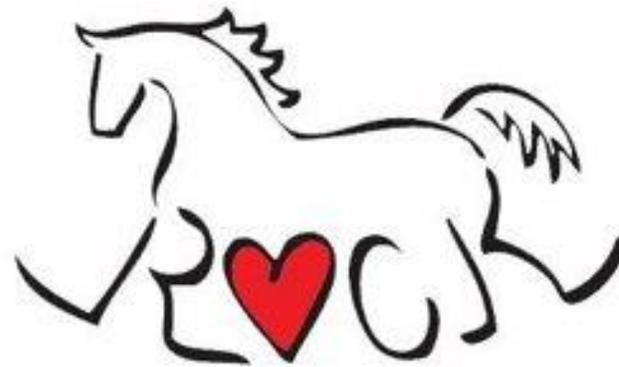


Cerebral Palsy

A General Overview
and
Considerations for
Equine Assisted
Services



Healing Thru Horses

Definition-What is cerebral palsy?

- *Cerebral* relates to the brain. *Palsy* means weakness or problems using the muscles.
- It is a group of disorders that affect a person's ability to control motor function and maintain balance and posture. It has a variety of causes that are currently not well known.
- It is the most common physical disability in childhood.
- It is a lifelong disability with no known cure.
- It is not progressive; however, secondary conditions can develop which may improve over time, worsen, or remain the same.

Click on the link to hear about some common misconceptions about CP:
<https://youtu.be/12SWoVopoTo>

Some Statistics

- ▶ Over 17 million people worldwide and over 800,000 children and adults in the United States display one or more of the symptoms of cerebral palsy.
- ▶ In high income countries, CP occurs in approximately 1 in 700 live births.
- ▶ Approximately 1 in 345 people in the United States have a diagnosis of cerebral palsy.
- ▶ It is more common in boys than girls. It is more common among black children than white children. It affects Hispanic children and white children equally.
- ▶ 60% of children with CP can walk independently. 10% walk with some type of aid. 30% of children with CP use wheelchairs.



History

-In the 1860s, William Little, an English surgeon, described “a puzzling disorder that affected children in the first years of life, causing stiff, spastic muscles in their legs and to a lesser degree, their arms”. He noted that they did not get better or worse as they grew up. The condition was called “Little’s disease” for many years. Because many of these children were born prematurely or had complicated deliveries, he suggested it was caused by a lack of oxygen at birth that damaged sensitive brain tissues which controlled movement.

-Sir William Osler first used the term "cerebral palsy" in 1887.

-In 1897, Sigmund Freud suggested that it might be caused by abnormal brain development in the womb since some of these children had other problems including intellectual disabilities, visual difficulties, and seizures. His theory was mostly ignored at the time.

-In the 1980s, an extensive government study was completed that showed oxygen deprivation accounts for less than 10 percent of cerebral palsy diagnoses. In many cases, the specific cause is unknown.

Congenital CP

Congenital CP is abnormal development of the brain or brain damage that occurred before or during birth. The majority of CP (85%–90%) is congenital. In many cases, the specific cause is not known.

The following factors can increase the risk for congenital CP:

- ▶ Low birth weight—The risk increases for infants born weighing less than 5 1/2 pounds, and especially for those who weigh less than 3 pounds, 5 ounces.
- ▶ Premature birth—The risk increases for those born prematurely (less than 37 weeks), especially if born before the 32 weeks. About 45% of children diagnosed with CP are born prematurely.
- ▶ The placenta is unable to provide the necessary oxygen and nutrients.
- ▶ Bacterial or viral infection of the mother or infant that directly or indirectly attacks the infant's central nervous system. Viral infection that have been linked with CP include chickenpox, rubella (German measles), and cytomegalovirus (CMV), and bacterial infections such as infections of the placenta or fetal membranes, or maternal pelvic infections have been linked to CP.
- ▶ Prolonged loss of oxygen during the pregnancy or birthing process.
- ▶ Multiple births—Twins, triplets, and other multiple births have a higher risk. Some, but not all the increased risk is due to children born from multiple pregnancies are often born prematurely or with low birthweight, or both.
- ▶ Jaundice and kernicterus--Jaundice occurs when a chemical called bilirubin builds up in the infant's blood. When severe jaundice is untreated for too long, it can cause kernicterus. This can cause CP and other conditions.
- ▶ Stroke—A stroke can occur in the infant during pregnancy or around the time of birth, damaging brain tissue and causing neurological problems

Acquired CP

Acquired CP is caused by abnormal development of the brain or damage that occurs more than 28 days after birth.

