



Supporting the Student With Down Syndrome in Your Classroom



Information for Teachers

What is Down Syndrome?

Down syndrome is a genetic condition that occurs in 1 of every 691 births. It affects people of all ages, races and economic levels and is the most frequently occurring chromosomal abnormality. More than 350,000 people have Down syndrome in the United States alone. The most common form of Down syndrome, Trisomy 21, occurs when there are three instead of two number 21 chromosomes in every cell of the body. Instead of 46 chromosomes, a person with Trisomy 21 has 47. This extra genetic material alters the course of development and causes the characteristics associated with Down syndrome.

Common Myths

Although information about Down syndrome is increasingly more accurate, there are still a few misconceptions that the general public may have about this condition.

Myth: Down syndrome is a rare genetic disorder.

Truth: Down syndrome is the most commonly occurring genetic condition. One in every 691 live births is a child with Down syndrome, representing approximately 6,000 births per year in the United States alone. Today, more than 400,000 people in the United States have Down syndrome.

Myth: People with Down syndrome have a short life span.

Truth: Life expectancy for individuals with Down syndrome has increased dramatically in recent years, with the average life expectancy approaching that of peers without Down syndrome.

Myth: Most children with Down syndrome are born to older parents.

Truth: Most children with Down syndrome are born to women younger than 35 years old simply because younger women have more children. However, the incidence of births of children with Down syndrome increases with the age of the mother.

Myth: People with Down syndrome are severely “retarded.”

Truth: Most people with Down syndrome have IQs that fall in the mild to moderate range of intellectual disability (formerly known as “retardation”). Children with Down syndrome fully participate in public and private educational programs. Educators and researchers are still discovering the full educational potential of people with Down syndrome.

Myth: Most people with Down syndrome are institutionalized.

Truth: Today people with Down syndrome live at home with their families and are active participants in the educational, vocational, social, and recreational activities of the community. They are integrated into the regular education system and take part in sports, camping, music, art programs and all the other activities of their communities. People with Down syndrome are valued members of their families and their communities, contributing to society in a variety of ways.

Myth: Parents will not find community support in bringing up their child with Down syndrome.

Truth: In almost every community of the United States there are parent support groups and other community organizations directly involved in providing services to families of individuals with Down syndrome.

Myth: Children with Down syndrome must be placed in segregated special education programs.

Truth: Children with Down syndrome have been included in regular academic classrooms in schools across the country. In some instances they are integrated into specific courses, while in other situations students are fully included in the regular classroom for all subjects. The current trend in education is for full inclusion in the social and educational life of the community. Increasingly, individuals with Down syndrome graduate from high school with regular diplomas, participate in post-secondary academic and college experiences and, in some cases, receive college degrees.

Myth: Children with Down syndrome “plateau”.

Truth: Learning is a lifelong experience for people with Down syndrome, just like everyone else. The idea that a child with Down syndrome would “plateau” or decline in rate of development is more likely due to an educational program that does not continue to meet the needs of the student.

Myth: Adults with Down syndrome are unemployable.

Truth: Businesses are seeking young adults with Down syndrome for a variety of positions. They are being employed in small- and medium-sized offices: by banks, corporations, nursing homes, hotels and restaurants. They work in the music and entertainment industry, in clerical positions, childcare, the sports field and in the computer industry. People with Down syndrome bring to their jobs enthusiasm, reliability and dedication.

Myth: People with Down syndrome are always happy.

Truth: People with Down syndrome have feelings just like everyone else in the population. They experience the full range of emotions. They respond to positive expressions of friendship and they are hurt and upset by inconsiderate behavior.

Myth: Adults with Down syndrome are unable to form close interpersonal relationships leading to marriage.

Truth: People with Down syndrome date, socialize, form ongoing relationships and marry.

Myth: Down syndrome can never be cured.

Truth: Research on Down syndrome is making great strides in identifying the genes on chromosome 21 that cause the characteristics of Down syndrome. Scientists now feel strongly that it will be possible to improve, correct or prevent many of the problems associated with Down syndrome in the future.

Is it Downs, Down's or Down?

The correct terminology is Down syndrome. There is no apostrophe and there is no capital “s” in syndrome. The syndrome is named after the physician, Dr. John Langdon Down, who identified the common characteristics as a syndrome in 1866. A child with this condition is a child with Down syndrome, not a Down’s child or the Down’s kid in Mrs. Hall’s class. Parents will greatly appreciate your sensitivity when you address their child as a “person first” and not merely as a syndrome.

