

Sensory Processing Strategies to Promote Mental Wellness in People with Down Syndrome

May 11, 2022

Katie Frank, PhD, OTR/L



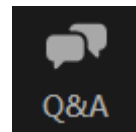
Adult Down Syndrome Center



Our mission is to enhance the well-being of people with Down syndrome who are 12 and older by using a team approach to provide comprehensive, holistic, community-based health care services.

Reminders

- This webinar is being recorded.
 - Available within two weeks in our Resource Library (and emailed to attendees).
 - <https://adscresources.advocatehealth.com>
- Q&A
 - Please submit questions using the Q&A option.



Disclaimer

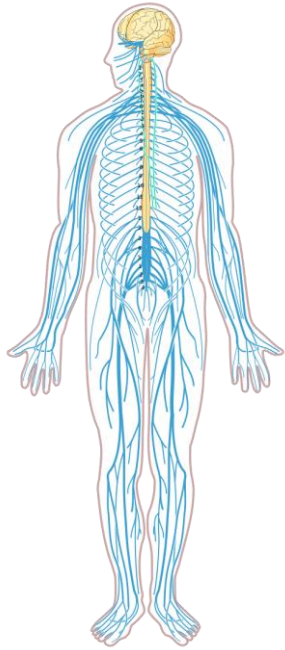
This information is provided for educational purposes only and is not intended to serve as a substitute for a medical, psychiatric, mental health, or behavioral evaluation, diagnosis, or treatment plan by a qualified professional.

Today's agenda

- Discuss sensory processing and how it impacts individuals with Down syndrome.
- Share practical sensory activities and suggestions for affordable equipment.
- Provide case examples.

Our Sensory System

Our sensory system



Our sensory system



Sensory and behavior



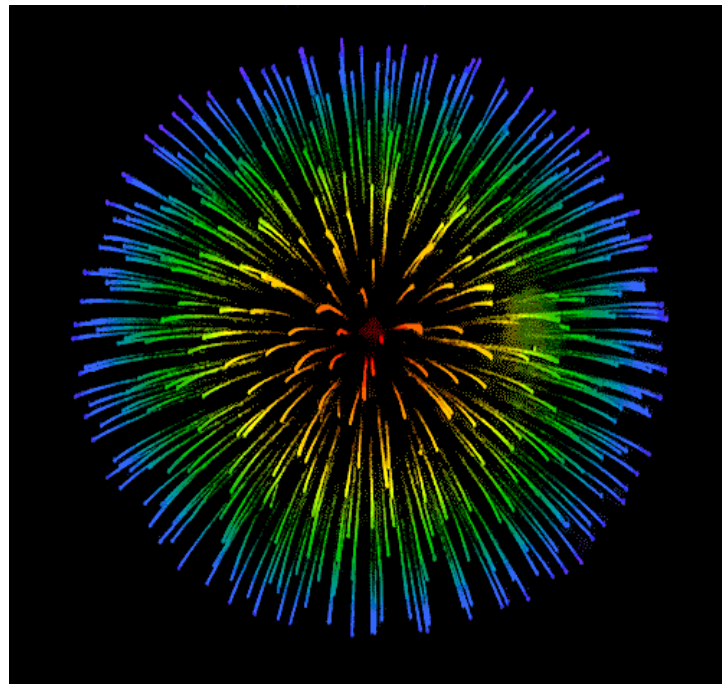
The kink can impact behavior.

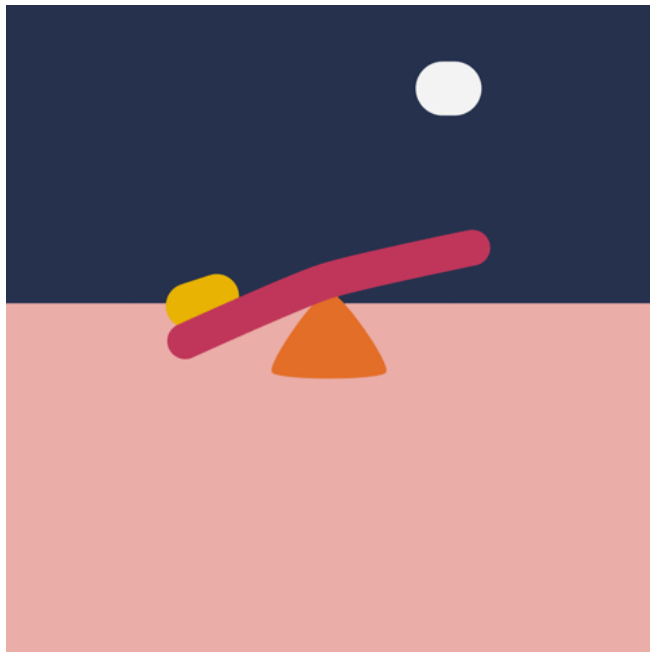
We may see...

