

PRECAUTIONS AND CONTRAINDICATIONS INDEX

Achondroplasia

- little people
- dwarfism (old terminology)
- pseudo-achondroplasia
- hypochondroplasia

Age Related Considerations

- under 2 years
- 2-4 years old
- geriatric

Allergies

- See also Respiratory Compromise, Medications

Amputations

- See also Diabetes, Skin Breakdown

Amyotrophic Lateral Sclerosis (ALS)

- See Neuromuscular Disorders

Anorexia Nervosa

- See Eating Disorders

Arthritis

- Rheumatoid Arthritis, Osteoarthritis
- See also Atlantoaxial Instability Medications, Joint Replacement, Hip subluxation/dislocation, Spinal Instability/Abnormalities, Surgery,

Arthrogyposis

Asperger Syndrome

- See Autism Spectrum Disorder (ASD)/Pervasive Developmental Disorder (PDD)

Asthma

- Bronchospasm
- See also Respiratory Compromise, Medications

Atherosclerosis

- See Peripheral Vascular Disease

Atlantoaxial Instability (AAI)/Down Syndrome

- See also Age Related Considerations, Head/Neck Control

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

- See also Behavior, Medications

Autism/Autism Spectrum Disorder (ASD)

- Also known as Pervasive Developmental Disorder (PDD)
- Includes: Autism, Asperger, PDD-NOS (not otherwise specified), Rett Syndrome and Childhood Disintegrative Disorder
- See also Behavior, Medications, Communication disorders, Seizures, Rett Syndrome, Sensory Integrative Disorder

Autonomic Dysreflexia

- See Spinal Cord Injury

2008

Behavior

- See also Attention Deficit Disorder, Attention Deficit Hyperactive Disorder, Autism, Brain

Injury, Communication disorders

Brain Attack

- See Stroke/CVA

Brain Injury (BI)

- Also known as Traumatic Brain Injury (TBI)
- See also Hydrocephalus, Heterotopic Ossification, Seizures, Cranial Defect, Equipment, Behavior, Medications, Communication Disorder

Bulimia Nervosa

- See Eating Disorders

Cachexia

- See Eating Disorders

Cancer (CA)

- See also Fatigue/Poor Endurance, Skin Breakdown, Eating Disorders/Cachexia

Cerebral Palsy (CP)

- Spastic Diplegia, Spastic Quadriplegia, Spastic Hemiplegia
- Athetoid type
- Hypoxic ischemia
- See also Age Related Considerations, Communication Disorders, Developmental Delay, Hip subluxation/dislocation, Head/Neck control

Chiari II Malformation

- See Spina Bifida

Childhood Disintegrative Disorder

- See Autism Spectrum Disorder (ASD)/Pervasive Developmental Disorder (PDD)

Chronic Fatigue Immune Dysfunction Syndrome (CFIDS)

- Chronic Fatigue Syndrome (CFS)
- Myalgic Encephalomyelitis (ME)
- See also Fatigue/Poor endurance

Chronic Obstructive Pulmonary Disease (COPD)

- See Respiratory Compromise

Conduct Disorder

- See Behavior Disorder

Coxa Arthrosis

Communication Disorders

- Aphasia, Anomia, Word-finding deficit
- See also Stroke, Brain injury, Autism, Cerebral Palsy, Rett Syndrome, Behavior

Cranial Deficits

- See also Brain Injury, Head/Neck control

Cystic Fibrosis (CF)

- See Respiratory Compromise
- See also Fatigue/Poor Endurance

Degenerative Joint Conditions

- Hip Degeneration – see Joint Replacement, Hip Subluxation and Dislocation
- Degenerative Joint Disease (DJD) – see Spinal Instability/Abnormalities

Decubitus Ulcers

- See Skin Breakdown

**NARHA Standards & Accreditation Manual J-3
2008****Diabetes**

- Diabetes Mellitus/Diabetes Insipidus
- See also Skin Breakdown, Fatigue/Poor endurance, Amputations