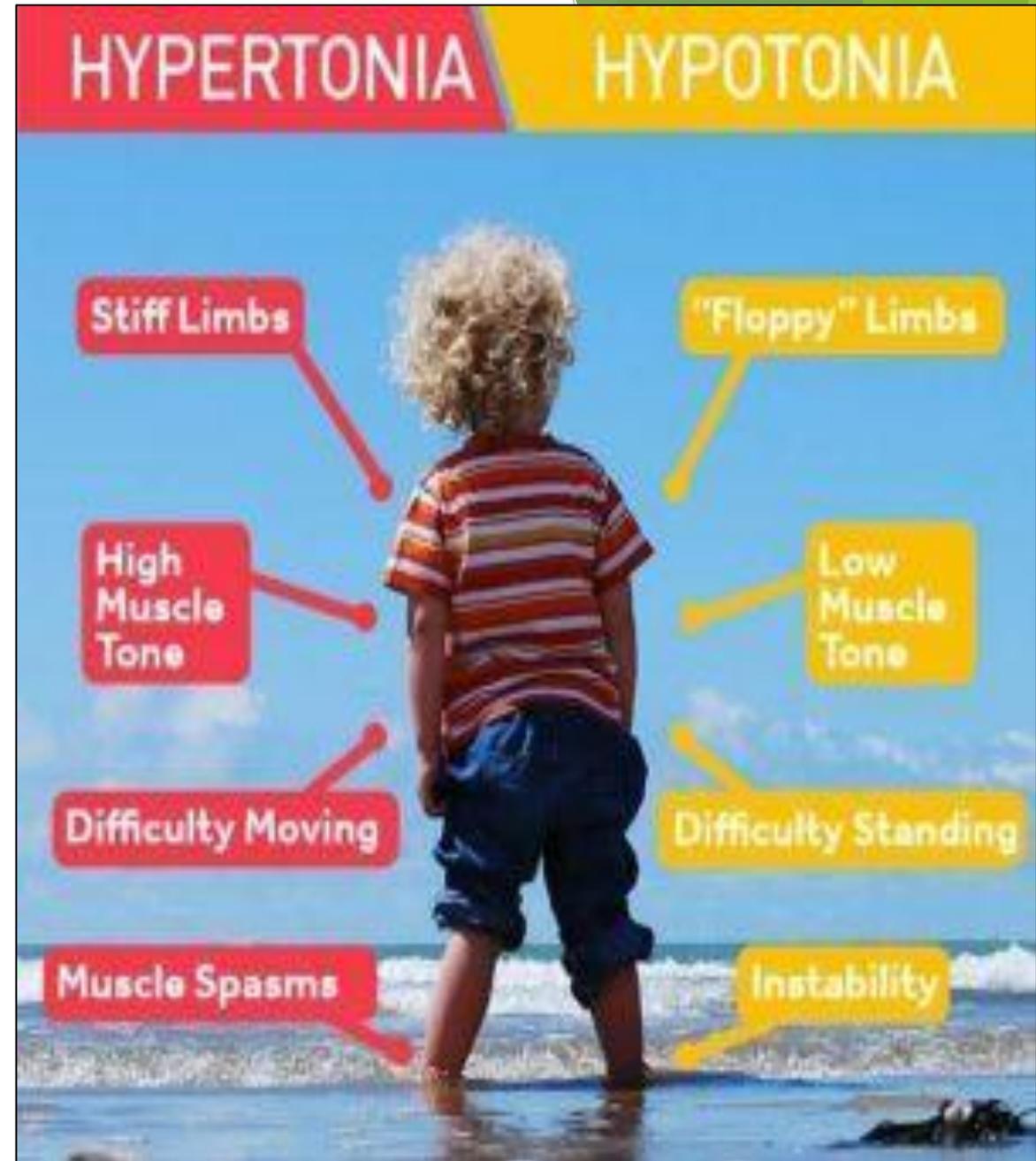
- ▶ The following factors can increase the risk for acquired CP:
 - ▶ Having a brain infection, such as meningitis or encephalitis
 - ▶ Suffering a serious head injury
 - ▶ Having a problem with blood flow to the brain caused by a stroke, bleeding in the brain associated with a blood clotting problem, blood vessels that didn't form properly, a heart defect, or sickle cell disease.

A Note About Muscle Tone

- ▶ Tone is defined as the amount of tension in a muscle when the muscle is at rest.
- ▶ Tone is not manipulated by exercise or stretching. It can be influenced by the positioning of the joints.

Photo from:

<https://www.playstreet.in/2021/01/02/how-much-do-we-know-about-muscle-tone/>





Types of Cerebral Palsy

- ▶ Cerebral palsy is classified according to the main type of movement disorder involved.
- ▶ There are four main types:
 - ▶ Spastic Cerebral Palsy
 - ▶ Dyskinetic Cerebral Palsy
 - ▶ Ataxic Cerebral Palsy
 - ▶ Mixed Cerebral Palsy

Spastic Cerebral Palsy

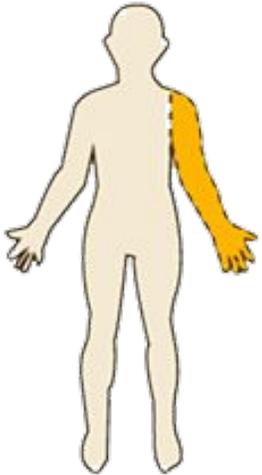
- ▶ This is the most common form of CP; worldwide, 80%-90% of individuals with CP have spastic CP.
- ▶ Spastic CP is characterized by increased muscle tone. The muscles appear tight and stiff, causing movements to be awkward.
- ▶ Caused by damage to the motor cortex.
- ▶ Spastic CP usually is described by what parts of the body are affected:
 - ▶ Monoplegia—mainly affects one limb, usually an arm.
 - ▶ Spastic diplegia—mainly affects the legs, with arms being less affected or not affected at all. May have trouble walking due to tight hip and leg muscles causing their legs to pull together, turn inward, and cross at the knees (*scissoring*).
 - ▶ Spastic hemiplegia—affects only one side of a person's body; usually the arm is more affected than the leg.
 - ▶ Spastic quadriplegia—affects all four limbs, the trunk, and the face. Individuals with spastic quadriplegia usually cannot walk.