- verbal outbursts
- physical aggression
- slowing down
- shutting down

Sensory and mental wellness

- Anxiety and self-talk
- Compulsive behaviors





Rule out medical first

- Sleep
- GI issues
- Pain
- Celiac disease
- Food or environmental allergies
- Language delays
- Anxiety/OCD/other mental health issues
- Seizures/neurological conditions

Is it sensory?

Questions to ask yourself...

- Does the person's action disrupt your life? For example, do you avoid certain places because of noises, crowds or smells?
- Does the action occur with *everyone*?
- Does the person stop the action when given a reward?

“The hallmark of individuals with SPD is that their sensory difficulties are *chronic* and *disrupt* their everyday life. Children with SPD get “stuck.” And no matter what strategies a determined parent uses-stickers on a chart, praise, discipline, or some technique another parent said worked magic for them-kids with SPD stay stuck.”

(Miller, 2006)



What is Sensory Processing Disorder?

Sensory processing disorder (SPD)

- Umbrella term to cover a variety of neurological disabilities
- Problems with the ability to process information received through the senses which **impact the ability for a person to function in their daily life.**
- SPD happens in the Central Nervous System which starts with the brain. When processing is disorderly, the brain cannot do its most important job of organizing sensory messages.

There are 8 senses!

Far Sensory Systems

Touch
Sight
Smell
Sound
Taste

Near Sensory Systems

Vestibular
Proprioception
Interoception

Treating far vs near

- Sensory accommodations for far sensory systems
- Sensory activities for near sensory systems

Common sensory deficits in DS

Tactile- not tolerating certain clothing types; not tolerating lotion on skin or brushing teeth; not tolerating water on face

Auditory- likes their music loud, but may not tolerate other loud sounds; not liking when babies cry, dogs bark, or sirens

Visual- poor depth perception making stairs and uneven surfaces challenging

Proprioception- stuff food in mouth; difficulty regulating force

Interoception- difficulty feeling thirst or satiation; difficulty with toilet training

Sensory

Common reactions

- Unable to calm self down, even after they get what they want
- Response is the same with everyone

Tricks to help

- Provide sensory input at regular intervals
- Positive time out in a calm space
- Determine sensory triggers and find ways to avoid/modify/adapt to them.

Who can help?

What is Occupational therapy?

- Health profession concerned with how people function in their respective roles and how they perform meaningful activities.
- “Occupation” is any activity in which one engages throughout the day.

Role of OT in sensory processing

- An OT will assess what is interfering with a person's ability to engage in activities and often times it can be an impaired sensory system.
- Not all OTs are as comfortable working with individuals who have sensory dysfunction.
- While there are formal assessments to "diagnose" Sensory Processing deficits, individuals with DS may not tolerate them.

Testing for sensory processing differences

- Sensory Processing Measure
- Sensory Profile 2
- Adolescent/Adult Sensory Profile
- SIPT
- The Sensory Symptoms Checklist

<https://sensationalbrain.com/pdf/SB-sensory-checklist.pdf>

(version in English and Spanish)

Sensory Symptoms Checklist

The following checklist is not a diagnostic tool; rather, it is an indicator of sensory over- or under-responsiveness. The purpose of this tool is to assist in developing an appropriate treatment plan and/or sensory diet for an individual with sensory modulation difficulties.

Remember: It is normal for all people to be sensitive to certain sensations. Sensory modulation becomes a disorder only when it negatively impacts a person's life (i.e., ability to pay attention, learn, socialize, relax).

The asterisk (*) indicates sensory-seeking behavior. Sensory Seeking is a form of under-responsiveness, but these individuals seek intense sensation to compensate for the under-responsiveness of their nervous systems.

