

# Ballet FOR ALL



A Guidebook for Dance Assistants





This book was written by dancers for dancers. We would like to share what we have learned about teaching ballet to young children with cerebral palsy. We hope that you will join us!





# Use This Guide To . . .

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# Learn About Cerebral Palsy

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Cerebral palsy is a physical disability that affects the way that a person moves. It is caused by an injury to the developing brain. Often this injury occurs before birth.

Cerebral palsy may be mild and cause only a slight disruption to a person's daily life. It can also be more severe, affecting the whole body and all activities of daily living.

Although the injury that causes cerebral palsy is permanent, children with cerebral palsy are not "ill". Cerebral palsy (CP) is not a progressive disease. It simply means that there was injury to the brain early in development. In fact, there are many children with CP whose movement improves over time. This is because the brain can compensate for injury over time. This process is called "neuronal plasticity". Neuronal plasticity refers to the changing of the structure, function and organization of neurons, or nerve cells, in response to new experiences. Neuronal plasticity is responsible for brain development, learning and the rehabilitation of brain-injured patients.

Cerebral palsy can be described or classified in different ways, including by its impact on movement, the part of the body that it affects, and in terms of its impact on motor ability or function. For example, some babies who are born prematurely develop spastic diplegia, which is a form of cerebral palsy that results in tight muscles in the legs. Another example would be a child who had a stroke (loss of blood supply and oxygen) to one side of the brain, such that only one side of the body (arm and leg) has muscle tightness and weakness. This child has spastic hemiplegic cerebral palsy. One in three children with cerebral palsy will be unable to walk. At greatest risk are those who have spastic quadriplegia (muscle tightness in both arms and legs) and an inability to sit independently at 2 years of age. The Gross Motor Function Classification System is an important way to predict motor ability for a child with cerebral palsy. More information about this classification system is available on the Internet at: <http://www.canchild.ca/en/measures/gmfcs.asp>.

Many children with cerebral palsy also have vision and hearing impairments. Seizures, difficulties with swallowing and talking, learning disability, and intellectual disability can also occur in children with cerebral palsy, especially if their motor disability is more severe. However, there are many children with cerebral palsy who do not have intellectual disability. It is important to always keep this in mind.

Some children with cerebral palsy may need ankle foot orthoses (sometimes referred to as splints or AFOs) to help maintain balance when walking. Others will use "walkers" or wheelchairs to get around. Children and adults with cerebral palsy may use a mixture of walking aids, depending on the distance they need to move. Medications can be prescribed to improve movement. Orthopedic surgery and sometimes neurosurgery can help too. However, the mainstay of treatment for children with cerebral palsy is movement! This is because of neuronal plasticity. A child with cerebral palsy will move better if he or she is given many opportunities to experience movement. Motor "learning" is based upon repetition and practice. The next page describes several specific movement abnormalities that can be seen in a child with cerebral palsy.

## Hypotonia

Muscle tone refers to the amount of tension or resistance to movement that exists in a muscle at rest. Many babies with cerebral palsy have hypotonia or low muscle tone, especially in the core muscle groups of the trunk and neck. Hypotonia can affect posture. Seating systems and walking aides that support the trunk are important for this reason. Horseback riding and other activities that build core strength, such as ballet, can help improve posture. Hypotonia tends to improve over time.

## Spasticity

Spasticity is an unusual "tightness" or "hypertonia" of muscles. The medical definition is "a velocity dependent increase in muscle tone". Children with spastic cerebral palsy often hold their arms and legs in flexion, or turned inward, because of high muscle tone. Children with spasticity can move their arms and legs more easily if they are stretched slowly. Fast movements result in muscle spasms. This sudden muscle tightness is sometimes called a "spastic catch". It is very important to help a child with cerebral palsy to stretch thoroughly and slowly before and during every ballet class.