Dorsal Rhizotomy

- See Surgery, Cerebral Palsy

Down Syndrome

- See Atlantoaxial Instability
- See also Eating disorders/Obesity, Head/Neck Control, Age Related Considerations, Hip subluxation/dislocation

Eating Disorders

- Anorexia Nervosa
- Cachexia
- Bulimia Nervosa
- Obesity
- Pica

Encephalopathy

- See Brain Injury

Epilepsy

- See Seizure Disorders

Equipment

- eyeglasses, hearing aids, braces/orthotics (AFO's, DAFO's, UCB inserts, etc . . .)
- cochlear implants, feeding tubes, tracheostomies
- internal pumps (baclofen, morphine, insulin or other medication administration)
- shunts, VP shunt
- pacemakers
- mouthguards/retainers
- indwelling catheter (suprapubic or urethral)
- ostomy/colostomy
- oxygen (O2)

Fatigue/Poor Endurance

- See also Obesity, Neuromuscular disorders, Age Related Considerations, Eating Disorders, Respiratory Compromise, Diabetes, Heart conditions, Chronic Fatigue Immune Dysfunction Syndrome, Stroke, Brain Injury

Fibromyalgia

- See Neuromuscular disorders, Fatigue/Poor Endurance

Fracture/Broken bones

- See Pathologic Fracture

Guillain Barre

- See Neuromuscular disorders, Fatigue/Poor Endurance

Head/Neck Control

- See Age Related Considerations, Atlantoaxial instability

Heart Conditions/Cardiac Conditions

- Myocardial Infarction (MI), Heart attack, Cardiac arrest
- Congestive Heart Failure (CHF)
- See also Fatigue/Poor endurance, Hypertension (HTN), Equipment - pacemaker

Hemiplegia

- See Stroke, Cerebral Palsy, Brain Injury, Multiple Sclerosis

**J-4 NARHA Standards & Accreditation Manual
2008****Hemophilia**

- Hemophilia A
- Hemophilia B
- VonWillebrand disease

Heterotopic Ossification (HO)/Myositis Ossificans (MO)

- See Brain Injury, Fracture, Spinal Cord Injury, Stroke

High Blood Pressure

- See Hypertension

Hip Subluxation and Dislocation

- See also Cerebral Palsy

HIV positive/AIDS**Hydrocephalus/Shunt**

- VP shunt

Hydromyelia

- See Spina Bifida

Hypertension (HTN)/High Blood Pressure**Hypochondroplasia**

- See Achondroplasia

Hypoxic Ischemia

- See also Stroke, Brain Injury, Cerebral Palsy

Indwelling Catheters

- See Equipment, Spinal Cord Injury, Neuromuscular Disorders

Internal Pumps

- See Equipment, Medications – pain, anti-spasmodics

Joint Replacement

- Total hip replacement (THR)
- Total knee replacement (TKR)

Juvenile Rheumatoid Arthritis (JRA)

- See Arthritis, Atlantoaxial Instability, Medications, Equipment

Medical Instability

- See Diabetes, Heart conditions, Neuromuscular Disorders/MS, Arthritis

Medication

- Phototoxicity
- Photoallergy
- Allergy Control
- Antibiotics
- Anti-Convulsants
- Anti-depressants
- Anti-spasmodics

- Attention Enhancers
- Blood Pressure Control
- Blood Thinners
- Bronchodilators
- Mood Stabilizers
- Pain Control
- Steroids (Glucocorticoids)

**NARHA Standards & Accreditation Manual J-5
2008**

Migraines/Headaches

Multiple Sclerosis (MS)

- See Neuromuscular Disorders, Fatigue/Poor Endurance

Myelomenigocele

- See Spina Bifida, Tethered Cord Syndrome

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

- Duchenne's Muscular Dystrophy
- Werdnig-Hoffman Syndrome
- Kugelberg-Welander Syndrome
- Limb-Girdle Dystrophy
- Myotonic Myopathy
- Fascioscapulohumeral Dystrophy

Neuromuscular Disorders/Multiple Sclerosis (MS)