TYPES

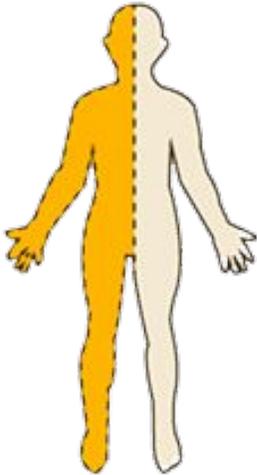
CEREBRAL PALSY

Monoplegia



Affects one limb, usually an arm.

Hemiplegia



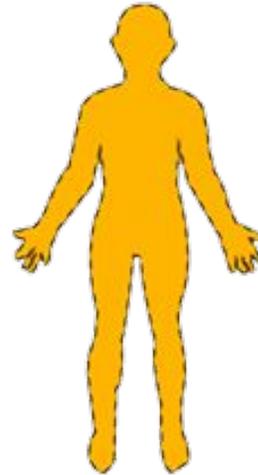
Affects one side of the body, including arm, leg, and trunk.

Diplegia



Affects symmetrical parts of the body (legs or arms).

Quadriplegia



Affects all four limbs

- ▶ 39% of individuals with spastic CP have spastic hemiplegia.
- ▶ 38% have spastic diplegia
- ▶ 23% have spastic quadriplegia

Dyskinetic Cerebral Palsy

- ▶ This is the second most common form of CP; worldwide, 6% of individuals with CP have dyskinetic CP.
- ▶ Also includes athetoid, choreoathetoid, and dystonic cerebral palsies
- ▶ Difficulty controlling the movement of the hands, arms, feet, legs, and, in some cases, the muscles of the face and tongue.
- ▶ Characterized by uncontrolled, slow, writhing movements. The movements can also be rapid and jerky.
- ▶ These movements cause difficulties sitting and walking. If the face and tongue are affected, sucking, swallowing, and talking can be difficult.
- ▶ These movements may increase during times of emotional stress and disappear during sleep.
- ▶ Muscle tone can fluctuate from too tight to too loose from day to day and even during a single day.
- ▶ Arises from damage to the Basal Ganglia.



Ataxic Cerebral Palsy

- Worldwide, 5% of individuals with CP have ataxic CP.
- Characterized by shaky movements.
- Affects balance, coordination, depth perception, and the sense of positioning in space.
- May cause the individual to
 - be unsteady when walking and walk with a wide-based gait with the feet far apart.
 - have difficulty with quick movements or precise movements such as writing and buttoning
 - have difficulty controlling their hands or arms when reaching.
 - have an intention tremor in which the beginning a voluntary movement, such as reaching, causes a trembling that affects the body part being used and then worsens as the individual gets nearer to the desired object.
- Arises from damage to the Cerebellum.



Mixed Cerebral Palsy

- ▶ Some individuals demonstrate symptoms of more than one type of CP.
- ▶ The most common type of mixed CP is spastic-dyskinetic CP.
- ▶ Other combinations are also possible.

Diagnosis

CP is usually diagnosed during the first or second year of the child's life. If a symptoms are mild, it can be difficult to make a diagnosis until the child is a few years older. Parents are often the first to report that their child is not developing motor skills normally.

The early signs of CP vary greatly because there are many different types and levels of CP. The main sign is a delay reaching motor or movement milestones.

The following are some other signs of possible CP:

► **3 to 6 months of age:**

- Head falls back when picked up
- Feels flaccid, relaxed or floppy (hypotonia or decreased muscle tone). Sometimes, the infant has an early period of hypotonia that progresses to hypertonia after the first 2 to 3 months after birth.
- Feels stiff or rigid (hypertonia or increased muscle tone)
- Seems to overextend the back and neck when cradled in someone's arms
- Legs stiffen and cross (scissor) when picked up

Diagnosis continued

The following are some other signs of possible CP:

In a baby older than 6 months of age:

- Doesn't roll over
- Unable to bring hands together
- Has difficulty bringing hands to mouth
- Reaches out with one hand while keeping the other hand fisted

▶ **In a baby older than 10 months of age:**

- Crawls in a lopsided manner
- Does not crawl on all fours but instead scoots around on buttocks or hops on knees

Diagnosis continued

- ▶ Diagnosing CP at an early age is important and can take several steps:
 - Developmental monitoring - The child's growth and development are tracked over time. If any concerns are raised, then a developmental screening test is given.
 - Developmental screening may consist of parent interviews or questionnaires and other tests that the doctor may give to the child. If any concerns are raised, then the doctor will make referrals for developmental and medical evaluations.
 - Developmental and medical evaluations- The goal of these evaluations is to diagnose the specific type of disorder. Developmental evaluations can be performed by the primary care doctor or by a specialist including developmental pediatricians, neurodevelopment pediatricians, child neurologists, pediatric physiatrists and pediatric rehabilitation doctors.

