

Professional Association of Therapeutic Horsemanship International

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PRECAUTIONS AND CONTRAINDICATIONS

Achondroplasia

Individuals born with achondroplasia, formerly referred to as ‘dwarfism,’ are short in stature (42” to 56”) due to shortening of the upper arm and leg bones primarily. Other bones are affected though the trunk is long in comparison to the length of the limbs. Due to the limit of bony development, restricted range of motion at the joints with associated neurologic problems are common. Pseudo-achondroplasia and hypochondroplasia are two similar diagnoses that also present with shortness of stature, though they have different presenting symptoms.

Precaution:

- Positioning on the equine may be difficult due to short limbs. Adapted tack may be necessary.
- Weakness of the extremities and/or bladder control problems may be associated with spinal stenosis and herniated disc (see Spinal Instability/Abnormalities).
- Spinal stenosis (decreased spinal mobility). Special care is needed to determine if the equine movement will cause damage to the areas of remaining mobility.

Age and Developmental Related Considerations

Children under two years are inappropriate for mounted activities because their structural and neurologic development is inadequate to organize the sensory input from the equine or to accommodate its movement. While the fontanel is still open, this puts the child at risk similar to those with a cranial defect. Infants and young children often do not have adequate head control to wear a helmet, and/or helmet fit may be a problem. There is research to indicate that because of the immaturity of the young spine, repeated stress such as bobbing of the child’s head while on the equine at a walk may lead to micro trauma of the cervical spine. A quick movement of the equine, even a small misstep, carries the risk of a whiplash type effect for the young child with poorly developed head control. The child without developmental delay will not display mature gait patterns with respect to pelvic movement until the age of three. Working with the equine to influence the child’s gait prior to this age may not be appropriate. Sitting astride a large equine for a small child has the potential to stress the hip joints, potentially dislocating at the hip. **Because there are many unknown issues, it is strongly recommended that a therapist trained in hippotherapy provide direct treatment to children two to four years of age who participate at Professional Association of Therapeutic Horsemanship International Centers.** Keep in mind that these age guidelines are based on children without developmental difficulties. Children with developmental delay will have a younger developmental age than their chronological age. Always use caution when determining the readiness of a young child to safely benefit from equine-assisted activities.

There are no upper age limits for participation at a PATH Intl. Center. However, the older participant may be more likely to have health challenges, and therefore a careful health history, including medication review, is essential. Common health issues that are found elsewhere in this document might include: heart conditions, respiratory compromise, fragile skin/skin integrity, osteoporosis, diabetes, sensitivity to environmental factors such as heat, cold or allergens, and fatigue/poor endurance.

Precaution:

- Children with developmental levels (gross motor skills) below four years of age may be unable to safely accommodate equine movement; mounted activities should be closely monitored and evaluated by the instructor/therapist for safety/poor head control.

Contraindication:

- All children less than two years old.

Allergies

An allergy is a hypersensitive state acquired through exposure to a particular allergen. Re-exposure then causes an exaggerated reaction. Professional Association of Therapeutic Horsemanship International Centers need to be concerned with allergies to bee stings, hay, animal dander, molds, dust and the PATH Intl. Center's surrounding environment. Also, be aware of latex allergies and the equipment a participant may come into contact with, such as latex gloves for emergencies, vet wrap, rubber rings or reins. Know where latex is at your center. Information from the participant's medical history form is particularly important for allergies to bee stings, medications and latex so the participant receives prompt and correct treatment in an emergency. (See also Medication - Photoallergy)

Whether an allergy is a precaution or contraindication to equine activities depends on the participant's tolerance, efficacy of medications, accurate documentation of the known allergies and proximity to emergency medical care.

Precaution:

- Document known allergens.
- Know access to treatments/methods of care if an allergic reaction should occur.

Contraindication:

- If the allergic reaction from the equine environment is significant enough to cause a loss of function or discomfort in other environments, such as home or work
- If a severe allergy is present and access to emergency care is not available

Amputations

A limb, or part of a limb, may be surgically removed due to disease or due to trauma. Medical problems that caused the need for the amputation may have related precautions or contraindications (see Diabetes). Be familiar with the complete medical information. The participant may experience pain in the existing limb or in the area where the limb had been (phantom pain). Pain may be related to the position of the limb or from pressure to the area.

Consideration should be given to mounted activities with or without a prosthetic device. The device may help to equalize weight on either side of the equine and may help stabilize the participant. Some devices may not be able to be positioned well so that they stay in place or so they do not aggravate the equine. Consider the need for the prosthesis when off the equine.

Precaution:

- Position adequately regarding potential for skin integrity/pressure problems (see Skin Integrity) and for pain.
- Riders with hemipelvectomy will require modifications to the saddle/sitting surface.

Contraindication:

- Lack of skin integrity on the weight-bearing surface or surfaces that come into contact with the equine or equipment

Arthritis – Rheumatoid Arthritis (RA), Osteoarthritis (OA)

There are several types of arthritis and rheumatic diseases that affect the integrity of the joints in various ways. The common results may be pain, inflammation, stiffness, joint degeneration and eventual functional loss. These conditions may affect adults or children. Exacerbations are not uncommon and may present periods of time for which activities should be curtailed. Commonly recommended is gentle exercise, generally without impact or weight bearing, to strengthen the muscles around the joint without further inflammation. Additional treatment may consist of medications, orthotics or splinting, rest during periods of exacerbation and/or surgery such as joint replacements, fusion or fixation. Please see these other categories for additional information.

Precaution:

- Pain, swelling or inflammation of the joints lasting beyond the activity time
- Position with adequate support to the joints involved and with the least strain

Contraindication:

- Exacerbation of the condition with increased pain and inflammation
- Following surgery or exacerbation without a release from the MD allowing return to equine-assisted activities
- Pain or inflammation that interferes with functional abilities

Arthrogyrosis

Arthrogyrosis describes a condition at birth resulting in multiple joint contractures, or joints with significantly limited range of motion. In classic cases, the hands, wrists, elbows, shoulders, hips, knees and feet are affected. In some cases all of the joints are affected. Most often, weakness accompanies the contractures. Stretching, splinting and sometimes surgery are used to correct the deformities. (See Equipment, Surgery)

Precaution:

- If the hip and knee joints allowing positioning on the equine have limited range of motion

Contraindication:

- If the contractures prevent the participant from being safely positioned on the equine
- If the activity produces significant or prolonged pain
- If surgery has occurred and the physician has not yet released the participant

Asthma

Asthma is an allergic condition that causes shortness of breath, wheezing and/or coughing. The person may have chronic daily symptoms, or be prone to sudden asthma attacks. Onset may be due to external (environmental) or internal (stress, health) triggers. The existence of other allergies may predispose onset of asthma. With a diagnosis of asthma, the center should document the following:

- Frequency of attacks
- Average duration of attacks
- Known triggers to wheezing (bronchospasm) including allergens, cold and/or exercise
- Current medication usage, such as bronchodilators and steroids
- Known behavioral response during attacks (e.g., panic or anxiety)
- Emergency treatment plan including assurance that there is access to medication (i.e., medihalers)

Precaution:

- The equine environment may present asthmatic triggers that had not been previously identified

Contraindication:

- Poor accessibility to emergency medical care
- Worsening of condition
- High probability of airway closure

Atlantoaxial Instability (AAI) in Down Syndrome

Atlantoaxial instability (AAI) has been described as instability, subluxation or dislocation of the joint between the first and second cervical vertebrae (atlantoaxial joint). Instability of the joint is generally due to poor muscle tone and ligament laxity that is common with **Down syndrome**, less common with other disorders. The problems that may arise with a lax joint is that there can begin to be pressure on the spinal cord, resulting in neurologic changes (see listing below). This is symptomatic AAI and will always require evaluation by an MD and restriction of high-risk activities such as riding or driving. This is a potentially paralyzing or life-threatening condition. Incidence of non-symptomatic AAI among persons with Down syndrome is reported to be 10 to 20 percent. Symptomatic AAI is much less frequently seen.

For the child from two to four years, please refer to the section on Age-Related Considerations, and always consult with the participant's pediatrician. A group of individuals with Down syndrome have been reported to demonstrate neurologic abnormalities with no visual AAI. The cause of these abnormal neurologic signs is unclear. **Neurologic signs always supercede radiographs and the presence of the neurologic disorder must be evaluated by a physician and is a contraindication for mounted equine activities.**

Note that it is not just a fall that is a potential for injury. For a participant with low muscle tone and laxity in the joints of the neck, the repeated movement of the equine or a sudden quick movement of the equine as with a spook or a misstep could be enough to cause problems. Please also see the section on Head/Neck Control.

Professional Association of Therapeutic Horsemanship International requires that all participants with Down syndrome have:

Prior to starting mounted activities:

- A. A yearly medical examination including a complete neurologic exam that shows no evidence of AAI.
- B. Certification by a physician that an examination did not reveal atlantoaxial instability or focal neurologic disorder.

NOTE: With continuation of mounted activities, annual certification from a physician must be completed specifying that the participant's physical examination reveals no signs of AAI or decrease in neurologic function.

The following conditions may also present AAI. Similar requirements should be considered by PATH Intl. Centers, and physicians should be consulted to rule out the presence of AAI.

- Congenital scoliosis
- Osteogenesis imperfect
- Achondroplasia
- Rheumatoid arthritis
- Neurofibromatosis

- Klippel-feil syndrome
- Morquio syndrome
- Larsen syndrome
- Spondyloepiphyseal dysplasia congenita
- Chondrodysplasia punctata
- Metatropic dysplasia (a rare syndrome that can present with AAI)
- Kneist syndrome (also can present with AAI)
- Odontoid abnormalities
- Os odontoideum
- Ossiculum terminale
- Third condyle
- Hypoplasia or absence of the dens
- Pseudoachondroplasia
- Cartilage-hair hyperplasia
- Ankylosing spondylitis
- Scott syndrome
- Infections of the head and neck
- Tumors
- Spinal trauma
- Steroid therapy

Atlantoaxial Instability/Neurologic Symptoms

- Change of head control
 - Torticollis/wry neck
 - Head tilt
 - Stiff neck
- Change in gait
 - Progressive clumsiness
 - Toe walking or scissoring
 - Falling
 - Posturing
- Change of hand control
 - Progressive weakness
 - Fisting
 - Change of dominant hand
 - Increasing tremor
- Change of bladder function
- Change of bowel function
- Increase of muscle tone (In Down syndrome, where hypotonia or low muscle tone is prevalent, increased muscle tone may not occur or be difficult to assess.)
- Fatigue

Precaution:

- Monitor for neurologic symptoms. Report changes to the family/physician and discontinue until cleared by the physician.

Contraindication:

- Children under the age of two
- Neurologic symptoms of atlantoaxial instability (see listing above)
- Positive neurologic clinical signs as noted by the physician
- Significant AAI measurement as determined by the physician
- Excessive head/neck instability with or without a helmet

Attention Deficit Hyperactive Disorder (ADHD)/Attention Deficit Disorder (ADD)

The essential feature of ADHD/ADD is a persistent pattern of inattention and/or hyperactivity and impulsivity that is more frequent and severe than is typically observed in individuals at a comparable level of development. (see Medication—Psychostimulants)

Precaution:

- Unpredictable behavior resulting from the disorder or the effects of medication

Contraindication:

- Extreme behaviors that make participation in the equine environment unsafe. Consider the size of the older child or adult who may be difficult to physically remove from an emergency situation. Consider the effects of the participant's behavior on the equine and the safety of the staff.

Autism Spectrum Disorders (ASD)/Pervasive Developmental Disorders (PDD)

The Autism Spectrum encompasses several varied diagnosis. There are Autism, Asperger, PDD-NOS (Not Otherwise Specified) and two rare diagnoses: Rett syndrome and childhood disintegrative disorder. These syndromes are characterized by varying degrees of impairment in communication skills, social interactions and restricted, repetitive and/or stereotyped patterns of behavior. Additional problems that may accompany these syndromes include: therapies to address physical, cognitive, behavioral, communication and/or sensory disorders; behavior management plans; restrictive diets; dietary supplements; medication to address dysfunctions such as seizures, inattention, hyperactivity, behavior disorders, anxiety or depression.

See topics such as Behavior Problems, Seizures, Medications, Rett Syndrome, Sensory Integrative Disorder and Communication Disorders for related issues.