- Amyotrophic Lateral Sclerosis (ALS)
- Fibromyalgia Syndrome
- Guillain Barre
- Multiple Sclerosis (MS)
- Myasthenia Syndrome/Myasthenia Gravis/Congenital Myasthenia
- Post-Polio Syndrome

Obesity

- See Eating Disorders, Skin Breakdown

Oppositional Defiant Disorder

- See Behavior Disorders

Osteogenesis Imperfecta (OI)

- Brittle bone disease
- See Pathologic Fracture

Osteoarthritis

- See Arthritis
- See also Medications, Joint replacement

Osteoporosis

- See Spinal Curvature, Pathologic Fractures

Osteotomy

- See Surgery

Paraplegia

- See Spinal Cord Injury

Pathologic Fractures

- See Medications, Cancer, Fracture/Broken Bone, Osteogenesis Imperfecta

Peripheral Vascular Disease (PVD)

- Atherosclerotic Disease (ASD)
- Arteriosclerosis (ASCVD)
- Thromboangitis Obliterans/Buerger's disease
- Raynaud's Phenomenon or Raynaud's disease

Pervasive Developmental Disorder (PDD)

- See Autism Spectrum Disorder (ASD), Behavior, Communication, Seizures, Medication

Pervasive Developmental Disorder-Not Otherwise Specified (PDDNOS)

- See Autism Spectrum Disorder (ASD)

J-6 NARHA Standards & Accreditation Manual 2008

PICA

- See Eating Disorders

Post Polio Syndrome

- See Neuromuscular Disorders, Fatigue/Poor Endurance

Pseudo-achondroplasia

- See Achondroplasia

Quadriplegia

- See Spinal Cord Injury, Cerebral Palsy

Raynaud's Phenomenon

- See Peripheral Vascular Disease

Respiratory Compromise

- Cystic Fibrosis (CF)
- Chronic Obstructive Pulmonary Disease (COPD)
- See Asthma, Allergies, Equipment, Medications

Rett Syndrome

- See also Autism Spectrum Disorder (ASD)/Pervasive Developmental Disorder (PDD), Communication disorders, Behaviors, Seizures, Medication, Spinal Abnormalities

Rheumatoid Arthritis

- See Arthritis
- See also Fatigue/Endurance, Spinal abnormalities, Joint Replacement, Atlantoaxial instability

Sensory Integrative Dysfunction (SID)

- See also Autism Spectrum Disorder, Communication Disorders, Behavior

Sensory Processing Dysfunction

- See Sensory Integrative Dysfunction

Seizure Disorders/Epilepsy

Skin Breakdown

- Decubitus Ulcers
- See Medication-steroids, Spinal Cord Injury, Peripheral Vascular Disease, Brain Injury, Stroke, Amputations, Eating Disorders, Diabetes, Spina Bifida

Spinal Cord Injury (SCI)

- Paraplegia
- Quadriplegia
- Autonomic Dysreflexia
- See Skin Breakdown, Spinal Instability/Abnormalities, Spinal Fusion/Fixation, Equipment,

Medication

Spinal Curvature

- Scoliosis
- Kyphosis
- Lordosis

Spinal Fusion/Fixation

- Laminectomy
- Harrington Rods/Luque Sublaminae Wiring

Spinal Instability/Abnormalities

- Spondylolisthesis
- Scheurermann's disease

**NARHA Standards & Accreditation Manual J-7
2008**

- Hemivertebrae
- Herniated disc/Slipped disc
- Spinal stenosis
- Vertebral spurring
- See Atlantoaxial instability

Spinal Muscular Atrophy (SMA)

- See Myopathy

Spinal Orthoses

- See Equipment, Spinal Instability/Abnormality

Spina Bifida/Spina Bifida Occulta/Spina Bifida Cystica

- Myelomeningocele
- Spina bifida cystica
- Myelodysplasia
- Tethered Cord
- Chiari II Malformation
- Hydromyelia
- See Hydrocephalus, Skin Breakdown

Stroke/Cerebrovascular Accident (CVA)

- Hemiplegia
- Brain Attack
- See also Skin Breakdown, Seizure Disorders, Heart conditions, Communication