Diagnosis continued

Besides testing motor skills, physicians will look at:

- The medical history of the mother and infant, test the infant's reflexes and look for early development of hand preference. (Infants with spastic hemiplegia may develop a hand preference much earlier than other infants since the hand on the unaffected side of their body is stronger.).
- Other disorders that can cause movement problems will be ruled out.
- Further tests may be ordered such as:
 - Computed tomography or CT which creates an anatomical picture of the brain's tissues and structures.
 - Magnetic resonance imaging or MRI which uses a magnetic field and radio waves and provides a better picture than CT of structures or abnormal areas located near bone.
 - Ultrasonography which bounces sound waves off the brain and uses the pattern of echoes to form a picture of its structures. Although it is less precise than the others, this can be used in infants before the bones of the skull harden and close. is less expensive and does not require the infant to be still for long periods of time.
- Physicians may also look for other conditions that are linked to CP including seizure disorders, intellectual disability, and vision, hearing, or speech problems.

Other Health Conditions- Many individuals with cerebral palsy also have at least one co-occurring conditions such as:

- ▶ Abnormal sensation and perception-3 in 4 children who have CP experience increased pain
- ▶ Vision impairment- 1 in 10 has a severe vision impairment
- ▶ Hearing impairment- 1 in 25 has a hearing impairment
- ▶ Speech disorder-1 in 4 children with CP are nonverbal
- ▶ Seizures/epilepsy- 1 in 4 has epilepsy
- ▶ Autism spectrum disorder
- ▶ Intellectual disability or learning disability-affects 1 in 2
- ▶ Feeding difficulties- 1 in 15 require non-oral feeding

Other Health Conditions Continued

- ▶ Difficulty with bladder and bowel control- 1 in 4 children with CP has a bladder control problem
- ▶ Respiratory difficulties due to postural difficulties
- ▶ Skin disorders such as pressure sores
- ▶ Changes in the spine such as scoliosis
- ▶ Joint problems such as contractures
- ▶ Behavior problems-1 in 4 children with CP has a behavior disorder.
- ▶ Sleep problems- 1 in 5 has a sleep disorder
- ▶ Hip displacement- affects 1 in 3

Treatment and Therapies

- ❖ While there is no cure for cerebral palsy, there are many treatments and therapies that can improve an individual's daily functioning.
- ❖ Treatment strategies will depend on a person's specific symptoms, their individual needs and may include both non-surgical and surgical options.
- ❖ Without treatment, an individual who has CP can deteriorate physically.

Early Intervention

- ❖ It is important to begin a treatment program early, and treatment should include a team of health professionals to help the child reach their full potential.
- ❖ For the first 1 to 2 years of age, physical therapists and occupational therapists target head and trunk control, rolling, and grasping. These early and aggressive treatments may help to improve function of the child's nervous and musculoskeletal systems.

Treatment and Therapies: Non-Surgical Options

- ▶ Assistive devices include leg braces, arm braces, splints, speech generating devices, wheelchairs and other positioning devices
- ▶ Physical therapy
- ▶ Occupational therapy
- ▶ Speech Therapy
- ▶ Recreational Therapy
- ▶ Medications can lessen muscle tightness and improve functional abilities, decrease pain, control seizure and manage complications related to spasticity. Medications may include:
 - ▶ Oral muscle relaxants such as baclofen, Zanaflex, Valium or Dantrium to relax muscles.
 - ▶ Muscle or nerve injections of Botox may be used to treat tightening of a specific muscle. These injections usually need to be repeated every three months.