## Dystonia

Dystonia is also associated with an increase in muscle tone. The hallmark of dystonia is variable tone. A change in posture or movement, or even emotion, can result in a dramatic increase in muscle tone and posture. Dystonia is due to "co-contraction" of both flexion and extension muscle groups around a joint. This results in twisting and repetitive movements or abnormal postures. Dystonia is best thought of as a movement disorder. Some examples of dystonic movements that may occur in a ballet class include "scissoring" of one leg across another, or inward turning of the wrist when a child is trying to grasp the barre.

## Weakness

Weakness is extremely common among children with cerebral palsy. In fact "palsy" is the Latin term for weakness. Research by physical therapists has shown that progressive resistance strength training can improve posture and motor function in children with cerebral palsy. Swimming is an excellent way to build strength. It is also important to be upright and moving as much as possible, to build strength. Weight training is beneficial for older children and teens. Ballet class is an excellent workout for children with cerebral palsy of all ages because it requires them to move slowly in repetitive patterns. This builds strength.

## Assymetry

It is very common to see asymmetry of movement and of posture in a child with cerebral palsy. This can be dramatic, such as with hemiplegic cerebral palsy due to stroke, or subtle, such as with dystonia. Either way, it is helpful to understand that core strengthening and/or support of the trunk while a child is moving, can counteract the asymmetry. Repetitive reciprocal movements, such as stepping in rhythm or marching can help counteract asymmetry as well. It is important to encourage a child to use his or her weaker side, because motor learning and awareness is based on repetition and movement. Mirrors in the dance studio can help children to better understand symmetric posture and reciprocal movement. Rhythm and music are also important.

# Hypotonia

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Low muscle tone in neck



Low muscle tone in trunk



# Spasticity

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Spasticity can make holding objects a challenge. Some children find it easier to hold objects with larger handles; others might use a looped handle or Velcro strap to assist their grasp.



Spasticity in the calf muscles can result in toe walking.



# Dystonia

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A change in posture or movement, or even emotion, results in twisting movement of the hand and wrist. Dystonia can affect legs, arms and even the mouth and tongue.



## Weakness

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Spasticity interferes with the development of strength, control and endurance. While spastic muscles appear tight and stiff they are actually weak and often uncoordinated. As a result it may be necessary to alternate movements and to provide rest periods during class in order to prevent fatigue.



# Asymmetry of Posture

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Trunk stability is key to symmetric movement



Provide balanced support by being aware of symmetry throughout the body, both side to side and front to back. Work to determine the best way to place your hands to support extension and the proper timing of movements.

Be aware of where you are supporting the body in relation to joints. Sometimes less support is more – if a child sinks into your support experiment

with changing the angle of your hands or the amount of support you are providing to encourage them to be more active in maintaining a position.



# Asymmetry of Movement

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Rhythm is an excellent way to encourage reciprocal stepping for children with hemiplegic cerebral palsy who favor one side.



# **DISCOVER** how professionals in physical therapy, occupational therapy, developmental pediatrics, and adapted physical education encourage motor learning in children with cerebral palsy.

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If you love movement and dance, and have an interest in working with children who have disabilities, you may want to look into these professions:

**A physical therapist (PT)** is a licensed health care professional whose job is to work with patients to reduce their pain and to improve their functional skills and/or their mobility skills. After completing 4 years of college, physical therapists are required to first earn a graduate degree from an accredited physical therapy program, and then pass a licensing examination for the state in which they are to practice. Currently physical therapists are required to have either a Masters Degree or Clinical Doctorate Degree, with a transition taking place for all programs to require a doctorate degree. The American Physical Therapy Association has more information about the Physical Therapy profession: <http://www.apta.org/>

**Physical therapist assistants (PTA)** provide physical therapy services under the direction and supervision of a licensed physical therapist. To work as a PTA, an individual must graduate with an associate degree (two years, usually five semesters) from an accredited PTA program at a technical or community college, college, or university. Graduates must pass the national examination for licensing/certification/regulation in most states to be eligible to work. Learn more about a career as a Physical Therapy Assistant at <http://www.apta.org/PTAEducation/>