Substance Abuse/Drug or Alcohol Dependence

Surgery - Recent

- Tendon lengthening/transfers
- Fracture repair
- Osteotomy/derotation osteotomy
- Selective Dorsal Rhizotomy
- See also Joint Replacement

Total Hip/Knee Replacement (THR/TKR)

- See Joint Replacement

Weight Control Disorders

- See Eating Disorders including obesity, anorexia, bulimia

**J-8 NARHA Standards & Accreditation Manual
2008**

PRECAUTIONS AND CONTRAINDICATIONS for NARHA CENTERS

“Precautions and contraindications relate to functional capacity rather than the presence or absence of a diagnosis, disease or specific signs/symptoms by history. Many illnesses can be chronic and although there may, at times, be active symptoms, there is also, often, compensatory coping and adaptation.”

Dr. Joff Barnett

Who Can Ride?

Accepting a participant into your NARHA center is an important step. This chapter will help you to be more effective when deciding whether precautions will limit or contraindications will prevent an individual from participating in your program.

Essential Considerations

The goal of NARHA Centers is to provide safe and productive equine assisted activities for all participants and to “do no harm.” Equine activities hold inherent risks, yet these risks can be quantified by completing a “Risk/Benefit” analysis for each potential participant and by posing the question, “Will the benefit of the equine activity outweigh the risk?”

This question must be answered with consensus by the entire team including the participant, parent/guardian, NARHA instructor, therapist, educator, physician and others. **All team members must be comfortable with the final decision to approve participation.** These guidelines have been developed to identify the risk of mounted equine activities, yet the concepts may also help in the decision making process for other equine activities.

Consider:

- Equine activities inherently involve movement - whether the participant is riding, vaulting, or driving. **If the movement activity will cause a decrease in the participant’s function, an increase in pain or generally aggravate the medical condition; it is not the activity of choice.**

Example: A participant with an unstable spine from a car accident notices pain for several hours

after riding at a walk for 20 minutes. Trying a smooth gaited equine and a seat saver pad didn’t

improve the situation. The pain is interfering with the participant’s daily routine.

Recommended is

that the rider return to her doctor to evaluate the source of her pain before resuming riding.

- The essence of equine activities is the human-animal connection. **If this interaction is detrimental to the participant or the equine, equine activities may be contraindicated.**

Example: A ten-year-old boy with a history of abuse begins to strike the pony and sidewalkers

without provocation. The behavior is not controlled easily and the safety of the staff and pony are

compromised. Before participation with the pony can be continued, the child's behavior will need

to be evaluated and a safe plan of treatment established by the doctor, behavioral specialist, and/or

mental health professional.

J-10 NARHA Standards & Accreditation Manual 2008

- Equine activities require the use of certain equipment in a prescribed environment and are, by

definition, interaction with an equine. **If the NARHA center cannot accommodate the participant's equipment needs, or the environment will aggravate his condition, equine**

activities may not be appropriate.

Example: A young participant with hydrocephalus had a cranial surgery to revise his shunt. If the

NARHA center does not have a helmet that fits properly, mounted activities are contraindicated

until an appropriately fitting ASTM/SEI helmet can be obtained.

Example: An adult with asthma and severe allergies to dander and dust has found it difficult to

breathe for several hours after working around equines. Upon consultation with her doctor, it was

found that medications to control the allergies would be detrimental. Activities at the stable are

curtailed until her allergies can be managed.

- Mounted or driving activities always present the potential for a fall. In most instances, the fall

would be from four to six feet above the ground. **Such a fall may cause an increased functional impairment. The possibility of a fall should be given careful consideration, and**

may lead to the informed decision that mounted or driving activities are not the activity of choice.

Example: A young man with Down Syndrome has atlanto-axial instability with neurologic

symptoms. He does not ride because this condition makes it very possible that a fall from an equine

could cause a severe spinal cord injury or death.