Precaution:

- Wandering – a participant may be at high risk for getting lost and may wander away from caregivers or staff. The participant may not consider him- or herself lost or may hide from those searching for him or her. Staff should be cautious to ensure adequate supervision is available.
- Self-injurious behavior
- Poor safety awareness may put the participant at increased risk during equine-assisted activities; participant may not respond to “no” or tone of voice.
- Poor impulse control—participant may run away from staff, may run into parking lot or field with horses or may spontaneously dismount during mounted activities.
- Rigid adherence to routines may make changes difficult. A different horse, instructor or volunteer team may cause a behavioral meltdown and may make EAA or EAT contraindicated that day.
- Communication deficits—be sure to understand how the participant communicates prior to EAA; utilize the communication method that is familiar to the student.

Contraindication:

- The instructor/therapist is unable to evaluate a participant's pain/distress level.
- Increasing self-injurious behavior (before, during or after EAA or EAT)
- Aggressive behavior toward others or toward equine that is not managed through a behavioral plan
- Behavioral meltdown where participant is unable to be calmed prior to EAAT; EAA or EAT may resume on another day
- Participant does not dress appropriately for the weather in cases of extreme weather (e.g., winter in Maine and will not wear coat or gloves, Florida summer and participant will only wear thermal long sleeves and hooded coat). Participant may participate in EAA or EAT at other times of the year.
- Participant refuses to wear a helmet.
- Extreme tactile defensiveness or gravitational insecurity unless under direct treatment by a therapist with training in sensory integrative dysfunction

Behavior and Psychosocial Problems

Psychological disorders, physiological disorders that affect the brain and some medications may cause behaviors or states of mind that are inappropriate for equine-assisted activities and therapies. Maladaptive behaviors may include agitation, aggression toward people or animals, self-abusive behavior or any condition where the participant is dangerous to him- or herself or to others. Have in place appropriate staff and a plan to address inappropriate behaviors. Consultation with current caregivers (family and/or therapists), mental health professionals and the program director is essential to ensure that the Professional Association of Therapeutic Horsemanship International Center staff addresses the behaviors in a consistent manner. Almost all individuals respond better to praise than punishment, to clear structure and to the opportunity to participate in making choices.

• Oppositional Defiant Disorder (ODD)

In general, these individuals tend to defy those in a position of authority more often than is typical for their age or development. These are youth who tend to elicit control issues of the “you will, I won't” nature. When you find yourself in one of these situations, you have lost. More effective responses are likely to result from the use of active listening skills or providing choices such as “Would you rather wear your helmet and ride today or wear your helmet and groom the equine?”

• Conduct Disorder

Children with conduct disorders have difficulty following rules and recognizing the rights of others; problem behaviors may include bullying, physical aggression, stealing, cruelty to people or animals and destruction of property. Provide close supervision and do not give these individuals the opportunity to get in trouble by being unsupervised.

• Attention Deficit Disorder With/Without Hyperactivity

People with these disorders show lack of impulse control, excessive distractibility, difficulty staying on task, risk-taking behaviors, poor sense of personal space, difficulty taking turns and difficulty following multistep instructions.

Precautions for Behavior and Psychosocial Problems:

- Physically dangerous behaviors such as striking, biting, kicking or running away
- History of maladaptive or manipulative behaviors such as animal abuse, fire setting or perpetrating physical, sexual or emotional abuse

Contraindications for Behavior and Psychosocial Problems:

- Serious alterations in mental status including delirium, dementia, dissociation, psychosis or severe confusion
- Active conditions with behaviors of fire setting, self-abuse, animal abuse, sexual abuse, suicidal thoughts or aggression without direct support of a mental health professional.
- Participants whose behavioral outbursts are unsafe and/or unable to be controlled

Programs without a mental health professional on site or for consultation available should consider referring a client for assessment of mental health issues if they should arise.

Brain Injury (BI)

The term brain injury may include vascular, acquired brain injury, formerly known as traumatic brain injury (TBI), near drowning syndrome (or near fatal submersion syndrome), shaken baby syndrome and tumors. A brain injury may be primary, the result of a trauma or disease that directly affects the brain; or secondary, a result of another condition or treatment that in turn affects the function of the brain. A thorough medical history is necessary so that the cause and location of the brain damage is understood, in addition to other related problems. Because the brain controls all of our body functions, a brain injury can result in a variety of difficulties. Commonly seen are difficulties with movement, balance, communication, cognition, perception, sensation, vision, emotion and/or behavior. Acquired related medical problems may be seizures, heterotopic ossification, incontinence, contractures, skin integrity, fatigue/poor endurance, communication or behavior difficulties, to name a few. Surgeries are used to treat some of these problems. Be aware of medications participants may be taking.

Precaution/Contraindication:

- Behavioral impulsivity
- Changes in consciousness
- Poor judgment
- Dependent on the specific dysfunction(s) or treatment methods. See topics such as Heterotopic Ossification, Cranial Defects, Hydrocephalus, Stroke, Behavior, Skin Integrity, Medication, Communication Disorders, Surgery and/or Equipment for related information.

Cancer

Cancer is characterized by abnormal proliferation of tissue cells producing a tumor at the proliferation site, as well as metastases to other areas. The medical history should outline the participant's current status. If the cancer has been successfully removed or the condition is in remission, there may be no reason to curtail mounted activities. At the end stages of cancer, quality of life issues and the risk/benefit ratio for participation will need to be addressed with the entire treatment team and with the participant.

Precaution:

- Side effects of cancer, or of its many treatments, may include fatigue, weakness, loss of appetite, sensitivity to the environment, decreased resistance to infection (see Fatigue, Eating Disorders, Skin Integrity)

Contraindication:

- Cancerous bone tumor that weakens the bones
- If the risk of riding exceeds the potential benefit, and the rider is unable to make an informed decision to continue with the activity

Cerebral Palsy (CP)

Generally defined as damage to the brain around the time of birth. The cause of damage may, or may not, be apparent. Effects can range from mild to very severe and can interfere with physical, sensory and/or cognitive function. CP may affect one or more areas of the body, resulting in mobility, fine and gross motor, speech, swallowing and other functional impairment. There are several types of CP, including the spastic type (causing excessive muscle tension/stiffness), ataxic (difficulty planning movement) or athetoid type (erratic, uncontrolled movement). Often, there are elements of more than one type. The diagnosis will usually indicate the area affected and the presentation; for instance, a person with spastic quadriplegia has at least all four limbs involved with excessive muscle tension. Oftentimes, CP is associated with developmental delay of motor or cognitive function.

Precaution:

- 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).

Contraindication:

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

Chronic Fatigue Immune Dysfunction Syndrome (CFIDS)

CFIDS, also commonly known as chronic fatigue syndrome (CFS), is characterized by incapacitating fatigue (experienced as profound exhaustion and extremely poor stamina) and problems with concentration and short-term memory. It is also accompanied by flu-like symptoms such as pain in the joints and muscles, unrefreshing sleep, tender lymph nodes, sore throat and headache. Additional symptoms are common. Exercise is suggested on a case-by-case basis as activity can help or hinder symptoms.

Precaution:

- Slow, gradual increase of activity is indicated, avoiding fatigue

Contraindication:

- Fatigue caused by equine activity that lasts beyond the time of the activity and interferes with function

Communication Disorders

Communication disorders encompass difficulty with speech, language, voice and fluency. They can occur independently or in conjunction with many physical and/or cognitive disorders such as cerebral palsy, autism, stroke, Down syndrome, etc. Communication disorders may be divided into subtypes and it is possible for a participant to have more than one.

- Speech sound disorder (including articulation disorder, phonological disorders and apraxia of speech/verbal apraxia). Difficulty saying sounds in words correctly. This may include difficulty with pronouncing sounds, leaving sounds off words (e.g., “ain” for “rain”) or substituting another sound (e.g., “wain” for “rain”). Speech is not clear or precise.
- Expressive language disorder—difficulty formulating sentences or putting words together, word finding problems
- Receptive language disorder—difficulty understanding what is heard or read

Consult with parents/caregivers to understand the participant’s system of communication, such as hand signs, eye gaze or specific behaviors that convey messages.

Precaution:

- Poor receptive language in which the participant has difficulty understanding what is heard or read
- Use of an augmentative/alternative communication device (see Equipment)
- Severe difficulty with expressing needs or pain; frequent consultation with parents/caregivers/guardians regarding how a participant expresses feelings and needs is very important.
- Participants with poor language skills frequently use behavior to communicate feelings, desires, needs and wants. For example, a child may begin to squirm and yell while riding because he needs to use the bathroom and has difficulty otherwise making his needs known.

Coxarthrosis

Coxarthrosis is the degeneration of the hip joint and is characterized by the destruction of the joint cartilage and abnormal bone growth. It is accompanied by pain and stiffness, particularly after prolonged activity, and by decreased range of motion.

Contraindication:

- Mounted seated activities place extreme stress on the hip joint. The hip motion required for mounting, riding astride and dismounting could cause further injury to the joint or hasten the course of the disease.

Cranial Defects

This condition is characterized by the absence of a portion of the skull. The absence may be due to trauma, birth defect or craniectomy (surgical removal). The participant’s medical history needs to describe the reason, extent and current status of the deficit. The risk of seizures increases for individuals with cranial deficits (see Seizure Disorders).

Precaution:

- If an ASTM/SEI helmet for equestrian activities can completely cover the unprotected area without putting pressure on the area of the deficit
- Because of gradual cranial molding, which can occur over time, a periodic examination will be needed to check for appropriateness of fit of helmet and potential pressure points.

Contraindication:

- If an ASTM/SEI helmet for equestrian activities cannot offer complete protection to the head

Diabetes

Diabetes mellitus is a disorder in the metabolism of carbohydrates, which is caused by inadequate production or use of insulin. Diabetes insipidus is a disorder resulting from a deficient production of the hormone vasopressin and leads to similar symptoms of excessive thirst and urination. Diabetes may be associated with other serious medical conditions, such as low resistance to infections, ulcerations of the extremities, cardiovascular and kidney disorders, disturbances in electrolyte balance, eye disorders and disturbance of sensation.

An individual's diabetes needs to be medically under control before participating in equine activities. People with diabetes require a balance of activity level and food intake to control their diabetes, whether they take medication or not. Monitor participants for signs of metabolic imbalance. Refer to a first aid manual for signs and emergency treatment of insulin reaction and diabetic shock.

Careful prevention of skin breakdown is essential (see Skin Integrity). The skin should be monitored for areas of redness that persist for 15 to 20 minutes after mounted activities. Also, during these activities monitor the lower extremities for swelling and discoloration and look for areas with an absence or decrease in sensation. Don't rely on the participant for adequate feedback due to sensory changes.

Precaution:

- If sensation is absent or impaired (See Skin Integrity)

Contraindication:

- Uncontrolled diabetes and/or medically unstable conditions associated with diabetes
- Skin Integrity on the weight-bearing surfaces

Eating Disorders

- **Anorexia Nervosa**

Anorexic conditions are those of extreme weight loss due to an eating disorder.

- **Cachexia**

Extreme uncontrolled weight loss that may be seen in medical conditions such as cancer or AIDS

- **Bulimia Nervosa**

Bulimia is distinguished by bingeing and purging behaviors. Bulimic participants may exhibit mood swings, acting out, poor judgment regarding safety and secretive bingeing and purging behaviors.

Due to nutritional difficulty and changes in metabolism, secondary effects of any of these conditions can include decreased balance, weakness, decreased fleshy padding covering bony areas, increased chance of bruising, cardiac arrhythmia, decreased blood pressure, decreased judgment regarding one's safety and decreased endurance. Monitoring of electrolyte levels and energy expenditure by the medical professionals should be done to determine the appropriateness of physical activity for that participant. For those participants with eating disorders such as anorexia or bulimia, caution should be taken that these participants regard the rules/guidelines of the operating center. (See Skin Integrity, Fatigue/Poor Endurance, Behavior)

Contraindication:

- If electrolyte levels are significantly out of balance
- If adequate supervision of the participant is not available

• Obesity

Excessive weight problems may be a primary condition such as an eating disorder or congenital condition; or secondary to medical issues such as side effects of medication or thyroid dysfunction. In either case, safety of the participant, equine and staff are the major consideration.