**Occupational therapists (OT)** help children to participate in the things they want and need to do through the therapeutic use of everyday activities (occupations). They help children with disabilities to participate fully in school and social situations. OTs use play based activities to strengthen weak muscles, balance muscle groups around joints (especially arms and hands) and to increase fluidity and efficiency of movement in children with cerebral palsy. They are trained in handling techniques to support the development of more efficient motor control. They also make recommendations for adaptive equipment. Occupational therapists are college graduates who go on to graduate school for training. They are licensed by the state and work in a variety of settings, including Early Intervention programs in the home, at schools, in hospitals, and in private practice. The American Occupational Therapy Association has more information about careers in this field: <http://www.aota.org/default.aspx>

**Occupational therapy assistant (OTA)** are graduates of an accredited occupational therapy assistant educational program and receive an associate degree (two years, usually five semesters). Graduates are eligible to sit for the national certification examination. Most states regulate occupational therapy assistants. Occupational therapy assistants are accredited by AOTA's Accreditation Council for Occupational Therapy Education (ACOTE). For more information, visit: <http://www.aota.org/Students/Prospective/OTA.aspx>

**Occupational and physical therapy aides** provide supportive services to the therapist or therapy assistants. Occupational therapy aides usually receive their training on the job and are not eligible for certification or licensure.

**Adapted physical educators (APE)** are responsible for developing a physical education program for individuals with a disability, including those with cerebral palsy. An adapted physical educator has highly specialized training in the assessment and evaluation of motor skills along with knowledge of instructional strategies to deliver a program suited to the interests and capabilities of students. These services may be provided in general physical education and/or in specialized adapted physical education settings. A college degree in physical education or a related area as well as graduate training in adapted physical education is essential. For more information, contact the American Association for Physical Activity and Recreation (AAPAR): <http://www.aahperd.org/aapar/careers/adapted-physical-education.cfm>

**Developmental pediatricians are medical doctors (MD)** who diagnose and treat children who have developmental disabilities, such as cerebral palsy, autism, and Down Syndrome. They work closely with Early Intervention teams and school based professionals to plan therapy services. They manage medications, prescribe equipment, and monitor developmental progress. They also help families to access services. Developmental pediatricians are college graduates who complete 4 years of medical school, 3 years of residency training in a hospital, and 3 years of fellowship training in order to attain board certification in their subspecialty field. They are licensed by the state in which they practice. For more information: <http://www.sdbp.org/>; <http://www.aacpdm.org/> Other medical specialists who focus on motor development and the care of children with cerebral palsy are Psychiatrists (<http://www.aapmr.org/patients/aboutpmr/pages/psychiatrist.aspx>) and Orthopedic Surgeons (<http://www.aaos.org/>).



**Suzanne Broschart , PT** is Miracle's physical therapist at the Pre-Kindergarten Program at McKinley Brighton School.



**Lisa Neville OTR** is Marley's occupational therapist at Jowonio Preschool. She is also a dancer and the instructor for our Adapted Ballet Program.



**Nienke Dosa MD** is Miracle and Marley's developmental pediatrician at the Center for Development, Behavior and Genetics at Golisano Children's Hospital, Upstate Medical University.



**Alyssa DeBie MS** is a physical education teacher at Nottingham High School. Students enrolled in her dance class are assistants for the adapted ballet program across the street at Jowonio Preschool.

# **UNDERSTAND** how dancers can improve posture, promote body awareness, and encourage participation of children with cerebral palsy.

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**My name is Rebecca Hart and I am a student of dance and movement.**

As a woman with Cerebral Palsy, I have received the gamut of traditional therapeutic modalities. When I was a child my options were quite limited. The treatment approach at that time was against movement, and the belief was that nothing could be done.

Given my curiosity, I was fortunate to be given the opportunity to participate in ballet lessons at the barre in early adulthood. I have found that the stability of the barre allows for an array of motion and movement that otherwise is difficult to achieve. Coupled with the melody and rhythm of the music, the movements become easier over time. The stretches required are deep, and aid in strengthening the core.