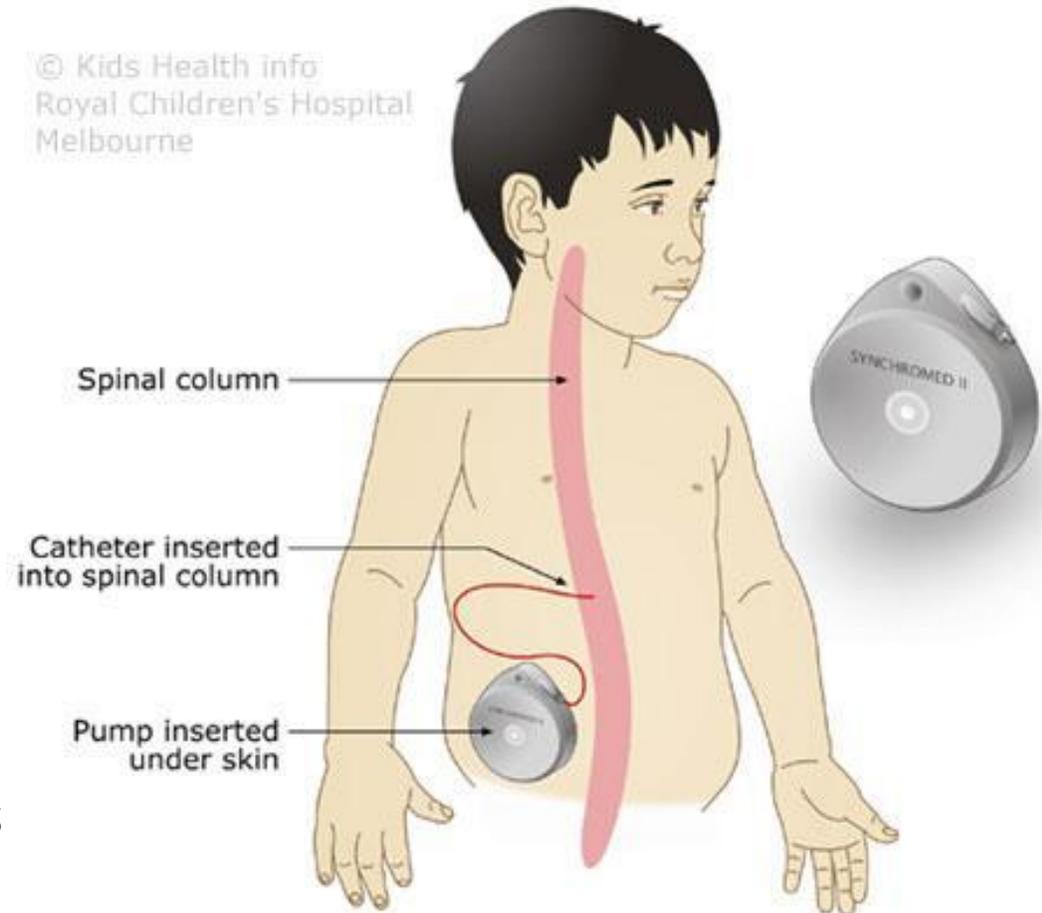


Treatment and Therapies: Surgical Options

Surgery may be needed to lessen muscle tightness or correct bone abnormalities caused by spasticity. These surgeries may include:

- ▶ Orthopedic surgery-to place arms, legs, hips or the spine in a correct position due to severe contractures or deformities. Surgical procedures can also lengthen muscles and tendons. These surgical corrections can ease pain and improve mobility.
- ▶ Surgical placement of a baclofen pump- The pump is implanted under the abdomen skin and the baclofen is pumped into the spinal cord with a tube.
- ▶ Selective dorsal rhizotomy -If other treatments haven't helped, surgeons may cut the nerves to specific muscles to relax the muscle and reduces pain. This can cause numbness.

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Melbourne



Education

- ▶ All children who have disabilities are assured of both early intervention and school-aged services through the Individuals with Disabilities Education Act (IDEA).
- ▶ Early intervention services are designed to help babies and children who are behind in their development from birth through 36 months of age.
- ▶ School services are guaranteed for school-aged children ages 3 through 21 years of age.



Cerebral Palsy and Adulthood

- ▶ The life expectancy for adults with CP is about the same as that of the general population due to medical advancements.
- ▶ Secondary to their cerebral palsy, adults often have higher than normal rates of other medical conditions such as hypertension, incontinence, and bladder dysfunction. Scoliosis is also likely to worsen after puberty because bones have matured.
- ▶ In a study by Dr. Gregory Liptak, it was reported that adults with CP participate less in social interactions, employment, marriage and independent living as compared to the overall population

Cerebral Palsy and Adulthood

- ▶ Adults with CP may live independently, semi-independently, or with complete dependence. With the right supportive networks, people with moderate to severe CP have been able to live independent lives with their families, outside their family's home, with assistance or without assistance.



Employment

- ▶ Under the Americans with Disabilities Act (ADA) of 1990, all individuals with a mental or physical impairment are entitled to equal opportunities and independence. This means that individuals cannot be discriminated against in job interviews, school applications or in the workplace due to their disability.
- ▶ Individuals with CP may experience difficulties in the workplace because daily activities, such as talking or walking, can be demanding and can impact their performance in the workplace.
- ▶ Employers are required to provide “reasonable accommodations” for employees with disabilities. These accommodations include:
 - Adjusted work schedules
 - Frequent rest periods
 - Working within proximity to restrooms, office machines, parking lots, etc.
 - Use of a service dog
 - Use of a personal care attendant
 - Assistive technology
 - Telephone assistance devices
 - Writing or typing aids/grips
- ▶ By understanding their rights and the best ways to manage their CP, individuals can pursue their dreams of employment.

The Most Common Challenges for Adults with CP:

- Premature aging-Due to the extra stress CP puts on their bodies, the majority of individuals with CP will experience some form of premature aging by the time they reach their 40s.
- Walking-25% of adults with CP who walked as children will lose this ability as they get older due to osteoarthritis and degenerative arthritis.
- Swallowing disorders which may be caused by damage to the nervous system, head or neck.
- Post-impairment syndrome is a combination of pain, fatigue, and weakness due to muscle abnormalities, bone deformities, over-use syndrome, and arthritis. When walking and moving, adults with CP may use three to five times more energy than able-bodied adults.
- Mental health issues-The most common mental health issues found in adults with CP are depression and anxiety disorders. The increased depression appears to be related to how well they cope with their disability and not as much due to the severity. Mental health is impacted by the amount of emotional support someone has, how successful they are at coping with disappointment and stress, and if they have an optimistic outlook about the future.
- Workplace challenges-As individuals with CP reach middle age, the daily challenges of the workplace are likely to increase. Accommodations such as an adjusted work schedule, assistive equipment, or frequent rest periods may be needed so they may continue working.

“As a person with cerebral palsy who walks with crutches, people have the assumption that I’ve had to overcome a lot of obstacles in my life because of it, and to some degree, I have. However, the most difficult obstacle to overcome is other people’s perception of who a person with a disability is.”