Precaution:

- Poor endurance caused by breathing difficulties or circulatory problems (see Respiratory Compromise, Fatigue/Poor Endurance, Heart/Cardiac)
- Skin chafing or pinching (see Skin Integrity)

Contraindication:

- If the staff is unable to safely manage the participant in any situation, including an emergency dismount, and is at risk for harming themselves or the participant
- If safety or comfort of the equine is compromised during mounted activities potentially resulting in a fight or flight response, which in turn could harm the staff or participant

• Pica

A disorder that causes strong cravings for non-food items. Items eaten can include most anything, including dirt, clay or manure. The diagnosis is given only once this becomes a persistent behavior, lasting more than four weeks. Obvious difficulties are the ingestion of parasites, toxic substances or gastrointestinal upset. It is impossible to control the environment, so supervision is essential.

Contraindication:

- If adequate supervision is unavailable to ensure the participant will not ingest any non-food items

• Prader-Willi

Prader-Willi syndrome (PWS) is the most common genetic cause of life-threatening obesity in children. PWS typically causes low muscle tone, short stature if not treated with growth hormone. Incomplete sexual development and a chronic feeling of hunger that, coupled with a metabolism that uses drastically fewer calories than normal, can lead to excessive eating and life-threatening obesity. The food compulsion makes constant supervision necessary.

Equipment/Medical Devices

There are many pieces of equipment that a participant might need for improved function. These can include devices that are external removable and/or internal devices. Some examples of equipment seen at Professional Association of Therapeutic Horsemanship International centers may include:

External: eyeglasses, hearing aids, braces/orthotics for the trunk or for the extremities (see Spinal Orthosis), supplemental oxygen, suction (oral, tracheal), augmentative communication devices, etc.

Internal: cochlear implants, feeding tubes, tracheostomies, internal pumps (baclofen, morphine, insulin or other medication administration), shunts, pacemakers, mouthguards/retainers, indwelling catheter (suprapubic or urethral), ostomy or colostomy bags, etc.

Staff training and animal desensitization must be conducted with all specialized medical equipment.

Whenever a PATH Intl. center encounters a participant with any type of equipment, it is imperative that the center personnel consider the following:

- Determine the need for these devices during the equine activities. They may be essential, or they may not be needed prior to, during or after the activity. Consult with the participant, family or medical professionals to determine the benefits and risks of using some of the equipment during equine activities.
- Ensure that the staff is familiar with the device. Be sure they are aware of its presence and use by/for the participant. Always use caution when handling the participant. Alternative methods of mounting/dismounting and/or possible tack adaptations may be required to avoid disturbing the external port.
- Ensure that the equine is comfortable around the device—whether he may feel it or hear it, when it is functioning correctly or when it malfunctions (a tube delivering oxygen sounds very different when it is attached to the tank than when it comes loose).
- Know how to adequately protect the devices from the equine environment—dust, dirt, falls, shaking.
- Consider appropriate positioning during activities to avoid difficulty with the equipment (rider's leg position with braces, or lying down on the equine with a feeding tube or shunt). Select the horse with consideration for type of movement generated.
- Consider the effect of commonly used equine safety equipment with regard to the participant's equipment. For example, determine the effect of helmets on hearing aids, cochlear implants or shunts. Consider how a safety belt should be used with a feeding tube or internal pump mechanism present. Check stirrup size with lift shoes or orthotics.
- Be aware of safety concerns for the participant should the device malfunction (Can they function without the device? For how long? Is there a back up in case of emergency?)
- Have a safety plan in place for emergency dismounts. Never secure the equipment where it cannot be kept with the participant. Do not attach any equipment to the equine or tack e.g., oxygen tank.

Riding is Contraindicated if:

- Going without the equipment for a short period of time, in cases of malfunction, is dangerous to the participant's health.
- If the staff is uncomfortable or unsafe around the equipment.
- Participants have indwelling urethral catheters.

Fatigue/Poor Endurance

Poor endurance and/or fatigue are often associated with a disease process, such as multiple sclerosis, muscular dystrophy and post-polio syndrome (see Neuromuscular Disorders, Stroke, Respiratory Compromise, Eating Disorders). Look for a diminished ability to perform routine activities, increased pain, lack of good judgment, decreased attention span, change in behavior and/or a more rapid progression of the disease. Fatigue may continue well past the end of the equine activities session.

Climactic conditions can affect endurance. You may need to suspend equine activities during certain times of the year (such as hot, humid summer months). Encourage participants to recognize their own levels of exertion/fatigue and to monitor themselves.

Precaution:

- Be aware of the participant's level of activity prior to participation, and monitor the participant throughout the session for signs of fatigue. Use rest breaks, or changes of activities to avoid over-exertion. Consider the equine's movement, as some equines require more energy to ride.
- Excessive weather conditions, including heat and humidity

Contraindication:

- If fatigue persists well after the riding session
- If fatigue impairs function or lifestyle
- If disease progression is heightened due to over-exertion

Fracture

With any fracture, a physician must release the participant to return to equine activities. Normal healing of a fracture is expected in about six to eight weeks. With a surgically repaired fracture of the upper extremity, or with a casted or fully supported fracture in a non-weight bearing bone, activities may be possible at an earlier date with a physician release.

Precaution:

- If a cast or sling causes difficulty in balance
- Pain may dictate tolerance

Contraindication:

- If the cast is irritating to the equine or cannot be easily accommodated to the tack
- If the orthopedist has not given a release for equine activities

Head/Neck Control

Certain orthopedic or neurologic conditions may impair the participant's head and neck control so that the participant is unable to hold his/her head against gravity, when sitting still or while moving. This may predispose the participant to a potential injury, either from the normal movement of the equine when mounted or driving, from a quick or strong movement from the equine such as with a small spook, or from a fall. Moderate head and neck control needs a physical or occupational therapy evaluation by a therapist familiar with equine-assisted activities and therapies. The participant could be very appropriate for hippotherapy designed to improve the head and neck control.

Precaution:

- Consider the movement of the equine and its impact on the participant's head control.
- The lightest weight ASTM/SEI approved equestrian helmet should be used. Avoid positions and activities that compromise head control.
- Fatigue may be a factor in loss of head control during mounted/driving activities. Activities should be discontinued if head control becomes compromised.

Contraindication:

- If there is an inability to control for excessive head movement during mounted/driving activities
- If the participant is unable to hold his/her head against gravity with a helmet on while sitting without moving or during static sitting
- If use of a helmet causes significant strain to the neck muscles and impairs head control
- If the participant is positive for atlantoaxial instability with or without neurologic signs (see Atlantoaxial Instability)
- Moderate impairment in head control may be appropriate for one-on-one treatment by a therapist.

Heart/Cardiac Conditions

This term describes various heart problems that compromise the cardiovascular system. The most common are myocardial infarction (MI, heart attack, cardiac arrest), congestive heart failure (CHF), bypass surgery (open-heart surgery) and congenital heart defects. Certain heart rhythm problems can also predispose the participant to fainting (syncope). Consider exertion levels for all equine activities, including mounting and dismounting. Staff working with these participants should be able to monitor exertion levels and be certified in CPR (cardiopulmonary resuscitation).

Chest pain, heartburn, jaw pain, nausea, left arm pain, shortness of breath, bluish lips and/or nails and dizziness are all significant symptoms of cardiac dysfunction. **If these symptoms occur, stop activity immediately! This is an emergency!**

Precaution:

- There must be a staff member present at the session who is CPR (cardiopulmonary resuscitation) certified.
- Participant should be monitored for shortness of breath, dizziness.

Contraindication:

- If heart rate and blood pressure cannot be maintained within the limits set by the physician
- If monitoring the pulse or blood pressure is required during activity and cannot be provided by the staff

Hemophilia (Hemophilia A/Hemophilia B/Von Willebrand Disease)

Hemophilia is an inherited disorder of blood clotting in which certain factors (VIII, IX) are present in less than adequate amounts in the blood so that bleeding occurs in a prolonged or excessive manner. The bleeding may be spontaneous or occur after trauma or surgery. The most common sites of bleedings are the joints and muscles of the extremities; less frequently, but of more concern, is bleeding into the head and/or the gastrointestinal tract.

How hemophilia affects an individual can vary from mild to severe. Consultation with the participant's hematologist (a physician who specializes in disorders of the blood) should be sought in addition to information from the participant's primary care physician. Past clinical history (frequency and sites of bleeding), condition of joints (pre-existing muscle or joint damage) and prophylactic infusion therapy are all vital pieces of information.

Precaution:

- Spontaneous and/or significant bleeding can occur despite the absence of external bruising. Avoid positioning on hard surfaces, activities with jarring movements.
- Heightened awareness of universal precautions and readily available personal protection kits at activity sites

Contraindication:

- Severe hemophilia (<1% factor)
- Poor accessibility to emergency medical care (at any level of factor deficiency)
- Recent bleeding episode

Heterotopic Ossification/Myositis Ossificans

Certain conditions cause the formation of excess bone or calcium in the body, resulting in decreased range of motion and/or pain. Heterotopic ossification is bone in an abnormal place in the body, such as in a joint. Myositis ossificans is bone found in muscle tissue. In some cases there may be points of exquisite tenderness in the muscle. These conditions can occur with diagnosis of severe trauma with fractures, severe muscle injury, traumatic brain injury or spinal cord injury. The medical history needs to include the location, extent and current status of the condition.

Precaution:

- Pain may dictate tolerance.
- ROM limitations
- Potential risk to skin integrity as a result of friction from movement
- Contractures

Contraindication:

- If there is inadequate range of motion to accommodate to the equine
- If severe pain exists, especially in the acute stages of the condition
- Ossification in the hip complex, cervical spine
- Skin breakdown on the seating surface

Hip Subluxation and Dislocation

The normal hip is a ball and socket joint. The socket (acetabulum) is located in the pelvis. The ball is the femoral head, located at the upper end of the femur or thighbone. When the joint is subluxed, the thigh bone is partially out of the socket, which makes the joint unstable. When the joint is dislocated, the femoral head is completely out of the socket. This condition may occur in one or both hips.

Abnormal muscle tone, either increased or decreased, can be the cause for either subluxation or dislocation in one or both hips. Increased tone is often found in persons with cerebral palsy or brain injury, low tone or decreased tone in Down syndrome or spinal cord injury. The cause of hip dysfunction can also be congenital. Both subluxation and dislocation necessitate careful motion and seating assessments prior to starting mounted activities. When riding, the participant needs to achieve a symmetrical pelvis that is level and has an equal distribution of weight on the equine.

Precaution:

- An asymmetric pelvis (with one hip subluxed) may aggravate the subluxation
- Access only to a wide-backed equine requiring significant leg spread

Contraindication:

- If there is pain or inadequate range of motion to accommodate the equine movement
- If there is poor postural alignment in the spine, pelvis and/or lower extremities that cannot be corrected by direct handling techniques or adapted tack

HIV Positive/AIDS

AIDS may present itself in a variety of ways. Treatment consists of addressing the immune system's defense of the virus and with the current symptoms. If the opportunistic infections attack the nervous system, then neuromuscular dysfunction may occur. If infection affects the skin, then lesions may occur. Consistent with most of the infections is the onset of fatigue, weakness, pain and decreased resistance to other opportunistic infections. The course of the illness may be a gradual worsening or have a more volatile pattern. At the end stages of the disease, quality of life issues and the risk/benefit ratio may need to be addressed by the entire team, including the participant.

Precaution:

- Protection from potential infection
- Avoidance of extreme fatigue (see Fatigue/Poor Endurance)
- If skin lesions exist, avoid potential irritation of the areas (see Skin Integrity).
- Pain may dictate riding tolerance.

Contraindication:

- If functional ability worsens due to excessive increase of fatigue or pain

Hydrocephalus/Shunt

Hydrocephalus is an excessive accumulation of cerebrospinal fluid in the brain, which may result in enlargement of the head. It is commonly associated with spina bifida and other developmental disorders or may be an isolated problem. A shunt, surgically implanted under the skin, drains and regulates the fluid (see Equipment). A participant with hydrocephalus may have decreased head control due to the size and weight of an enlarged head (see Head/Neck Control). Signs of a failing shunt may include: nausea, headache, confusion, visual disturbance, seizure, behavioral changes, decreased motor control, changes in muscle tone or decreased cognitive function. If any of these occur without obvious reason, refer to the physician immediately.