Dancers definitely have something to offer on top of what doctors, therapists, and physical education teachers do for children with cerebral palsy.

Last but not least, it is very important for dancers to share their love of dance with children who have cerebral palsy. Dancers help kids to express beauty and share joy through movement.

## **Why Dance?**

Dancers are amazing athletes who really understand the body. They are well positioned to help children with cerebral palsy move their bodies more efficiently. Abnormal tone interferes with the development of strength, control and endurance.

By pairing music with repetitive reciprocal movement that encourage controlled and balanced extension throughout the body, dance can increase the range, control, timing, strength and fluidity of movement. We are just beginning to understand how music and rhythm, which is processed in a wholly different part of the brain, can help children with cerebral palsy to learn about movement and to organize their bodies.



### **The Rehabilitation Institute of Chicago - Caring for Kids Program**

conducts a weekly dance class for children with cerebral palsy (CP) originally created by Citlali Lopez-Ortiz, PhD. Her classes are designed to increase range of motion, build postural and movement awareness, and increase selective motor control and coordination of movement. Dr. Lopez-Ortiz and her research team are using motion analysis, virtual reality and statistical tools to better understand movement coordination and motor learning in children with CP.

We are grateful for Dr. Lopez-Ortiz's guidance as we launched our adapted ballet program. Her grand rounds presentation in June 2012 to the Department of Pediatrics at Golisano Children's Hospital in Syracuse, NY, mobilized dancers, therapists, doctors, and adapted physical educators in our community to create a ballet program for children with cerebral palsy at Jowonio Preschool. This pilot program also represents a collaboration with Ms. DeBee's dance students at Nottingham High School in the Syracuse City School District.

We very much appreciate Dr. Lopez-Ortiz's feedback as we developed this guidebook for dance assistants. Dr. Lopez-Ortiz's research is essential to the development of high quality dance programs for children with cerebral palsy. More information about Dr. Lopez-Ortiz's research program is available at: <http://www.chlth.uiuc.edu/Faculty/Bios/lopez-ortiz.aspx>

Lopez-Ortiz, C., Gladden, K., Deon, L., Schmidt, J., Girolami, G. and Gaebler-Spira, D. (2012). Dance program for physical rehabilitation and participation in children with cerebral palsy, *Arts & Health* 4(1): 39-54. First published on: 13 June 2011 (iFirst).

**For more information about dance, and for inspiration, here is a partial listing of organizations and dance companies:**

- **American Alliance for Health, Physical Education, Recreation, and Dance (AAHPRD)** <http://www.aahperd.org/> With 20,000 members, the American Alliance for Health, Physical Education, Recreation and Dance (AAHPERD) is the largest organization of professionals supporting and assisting professionals involved in physical education, recreation, fitness, sport and coaching, dance, health education and promotion, and all specialties related to achieving a healthy and active lifestyle.
- **American Dance Therapy Association (ADTA)** <http://www.adta.org/>  
The American Dance Therapy Association works to establish and maintain high standards of professional education and competence in the field of dance/movement therapy.
- **American DanceWheels** <http://www.americandancewheels.com/>  
First American Style Wheelchair Dance Program in the world. Our mission is to provide people of all abilities the opportunity to partner dance.
- **Anjali Dance Company** <http://www.anjali.co.uk/>  
All members of this professional-quality contemporary dance company have a disability. Features information on tours, education, outreach, and more.
- **AXIS Dance Company** <http://axisdance.org/>  
This is a modern dance company – that has some individuals with disabilities and some who don't.
- **DanceAbility International** <http://www.danceability.com>  
This international organization offers a DanceAbility teacher certification course.
- **Dancing Dreams** <http://dancingdreams.org/>  
A dance program in Bayside New York for children with developmental disabilities that was started by a pediatric physical therapist with a background in ballet.
- **Dancing Wheels** <http://www.gggreg.com/dancingwheels.htm>  
This is a company of professional dancers with and without disabilities
- **Full Radius Dance** <http://www.fullradiusdance.org/>  
This is a modern dance company that challenges traditional gender portrayals in mature, choreographically complex works that celebrate technique and physicality. Additionally, the company has a desire to share the talents of dancers who have disabilities with the mainstream audience.
- **Infinity Dance Theater** <http://www.infinitydance.com/index.html>  
Bringing the joy and drama of motion, movement and theatre to performing artists with disabilities and non-disabled artists over the age of 40.
- **Moving Miracles New York** <http://www.movingmiracles.org/>  
A dance/movement program based in Buffalo, New York for children, adolescents and adults who are exceptionally challenged mentally, physically and/or emotionally.
- **Wee Dance** <http://weedance.com/>  
A curriculum that encourages children to move, discover and express themselves in a non-threatening environment by combining many styles of music and movement activities.