Health Concerns That May Affect Learning

Health Conditions Associated with Down Syndrome

In general, the following reminders and practices will promote improved classroom success:

- ✓ Be aware of physical characteristics and health conditions that may affect classroom success. It is important to note that behaviors you witness in the classroom may have a medical or health basis. Speak with the student's parents to identify previous health conditions and ongoing medications, as these can affect ability to listen and follow directions. Recognize that unusual behaviors or situational responses may signal an illness which the child is unable to communicate.
- ✓ Ask parents to alert you to changes in their child's health or sleeping patterns, as these factors can detract from their ability to solve problems. Schedule the most challenging academic areas in the morning. Tiredness at the end of the school day can significantly increase the time required to process information or directions and cause frustration and perceived behavior problems.
- ✓ Students with Down syndrome may require additional recovery time from illness; consider alternative activities and additional periods of rest in these cases. Recognize that non-routine activities (field trips, parties, etc.) can be physically or emotionally draining for students with Down syndrome. Avoid situations that set up a student for failure.

The following are some of the physical characteristics and health conditions that may affect the classroom success of students with Down syndrome:

MUSCLE HYPOTONIA

Hypotonia is a medical term used to describe decreased muscle tone (the amount of resistance to movement in a muscle). Symptoms of hypotonia include problems with mobility and posture, breathing and speech difficulties, lethargy, ligament and joint laxity, and poor reflexes.

To understand the physical demands that low muscle tone places on children with Down syndrome, imagine cooking dinner while wearing socks on your hands. Students with Down syndrome can get frustrated when their abilities to complete tasks are hindered by low muscle tone. Muscle development can require repetitive training.

- ✓ Allow extra time for a student with Down syndrome to complete tasks.
- ✓ Provide increased opportunities for practice.
- ✓ Work with physical therapists to identify and improve specific muscle development needs.
- ✓ To support fine motor development, use wrist and finger strengthening activities. Multisensory activities and materials work well. Provide opportunities to practice self-help skills such as using buttons and zippers.

SPEECH INTELLIGIBILITY

Speech intelligibility refers to the ability to be understood when speaking orally. This can be difficult for students with Down syndrome because of low muscle tone, jaw movement difficulties and motor planning difficulties.

To understand how your student with Down syndrome may feel, imagine communicating your needs while your mouth is full.

- ✓ Upon evaluation, many students with Down syndrome exhibit great differences between receptive (understanding) and expressive (spoken language production) language abilities. For this reason, their intelligence is often underestimated.
- ✓ Recognize that situational factors can impact communication and classroom performance, e.g., an impatient listener, anxiety, perceived pressure, embarrassment or lack of confidence.
- ✓ Use simple questions (5Ws and H), and allow extra response time. If your student uses American Sign Language (ASL), learn basic signs and teach them to the class.
- ✓ Peer group acceptance may hinge on the ability to communicate intelligibly. Goals for the classroom should include teaching the student with Down syndrome to communicate, in addition to teaching peers how to engage in meaningful interactions.
- ✓ Work with your district's therapists to assist students with Down syndrome:
- ✓ Speech therapists can design a speech remediation component to the IEP.
- ✓ Occupational therapists can work on postural control required for speech.
- ✓ Audiologists measure a child's ability to hear.
- ✓ Aides can provide one-to-one instruction for articulation skills.
- ✓ Students may exhibit an increase in stuttering when under stress. Attempt to ease stress by increasing the comfort level of the classroom.

MEMORY

Most students with Down syndrome will have short term or working memory difficulties. This makes it harder for them to access, understand and process information at the speed of other students, but it does not prevent them from learning the same information. Individual motivation is the key to learning!

Present information in a clear, ordered manner. Explain the links between information to build a system of knowledge.

- ✓ Allow more time to learn.
- ✓ Allow more practice to apply knowledge.

COMPACT STRUCTURE OF EAR, NOSE AND THROAT

Students with Down syndrome typically have compact bone and soft tissue structure of the ear, nose and throat. This increases their susceptibility to, and the severity of, upper respiratory and sinus infections. It may also increase sensitivity to loud sounds or vibrations. A child with Down syndrome may cover his ears or avoid activities that create loud noises. Be aware of the activity noise levels in and around your classroom. If appropriate, headphones can limit auditory distractions.