• **Working around equines (i.e. grooming, leading, lunging, etc.) involves risk.** Even the welltrained equine is subject to its instinctive fight or flight responses. Equines are large, move quickly and can be dangerous to the participant who is unable to respond appropriately. Example: A young woman with a cerebellar brain tumor has jerky, erratic movements when she attempts to move. Propelling her wheelchair is a difficult and slow process. Walking with a walker is precarious because of poor balance. She requires one-on-one assistance with grooming tasks to avoid accidentally striking the equine and frightening him. Firm ground is chosen where her wheelchair may be more easily moved if necessary. The equine is held rather than tied to allow quicker movement of the equine away from the participant. If all of these situations cannot be met, grooming activities for this participant are contraindicated.

• **Equine activities involve a team approach.** Team members usually include the equine, the NARHA instructor, sidewalkers/helpers, and additional professionals as needed. The training, performance and communication skills of the team members must allow for a safe and effective session.

Example: At the beginning of a therapeutic riding lesson, the NARHA instructor notes that the only available sidewalker appears to be having an asthma attack. The riding session is canceled and alternative activities are done that day. Mounted activities are contraindicated until a safe session can be carried out with qualified staff.

**NARHA Standards & Accreditation Manual J-11
2008**

Precautions and Contraindications

Knowledge of current precautions and contraindications to equine activities is essential. The presence of a

precaution requires additional investigation - such as contacting the physician or therapist before accepting a participant into a program. It may also require modification of the program, additional equipment, and re-evaluation at regular intervals to assure the appropriateness of the program. **It is the**

NARHA center's responsibility to obtain additional information from the participant's physician, if needed, before permitting that participant to ride or work around equines.

The presence of a **contraindication** makes this activity inappropriate. Few contraindications are

clear-cut. A contraindication may be permanent. For instance, some activities may never be appropriate for certain participants due to safety or health concerns. A contraindication may be temporary. Activities may only be contraindicated until appropriate conditions exist at a center or until a participant's health condition improves enough to make participation safe. If a particular activity is contraindicated, alternative equine activities may be explored. For example, if therapeutic riding is contraindicated, therapeutic driving may be appropriate and beneficial.

ADA Considerations

The Americans with Disabilities Act (ADA) guarantees access for people with disabilities to activities in public spaces. Most EAA programs would fit in this category. A NARHA center may refuse access for safety concerns if they refuse access equally to all individuals with similar characteristics, and if there is concern for the safety of personnel, volunteers or other participants as a result. For example, a NARHA center may have a written policy to serve only those individuals weighing less than 200 lbs. with regard for the safety of the sidewalkers. These pre-determined written policies must be administered fairly with no exceptions. Reasons for not providing services such as concern over the 'welfare of the equine' or the 'well being of the rider' are not sufficient to explain why a rider may be refused participation. A fairly administered, written policy with specific limitations is necessary. Additionally, a NARHA center may find that providing services safely would be a considerable financial hardship. If this is not the case, it is expected that the Center would make 'reasonable accommodations' to provide services. The Precautions and Contraindications are guidelines. They should not be used solely to justify admission or denial of a participant to the center.

Staff

A NARHA center should have the numbers and quality of staff necessary to capably serve those participants accepted at the center. For example, if two sidewalkers and a leader are unavailable for a participant who requires them, only participants who do not need such support can be served. A NARHA center that provides and bills for therapy services must have a qualified, licensed therapy

professional who has additional training in working with equines to provide direct treatment. A center that accepts a participant with severe behavioral difficulties must have staff with adequate training to deal with the behavioral issues competently and safely. It is strongly recommended that a medical advisor (i.e. a physician, therapist, RN) who is familiar in working with equines be available to the program to assist in communicating with the participant's medical providers. This liaison can help the program and the community physician understand the issues related to an equine based activity.