# Get Tips for Being a Dance Assistant at an Adapted Ballet Program

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- **Get to know the kids ahead of time** Some of our dance assistants were able to make home visits the week before classes got started. They brought ballet bags as gifts and showed the children books and Youtube videos about adapted ballet. This was a great way to get off to a friendly start.
- **Use child-first language** This probably goes without saying, but please remember that kids with cerebral palsy are children first and foremost. They may happen to have a disability, but this does not define them. Avoid saying things like "CP dancer". Also, please join the campaign against the R-word. Spread the Word to End the Word: <http://www.r-word.org/>
- **Give kids time** Get to know a child's communication style. Some children with cerebral palsy have difficulty with drooling and with speech (Dysarthria). Some may use a communication device to talk. Others simply need extra time to express themselves.



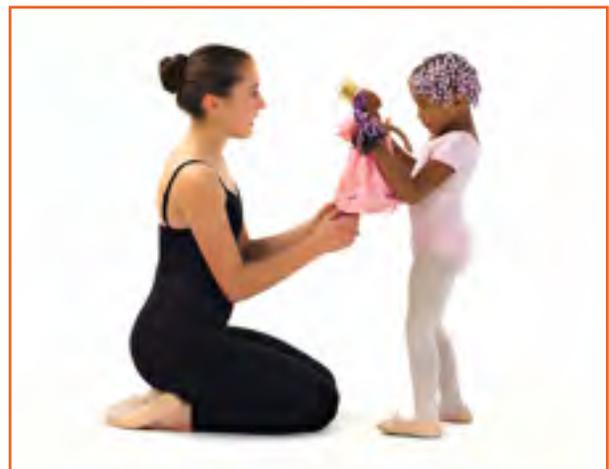
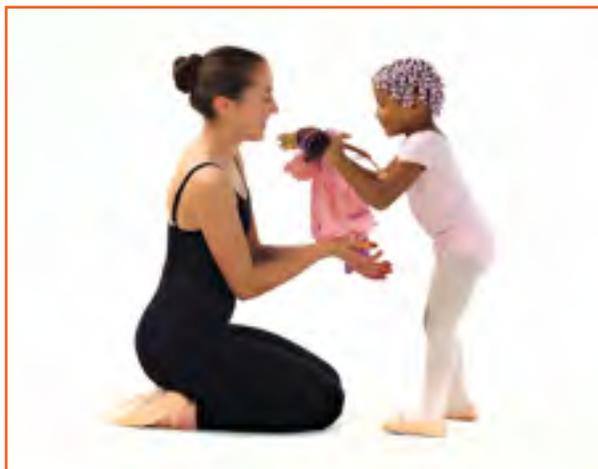
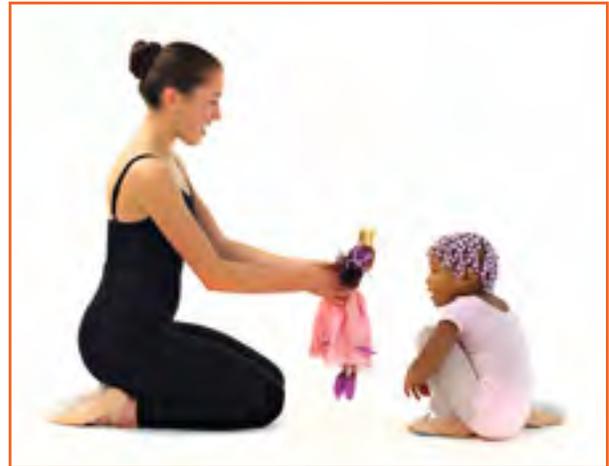
## Some thoughts from our dance teacher, Lisa Neville:

As a dancer you are an athlete who understands how the body can move and are well positioned to help children with cerebral palsy move their bodies more efficiently. Every person with cerebral palsy is unique and different cerebral palsy presentations require different physical supports while dancing. Helping the dance assistants adjust their physical support while teaching the class can be challenging but the more we work together the more automatic this becomes. We meet as a team before and after each class to plan and debrief based on each interaction with the dancers. The young children we dance with have different knowledge and understanding of ballet and different attention skills. This means that sometimes we have to be very creative on the spot to recapture or hold kids' attention while we work on a specific goal. Dancing together is a celebration of our shared love of dancing and of our creativity.

# Floor Time

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Floor time puts you on the child's level. Doll dancer roll play is a good way to start.



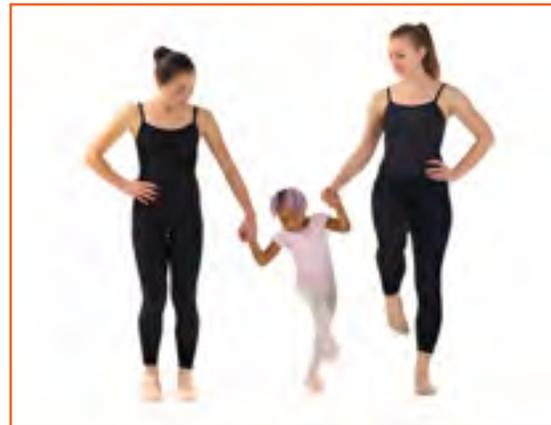
## Be Close



## Let the Child Lead



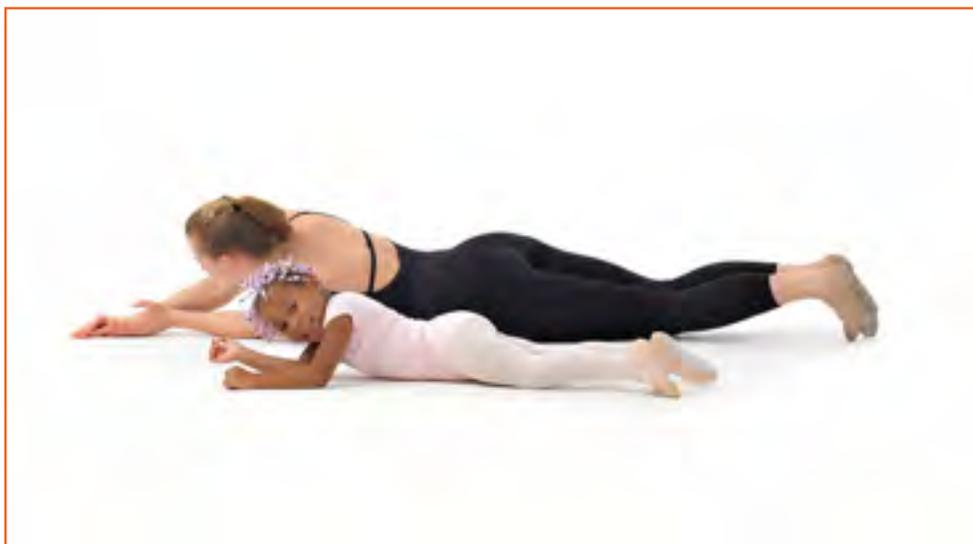
## Model Movements



## Have a Sense of Humor

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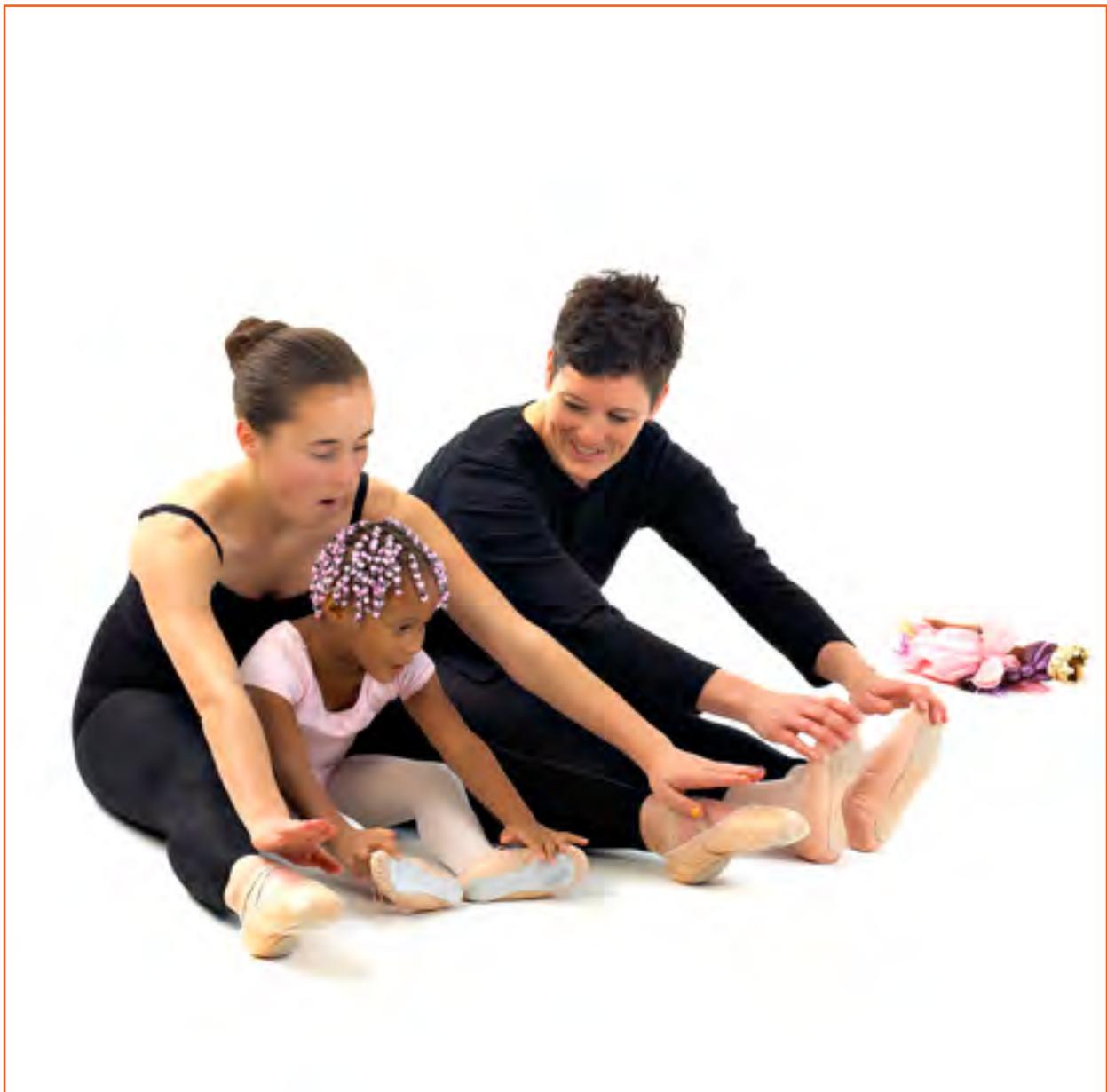
Dance assistants should be flexible in their expectations and approach – it takes more repetitions and practice for someone with low or high muscle tone to learn new ways to move. No two people's bodies move in exactly the same way. It is important to accept some approximations in order to sustain focus and help kids feel good about their efforts. Remember that most people dance for the love of movement. Ballet class should be fun even when the movements are challenging!