TACTILE (TOUCH)

Symptoms of Over-Responsiveness	Symptoms of Under-Responsiveness
<input type="checkbox"/> avoids affectionate touch	<input type="checkbox"/> always touching others*
<input type="checkbox"/> bothered by seams in clothing, tags, waistbands, etc.	<input type="checkbox"/> as a young child, may prefer to be without clothes and barefoot
<input type="checkbox"/> avoids messy play including finger-painting and Play-Doh	<input type="checkbox"/> doesn't seem to notice messy hands or face
<input type="checkbox"/> dislikes nail-trimming/hair-cutting hair-brushing/tooth-brushing	<input type="checkbox"/> touches everything, brings objects and toys to mouth frequently*
<input type="checkbox"/> limited food preferences, sensitive to food textures	<input type="checkbox"/> may stuff too much food in mouth
<input type="checkbox"/> excessively ticklish	<input type="checkbox"/> seems unaware of light touch
<input type="checkbox"/> avoids standing close to others	<input type="checkbox"/> doesn't seem to notice cuts and scrapes, doesn't mind shots
<input type="checkbox"/> startles easily when touched unexpectedly	<input type="checkbox"/> drools, doesn't wipe runny nose
<input type="checkbox"/> overreacts to minor injuries or mosquito bites	<input type="checkbox"/> unintentionally rough on pets or other kids
	<input type="checkbox"/> craves intense flavors—salty, sweet, sour, spicy, etc.*
	<input type="checkbox"/> difficulty with fine motor tasks

*Indicates sensory-seeking behavior.

PROPRIOCEPTIVE (PRESSURE ON MUSCLES AND JOINTS)

Since proprioceptive input is always helpful to the nervous system, we do not see **over-responsivity** in this category.

Symptoms of Under-Responsiveness

- ☐ loves jumping, climbing, wrestling, and crashing activities*
- ☐ walks on toes or walks heavily*
- ☐ difficulty with fine motor tasks
- ☐ prefers crunchy and chewy foods*
- ☐ sucks thumb or fingers, chews on clothes and toys
- ☐ grinds teeth, cracks knuckles*
- ☐ loves tight hugs and "squishing" activities or positions*
- ☐ chooses thick or heavy blankets
- ☐ self-abusive behaviors—pinching, biting, head-banging*
- ☐ prefers tight-fitting clothes or may wear a snug jacket constantly*
- ☐ uses too much or too little force on objects (e.g., juice boxes, crayons)

VESTIBULAR (MOVEMENT)

Symptoms of Over-Responsiveness	Symptoms of Under-Responsiveness
<input type="checkbox"/> as a baby, dislikes being held away from adult's body or tossed in air, may be "clingy"	<input type="checkbox"/> as a baby, needs to be rocked a lot, is happiest in stroller, swing, bouncer*
<input type="checkbox"/> avoids swings, slides, anything that requires feet to be off the ground	<input type="checkbox"/> dislikes sedentary tasks*
<input type="checkbox"/> fearful of escalators, elevators, and all heights	<input type="checkbox"/> is in constant motion, loves spinning, swinging, being upside down*
<input type="checkbox"/> gets motion sick easily	<input type="checkbox"/> may have low muscle tone (muscles and joints seem too soft and floppy)
<input type="checkbox"/> dislikes leaning back for hair- washing or floating on back in pool	<input type="checkbox"/> "W" sitting on floor, slumps, leans in chair
	<input type="checkbox"/> loves spinning, loves amusement park rides, is a "thrill-seeker"*
	<input type="checkbox"/> rocks self or moves head back and forth while sitting*

*Indicates sensory-seeking behavior.

Role of OT in sensory processing

- Often direct therapy in an outpatient setting.
- Sensory diet is provided.
 - Can include a combination of alerting, calming, and organizing activities.
- Often it is trial and error to determine the “best” sensory activities for each person.
- Modifications can be made in a classroom/work/day program setting as well.

Reasons to seek treatment

- The person will NOT outgrow some of the sensory processing deficits. Treatment helps a person function smoothly.
- Helps to develop social skills.
- Helps with learning.
- Helps improve emotional well-being.
- Helps improve family relationships.

Sensory Diet

What is a sensory diet?

- Designed to provide the right combination of sensory input to keep an optimal level of arousal or performance.
- Should be more like choosing from a menu rather than following a recipe.
- Needs to be individualized and may not necessarily be convenient.
- Sensory input should NEVER be given as a reward or removed as a punishment.

Types of activities in a sensory diet

- Alerting
 - Benefits the under-responsive person; someone who need a boost.
- Organizing
 - Activities that help regulate the person's responses so they can be more attentive.
- Calming
 - Activities that help decrease the sensory over-responsiveness.