Precaution:

- Consider the fit of the helmet. It should be adequate for the enlarged head and not increase pressure on the shunt. The participant should have independent head control even with the additional weight of the helmet.
- The shunt 'reservoir' is the most vulnerable part of the shunt to effects of pressure. The reservoir can be identified as a protruding structure about the size of a dime along the shunt tubing. In some cases there may be more than one shunt with more than one reservoir. Inspect the skin over the shunt and reservoir frequently for redness or irritation.
- Be cautious when using mounted positions other than upright, such as lying on the rump or reaching down to touch the feet, as the head lowered position may put too much pressure on the shunt.

Contraindication:

- If an ASTM/SEI approved helmet can not be fitted
- If the participant has a severely enlarged head and poor head control
- If there are signs of a failing shunt

Hypertension (HTN)/High Blood Pressure

Hypertension is an elevation in blood pressure (more than 140/85). Increased vascular resistance that causes the heart to work harder causes this condition. Untreated hypertension is a major risk factor, predisposing people to stroke, heart attack, cerebral hemorrhage and kidney failure.

Elevated blood pressure may be noted by increased color in the face (red, florid), headache and nausea. However, increased blood pressure is often present without symptoms.

If hypertension is noted in a participant's medical history, the history needs to state if it is controlled by medication. If the Professional Association of Therapeutic Horsemanship International Center instructor or therapist has any concern about the participant's hypertension, request more information from the physician. Ask if the blood pressure needs monitoring, how often (should you take it) and how high it can safely rise. The mounting and dismounting process often requires more exertion from the participant than mounted activities. Environmental conditions (e.g., extreme heat) or emotional conditions (e.g., fear, stress) may affect blood pressure.

Precaution:

- Hypertension controlled through medication
- Extreme outdoor temperature or situations of stress

Contraindication:

- Uncontrolled hypertension
- If the operating center cannot safely accommodate the monitoring advice of the physician

Hypertonia

Hypertonia is an upper motor neuron dysfunction marked by an abnormal increase in tightness of muscle tone and a reduced ability of a muscle to stretch (i.e., an increased stiffness). Hypertonia is usually a feature of spasticity in particular muscles. Spastic hypertonia (SH) is a term that doctors are now using to offer a more complete description of spasticity and various conditions of extreme muscle tension. Spastic hypertonia refers to uncontrollable jerking movement (muscle spasms), stiffening or straightening out of muscles (rigidities), shock-like contractions of all or part of a muscle or group of muscles (myoclonous) and abnormal tone in the muscles (dystonia). These features are common in persons with cerebral palsy.

Precaution:

- Inability to position on equine
- Adductor tightness that does not decrease with equine movement
- Extensor thrust with or without specialized training
- Handling skills of staff

Contraindication:

- Strong extensor thrust
- Inability to separate legs to accommodate equine with or without adapted tack

Hypotonia

Hypotonia means “low tone” and refers to a physiological state in which a muscle has decreased tone or tension. A muscle’s tone is a measure of its ability to resist passive elongation or stretching. Some common causes of hypotonia are Down syndrome, myasthenia gravis, myotonic dystrophy, muscular dystrophy, spinal muscular atrophy type 1, Prader-Willi syndrome, congenital cerebellar ataxia, congenital hypothyroidism, Tay-Sachs disease, Werdnig-Hoffman, Riley-Day syndrome, Marfan’s syndrome, achondroplasia, trisomy 13, sepsis, Aicardi syndrome, rickets, infant botulism and a vaccine reaction.

Precaution:

- Laxity in weight-bearing joints
- Inability to maintain upright sitting posture without assistance
- At risk for hip subluxation

Contraindication:

- Unable to attain upright sitting posture may require direct treatment by a therapist.

Joint Replacement

Joints can be surgically replaced for many reasons including severe arthritis, joint degeneration, joint malformation, chronic pain or disease process such as a tumor. Either half of a joint or a full joint can be implanted. It is important to understand the underlying reason for the replacement, the extent, type and the time since surgery, and the precautions involved. If, for example, a surgeon were to indicate that post-surgical hip flexion should not exceed 90 degrees, accommodations would need to be made for the mounting and dismounting process. Often, the replaced joint is actually stronger than the bone surrounding the joint. Because of this, falls may cause severe fractures at the site around the joint replacement. The orthopedic surgeon should always be consulted for participants with joint replacements.

Precaution:

- Adapted equipment or alternative mounting procedures may be necessary.
- Pain will dictate tolerance.
- Any person with active hip precaution orders

Contraindication:

- Persistent pain during activity
- Inability to avoid unsafe positions or activities for that individual
- If the orthopedic surgeon has not released the participant for equine activities

Migraines

Migraine disease is a syndrome in which severe head pain is a primary symptom. The head pain stems from an enlargement of the blood vessels in the head (vasodilation). Related symptoms are nausea, vomiting, sensitivity to light and sound, numbness or difficulty in speech. Often there are preceding symptoms that may indicate that a migraine is imminent. Migraine pain may last for hours, days or even weeks. Various triggers such as weather conditions, menstrual cycles, lights, smells, food, drink, physical or emotional stress may induce migraine.

Precaution:

- Accessibility to medication during the activity
- Riding during a known trigger (e.g., menses)
- Migraines more frequent during or after the activity

Contraindication:

- If a migraine is in process

Myopathy/Muscular Dystrophy (MD)/Spinal Muscular Atrophy (SMA)

A myopathy is a disease affecting muscles, in which the changes in the muscle fibers are not secondary to any alteration in the nerves or neuromuscular junction. Myopathies, or muscular dystrophies, are disorders in which there is a progressive loss of muscle, and therefore muscle function, due to a hereditary cause. The individual diagnoses making up this category of disorders include Duchenne muscular dystrophy, Becker myopathy, limb-girdle dystrophy, fascioscapulohumeral dystrophy and myotonic myopathy. Duchenne muscular dystrophy is the most common and most severely disabling of the myopathies, with symptoms in the very early years of life. The myopathies are characterized by progressive muscle weakness, although each condition may have a different distribution of weakness. For example, in Duchenne muscular dystrophy, limb-girdle dystrophy, fascioscapulohumeral dystrophy, Werdnig-Hoffman and Kugelberg-Welander disease, the muscles most proximal (that is, closer to the center of the body) are weakened most and first; in myotonic muscular atrophy, the most distal (furthest away from the center) muscles weaken most and first. In myotonic muscular atrophy, mental retardation is also seen. In all the myopathies, there is slow but steady progression toward respiratory failure and death, with the speed of the progression and the age of onset varying.

Often included with the muscular dystrophies is spinal muscular atrophy, such as infantile spinal muscular atrophy (Werdnig-Hoffman syndrome) and juvenile spinal muscular atrophy (Kugelberg-Welander syndrome). SMA is a disease resulting from progressive degeneration of the nerve fibers that innervate the muscles. This often begins in childhood or adolescence and results in progressive weakness and atrophy of the muscles. The infantile form tends to be more serious and prone to more rapid progression. The juvenile-onset form tends to be more slowly progressive. There is often marked thinning of the muscles and as the weakness progresses, contractures of the muscles develop and can add orthopedic complications to the weakness. As in the case of the primary myopathies, the clinical course is one of steady progression with eventual death due to respiratory failure or infection.

In all of these disorders, the participant needs to be protected from excessive fatigue but encouraged to remain active as long as possible. The therapist and instructor need to assess the child or young adult for their current abilities in terms of balance, endurance, posture and muscle strength in the extremities and the trunk. It is not unusual for an individual with such a disorder to begin as a more independent participant then gradually need more assistance as the disease progresses. Transition from mounted activities to driving or other non-mounted activities is often appropriate. The Professional Association of Therapeutic Horsemanship International Center staff should encourage and support the participant while avoiding setting unreasonable goals. The staff should recognize that the PATH Intl. Center may serve as one of the most important supports in the life of a participant with a terminal disease, and that they (the staff), too, may need help and counseling to address their own feelings about the participant.

Precaution:

- Fatigue should be avoided.
- Hypotonia

Contraindication:

- Fatigue that impacts participant's functional activities off the equine
- If the participant cannot be safely supported on the equine due to trunk muscle weakness
- If the dust and dander in the environment impair breathing/increase congestion

Neuromuscular Disorders/Multiple Sclerosis (MS)

Many diseases or syndromes exist that affect the nervous system that may be appropriately addressed with equine activities. Some of these include amyotrophic lateral sclerosis (ALS or Lou Gehrig's disease), post-polio syndrome, myasthenia syndromes (myasthenia gravis, congenital myasthenia) and fibromyalgia. Not technically a neuromuscular disorder, due to an autoimmune reaction of the central nervous system, but with very similar presenting symptoms, is multiple sclerosis. Common characteristics of all of these disorders are onset of fatigue, pain and weakness. Some of these disorders present with periods of exacerbation or remission and some present with a gradual worsening of the symptoms over time.

For all Neuromuscular Disorders/Multiple Sclerosis

Precaution:

- Gentle exercise is encouraged, without the increase of pain or fatigue. Appropriate positioning when mounted, avoiding pain and pacing the activity to avoid overexertion is essential. Consider the exertion necessary for preparing to ride, after the ride and any off-equine activities that are planned. Sometimes just walking to the mounting block on uneven ground can be exhausting.
- Riding during extreme weather conditions

Contraindication:

- If fatigue persists or interferes with functional activities off the equine
- If pain increases in duration or intensity
- If the participant is showing signs of exacerbation or worsening of the disorder
- Acute stages of neuromuscular disorders

Examples of neuromuscular disorders:

- **Amyotrophic Lateral Sclerosis (ALS)**

Also known as Lou Gehrig's disease, ALS is characterized by progressive muscular weakness and atrophy with spasticity due to degeneration of the motor neurons of the spinal cord and parts of the brain. Some individuals may remain active for 10 to 20 years. In addition to the common characteristics, ALS also leads to difficulty talking, swallowing and sometimes breathing.

- **Fibromyalgia Syndrome**

Fibromyalgia is a syndrome that is diagnosed by clinical presentation. Frequently associated with the diagnosis are muscle pain, fatigue, morning stiffness, sleeping disturbance, sensory disturbance (paraesthesias), headache, depression and anxiety. Research has shown that daily, gentle, low-impact exercise helps, but too much or the wrong kind of exercise may exacerbate fibromyalgia symptoms.

- **Guillain Barré Syndrome**

Guillain Barré syndrome is an acute inflammatory process that affects the nerves causing partial or complete paralysis. Recovery is slow; though up to 95% of those affected show complete recovery. Weakness and poor endurance are universal; pain is common.

- **Multiple Sclerosis (MS)**

MS is a progressive autoimmune disease of the central nervous system. Characteristics include neurologic changes that appear and disappear and may include weakness, alteration in sensation, spasticity, susceptibility to temperature fluctuations, visual disturbance, emotional changes and fatigue.

- **Myasthenia Syndromes**

Myasthenia is a condition in which the muscle fatigues rapidly resulting in weakness with continued effort. Rest will often restore the muscle to its baseline. The syndrome can either be a defect in the junction from birth (congenital type) or can arise from an autoimmune reaction acquired after birth (myasthenia gravis).

- **Post-Polio Syndrome**

Recent onset of polio is extremely rare in the United States. More common is the onset of post-polio syndrome 20-40 years after the original onset of the disease. Characteristics of post-polio syndrome are fatigue, pain and weakness.

Osteogenesis Imperfecta (OI)

Also known as brittle bone disease, osteogenesis imperfecta is a genetic disorder characterized by bones that break easily, often from no apparent cause. There are at least four distinct forms of the disorder with a wide variety of severities. Deafness is common, as is poor head/trunk control, contractures and scoliosis of the spine. Treatments may include bracing, adaptive equipment and surgical insertion of spinal/skeletal support (see Equipment, Spinal Curvature, Spinal Fusion/Fixation, Pathologic Fractures and Head/Neck Control).

Precaution:

- Mild condition without occurrence of fractures
- The entire team should be competent in handling skills.

