certain cognitive areas Will need to learn how to learn and overcome barriers to learning
- Establish immediate and long-term goals
- Want to assume individual responsibility for learning and progress toward goals
- Interested in co-educational activities
- Desire adult leadership roles and autonomy in planning
- Want adults to assume a chiefly support role in their education
- Developing a community consciousness
- Need opportunities for self-expression

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Accommodations to Close the Gap
- Develop strong computer skills
- Refine skills according to school processes
- Begin use of email – submit assignments digitally
- Implement Alternate Access – Alternate Output
- Video & web based supports to increase comprehension
- Continue use of audio books

Therapies/Other
- Increase social work supports
- Continue speech therapy for pragmatics
- Ensure students are participating in school affiliated sports/extra curricular activities
- Ensure student is HIGHLY involved with same age typical peers