Sensory diet

- Sensory accommodations
 - Used to address difficulties with sensations involving sight, sound, touch, taste, and smell
- Sensory activities
 - Used to address input to the muscles and joints

Sensory accommodation examples

- Sunglasses, dim lighting, study corral
- Headphones
- Gloves, clothing without labels, fidget
- Bland foods for flavor vs spicy foods or soft/pureed foods vs crunchy foods
- Air purifiers, limiting perfume/lotion scents and air fresheners or aromatherapy

Sensory activity examples

Proprioceptive input

- Everyday activities like chores
- Joint compression
- Physical activity
- Vibration
- Weighted objects



Proprioceptive Input

Many individuals with Down syndrome experience difficulty with their proprioceptive sensors in our body are responsible for providing feedback on how the body is in space. When these sensors aren't working like they should, it can lead to difficulty with motor coordination, meaning they appear clumsy. This inability to actually carry out a movement even though they know how to plan it. They may carry out activities and have difficulty grading the things too hard or too soft. Another feature is the person may have difficulty sitting or they often appear slumped over or lethargic.

In order to activate these receptors and improve a person's proprioceptive activities can be encouraged throughout the day to get natural input. These activities can be done in preparation for a transition or when you start working up. For instance, they need to complete a series of self-care tasks that require verbal prompts to initiate the activity. Provide proprioceptive input to the body and prepare to complete the required task. This also goes for transitions, like leaving the house and your loved one with DS doesn't want to go? Try to make it a melt-down.

- Animal walking (like bear or crab, even crawling like a cat or dog, or hopping like a bunny)
- Jumping up and down, maybe even on a trampoline
- Dancing
- Jumping Jacks
- Push-ups on the floor or against the wall
- Bouncing on a therapy ball
- Sitting on a sit-disc
- Riding a bike/scooter
- Sports like swimming, yoga, Pilates and martial arts
- Completing an obstacle course
- Carrying a heavy backpack
- Moving furniture
- Pushing a cart/stroller/wagon
- Rolling up in a blanket like a burrito
- Bear hugs or being squeezed between pillows or cushions
- Using play
- Log rolling
- Vibration
- Weighted blankets
- Sitting in a rocking chair
- Strength training or light weights
- Throwing a ball
- Joint compression
- Massage
- Yard work
- Housework like mopping, vacuuming, etc.
- Eating chewy foods
- Sucking through a straw

Affordable Sensory Equipment Recommendations

Weighted products:

Key points to remember: Please consult with an Occupational therapist to help you determine the best size and weight. It is typically recommended to have a blanket be 7-10% of a person's body weight.

Weighted blankets and lap pads

Custom weighted blankets and lap pads:

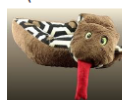
<http://www.sensacalm.com/weighted-blankets/>

<http://www.mosaicweightedblankets.com/> (they even offer DIY kits)

Amazon and Etsy even carry weighted products

Weighted snake

Amazon has a few versions (be careful though because their prices fluctuate).



Alternative ideas to expensive weighted objects



Door stoppers

and neck wraps and warmers



Available at drug stores and websites like Amazon. Bed Bath and Beyond carries a brand called Bed Buddy.

Talk with your dentist as you may be able to get an old lead vest used for x-rays.

Vibration:

Hand held massager: Amazon as well as drug stores, Target, WalMart etc.



Vibrating cushion: Amazon carries a brand by Dr.Scholl's



Upper body

Proprioceptive input. It occurs when there is compression, push, or weight on the body, helping to develop body awareness and body in space, as well as for joint regulation and can be very calming, regulating, and organizing for a technique that seems to be effective for individuals with Down syndrome.

Use this as a tool to help calm the body. Therefore, complete this quick activity with your loved one with Down syndrome. It should only take a few minutes.

Dr. Frank, PhD, OTR/L at 847-318-2331 or

or on the floor. If they want or need to stand, joint compression can



to touch him/her. Once joint compression becomes part of the routine, it can help with time for joint compression.

side and you will plan on doing joint compression to both sides.

her shoulder and your other hand on his/her upper arm. Gently push together to provide compression at the shoulder joint. Do this 10 times.





Details

Our Sleep Tight Weighted Blankets provide deep pressure which helps encourage a restful night sleep.