-Greg Walloch, comedian and storyteller with cerebral palsy

“Talking to people is important to me as someone who has cerebral palsy. I know what it's like to have people not talking to me because they are scared they would ask the wrong question, but I would rather have an honest dialogue as long as it comes from an honest place.”

-Zach Anner, American comedian, actor, and writer with cerebral palsy

“Look past the disability and see the person. If you have questions, ask them. Be patient because speech may be hard to understand, but carry on a conversation. Just because they’re difficult to understand doesn’t mean they don’t have something to say.”

-Dr. Gary Edwards, United Cerebral Palsy Birmingham executive director

Click on the link to learn more:

<https://youtu.be/ysn-g8VHCsQ>

Cerebral Palsy and Equine Assisted Services (EAS)



Click on the link to hear more about the impact of EAS.

<https://youtu.be/ZMcB1OPDsGA>

PATH Intl. Precautions and Contraindications for Cerebral Palsy



Professional Association of Therapeutic
Horsemanship International

Precautions:

- ▶ If the CP is spastic type affecting the legs and trunk, sitting astride may be difficult and hip alignment may become compromised (see Surgery, Medications, Skin Integrity, Spinal Curvature, Hip Subluxation/Dislocation).
- ▶ In all types, communication may be difficult (see Communication Disorders).
- ▶ If head/neck control is problematic, the participant may require direct treatment by a therapist (see Head/Neck Control).

Contraindications:

- Poor head control
- A physical/occupational therapist or primary care physician should evaluate persistent primitive reflexes and if present equine-assisted services are contraindicated.

Considerations for Mounted Activities:

- ▶ Some riders may have difficulty finding an appropriate fitting ASTM-SEI helmet, and an alternative helmet may be needed. Be sure to follow the PATH Intl. Guidelines for Alternative Helmet Use.
- ▶ Some individuals with cerebral palsy are nonverbal or have minimal verbalizations and may not be able to communicate pain or discomfort. Traditional communication may be difficult, or they may require more time to communicate their needs and ideas. Work with the participant's family, caregiver and Speech Language Pathologist, if available, to establish a means of communication.
- ▶ The participant may need an alternative mount, such as a crest or lift mount.
- ▶ Positioning starts with the pelvis. It may be harder to position the pelvis in a neutral position because the participant's tone may affect the range of motion of the pelvis. Spasticity may affect one hip more than the other causing one hip to be more forward resulting in a twist in the pelvis.
- ▶ Individuals who have hip disorders, such as dislocated, subluxed or unstable hips, may not be able to participate in mounted activities safely.
- ▶ If the participant has limited range of motion in their hip joints, a too wide horse will cause the hips to rotate internally, resulting in the participant sitting in a posterior pelvic tilt with their legs rolled out.

Considerations for Mounted Activities Cont.:

- ▶ Another precaution for mounted EAS is atypical spine curvature, such as scoliosis.
- ▶ Do not use any type of prop to support a participant's head. A participant who has limited head control or who has significantly decreased trunk control may be more appropriate working with a therapist trained in hippotherapy principles than in therapeutic riding lessons.
- ▶ Be aware of skin irritation or skin breakdowns, especially for participants who have limited mobility.
- ▶ Feeding tubes, such as g-tubes, are considered a precaution for mounted EAS.
- ▶ It is highly recommended that therapeutic riding instructors consult with a therapist trained in hippotherapy principles when working with individuals who have moderate to severe CP.

Considerations for Mounted Activities Continued:

- ▶ Train volunteers to assist correctly. Consider if the participant would extend their arms for protection during a fall before removing sidewalkers.
- ▶ Many participants can wear their AFO's or ankle/foot braces while riding.
- ▶ Be aware of the temperature—it may decrease endurance.
- ▶ Utilize rest periods if the participant fatigues easily.
- ▶ For unbalanced participants, sudden transitions and tight circles should be avoided.





Considerations for Mounted Activities Continued:

- ▶ The participant may require more time to coordinate and perform motor movements. Be sure to allow them this extra time to do tasks as independently as possible.
- ▶ Trotting may be contraindicated if it has a negative effect on the participant's tone or alignment and if the participant has decreased head or trunk control.
- ▶ Pain, excessive tone or unwanted posture changes should not be the result of riding.

Pathological Reflexes

- ▶ Pathological Reflexes may affect body position and body control, cannot be controlled by the participant and are triggered by movement or responses to the environment.

Tonic neck reflex is often called the fencing reflex. When their head is turned to the right or left, the corresponding arm extends while the other arm bends next to their head.



Pathological Reflexes continued

- The legs cross or scissor when a participant is lifted under the arms.
- The arms bend and the legs straighten when the participant's head falls forward.
- The participant attempts to raise their head, but it falls backward and their whole body straightens.
- When the participant is lying prone over the horse's barrel, their entire body bends.
- The participant attempts to point their toes, and their hips and legs scissor.
- The participant looks to the right, and their right arm and leg straighten while their left arm and leg bend.
- The participant startles, and their head, arms and legs extend.

Pathological Reflexes Continued

What to do for the mounted participant:

- Consult a therapist for suggestions to avoid triggering these reflexes.
- Try to help the participant relax through non-direct methods such as singing and fun activities. Telling them to relax will probably actually cause them to tense.
- Do not expect or encourage the participant to accomplish tasks that increase reflexes.
- Encourage an upright seat position sitting on the seat bones to create a deeper seat. Watch for posterior pelvic tilt which will round the back.
- Stop the session before the participant gets tired so you end when they are at their peak performance.
- For some individuals, these reflexes cause a safety hazard while participating in mounted EAS. The risks may outweigh the benefits of therapeutic riding for these individuals.