Equines

J-12 NARHA Standards & Accreditation Manual 2008

Successfully matching a participant with an appropriate equine is part of deciding if a person can be served safely at a center. Temperament, gait, age, health, conformation, energy level, responsiveness, sensitivity and level of training are just some of the considerations for the equine. The characteristics of an available equine must be matched with a participant's needs and the activities that are proposed. Each equine must be evaluated and adequately trained for the work to be performed. All equines must have the temperament and training to work closely with the participant. Some equines that work well with certain participants may be inappropriate for others. Some equines have adverse reactions to crying children, people with extreme stress, pain, seizure disorders or migraines and should not be matched with these participants. The natural gait of the equine must be suitable to the needs of the participant. For example, a pony with a concussive gait may be unacceptable for the child with spastic type muscle tone, yet may be appropriate for the child with poor attention. It is recommended to maintain and frequently update written profiles for equines that include information on physical and behavioral aptitude, training level, suitability for which type of participant and other performance related information that may be relevant when selecting this equine for a prospective rider. The absence of an appropriate equine match for an individual participant may make the activity unsafe, and therefore, contraindicated.

Facilities and Equipment

A center's program goals, mission, facility, staff/volunteers, equipment resources and other assets will be important factors that help to determine if a participant can be served safely and effectively.

The physical structure of the facility and proximity to emergency medical care must be considered when deciding on appropriate participants.

Additional Considerations:

Participants may be referred to a NARHA center with secondary diagnosis. This may be indicated on the forms, or unreported. For example, an adult participant with weakness from a stroke may also have a history of depression. A child with ADHD may also be dealing with the trauma of sexual abuse. These additional diagnoses are most often not apparent and upon discovery may need to be considered when determining if an individual should participate in an activity. Several disorders, such as multiple sclerosis or arthritis, tend to have periodic, acute flare-ups, also known as an exacerbation. During an exacerbation the participant is often quite ill and uncomfortable. Equine activities are usually contraindicated at this time. With a significant exacerbation or deterioration of a condition, the participant needs to obtain a physician's permission before resuming activities at the NARHA Center. Many of the conditions, whether physiological or psychological in origin, may have periods of instability.

These are times when symptoms of the disorders are unable to be safely controlled. This may be temporary or permanent. If any participant develops a situation that makes them medically or

NARHA Standards & Accreditation Manual J-13 2008

psychologically unstable, referral to a physician or medical professional while discontinuing equine activities is essential. Return to the NARHA center should only be upon the approval of the physician.

Confidentiality

Medical and personal information about the participant is always considered confidential. It is essential that the NARHA instructor who is gathering this information share only that which is necessary to carry out a safe and effective program plan. Records should be kept secured, and

requests for information from other professionals should be gathered with a request for a release of information from the participant/family or caregiver. Respect the privacy of each participant and their family. Medical professionals working in this setting need to conform to HIPAA standards for privacy. (For additional information: www.hhs.gov/ocr/hipaa/)

Ongoing Participation

The decision-making process used to determine participant acceptance to a NARHA Center is the same for determining ongoing participation. Participant's interests can change, their degree of disability may change, or other situations can develop. Periodic re-assessments should be done.

This requires ongoing communication with the participant, physicians, teachers, therapists and parents or caretakers. There should be in place a written policy with criteria for acceptance to the NARHA center for specific activities, and for discontinuation of services. For example, a child with muscular dystrophy may begin in a therapeutic riding activity, but with progression of his disability, riding may no longer be safe and other non-mounted activities may be offered instead. In a regular review of each participant, ask the following: "Are equine assisted activities appropriate for this person?" "In what type of activities should s/he participate?" "How can we provide the activities safely?" Without this communication and periodic reassessment, a contraindication can develop and remain hidden from the NARHA center. **It is the responsibility of the NARHA center to maintain reasonably up to date information regarding the participant's status.**

A descriptive list of conditions and diagnoses begins on page J-1. This list is subject to periodic review and change by the NARHA Health and Education Committee to reflect the advances in the medical field and the broad spectrum of NARHA centers. **This document should be used to educate about the decision making process. It does not include every medical condition that could make equine activities inappropriate or unsafe. Use this list as a reference and seek out additional information as needed.**

*Prepared by the NARHA Health and Education Committee. The NARHA Health and Education Committee is an interdisciplinary group of health and education professionals. The information presented in this section is to be used as a guide only. In all participant evaluations, members are encouraged to confer with the participant's physician and/or therapist. NARHA and the NARHA Health and Education Committee are not responsible for the use or misuse of information presented in this section.