- Gentle deep pressure weighted blanket replicates the experience as swaddling
- 100% Cotton
- Polyester inner core filled with glass pellets
- Suitable for all ages
- 5 lb. blanket fits users up to 30" x 36"
- 8 lb. blanket fits users up to 36" x 42"
- 12 lb. blanket fits users up to 42" x 54"
- 16 lb. blanket fits users up to 48" x 72"
- 25 lb. blanket fits users 48 lbs. +, 48" x 90"
- Machine Washable
- Made from natural and imported materials
- Available in Sleep Tight Weighted Blanket

Case example #1

- 24-year-old with fear of blood draws
 - Proprioceptive input to calm and relax



Case example #2

- 15-year-old gets stuck organizing the stuffed animals on her bed impacting her ability to leave for school in the morning.
 - Proprioceptive input to reset her body so that she does not get stuck and additional strategies like visual schedules can be successful

Case examples #3

- 30-year-old who engages in self-talk at work
 - Proprioceptive input to help calm and relax









Case example #4

- 56-year-old with Alzheimer's disease who displays periods of agitation, especially around dinner time.
 - Sensory accommodations

Key points to remember

- Rule out medical reasons for changes in behavior.
- Sensory processing differences does not mean the person is on the autism spectrum.
- Proprioceptive input will help everyone so encourage physical activities throughout the day.
- Consider proprioceptive input when an activity or procedure may cause anxiety.
- When in doubt, talk to an Occupational therapist.

Resource Library

The screenshot shows the website for the Advocate Medical Group Adult Down Syndrome Center. At the top, there is a dark blue header with the center's logo and name on the left, a search bar with the placeholder text "I'm looking for..." in the center, and a "MENU" button with a hamburger icon on the right. Below the header is a yellow banner with the text "COVID-19 Resources" and a subtext "Review articles, resource lists, and videos related to COVID-19 and Down syndrome." The main content area has a dark blue background with the text "Adult Down Syndrome Center | Resource Library". Below this, there are three large image tiles. The first tile shows a young woman with short brown hair wearing a purple shirt, with the caption "For People with Down Syndrome". The second tile shows a woman with glasses and a floral shirt hugging a man, with the caption "For Families & Caregivers". The third tile shows a woman in a blue shirt talking to two men, one of whom is older, with the caption "For Health Care Professionals". At the bottom of the page, there is a light gray bar with five icons and their corresponding links: a bell icon for "Events, Classes & Programs" with a link "See the Schedule"; a play button icon for "Video Gallery" with a link "View All"; a sun icon for "Related Organizations" with a link "See Listing of Links"; a book icon for "Projects" with a link "See Our Latest Projects"; and a newspaper icon for "News" with a link "View News Articles".

Advocate Medical Group
Adult Down Syndrome Center

I'm looking for... MENU

COVID-19 Resources
Review articles, resource lists, and videos related to COVID-19 and Down syndrome.

Adult Down Syndrome Center | Resource Library

For People with Down Syndrome

For Families & Caregivers

For Health Care Professionals

Events, Classes & Programs
[See the Schedule](#)

Video Gallery
[View All](#)

Related Organizations
[See Listing of Links](#)

Projects
[See Our Latest Projects](#)

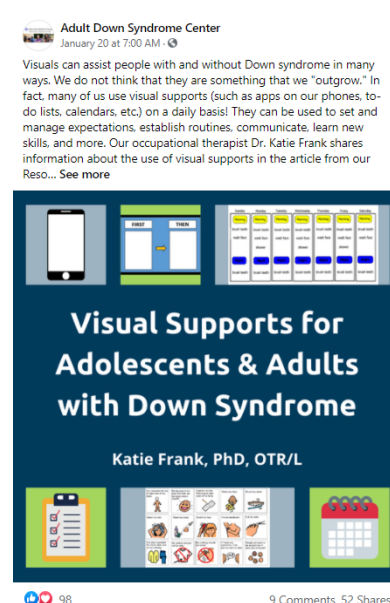
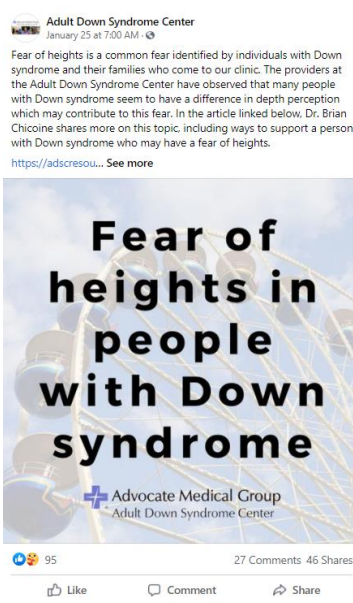
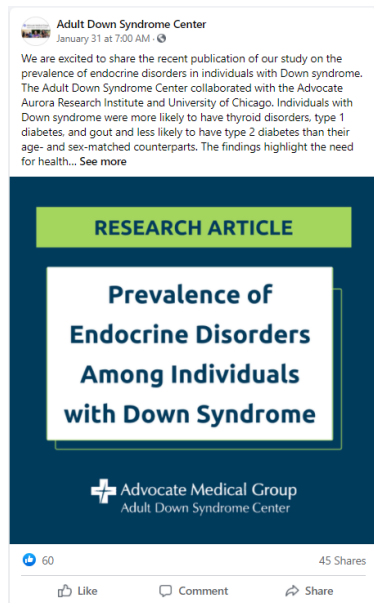
News
[View News Articles](#)