Tips for Participants with Spastic Cerebral Palsy:

- ▶ The participant may need to sit astride a barrel before riding for about 10 minutes to encourage stretching and relaxation.
- ▶ Mount participants with increased muscle tone first to provide extra time to warm up muscles and improve ROM of joints. An additional assistant may be required to help prevent the participant's body from going into extension
- ▶ The participant may need to sit on the horse at a halt after mounting to adjust to sitting on the horse and to allow the horse to relax under the participant's weight. Use mental images to help the individual stretch and relax, for example "Imagine there are strings tied to your legs pulling them gently down toward the ground".
- ▶ Begin with the participant's pelvis in a neutral position then focus on the trunk and legs.

Tips for Participants with Spastic Cerebral Palsy cont:

- ▶ First, allow the horse's movement to reduce the participant's tone, then gently make position changes and adjust stirrups.
- ▶ Having the participant breathe deeply will help relax their muscles.
- ▶ The participant should have as much control of their posture as possible; decreasing their control will increase their tone and stiffness.
- ▶ Making gentle posture and position corrections throughout the session will help facilitate the participant's symmetry, balance, muscle function and muscle memory, but remember, posture cannot be forced.
- ▶ Encourage correct head and neck alignment. This will promote better balance and help with movement of the arms and upper trunk.
- ▶ If an individual is unable to sit comfortably on the horse due to spasticity in their legs, they may not be an appropriate candidate for mounted therapeutic riding lessons.

Tips for Participants with Spastic Cerebral Palsy Cont.:

- ▶ Move arms and legs slowly and gently. Pulling on the muscles will make them tighter and could possibly tear the muscles or tendons, cause pain or cause hip dislocation.
- ▶ Be aware that stirrups may elicit the plantar reflex in the ankle which will cause the heels to rise.
- ▶ The participant may need a longer warmup. Start with the horse's casual walk and progress from straight lines to gradual half circles and circles during the warmup to help the muscles relax.
- ▶ If the participant has a weaker side, track away from this side.
- ▶ Dismount participants with increased muscle tone first to avoid fatigue.

Horse Selection and Spastic Cerebral Palsy

- ▶ Choose a horse with a smooth, steady, rhythmic gait. Transitions should be smooth also.
- ▶ The horse should have a narrow to medium width. It should be narrow enough to not overstretch the participant's muscles but wide enough to give their pelvis a base of support.
- ▶ The horse's movement will stretch and relax the participant's muscles naturally.
- ▶ Avoid a horse with an elevated trot which may elicit the plantar reflex in the ankle which will cause the heel to rise.
- ▶ The horse should respond to the participant's aids, especially voice aids and neck reining.
- ▶ The horse should not react to the participant's increased muscle tone or abrupt, jerky or rough aids that the participant may involuntarily use.
- ▶ The horse should not lean into the rein contact which will pull on the participant's hands; this could cause stiffness in the participant's arms and back and weaken their position.

Tack Selection and Spastic Cerebral Palsy



- ❖ Due to possible abrupt, jerky or rough rein aids, choose a bitless bridle, reins attached to the halter, neck reining, or adaptive reins. Most participants with spastic CP will use gross motor movements to rein.
- ❖ A close contact English saddle or pad/surcingle with or without stirrups will bring the participant into close contact with the horse. This will help minimize overstretching the leg muscles and stressing the hip joints and knees.
- ❖ Stirrup leathers may need to be lengthened after the warm-up if the participant has increased tone in their legs.
- ❖ Devonshire stirrups or rubber bands to support the rider's foot position may help with participants who have tight heel cords.

Tips for Participants with Dyskinetic Cerebral Palsy

- ▶ Due to the fluctuation in tone, consult with therapists for providing support, mounting and dismounting techniques and communication.
- ▶ For mounting, try to progress to the participant using a stirrup to mount. This will help maintain their joint flexion and stability.
- ▶ Target developing skills that are easily achievable to help the participant be successful.
- ▶ Use task analysis and skill progression when teaching.
- ▶ Avoid too much stimuli.
- ▶ To help minimize muscle fluctuations, aim for correct joint flexion, joint compression, weight bearing and riding position.

Horse Selection and Dyskinetic Cerebral Palsy

- ▶ Choose a horse with a calm demeanor.
- ▶ The horse should have a smooth and consistent gait and the ability to make gradual transitions.
- ▶ The horse must be tolerant to the participant's inconsistent movements.
- ▶ The horse's width should fit the participant's age, size and balance requirements.
- ▶ Head tossing or tail switching may cause unwanted muscle responses in the participant.
- ▶ The horse should neck rein, respond to verbal aids and be accepting of different participant positions.

Tack Selection and Dyskinetic Cerebral Palsy

- ▶ Choose Western, Dressage, Trail or Australian saddles that provide a base of support and a sense of security.
- ▶ Use a bitless bridle, reins attached to the halter, neck reining or adaptive reins due to possible abrupt, jerky or rough rein aids.
- ▶ A neck strap, hand hold or solid pommel bar will help the participant stabilize their hands or position.
- ▶ Exercise weights on the wrists may help stabilize the arms.
- ▶ If the participant cannot keep their feet in the stirrups, use a covered stirrup or rubber bands to secure their feet.