2008

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 and spinal stenosis (decreased spinal mobility) with associated neurologic problems are common. Pseudo achondroplasia and hypochondroplasia are two similar diagnoses that also present with shortness of stature, though 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)

Age Related Considerations

Children under 2 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 to 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 mis-step, 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 3. 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 provide direct treatment

to children 2 to 4 years of age who participate at NARHA 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 tolerate equine activities.

There are no upper age limits for participation at a NARHA 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 breakdown, osteoporosis,

diabetes, sensitivity to environmental factors such as heat, cold or allergens, and fatigue/poor

endurance.

Contraindication:

- Children with Down Syndrome less than 2 years old. (See Atlantoaxial Instability)

Allergies

NARHA Standards & Accreditation Manual J-15

2008

An allergy is a hypersensitive state acquired through exposure to a particular allergen.

Re-exposure then

causes an exaggerated reaction. NARHA centers need to be concerned with allergies to bee stings, hay,

animal dander, molds, dust and the NARHA 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 need for the prosthesis when off of the equine.

Precaution:

- Position adequately regarding potential for skin breakdown/pressure (See Skin Breakdown) and for pain.

- Riders with hemipelvectomy will require modifications to the saddle/sitting surface

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

J-16 NARHA Standards & Accreditation Manual 2008

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 activities.
- Pain or inflammation that interferes with functional abilities.

Arthrogryposis

Arthrogryposis 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 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 (i.e. panic or anxiety)
- emergency treatment plan including assurance that there is access to medication (i.e. inhalers)

Precaution:

**NARHA Standards & Accreditation Manual J-17
2008**

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

Contraindication:

- Poor accessibility to emergency medical care

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 such as rheumatoid arthritis. 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.

X-ray, CT or MRI is needed to determine if AAI is present. An accurate measurement by X-ray is

not easy to obtain and should be done by a radiologist familiar with this examination. It should be

noted that X-rays done prior to the age of 2 can be unreliable, therefore, these children may not

participate in mounted activities. For the child from 2-4 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**

supersede 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 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 mis-step, could be enough to cause problems. Please also see the

section on Head/Neck control.

NARHA requires that all participants with Down Syndrome have:

Prior to starting mounted activities:

A. A recent medical examination with special reference to neurologic function.

B. Lateral or side view X-rays or other appropriate imaging studies to determine presence of

AAI. Suggested to be within the past 5 years. X-rays are of the upper cervical region in:

1. Full flexion
2. Extension

C. Certification by a physician that an examination did not reveal atlantoaxial instability or

focal neurologic disorder.

With continuation of mounted activities:

A. Annual certification from a physician/qualified medical professional that the participant's

physical examination reveals no signs of AAI or decrease in neurologic function.

B. Following the initial radiograph, indication for repeated imaging studies (X-ray or CT) should be made at the discretion of the participant's physician.

Atlantoaxial Instability /Neurologic Symptoms

J-18 NARHA Standards & Accreditation Manual 2008

- 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 2

- 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 Attention Enhancing medication)

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)

NARHA Standards & Accreditation Manual J-19 2008

5 different syndromes are grouped under the ASD or PDD. These are Autism, Asperger, PDD – NOS

(Not Otherwise Specified), 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. Often onset is seen after a period of normal

development. Additional problems that may accompany these syndromes include:

sensory processing

dysfunction, cognitive dysfunction, and seizures.

Treatment is dependent on the presenting problems and may 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.

Precaution/Contraindication:

- Dependent on the specific dysfunction(s) or treatment methods. See topics such as Behavior

Problems, Seizures, Medications, Rett Syndrome, Sensory Integrative Disorder and Communication Disorders for specific related issues.

Behavior Problems

Psychological disorders, physiological disorders that affect the brain, and some medications may

cause behaviors or states of mind that are inappropriate for equine activities. Maladaptive behaviors

may include agitation, aggression towards people or animals, self-abusive behavior, or any

condition where the participant is dangerous to himself or to others. Have in place appropriate staff

and a plan to address inappropriate behaviors. Consultation with current caregivers (family or

therapists) and with mental health professionals is essential to insure that the NARHA 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 not wear your helmet and groom the equine?”