Contraindication:

- Moderate to severe OI with recent fractures, significant scoliosis or poor head/trunk control

Osteoporosis/Low Bone Density/Osteopenia

Often seen in older people, post-menopausal women, individuals who do not walk and/or people who use wheelchairs and people with a history of eating disorders. Those who have limited physical activity during the developmental years, or for a prolonged time, are also at risk for developing low bone density/osteoporosis. Radiation therapy and some medications, particularly with long term use, may also cause this condition. The loss of bone density may be generalized or localized to one site. A potential participant's medical history should delineate the location(s) of the osteoporosis and the magnitude of the bone density loss (mild, moderate, severe). Osteoporosis can increase a person's risk for pathologic fractures with trauma.

Precaution:

- Mild osteoporosis/osteopenia without a history of fractures (BMD between 1-2.5 SD below the mean for young adult women or T-score between -1 and -2.5)
- Should the participant exhibit bone pain or discomfort during equine-assisted activities or therapy, the instructor or therapist may need to promptly end the session.

Contraindication:

- Moderate to severe osteoporosis (BMD 2.5 SD or more below the normal mean for young adult females or T-score at or below -2.5 or Severe or "established" osteoporosis - BMD 2.5 SD or more below the normal mean for young adult females or T-score at or below -2.5)
- A history of fractures
- If bone pain persists or interferes with functional activities off of the equine
- If bone pain increases in duration or intensity

Pathologic Fractures

A pathologic fracture is a break in a bone that is weak from disease (such as osteoporosis), a tumor in the bone or from unknown factors (idiopathic). The force responsible for the break would not have broken a healthy bone. Pathologic fractures often recur. The medical history should indicate fracture sites and the current status, as well as whether the underlying cause of the fracture has been corrected.

Precaution:

- Condition under control without fractures for at least two years
- The entire team should be competent in handling skills.

Contraindication:

- Recurrent pathologic fractures without successful treatment of the underlying medical cause

Peripheral Vascular Disease (PVD)

Peripheral vascular disease (PVD) refers to a family of diseases affecting the circulatory system of the extremities (arms and legs). The following are some common peripheral vascular diseases: atherosclerotic disease (ASD), arteriosclerosis (ASCVD), Thromboangiitis obliterans/Buerger's disease, Raynaud's phenomenon, Raynaud's disease. Characteristics of PVD may include abnormal skin color changes, particularly in the fingers or toes, numbness, tingling, burning sensation and/or pain. Emotional disturbance or exposure to cold may exacerbate the condition. The physician needs to clearly describe the status and affected areas.

Precaution:

- If sensation is impaired or skin is at risk for integrity (see Skin Integrity). Monitor the skin for areas of redness that persist for 15 to 20 minutes after the activity. Do not rely on the participant for feedback.
- Dependent positioning (e.g., feet hanging down as with mounted activities or driving) may cause swelling or discoloration (as there may be inadequate sensation in the extremities). Support of the legs may help with use of support stockings as appropriate, and/or with stirrups or Devonshire boots.

Contraindication:

- If skin damage is present, particularly in a weight bearing area
- If redness, swelling or pain does not subside within 15 to 20 minutes after mounted activities and accommodation cannot be made

Respiratory Compromise

Breathing problems may be a primary problem, such as with cystic fibrosis, chronic obstructive pulmonary disease (COPD) or asthma, or may be due to other conditions such as obesity, allergies or spinal abnormalities (see related topics). Medications may mediate the effects of lung problems and need to be available if they are prescribed. Be aware of the effect of the outside environment, particularly for those with allergies or other conditions that may worsen with environmental changes.

Oxygen supplementation may be prescribed for use during or following activity. Portable oxygen tanks may be carried next to the equine if secured. Tanks are generally too heavy for the participant to carry and should not be carried by the sidewalker unless a backpack is used so that their hands are free. Never secure equipment to the equine or tack. Caution should be taken that the equine is

comfortable with the sounds of the oxygen compressor, particularly if the tube comes away from the tank. Emergency dismounts should be rehearsed so that tubing and the tank are taken care of without entangling. The medical history should indicate the maximum length of time that the rider can be without the oxygen supplement in case of an emergency. If suction is needed to clear an airway, either the participant should be taken off of the equine or the equine should be well trained to accept the noise of the suction machine. Pay particular attention to the participant's position on the equine as some postures or positions may impact the ease of breathing.

Precaution:

- Have medications available.
- Many centers are located far away from the participant's home and participants may not be familiar with the environmental conditions at the operating center. Have a communication plan.
- If supplemental oxygen is used, staff and volunteers should know how to operate the equipment and when it is needed.

Contraindication:

- If physical exertion or the environment will make breathing more difficult while doing the activity or for any time following
- If weather or environmental conditions cause an excessive challenge to breathing
- Staff is not trained to adequately handle condition
- Poor access to emergency medical facility

Rett Syndrome

Occurring primarily in girls, this genetic disorder is characterized by loss of communication skills and purposeful use of the hands, usually beginning at 6-18 months. Associated difficulties may include stereotypic hand movements, gait disturbance, slowing of growth, receptive communication greater than expressive, seizures, breathing disorganization and gastric difficulties. Apraxia (difficulty with volitional or non-automatic movement) is typical, affecting motor skills, oral skills and eye gaze. Later stages often show joint contractures, scoliosis and other difficulties due to impaired mobility. (See Communication Disorders, Behaviors, Spinal Curvature, Seizure, Medication)

Precaution:

- Automatic movements (rubbing the nose, bringing food to the mouth) are easier than requested or planned movements
- Balance affected with impaired ability to use the arms to catch a fall

Sensory Integrative Disorders - SID

Sensations (vision, touch, smell, hearing, taste, movement, position sense) are first registered and processed, then recognized and responded to. With a sensory integrative or sensory processing dysfunction, the sensation may be registered as too little or too much, the understanding or recognizing of the sensation may be impaired, or the reaction to the sensation may be inappropriate. Sensory dysfunction disorders may occur alone or along with other dysfunction of the nervous system. Therapeutic riding provides input to all of the sensory systems, particularly movement (vestibular) and position sense (proprioception). (See also Behavior and Psychosocial Problems, Communication Disorders)

Precaution:

- If sensory dysfunction is severe and leads to extreme behaviors or discomfort, careful grading of the

- sensory input is necessary. Consult an OT or other specialist trained in SI dysfunction.
- Child experiences gagging, vomiting, cries, holds hands over ears or exhibits other tactile defensiveness

Contraindication:

- Extreme tactile defensiveness or gravitational insecurity unless under direct treatment by a therapist with training in sensory integrative dysfunction

Seizure Disorders/Epilepsy

Seizures are a disruption of brain function manifested as impairment by loss of consciousness, abnormal motor activity or sensory disturbances. Seizures may arise as a primary disorder (e.g., epilepsy), or seizures may be secondary to brain insults (e.g., brain injury, stroke, cerebral palsy, disease, tumor). The severity of seizures ranges from extremely mild and barely noticeable, to moderate or severe with complete loss of control. Seizures may have specific triggers such as sounds, light or smells that precipitate the seizure activity. Frequency of seizures varies widely and cannot always be predicted. If a seizure disorder is noted on the Health or Medical History form, the Professional Association of Therapeutic Horsemanship International Center should obtain additional information as to the following:

- Type of seizure
- Typical aura (pre-seizure sensations or behaviors)
- The typical motor activity during seizures
- The post-seizure behavior and duration
- The average duration of seizures
- The current frequency of seizures
- What to do should a seizure occur at the center

If the medical form indicates a history of seizures, determine how long it has been since the last seizure. The longer it has been since a seizure occurred, the less likely it will re-occur, but it can. Consult with the participant's MD to determine the likelihood of seizure recurrence, particularly if the seizure activity was of the 'atonic' or 'drop' kind.

Know the tolerance of the equine, staff and participant in case seizures should occur, and have an emergency plan in place with rehearsals as necessary. Center staff should be trained in the correct first aid procedures for a seizure.

Precaution:

- If the motor activity, change in postural tone, loss of motor control or alteration in consciousness is minor and is unlikely to frighten or injure the equine, participant or staff
- Seizure medications may cause drowsiness or photosensitivity (see Medication).
- Sensitivity of the equine to seizure activity
- Availability of appropriate equine

Contraindication:

- Recent seizure activity accompanied by strong, uncontrollable motor activity or atonic or drop attack seizures due to their sudden and complete loss of postural muscle tone
- A change of frequency or type of seizure until the condition is evaluated
- Inability to manage a participant during an emergency dismount should a seizure occur

Skin Integrity, Pressure Ulcers (Decubitus), Rashes, Burns, Fungal Infections (Ringworm)

Impaired skin integrity, or sores, can occur due to friction or pressure. Participants susceptible to skin breakdown may have fragile skin, poor sensation, prominent bones with minimal protective muscle or fat, previous skin problems from burns or skin graft surgery, contractures, or may be obese with skin folds. The areas most likely to break down are often sites of weight bearing or friction while mounted or driving, such as over the seat bones or areas that can get moist due to sweat or heat/humidity. Ask for information on the sites of previous integrity or skin grafts before participating. Movement in sitting (riding or driving) is more stressful to fragile skin than sitting on a stable surface. Choose an equine with movement that is smooth with less abrupt transitions. Heat and/or moisture are also precursors to skin problems and should be monitored for the participant. Professional Association of Therapeutic Horsemanship International Centers should modify equipment for participants susceptible to skin integrity. Use properly fitted footwear and clothing and saddle pads that are made of fleece, foam or gel.

Precaution:

- History of previous skin breakdown, skin grafts or burns
- Impaired sensation, particularly areas that are in contact with the equine or tack
- Very thin build or prominent bones
- Prolonged use of steroid medication
- Incontinence
- Obesity

Contraindication:

- Open skin areas on a weight-bearing surface or on a surface that may be subject to friction (buttocks, inner thighs, inner/back of calves, hands, etc.)
- Recent skin graft over an area of weight bearing or friction—a release from the physician is required to resume riding.

Spinal Cord Injury (SCI)

This is damage to the spinal cord that causes a loss of muscle control and/or sensation. If the injury is in the upper spinal cord, the cervical region, this will effect all four extremities and is called quadriplegia. If the injury is lower, the effect will be on the trunk and/or legs and is called paraplegia. The spinal cord injury may be complete (no function and/or sensation below the level of injury) or incomplete (partial loss of motor control or sensation below the level of injury). The medical history needs to delineate the cause of the spinal cord damage, the level of the insult, the completeness of the spinal cord damage, the method of spinal stabilization and any complications. The sixth thoracic vertebra (T-6) is usually the highest level of injury that still allows independent sitting balance. If the injury is below T-6, and there are no complications, the participant can consider mounted activities. A thorough functional assessment is needed to assess sitting balance, height and weight to decide if the participant can safely ride.

A serious condition that may accompany spinal cord injury, particularly quadriplegic injury, is autonomic dysreflexia. This is a dysfunction of the body's ability to regulate itself. Often due to an unrecognized full bladder or injury unnoticed below the level of injury, the participant's blood pressure can go out of control. Other symptoms may include headache, profuse sweating above the level of injury, flushing of the skin and blurred vision. This is a **life-threatening** emergency. Blood pressure will need to be monitored. Immediately search for any potential causes of the problem such as a kinked catheter or difficulty below the level of injury. Loosen any restrictive clothing to allow blood pooling. If

no apparent cause of the condition can be corrected, seek medical help immediately.

The PATH Intl. Center staff and the participant need to be familiar with this condition and its treatment.

Precaution:

- Paralysis below T-6 for mounted activities
- Impaired sensation, including pain sensation (see Skin Integrity). Monitor the skin for areas of redness that persist for 15 to 20 minutes after the ride. Instruct the participant/family to do this as well, as they may not be at your facility at that time.
- Impaired temperature regulation, particularly during times of extreme outside temperatures
- Surgically stabilized spine (see Spinal Fusion/Fixation)
- Poor abdominal/respiratory control. May consider an abdominal binder or corset for trunk stabilization and breath support
- Poor joint stabilization below the level of injury (see Hip Subluxation)

Contraindication:

- Complete spinal cord injury above T-6

Spinal Curvature

The spine has three moveable curves to it, one at the neck/cervical, one at the upper back/thoracic and one at the lower back/lumbar. The fourth, or lowest curve, the sacrum/coccyx, has little flexibility. The motion of the three upper curves allows for movement of the body, and the healthy spine provides shock absorption. When these curves become immobile or exaggerated with either an increase or decrease in curvature, it may lead to problems with pain and/or decreased function.