Click on the link to learn more:
<https://youtu.be/XXrIEtaZC8w>

Tips for Participants with Ataxic Cerebral Palsy:

- ▶ Provide deep pressure through heavy work such as carrying heavy props, grooming and carrying tack.
- ▶ Due to their low muscle tone, their shoulder or hip joints may sublux if the mount, dismount or position changes are not performed correctly. Do not pick the participant up underneath their arms.
- ▶ Be aware that the participant may have gravitational defensiveness and fear falling.
- ▶ Use school figures and patterns that work both sides of the participant's body equally. These will also help them increase their ability to re-right themselves against gravity.

Tips for Participants with Ataxic Cerebral Palsy:

- ▶ Be sure the support from sidewalkers is provided equally to both sides of the participant's body. Sidewalkers will need to stabilize the participant's leg position when stirrups are not used.
- ▶ Vary the horse's stride lengths to help increase the participant's balance and stamina.
- ▶ Gait transitions will help strengthen postural corrections and stability and will improve muscle tone and muscle memory.
- ▶ Provide needed support while still encouraging the participant to be as independent as possible.

Tips for Participants with Ataxic Cerebral Palsy:



- ▶ Choose a medium to wide based horse. This will provide a wider base, support balance and stabilize the participant's hip joints.
- ▶ Note: If a participant has narrow hips, do not choose a too wide horse. It will place stress on their hip adductors.
- ▶ For participants have gravitational defensiveness and a fear of falling, a shorter horse *may initially be needed*.
- ▶ A horse with a concussive gait will help provide proprioceptive input.
- ▶ The horse should respond to neck reins, voice aids or artificial aids.

Horse Selection and Ataxic Cerebral Palsy

- ▶ Choose a medium to wide based horse. This will provide a wider base, support balance and stabilize the participant's hip joints.
- ▶ Note: If a participant has narrow hips, do not choose a too wide horse. It will place stress on their hip adductors.
- ▶ For participants have gravitational defensiveness and a fear of falling, a shorter horse may initially be needed.
- ▶ A horse with a concussive gait will help provide proprioceptive input.
- ▶ The horse should respond to neck reins, voice aids or artificial aids.

Tack Selection and Ataxic Cerebral Palsy



- ▶ Use a saddle with a supportive seat or a pad and surcingle with or without stirrups.
- ▶ Watch for pressure sores from the tack.
- ▶ A neck strap, hand hold or solid pommel bar will help the participant stabilize their hands and their body position.
- ▶ Ladder reins may help the participant rein better.

✓ Solid Rung Ladder Reins from freedomrider.com



Click the link for some final thoughts:
<https://youtu.be/lPW8JGmFuHc>

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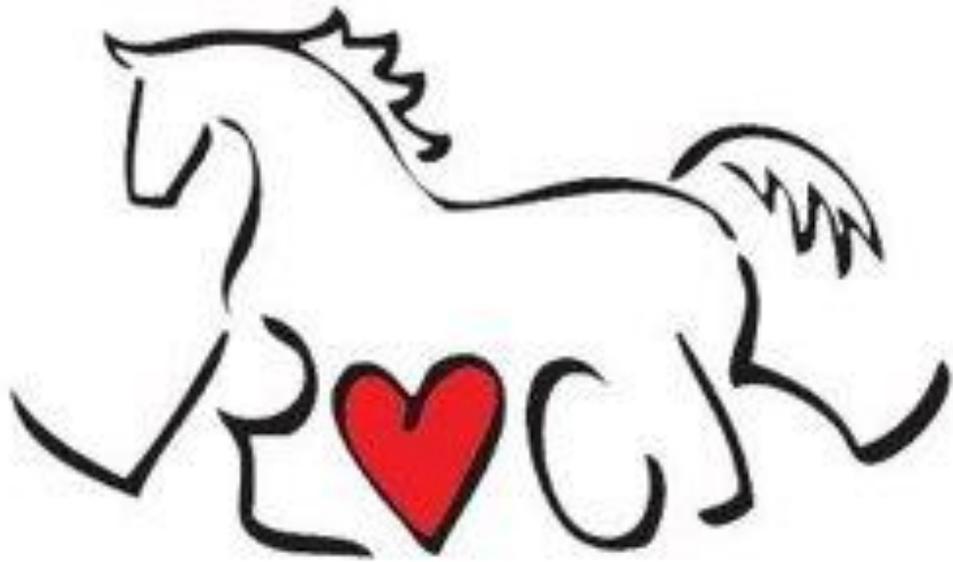
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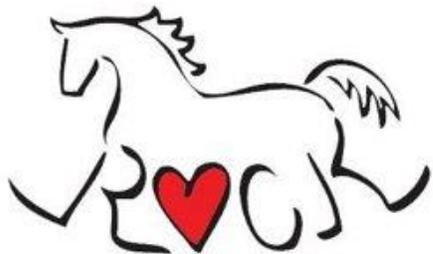
Healing Thru Horses

A special Thank You
to our participants
and their families
who so willing shared
their stories with us.



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