## Seated

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Work with your dance teacher and consulting therapists to adapt movements and positions for success. Achieving and maintaining standing with good alignment of all the joints of the feet, legs and trunk can be challenging for children with cerebral palsy. Consider teaching and practicing tendu or passe while seated, by moving the legs along the floor.



## Rhythm and Music

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Some children, particularly those with dystonia, respond best to simple rhythm. Music engages the whole brain, and can increase the range, control, timing, strength and fluidity of movement, especially among children with spasticity.



# Stretchy cords

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Pulling against resistance with a stretchy cord builds strength and helps to encourage symmetric movement.



## Scarves and Costumes

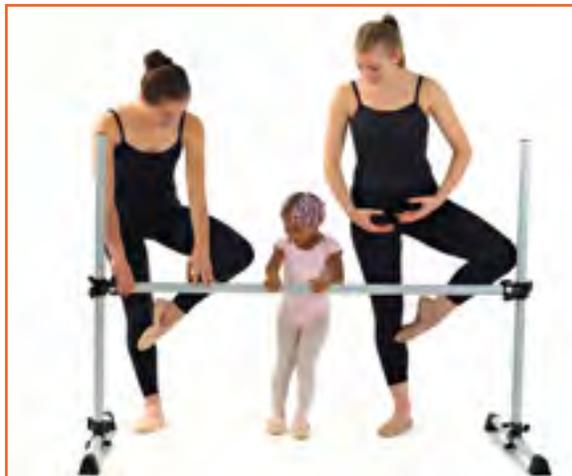
Collaborative dance props foster interaction between dancers and help us all to work together. Scarves are a beautiful way to encourage arm movement.



# Ballet Barres

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Ballet barres and mirrors are standard equipment in a ballet studio. The barre is helpful as a tactile support and physical frame of reference. Mirrors help children to understand their movements.



# The Classic Five Ballet Positions

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1



Ballet instruction begins with the five classic positions. Feet point outward, and postures are held for 8 counts. Postures eventually turn into movements as positions are held for 4 counts and then 2 counts. This is excellent training for children with cerebral palsy, many of whom tend to keep their legs internally rotated and their hands fisted.

2



3



4



5



## Mobility Devices

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Some children with cerebral palsy use mobility devices such as walkers, gait trainers and wheelchairs to get around. Mobility devices are important because they give children independent movement and freedom. Physical therapists typically recommend and help families to obtain mobility devices.

Some adapted ballet programs incorporate mobility devices into dance lessons. Other programs stress the importance of experiencing movement without equipment. For children who typically use mobility devices, it can be a wonderful experience to dance this way.

# Kidwalk II Mobility Device Advantages

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Trunk Support for Stability



Hands Free



Weight-shifting



Small Turn Radius

# Kidwalk Ballet

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Prancing



Jumping!



Turning



# Acknowledgements

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## **Graphic Design**

Holly Scherzi Design

## Stay Tuned!

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Our ballet program has expanded! We recently installed an OASUS unit (custom built by Enliten LLC) in our dance studio so that children can experience partial weight supported movement!

Also we recently hosted Martha Hall and Michele Logo from the University of Delaware "Go Baby Go!" Project. We learned about their "FUNctional fashion" program at our third annual Fit-In Conference, which was focused on adaptive design in collaboration with the Syracuse University School of Visual and Performing Arts. "Ballet for All" dance assistants are learning about the exciting new field of adaptive clothing by creating costumes for our dancers!

# Notes

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