Terms used to describe curvatures of the spine include functional and structural. A functional curvature is typically seen only when the participant is upright-sitting or standing. Because the spine is still flexible, the curvature disappears when the participant lies down or voluntarily straightens his spine. A structural curvature is present in all positions, and can be straightened only with surgery. It also causes a decrease in the normal flexibility of the spine.

The physician should provide information about the degree and location of the curvature. Contacting the participant's orthopedist may provide useful information. When the mobility of the spine is an issue, the physician or an experienced physical therapist needs to evaluate the participant to determine if there is enough functional mobility to participate in mounted or driving activities.

• **Scoliosis**

Scoliosis is a lateral or sideways curvature of the spine with a rotatory component. It may involve only a few vertebrae or the entire spinal column. The degree, direction and location describe the scoliosis (e.g., a 25-degree right thoracic curve). The cause of scoliosis can be unknown or it can be due to other musculoskeletal abnormalities, such as unequal leg lengths.

• **Kyphosis**

Kyphosis is an excessive rounding of the upper back (hunchback) when viewed from the side.

• **Lordosis**

Lordosis is an excessive forward curve (swayback) of the low back when viewed from the side.

Precaution:

- The spine should have enough flexibility to accommodate the movement of the equine activity.
- Activities should be monitored and adjusted to not further exaggerate the curvature.
- Specialized training of staff to understand curvature and effects of equine movement

Contraindication:

- If the activity produces lasting pain
- If there is not enough spinal mobility to accommodate to the movement of the equine
- If the spinal curvature is getting worse over time
- Aggravation to compromised pulmonary function, heart function, circulation and/or skin breakdown (see related topics including Respiratory Compromise, Skin Integrity, Equipment, Spinal Fusion/Fixation, Surgery)
- Moderate or severe scoliosis or inability to achieve a full upright posture

Spinal Fusion/Fixation

Participants with spinal fusion have one or more segments of their spinal column structurally joined. Bony abnormalities, disease or surgical intervention may result in fusion. Spinal fixation or internal stabilization is when the spine is stabilized surgically with hardware (e.g., Harrington rods, Luque sublaminar wiring) or by other procedures. The participant's medical history should delineate the area involved, when the fusion/fixation occurred, how it occurred and the current status. Some fusions are created surgically to correct scoliosis. Some fixations accompany spinal cord injury and there will be muscular weakness of the trunk as well.

When some spinal segments are immobilized, the movement of the equine causes increased relative movement at the spinal segments immediately above and below. Thus, these non-fixed segments can be hypermobilized or moved too much. The excessive movement could create or contribute to the degeneration of the spine. Additionally, the vertical concussion and compression forces that occur during vigorous walking, trotting or riding in a carriage may increase the risk of dislodging internal rods or wiring. A fall from four to six feet may have greater impact than the immobilized spine can withstand. Therefore, it is essential to consult with the physician regarding riding/driving activities.

Precaution:

- If Harrington rods or Luque sublaminar wiring are present, the surgeon should make an informed decision regarding participation in riding/driving activities. The physician should base this decision on knowledge of the specific activities in which the participant will be involved, including risk of falls.
- Pain may dictate tolerance.

Contraindication:

- If there is insufficient mobility in the spinal joints above and below the fixation/fusion to accommodate the movement of the equine
- If there is a pre-existing condition of severe degenerative joint disease in the remaining mobile spinal joints
- If there is significant pain
- If physician has not released participant for post-surgical participation, indicating a solid bony fusion/fixation

Spinal Instability/Abnormalities

The integrity of the spinal cord is at risk when the spine is unstable. Instability can be due to disease, congenital deformity, bony abnormality or injury. Examples include spondylolisthesis, Scheuermann's disease (also known as adolescent kyphosis, epiphyseal plate disease, vertebral epiphysitis), atlantoaxial instability (see Down syndrome), hemivertebrae and herniated disc. Abnormalities may include spinal stenosis, vertebral spurring or other conditions that compromise the function of the spine. Orthopedic or neurologic consult for location and degree of spinal dysfunction and positional or activity precautions is essential.

Precaution:

- Consider positioning, ground impact during mounted activities/driving, degree of movement of the equine and mounting/dismounting activities
- Pain may dictate tolerance

Contraindication:

- Acute, painful stages or pain resulting from mounted activities/driving
- Onset of neurologic symptoms such as numbness or weakness of the extremities, changes in muscle tone or changes in bowel or bladder control

Spinal Orthosis

A spinal orthosis is a jacket or brace worn to support or stabilize the spine. The orthosis can be made of soft or hard material and is designed in many different lengths. The pertinent concern is whether the brace allows the participant sufficient mobility to move with the equine with a relaxed, stable, upright posture and without interfering with the movement or the comfort of the equine. Know the purpose of the brace and wearing restrictions or precautions. If unsure of the effects on the equine, carefully observe how the client is positioned and how they move when astride. A licensed/credentialed therapist/health professional with experience and training in equine activities, the Professional Association of Therapeutic Horsemanship International Instructor, the physician/orthopedist and the participant or family need to make an informed decision as to whether equine activities are appropriate for the client or the equine. The orthotist may also be consulted for possible alternative bracing if necessary (see Equipment).

Precaution:

- Skin irritation where the orthosis meets the body, caused from movement (see Skin Integrity)
- Use of spinal orthosis for scoliosis
- Poor trunk control or hypotonia

Contraindication:

- Use of a rigid chin support attached to the spinal orthosis
- Insufficient mobility to accommodate equine movement

Spina Bifida

Spina bifida (myelomeningocele, spina bifida cystica and myelodysplasia) is a congenital deficit in the structure of the vertebrae. The spinal cord and its protective membranes (meninges) protrude through this defect. Spina bifida is diagnosed at birth by the presence of an external sac on the back and is most common in the lumbar region. If necessary, surgery is usually performed within days after birth to close the spinal defect and cover the sac to prevent infection.

The primary problems associated with spina bifida are trunk and/or lower extremity paralysis, loss of sensation and hydrocephalus (see Hydrocephalus). Spina bifida occulta is a less severe abnormality of the vertebrae, without motor or sensory deficits or hydrocephalus. Although spina bifida itself is non-progressive, it is strongly associated with Chiari II malformation, tethered cord and hydromyelia. All of these conditions can cause the appearance or worsening of neurologic symptoms. Therefore, the Professional Association of Therapeutic Horsemanship International Instructor and therapists need to watch the participant for the symptoms for each (see following entries).

The medical history should contain information on the level of the defect, associated medical problems, a shunt, scoliosis, hydromyelia, Chiari II malformation, tethered cord and whether any of these are symptomatic. The therapist and PATH Intl. Instructor need to complete a baseline assessment of the participant's functional abilities (including urinary continence, sitting balance, muscle strength and sensation) before the participant can ride. A lesion above T-6 can prevent the participant from sitting independently. Monitoring and periodic re-evaluation are essential. Input from the participant's family on function at home is helpful as well. (See Equipment, Spinal Cord Injury, Spinal Curvature, Spinal Fusion/Fixation)

Precaution:

- Pain may dictate tolerance.
- If decreased sensation is present, particularly of the trunk/lower extremities (see Skin Integrity)

Contraindication:

- If there is an appearance or worsening of neurologic symptoms
- Skin Integrity on seating surface
- Participant is unable to do skin checks

Associated With Spina Bifida Cystica

Tethered Cord

For various reasons, the surgically repaired myelomeningocele in spina bifida may become tethered or anchored down. This condition prevents the spinal cord from moving freely as the participant moves, bends and grows. There can be interference to the blood supply to the spinal cord, resulting in malfunction or permanent injury to the spinal cord cells. All children with repaired myelomeningocele are at risk for tethered cord but only a few become symptomatic.

Those at greatest risk are children with low-level defects, good lower extremity function and those who can walk.

Tethered Cord Symptoms

1. Worsening gait, progressive loss of motor ability
2. Rapidly increasing scoliosis
3. Increasing incontinence (“accidents” between catheterizations)
4. Back or radiating pain down a leg

5. The appearance or worsening of spasticity

As noted under spina bifida, an initial baseline assessment by the program instructor and therapist is essential, as is periodic re-evaluation. Professional Association of Therapeutic Horsemanship International Centers need to be concerned about the symptoms of tethered cord because the equine's movement mobilizes the lower spine. If a symptomatic tethered cord is not corrected promptly with surgery, additional permanent loss of function can occur.

Precaution:

- All children with repaired myelomeningocele need to be monitored for tethered cord symptoms.

Contraindication:

- If any of the symptoms of tethered cord develop, discontinue mounted activities until the physician resolves the cause of symptoms. A release from the MD is required to resume participation.
- Current tethered cord with neurological symptoms

Associated with Spina Bifida

Chiari II Malformation

The Chiari II malformation is a congenital condition consisting of three major structural abnormalities of the lower brain. The result is compression of the brain stem and obstruction of cerebral spinal fluid. It occurs in 85 to 99 percent of children born with spina bifida and hydrocephalus, but only about 20 to 30 percent develop symptoms. Chiari II is one of the main causes of death in the older child with spina bifida.

Chiari II Malformation Symptoms

1. Respiratory distress such as noisy congested breathing, difficult breathing and retraction rather than expansion of the chest as air is inhaled
2. Apnea, or temporary cessation of breathing
3. Stridor, which is harsh croupy noise while breathing, or cyanosis, which is a bluish tinge around the mouth and fingernails indicating a lack of oxygen
4. Difficulty swallowing, excessive drooling, gagging or vomiting
5. Weakness and/or spasticity in the arms
6. Backward spastic arching of the head, neck or the entire body
7. Persistent severe headaches, usually radiating from the base of the skull and neck

Young children with symptomatic Chiari II malformation usually show feeding difficulties, stridor, apnea or arm weakness. Fifty percent outgrow them. If the child's symptoms resolve, the physician or neurosurgeon should clearly state that it is safe for the child to participate in equine activities.

The second most common age for symptoms to occur is during adolescence. It appears to be more severe in youths with low lesions and good leg function. Older children may show symptoms of arm weakness, respiratory distress and stridor.

The child with spina bifida needs careful evaluation as well as monitoring and re-evaluation. The medical history should include information on a shunt, scoliosis, hydromyelia, Chiari II malformation and tethered cord. The history needs to also indicate whether any of these are symptomatic. The mobilization and compression of the spine that occur during seated mounted activities affect the head and neck. Therefore, Professional Association of Therapeutic Horsemanship International Centers need to be extremely watchful of Chiari II malformation symptoms. It is one of the

main causes of death in the older child with spina bifida.

Precaution:

- All children with spina bifida and hydrocephalus are at risk for Chiari II malformation unless a baseline magnetic resonance imaging (MRI) test has firmly established otherwise. Monitor the participant for symptoms at each session and re-evaluate frequently.

Contraindication:

- If any of the symptoms of Chiari II malformation develop, discontinue mounted activities until the cause of the symptoms is resolved. This is an emergency. A release from the MD is required to resume participation.

Associated with Spina Bifida

Hydromyelia

Hydromyelia is an abnormal amount of fluid in the spinal cord that increases pressure on the nerves, causing weakness. Subsequent can be the development of scoliosis (see Spinal Curvature). Repair of the hydrocephalic shunt or surgical drainage of the hydromyelia usually prevents the scoliosis from worsening. The participant may need a shunt in the spinal cord to properly drain the hydromyelia.

Hydromyelia Symptoms

1. Progressive loss of muscle strength
2. Rapidly increasing scoliosis

The medical history of children with spina bifida should include information on a shunt, hydromyelia, scoliosis, Chiari II malformation and tethered cord. The history needs to also indicate whether any of these are symptomatic.

Precaution:

- All children with spina bifida are at risk for hydromyelia. Therefore, monitor the participant for symptoms at each session and re-evaluate frequently.

Contraindication:

- If any of the symptoms of hydromyelia develop, discontinue mounted activities until the physician resolves the cause of the symptoms. A release from the MD is required to resume participation.

Stroke/Cerebrovascular Accident (CVA)

A stroke or CVA is brain damage caused by bleeding into the brain or blockage of blood to the brain. A transient ischemic attack (TIA) is a very small stroke with little or no residual deficit. Causes include rupture of an artery or embolus or blood clot that occludes an artery. Risk factors for stroke include diabetes, hypertension and heart disease.