[https://adscresources.
advocatehealth.com](https://adscresources.advocatehealth.com)

[All Resources](#)

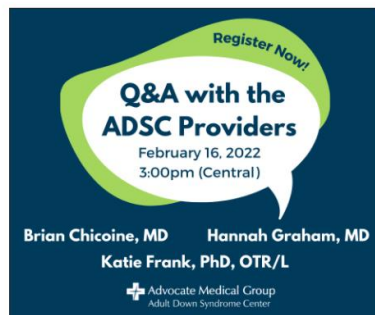
[Sensory Resources](#)

Facebook



<https://www.facebook.com/adultdownsyndromecenter>

Email list



Do you have questions about health and wellness of adolescents and adults with Down syndrome? Our next webinar is for you! Join Brian Chicoine, MD, Katie Frank, PhD, OTR/L, and Hannah Graham, MD for a Q&A on Wednesday, February 16, at 3:00pm (Central). Questions may be submitted before the webinar and/or during the webinar. Please click the button below to register and submit a question.

[REGISTER NOW](#)

Resources



Even if the weather outside is frightful, there are many activities we can do at home to fight boredom, stay active, be social, and have fun. We recently updated our "Activities You Can Do at Home" resource. There are ideas for arts and crafts, cooking, education and learning, fitness and physical activity, games, and more.

[Explore activities](#)

<http://eepurl.com/c7uV1v>

Additional Resources



Books

- Kranowitz, C.S. (2005). *The Out-of-Sync Child*. New York, NY: Penguin Group.
- Kranowitz, C.S. (2016). *The Out-of-Sync Child Grows Up*. New York, NY: Penguin Group.
- Miller, L.J. (2006). *Sensational Kids: Hope and Help for Children with Sensory Processing Disorder*. New York, NY: Penguin Group.
- Slutsky, C.M. & Paris, B. (2004). *Is it Sensory or is It Behavior?* New York, NY: PsychCorp.
- Voss, A. (2015). *Understanding Your Child's Sensory Signals, 3rd ed.* San Bernardino, CA: CreateSpace Independent Publishing Platform.
- Yack, E., Aquilla, P., & Sutton, S. (2002). *Building Bridges through Sensory Integration, 2nd ed.* Arlington, TX: Future Horizons.

Websites-General

- <https://www.spdstar.org/>
- <http://sensoryfun.com/home>
- <http://www.asensorylife.com>
- <https://sensationalbrain.com/>
- <https://www.amctheatres.com/programs/sensory-friendly-films>

Websites-Sensory diet

- http://sensorysmarts.com/sensory_diet_activities.html
- http://www.superduperinc.com/handouts/pdf/132_sensory_diet_090212.pdf
- <http://www.developmental-delay.com/page.cfm/286>
- <http://sensorysmarts.com/sensory-diet.pdf>
- <http://www.alertprogram.com/index.php>

Websites-Equipment

- <http://www.specialneedstoys.com/>
- <http://www.southpawenterprises.com/>
- <http://www.therapro.com/>
- <http://www.flaghouse.com/>
- <http://www.therapyshoppe.com/>
- <http://store.schoolspecialty.com>

Personal contact information

Katie Frank, PhD, OTR/L

Katherine.frank@aah.org

847-318-2303

Adult Down Syndrome Center,

1610 Luther Lane, Park Ridge, IL 60068