SLEEP APNEA

Recent studies indicate that as many as forty-five percent of individuals with Down syndrome may suffer from sleep apnea. This is the term used when someone stops breathing for very short periods of time, usually ten to twenty seconds, during sleep. Sleep apnea can cause memory loss and intellectual impairment, and may make a student more tired and lethargic. Alternatively, it may result in hyperactivity (which is often inaccurately interpreted as an attention deficit disorder). If you recognize these issues in a student with Down syndrome, explore sleep patterns

(including snoring) with parents. Medical interventions can improve your student's quality of life and school performance.

HEARING, VISION AND THYROID PROBLEMS

It is estimated that sixty-five to eighty percent of children with Down syndrome have conductive hearing loss, and that fifty percent have vision problems. There is also a higher rate of hypothyroidism, which can cause sluggishness, weight gain and mental impairment.

Perform an annual hearing and vision screening. Note that hearing loss may fluctuate when fluid is present or when a student is experiencing ear pain. A student may not be "ignoring" your instructions, but may not be able to hear you. Inform parents of your observations. When left untreated, these problems can significantly affect a student's ability to succeed academically and socially.

The following tips and tactics are recommended to improve the listening environment:

- ✓ Place the student at the front of the class.
- ✓ Speak directly to the student and supplement with signs, gestures or expressions.
- ✓ Use visual aids, e.g., write on the board.
- ✓ Rephrase and repeat questions or instructions often.

The following tips and tactics are recommended to support visual skills:

- ✓ Place the student at the front of the class.
- ✓ Use larger font.
- ✓ Use visual aids, e.g., signs on floors or walls.

HEART CONDITIONS

Forty to forty-five percent of children with Down syndrome have congenital heart disease. Many of these children will have to undergo cardiac surgery and can participate in classroom activities without restrictions. If a student has had or is scheduled to have surgery, ask the parents if it is appropriate to teach his or her classmates about the condition.

PAIN TOLERANCE

A recent study has confirmed what parents already knew. Individuals with Down syndrome express pain more slowly and less precisely than general population.

However, they are not insensitive to pain. They may not exhibit signs of distress when exposed to painful stimuli. Their pain threshold appears to be higher than the general population. Therefore, a teacher may have to be alert to other signals from the child to determine if they may not be feeling well or are injured.

References

- ✓ Bird, Gillian, et al. "Accessing the Curriculum: Strategies for Differentiation for Pupils with Down Syndrome." (The Down Syndrome Educational Trust, UK. 2000)
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- ✓ Leshin, Len, M.D. FAAP. Obstructive Sleep Apnea and Down Syndrome. (1997) <http://www.dshealth.com/apnea.htm>
- ✓ Peoples, Susan J. Understanding How Children with Down Syndrome and Other Developmental Delays Learn. Fort Wayne: Special Offspring Publishing, 2003

Communication

Each student with Down syndrome is a unique individual and the same speech therapy approach will not be effective for every student. Therapy is always individualized based on a child's particular strengths. Students with Down syndrome clearly want to communicate and many will need special techniques, strategies and exercises to assist them in their communication development. Refusal to comply or stubborn behavior may actually be caused by a student's frustration with their ability to communicate effectively. The **Speech Therapist** will be able to offer suggestions for strategies to use in your classroom. Visuals like photographs are great tools for communication.

Gross Motor Skills

Desk height - It is important that all children have a comfortable workspace. It is especially important for a child with low muscle tone because proper support will help to alleviate fatigue.

Foot Support - Check to see that your student's feet are not dangling from his chair but rather resting flat on the floor. Proper foot stability will not only lessen fatigue but will also provide trunk support.

Hypotonia- Low muscle tone may affect some body parts more than others. A student with Down syndrome may have difficulty sitting for an extended time on a floor without proper back support. Provide something to lean against.

“W” sitting should be discouraged as it stresses joints in the knees and hips.

Please consult with your student's Physical Therapist for suggestions on increasing gross motor skill development.

Fine Motor Skills

Several factors may affect the fine motor skill development of children with Down syndrome.

- Low muscle tone, or hypotonia
- Shortened limbs - hands may be 10 to 30% shorter
- Ligament or joint instability

These factors may contribute to difficulty with small muscle activities such as handwriting. In addition, children with Down syndrome may have wrist bones that develop more slowly, decreased skin sensation or a delay in the maturation of the palmar reflex. Please consult with your student's Occupational Therapist for suggestions on developing these skills.

How Do Children with Down Syndrome Learn?

As with all children, there is a wide range of abilities, behavior and physical development among children with Down syndrome. However, as a general rule, most children with Down syndrome learn best with a multi-sensory based program.