The participant who has had a stroke is usually affected more on one side of the body than the other. The participant may experience movement difficulties (hemiplegia), sensory impairments, visual deficits, altered muscle tone (either increased or decreased), speech problems, inability to understand others, perceptual and/or cognitive deficits. Stroke itself is rarely a contraindication to equine activities, but there may exist associated medical problems that will need further investigation prior to participation. These may include seizure activity, uncontrolled high blood pressure, sensory loss, known aneurysm or artery blockage.

Precaution:

- Controlled hypertension, if this is the cause of the CVA (see Heart Conditions)
- Impaired sensation (see Skin Integrity)
- Seizure disorder (see Seizure Disorders)
- Medications including blood thinners, blood pressure medications or seizure medications (see Medication)
- Difficulty understanding directions or making needs known (see Communication Disorders)
- Neglect syndrome
- Poor balance from hemiplegia

Contraindication:

- Uncontrolled seizure activity, an aneurysm or an angioma
- Inability to position participant in midline

Substance Abuse/Drug or Alcohol Dependence

The essential feature of substance abuse is a maladaptive pattern of substance use manifested by recurrent and significant adverse consequences related to the repeated use of substances. Included with this are withdrawal reactions that can manifest as physical or behavioral difficulties and can in some instances be life threatening.

Note: Certain controlled substances may be prescribed for some participants for medical reasons, sometimes in large doses. These participants are rarely at risk for abuse and, in fact, need these medications for pain or symptom control.

Precaution:

- Caution should be taken related to the availability of potential substances at the Professional Association of Therapeutic Horsemanship International Center. Veterinary and human medications, cleaners and poisons should be locked up at all times.

Contraindication:

- Active substance abuse
- Inadequate supervision on site

Surgery - Recent

Each surgical case is different. There is great variability in the types of surgeries and protocols for care following a procedure. It is essential to evaluate each participant independently in conjunction with the surgeon and/or the therapist. PATH Intl. Centers must obtain a medical release from the physician to start or restart equine activities after any minor or major surgery. Note any precautions or restrictions that the surgeon may impose following a surgical procedure. Note the need for any braces or casts following surgery (see Fractures, Equipment). Examples of surgical procedures that might be seen include:

Tendon lengthening/tendon transfers

Anticipate and prevent the potential for discomfort due to stress on the surgical site with equine activities. The surgeon may consider activity eight to 10 weeks following surgery.

Fracture repair/osteotomy

Surgical repair of fractures may consist of implantation of devices (screws or plates, for example) or may require bone grafts. Osteotomies are the surgical correction of a bony deformity and often require fixation or grafting. Both procedures may result in casting or bracing for the healing process. A simple

fracture generally requires six to eight weeks for healing; the surgical repair of a fracture may take longer. Resumption of riding will depend on the procedure, time for healing and location of the dysfunction. With a surgically repaired fracture of the upper extremity, mounted activities may be possible at an earlier date. In all cases, obtain consent from the participant's surgeon.

Selective dorsal rhizotomy

Dorsal rhizotomy is a common spinal surgical procedure to reduce spasticity in participants with cerebral palsy. Physician's permission to begin or restart an equine activities program following rhizotomy may be given from three months to one year after surgery. Consult the participant's postsurgical physical therapist about the participant's functional abilities.

Precaution:

- Positioning needs/movement restrictions related to the recent procedure
- Pain may dictate riding tolerance.

Contraindication:

- Physician has not provided a post-surgical medical release for equine activities following surgery.

Trunk Control

The human trunk is the part of the body between the neck and the waist. It does not include the arms or legs. The control of the trunk relies on the ability of the person to maintain anti-gravity postures in a variety of positions. This is achieved by the muscles in the trunk, front, back and sides as well as the vertebral column (back bone) and awareness of the body in relationship to the surroundings. The major muscles that control the trunk are the abdominals in the front, which support the vertebral column and abdominal contents to bend forward, and the back extensors muscles, which help the trunk to bend backward, sideways and twist the trunk. The oblique muscles of the abdominals also twist the trunk. Trunk control is a dynamic process necessary for all motor tasks. Trunk control requires musculoskeletal integrity, activation of the motor and arousal systems and sensory input. Trunk control is dependent on the ability of the abdominal flexors/obliques and the spinal (back) extensors supporting the body and making corrections that maintain balance without a loss of balance or falling. Trunk control plays a large factor in sitting and standing balance. Independent sitting balance is defined as the ability to sit on the edge of a mat without back support, use of the arms, help of an assistant and without weight bearing through the feet. Standing balance requires the ability to maintain alignment and balance without stepping or moving in any direction.

Precaution:

- Adults who are unable to sit on a flat surface without back support assistance for three to five minutes without assistance
- Children who are unable to sit unassisted may require direct treatment by a therapist

Contraindication:

- Adults who are unable to sit unassisted on a flat surface with a back rest

Medication

Consideration should be given to the medications, prescription and over the counter, that the participant is taking. Listed below are general categories of medications common for the participant in Professional Association of Therapeutic Horsemanship International programs. Be certain to be familiar with all of the medications. Take note of when the medications are taken (e.g., directly before a session or several hours prior) or of recent changes in medications. Medications may have side effects, and some medications can become toxic if the dosage is not controlled. Some medications are affected by environmental factors such as sunlight. Medication interactions can be toxic. For example, erythromycin may cause acute elevations of the commonly used anti-convulsant carbamazepine (Tegretol). Fact sheets about specific medications are available at all pharmacies. Once you have read these, if there are additional questions regarding medications, call the pharmacist or physician.

Special Considerations:

- **Phototoxicity**

Some drugs become toxic when chemically activated in the skin by light (ultraviolet or visible radiation). Examples of phototoxic drugs include antibiotics such as tetracyclines (commonly used to treat severe acne), sulfonamides and chlorpromazine (Thorazine). Control exposure to the sun by using protective clothing or sunscreen for participants taking these medications.

Precaution:

- Lack of covered arena

- **Photoallergy**

Some drugs are activated to a more potent allergen in the skin upon exposure to light (ultraviolet or visible radiation). Clinically, a photoallergy may manifest as reddened skin (that resembles sunburn) or as hives, which may appear a few minutes after exposure to sunlight. Drugs capable of causing a photoallergic reaction include phenothiazines, sulfonamides, hexachlorophene and topical antihistamines.

- **Allergy Control**

An antigen-antibody reaction stimulating the release of histamine produces the most common symptoms associated with allergy: stuffy nose, runny nose, hives and itching, and watery, itchy eyes. Many antihistamines, or allergy control medications, are available without a prescription. These medications may be sold alone or in combination with other drugs.

Precaution:

- Sedation and dizziness are common side effects of antihistamines. Confusion may be seen in the elderly and hyper-excitability in children because of the effects of antihistamines on the central nervous system. There are several non-sedating antihistamines, but they are generally prescribed for older children and adults.

- **Antibiotics**

These medications are used to kill or inhibit the growth of susceptible bacteria. They are not active against viruses or fungi. Antibiotics are subdivided into categories depending on chemical similarities and antimicrobial spectrum.

Precaution:

- Many antibiotics cause gastrointestinal upset, nausea and diarrhea that may cause discomfort. Photosensitivity is common to certain antibiotics such as the tetracyclines, sulfonamides and quinolones/Cipro. Protective clothing and sunscreens are recommended.

- Significant reactions to antibiotics may occur such as coma, seizures, anaphylaxis, shortness of breath and hives. Penicillins and sulfa drugs can cause life-threatening allergic reactions.

- **Anticonvulsants**

These medications include a variety of agents, all capable of depressing abnormal neuronal discharge in the central nervous system that may result in seizures. They are also used in the treatment of psychiatric behavior disorders particularly mood disorders, aggression and impulse control disorders.

Precaution:

- Drowsiness, uncoordination, vertigo, nystagmus (abnormal eye movement), mild nausea are common side effects, especially when these drugs are just started or if the dose has been increased too quickly.
- Double vision is a common side effect of carbamazepine (Tegretol) and often goes away spontaneously or after the dose is decreased. Aggression, increased irritability, mood lability, tantrums, hyperactivity and paradoxical behavioral rebound may all be side effects of these medications. These side effects often resemble the target symptoms they are meant to treat. Close monitoring and communications with the participant's physician or therapist is essential to determine if the drug is helping or hindering therapy.
- Caution participants to use sunscreen and protective clothing to prevent photosensitivity reactions. Participants taking valproic acid might bleed more easily upon bumps or cuts to the skin.

- **Antidepressants**

These medications are used in the treatment of various forms of depression often in conjunction with psychotherapy. Other uses include the treatment of anxiety, enuresis (bedwetting), insomnia, obsessive-compulsive disorder and chronic pain syndromes.

Precaution:

- Dizziness or drowsiness may occur. Rapid position changes may cause a drop in blood pressure with lightheadedness or weakness. Participants may experience dry mouth or difficulty voiding. Participants who have seizure disorders may be likely to have more seizures. Symptoms of toxicity and overdose of anti-depressants include chest pain, severe headache, neck stiffness, nausea, vomiting, photosensitivity and enlarged pupils.
- Monoamine oxidase inhibitor (MAOI) is a type of anti-depressant that requires strict dietary restrictions. Tyramine, a substance found in aged food such as sauerkraut, pickles, raisins, ripe bananas, cheese, etc., can combine with the MAOI to cause high blood pressure. If symptoms of high blood pressure occur (nausea, sweating, neck stiffness, sudden headache) activity should be restricted until the situation is assessed.

- **Antipsychotics/Neuroleptics**

Generic brand

Traditional antipsychotics

chlorpromazine: Thorazine, Largactil

fluphenazine: Prolixin, Permitil, Anatenzol

haloperidol: Haldol

loxapine: Loxitane, Daxolin

mesoridazine: Serentil
molindone: Moban, Lidone
perphenazine: Trilafon, Etrafon
pimozide: Orap
thioridazine: Mellaril
thiothixene: Navane
trifluoperazine: Stelazine
Novel or atypical antipsychotics
aripiprazole: Abilify
clozapine: Clozaril
olanzapine: Zyprexa, Zyprexa Zydis
paliperidone: Invega
quetiapine fumarate: Seroquel
risperidone: Risperdal
risperidone, long-acting injection: Risperdal Consta
ziprasidone: Geodon

Purpose

Antipsychotics (neuroleptics) are most frequently used for persons who experience psychotic symptoms as a result of having some form of schizophrenia, severe depression or bipolar disorder. They may be used to treat brief psychotic episodes caused by drugs of abuse. Psychotic symptoms may include being out of touch with reality, “hearing voices” and having false perceptions (e.g., thinking you are a famous person, thinking someone is out to hurt you). Antipsychotic medications can be effective in either minimizing or stopping these symptoms altogether. In some cases, these medications can shorten the course of the illness or prevent it from happening again.

Potential side effects

Tardive Dyskinesia

- Involuntary movements of the tongue or mouth
- Jerky, purposeless movements of legs, arms or entire body
- More often seen in women
- Risk increases with age and length of time on medication
- Usually seen with long-term treatment using traditional antipsychotic medications; rarely seen with atypical antipsychotic medications

Symptoms of diabetes mellitus (associated with obesity)

- Excessive thirst and hunger
- Fatigue
- Frequent urination
- Headaches
- Slow healing cuts and/or blemishes
- weight loss

Neuroleptic malignant syndrome (very rare)

- Blood pressure up and down
- Dazed and confused
- Difficulty breathing
- Muscle stiffness
- Rapid heart rate

- Sweating and shakiness
- Temperature above normal

Other

- Blurred vision
- Changes in sexual functioning
- Constipation
- Diminished enthusiasm
- Dizziness
- Drowsiness
- Dry mouth
- Lowered blood pressure
- Muscle rigidity
- Nasal congestion
- Restlessness
- Sensitivity to bright light (including sunburning easily)
- Slowed heart rate
- Slurred speech
- Upset stomach
- Weight gain

Note: any side effects that bother a person need to be reported and discussed with the prescribing physician. Anticholinergic/antiparkinsonian medications like Cogentin or Artane may be prescribed to control movement difficulties associated with the use of antipsychotic medications.