Teaching strategies for the student with Down syndrome

- ✓ **Visual Learners:** pair pictures with spoken word, demonstrate, model, visual cues, kinesthetic reinforcement, color coded, highlighted.
- ✓ **Auditory memory and auditory processing weak:** ALWAYS allow adequate response time.
- ✓ **Fewer short-term memory channels:** Break down directions into smaller steps, repetition. Repeat, repeat, repeat, small chunks of information.
- ✓ **Literal learners:** best to avoid slang, multiple meaning terms.
- ✓ **Learns:** at slower rate than typical peers

Curriculum Adaptation Simplify, Supplement, Alter

There is no magic formula for adapting your classroom curriculum for your students with Down syndrome. Each student's needs are unique. The process is simple, but it does require that all team members work collaboratively.

Subtle adaptations - Subtle accommodations to daily work will assist your student without drawing attention to the adaptation. For instance, textbooks with the same cover but different contents will minimize the variation.

Same timetable/same subject - Materials and methods may vary but if all students work on the same subject matter at the same time a student's sense of competence will increase.

Allow **adequate response time**. Some students need time to process your question. Be patient.

Visual accommodations work best for your students with Down syndrome. Visual schedules may help compensate for memory difficulties.

A Word About Hugs

As with all children, it is also important to help children with Down syndrome learn appropriate social boundaries. Although hugging your teacher is encouraged in the early grades, children need to learn when this has become inappropriate and how to replace hugging with more appropriate social gestures. A hand shake, pat on the back, high 5, thumbs up sign, etc are all great replacements to hugging.

Consult your student's Occupational Therapist for sensory diet needs.

The Home and School Partnership

The Down Syndrome Association of Greater St. Louis (DSAGSL) strongly believes that creative collaboration between all team members is the best strategy for success. Each child possesses a unique potential and when the parents, teachers, assistants, specialists, school administrators, bus drivers, etc. all work in the best interest of the child, your student will have a productive year. We offer a Down Syndrome Specialist Training Program for the team of general education and special education staff. Please contact us to enroll.

Great Resources for Teachers

Please call the DSAGSL at 314-961-2504 for information on any of these items. Many are available for loan in our library.

- ✓ Bruni, Maryanne. **Fine Motor Skills in Children with Down Syndrome**, Woodbine House, 1998.
- ✓ Buckley, Sue. **Down Syndrome Issues and Information**, The Down Syndrome Educational Trust, 2000. www.downsed.org
- ✓ Glatzer, Jenna. **Taking Down Syndrome to School**. JayJo Books, L.L.C., 2002
- ✓ Hammeken, Peggy. **Inclusion: 450 Strategies for Success**, Peytral Publications, 2000.
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- ✓ Sandall, Susan & Schwartz, Ilene. **Building Blocks for Teaching Preschoolers with Special Needs**, Brookes, 2002
- ✓ Sandall, Susan. Young Exceptional Children Monograph #1. **Practical Ideas for Addressing Challenging Behaviors**, Sopris West, 1999.
- ✓ Tien, Barbara. **Effective Teaching Strategies for Successful Inclusion - A Focus on Down Syndrome**, The PREP Program, 1999.
- ✓ Winders, Patricia. **Gross Motor Skills in Children with Down Syndrome**, Woodbine House, 1997.

Websites that may be helpful:

- ✓ Inclusion Solutions, www.kcdsg.org – Educators’ newsletter.
- ✓ Down Syndrome Education, USA, www.downsedusa.org/en/us/default.aspx - Free downloads for teaching materials, their own blog, specialist publications from Down Syndrome Education International and other recommended publishers through online store.
- ✓ Helpful newsletters at www.dsage.com
- ✓ Teaching math at www.numicon.com and www.touchmath.com
- ✓ Excellent auditory and visual memory programs at info@littlegiantsteps.com
- ✓ Materials to download from the Learning Program at www.dsgoc.org/learning_program.htm

Other Programs and Services offered by the Down Syndrome Association of Greater St. Louis

New/Expectant Parent Support Program
Medical Outreach Program
Family Conference
Educational seminars
Down Syndrome Specialist Program
Lending Library
Family Connections newsletter
Website: www.dsagsl.org
Friday E-mail blast
Speaker's Bureau
Community Groups
Helpline/Information and Referral
Family Events
Bike Camp
Healthy Lifestyles program for teens & adults
Advocacy and Public Awareness

For More Information

DSAGSL
8420 Delmar Blvd. Suite 200
St. Louis, MO 63124
Phone: 314.961.2504
Fax: 314.989.1579
Email: info@dsagsl.org

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