Emergency conditions

Contact a physician and/or seek emergency medical assistance if the person experiences involuntary muscle movements, painful muscle spasms, difficulty urinating, eye pain, skin rash or any of the symptoms listed above under *tardive dyskinesia* and *neuroleptic malignant syndrome*. An overdose is always considered an emergency and treatment should be sought immediately.

Glossary:

tardive dyskinesia: a central nervous system disorder characterized by twitching of the face and tongue and involuntary motor movements of the trunk and limbs; occurring especially as a side effect of prolonged use of antipsychotic medications

neuroleptic malignant syndrome: a very rare but life-threatening neurological disorder most often caused by a reaction to antipsychotic/neuroleptic medications. Typically developing within the first two weeks of treatment; but can develop at any time. The syndrome can also occur in people taking antiparkinsonian medications if discontinued abruptly.

sedation: inducing a relaxed, easy state especially by the use of sedatives (drugs)

lipids: any of various substances including fats, waxes and phosphatides that with proteins and carbohydrates make up the principal structural components of living cells

diabetes mellitus: an endocrine disorder in which insulin is inadequately secreted or used by the body

blood dyscrasias: a disease of the blood usually involving cellular abnormalities (e.g., poorly func-

tioning or fewer than normal platelets, or loss of certain blood proteins called “clotting factors”; poorly functioning or decreased numbers of red and/or white blood cells)

agranulocytosis: a condition in which there are too few of a specific type of white blood cell called neutrophils in the blood. Affected people are susceptible to infections.

microencapsulated: to enclose in a tiny capsule material (as a medicine) that is released when the capsule is broken, melted or dissolved

- **Antispasmodics**

Excessive uncontrolled muscle activity (tension, stiffness, tremors, writhing) is common for many disorders involving the nervous system, including cerebral palsy, brain injury, stroke and multiple sclerosis. Medications such as baclofen, Dantrium, Valium work centrally to lower muscle activation. Medication is most often taken orally; occasionally it is administered by an implanted pump (see Equipment). Botox injections are used to inhibit muscle activation locally, in the area of the injection, and generally last eight to 12 weeks.

Precaution:

- Initially, or in elevated doses, there may be fatigue or weakness. These effects often diminish as the individual accommodates to the medication and as the dosage becomes regulated.

- **Blood Pressure Control**

Because so many different body systems are involved in the maintenance of normal blood pressure, there are several classifications of drugs used to reduce high blood pressure. If a single drug is not effective, commonly a second, or even a third anti-hypertensive drug, with a mechanism of action different from the others is added to the participant’s drug regimen. These medications CONTROL but do not CURE high blood pressure.

Precaution:

- Drowsiness, sedation and fatigue may occur that might make a participant more susceptible to an injury and less responsive in an emergency situation. Orthostatic hypotension (low blood pressure) may occur, so make position changes on the equine slowly. Riding in hot weather may enhance blood pressure lowering effects. Dry mouth, constipation and fast heart rate occur with some drugs. Make sure the participant’s caregiver or physician is notified if concerns arise. Be aware that abrupt withdrawal of medication may cause rebound hypertension (blood pressure increases).

- **Blood Thinners**

Blood thinning medication such as aspirin or Coumadin may be prescribed for those who are at risk for blood clots, which may cause stroke or heart problems. Clotting time of the blood should be monitored to determine if the appropriate amount of medication is being prescribed.

Precaution:

- Any fall, kick or bump is a potential problem for participants on this medication. Bleeding or bruising is more significant because of the decreased clotting speed of the blood. Of greater concern would be the potential for internal bleeding following an injury that cannot be easily observed. Extreme caution should be taken with these participants.

Contraindication:

- Excessive bruising, blood in the stool, blood-clotting levels not periodically monitored by the physician are all contraindications. Poor accessibility to emergency medical care is also a contraindica-

tion, particularly with these participants.

- **Bronchodilators**

These medications are used in the treatment of reversible airway obstruction (reactive airway disease) due to asthma or chronic obstructive pulmonary disease. Bronchospasm which results in a narrowing of the airway may be triggered by respiratory irritants such as pollens, molds, dust, animal dander, feathers, dust mites, cockroaches, emotional factors, exercise or infection. If possible, a participant on a bronchodilator should identify his/her most common stimuli. For example, a windy day or dry conditions might create excessive dust. Grooming may not be tolerated by some because of dust and dander. Hay and grain storage areas that tend to harbor mold or other barn animals such as cats might trigger an attack among very susceptible individuals.

Bronchodilators are often administered via metered dose inhalers (MDI's) either with or without a spacing device. Sometimes the medication is prescribed prior to an activity or exposure to prevent bronchospasm from occurring in the first place. How medication is to be administered (by mouth, via a small compressor, or via a MDI with or without a spacer), when medication is to be administered (before the activity or as needed [PRN] for symptoms), and how frequently the medication can be repeated should be identified.

Precaution:

- Side effects of these medications can include rapid pulse, dizziness, blood pressure changes and may produce paradoxical or reverse symptoms and death.

- **Mood Stabilizers**

Lithium is a medication used to stabilize abnormal highs and lows of mood swings. The person on lithium should have regular blood testing performed to ensure that the lithium in the bloodstream is in a therapeutic range. Too low a level is ineffective and too high a level can result in the serious problem of lithium toxicity. Caution should be taken with potential drug interaction, especially with non-steroidal anti-inflammatory medications (NSAIDs) which can be purchased over the counter.

Precaution:

- Symptoms of lithium toxicity are broad. They may include nausea, vomiting, diarrhea, tremors, increased or decreased thirst, slurred speech, lethargy, confusion, dizziness, headache and eye pain. Pay special attention to the participant's fluid intake, particularly on hot days, as fluid loss from sweating without adequate replacement can result in increased concentration of lithium in the blood stream. Coffee, tea and caffeinated sodas are not appropriate as they act as diuretics and will enhance fluid loss.
- A participant whose lithium level is being adjusted needs to be monitored very closely during the process. If symptoms warrant, program modification may need to be considered until drug stabilization has occurred.

- **Pain Control**

Analgesia is the term used for pain relief. Many medications used to control mild to moderate pain also reduce fever and have anti-inflammatory effects. They are useful in many acute and chronic conditions. Acetaminophen (Tylenol) has no anti-inflammatory effects, so it is used only to reduce pain and fever. Consider the source and type of pain when determining if someone in pain should be riding. Pain medications are used to control the sensation of pain, and this may assist a participant to participate in an

activity without being distracted by pain. Of concern is that the medication may mask pain, which could cause an unsafe situation leading to further tissue damage.

Precaution:

- Pain medications may cause drowsiness, altered mental function, and/or balance impairment. Large doses of salicylates (aspirin) may cause ringing in the ears or hearing loss that may also affect the participant's balance. Nonsteroidal anti-inflammatory drugs (NSAIDs) such as ibuprofen, naproxen, indomethacin and piroxican may cause gastrointestinal (GI) irritation such as nausea, vomiting, diarrhea, gas and even GI bleeding. Be aware of the particular side effects associated with the medications used.

Contraindication:

- If pain persists with riding, especially when pain medications are used. If the origin of the pain will worsen with riding, or if the risk of undetected injury is greater than the benefit of riding, then riding for the individual in pain is contraindicated.
- Salicylates (aspirin) should not be used in persons under the age of 21 because of the risk of Reye's Syndrome, a potentially fatal disease involving brain and liver dysfunction.

- **Psycho-stimulants**

These medications are used as an adjunctive treatment in the management of attention deficit hyperactivity disorder (ADHD) and in the treatment of narcolepsy.

Precaution:

- Stimulant medication can worsen pre-existing motor tics or result in new tics including those observed in the rare Tourette's disorder. The participant's caregiver or physician should be immediately notified if tics are observed. Recognize that stimulant medication is very short lived so that dosing time may significantly impact on a participant's ability to focus attention during the riding session.
- Participants who are on sustained-release methylphenidate (Ritalin) may demonstrate day-to-day variability in their target symptoms.
- Be aware that if medication is administered at a therapeutic riding center, when sustained release methylphenidate is chewed instead of swallowed, very high blood levels can result, with toxic side effects. If stimulants are taken in large quantities, the following signs and symptoms may result: dry mouth, dilated pupils, fast heart rate, increased blood pressure, stereotyped behavior, irritability or paranoia.

- **Steroids (Glucocorticoids)**

Steroids produce profound and varied metabolic effects in addition to modifying the normal immune response and suppressing inflammation. Long-standing use is most often with chronic conditions.

Precaution:

- These drugs cause immunosuppression and may mask symptoms of infection. These participants should avoid people with known contagious illnesses. Be aware that steroids may cause psychosis or depression and the reason for this is not certain. Skin changes may be seen and can include tiny bruises, red/purple stretch marks and thinning of the skin. This may make a participant more susceptible to pressure areas or tears of the skin with friction (see Skin Integrity). Long-term use will lead to osteoporosis and these participants will be at greater risk of bone fractures (see Osteoporosis, Pathologic Fractures).

Suggested Internet References:

Internet references can be helpful, though they may also be overwhelming. Often a Google search using the diagnosis or condition in the search box will bring up a variety of information. Look for websites by national support organizations or universities that will have medical or diagnostic information.

Medline Plus – a service of the US National Library of Medicine and the National Institute of Health has information about disabilities, health, medication, research and organizations on all disabilities and diagnoses.

<http://www.nlm.nih.gov/medlineplus/disabilities.html>

National Institute of Neurological Disorders and Stroke

www.ninds.nih.gov

National Institute of Mental Health

www.nimh.nih.gov

American Academy of Pediatrics

www.aap.org/topics.html

Administration on Aging

www.aoa.gov

Cerebral Palsy – United Cerebral Palsy

www.ucp.org

Multiple Sclerosis – National MS Society

www.nationalmssociety.org

Spinal Cord Injury – National Spinal Cord Injury Association

www.spinalcord.org

Brain Injury – Brain Injury Association of America

www.biausa.org

Chronic Fatigue Immunodeficiency Syndrome (CFIDS) – The CFIDS Association of America

www.cfids.org

Spina Bifida – Spina Bifida Association

www.sbaa.org

ADD/ADHD – Children and Adults with Attention Deficit/Hyperactivity Disorder (CHADD)

www.chadd.org

Substance Abuse and Mental Health Services Administration (SAMHSA)

www.samhsa.gov

Additional references:

Tabers Cyclopedic Medical Dictionary, Editors: Donald Venes, Clayton Thomas, Clarence Wilbur Taber, Published by F.A. Davis

The Merck Manual of Medical Information, Second Edition, Author: Mark Beers, Published by Simon and Schuster

The Pill Book 10th Edition: New and Revised, Author: Harold Silverman, Published by Bantam

American Psychiatric Association, *Diagnostic and Statistical Manual of Mental Disorders*, DSM-IV-TR, Division of Publications and Marketing, American Psychiatric Association, Washington, D.C., June 2000.

INDEX TO MENTAL HEALTH PRECAUTIONS AND CONTRAINDICATIONS

Mental Health Precautions & Contraindications

Professional Association of Therapeutic Horsemanship International Precautions & Contraindications

CONCEPTS

REFERENCE

EFP Precautions

PATH Intl. Standards for Certification & Accreditation Manual, 2012

- History of animal abuse
 - History of fire setting
 - Suspected current or past history of physical, sexual and/or emotional abuse
 - History of seizure disorder
 - Gross obesity
 - Medication side effects
 - Stress-induced Reactive Airway Disease (asthma)
- *Page 190 (Behavior and Psychosocial Problems)*
 - *Page 190 (Behavior and Psychosocial Problems)*
 - *Page 190 (Behavior and Psychosocial Problems)*
 - *Page 207 (Seizure Disorders/Epilepsy)*
 - *Page 194 (Eating Disorders)*
 - *Page 216 (Medication)*
 - *Page 186 (Asthma)*

EFP Contraindications*

- Actively dangerous to self or others (suicidal, homicidal, aggressive)
- Actively delirious, demented, dissociative, psychotic, severely confused (including severe delusion involving horses)
- Actively substance abusing

*Contraindications are a concern only if the client is experiencing symptoms at the time of the EFP session or is otherwise determined by a qualified professional to be at inherent risk of experiencing these symptoms.