A lot of anger can build in children with ADD/ADHD or ODD. This can result in the development

of **Conduct Disorders** where rules and the rights of others are often violated. These individuals

may be sneaky, or hurt animals by pulling whiskers or pinching. Provide close supervision and do

not give these individuals the opportunity to get in trouble by being unsupervised.

Precaution for Behavior 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.

Contraindication for Behavior Problems:

**J-20 NARHA Standards & Accreditation Manual
2008**

- 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

Brain Injury (BI)

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 breakdown, 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:

- Dependent on the specific dysfunction(s) or treatment methods. See topics such as heterotopic ossification, cranial deficits, hydrocephalus, stroke, behavior, skin breakdown, 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 – Cachexia, Skin Breakdown)

Contraindication:

- Cancerous bone tumor which weaken 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)

**NARHA Standards & Accreditation Manual J-21
2008**

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 breakdown, Spinal curvature, Hip subluxation/dislocation.)
- In all types, communication may be difficult. (See Communication disorders).
- If head/neck control is problematic (See Head/Neck Control)

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.

- articulation disorder – difficulty with verbal communication, this may include difficulty with

pronouncing sounds, leaving sounds off of 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.

Precautions:

J-22 NARHA Standards & Accreditation Manual 2008

- Poor expressive language in which the participant is unable to express discomfort/pain, needs, wants.

- Poor receptive language in which the participant has difficulty understanding what is heard or read.

- Use of an augmentative/alternative communication device. (See Equipment)

- 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.

Coxa Arthrosis

Coxa arthrosis 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.

**NARHA Standards & Accreditation Manual J-23
2008**

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 Breakdown) 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 Breakdown)

Contraindication:

- Uncontrolled diabetes and/or medically unstable conditions associated with diabetes

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 must be taken that these participants regard the rules/guidelines of the operating

center. (See Skin Breakdown, 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.

J-24 NARHA Standards & Accreditation Manual

2008

Precaution:

- Poor endurance caused by breathing difficulties or circulatory problems. (See Respiratory

Compromise, Fatigue/ Poor Endurance, Heart/Cardiac)

- Skin chafing or pinching (See Skin Breakdown)

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. Foods eaten can include most anything, including dirt, clay, or manure. The diagnosis is given only once this becomes a persistent behavior, lasting more than 4 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 insure the participant will not ingest any non-food items

Equipment/Medical Devices

There are many pieces of equipment that a participant might need for improved function. These can

include devices that are external (they can be removed) or devices that are internal. Some examples

of equipment seen at NARHA 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

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

Whenever a NARHA center encounters a participant with any type of equipment, 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.

- Assure that the staff is familiar with the device. That they are aware that it is present and what it is for.

Use caution when handling the participant, particularly during mounting/dismounting.

- Assure 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

**NARHA Standards & Accreditation Manual J-25
2008**

- 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)

- 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 or shunts.

Consider

how a safety belt should be used with a feeding tube or internal pump mechanism present.

- 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 rider. Do not secure to the equine or tack.

Contraindication:

- If going without the equipment for a short period of time, in cases of malfunction, is dangerous

to the participant's health.

- If equine or staff are unfamiliar or unsafe around the equipment.

- Female participants with indwelling 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 6 to 8 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.

**J-26 NARHA Standards & Accreditation Manual
2008**

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 their 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 to severely impaired head and neck control requires a

physical or occupational therapy evaluation. The participant could be very appropriate for hippotherapy or a similar approach 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, as should alternative positions as appropriate.
- Fatigue may be a factor in loss of head control during mounted/driving activities.

Contraindication:

- If there is an inability to control for excessive head movement during mounted/driving activities.
- If the participant is unable to hold their head against gravity with a helmet on while sitting without moving/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 atlanto-axial instability with or without neurologic signs. (See Atlantoaxial Instability)

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 must 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 who is CardioPulmonary Resuscitation (CPR) certified present at the session.

**NARHA Standards & Accreditation Manual J-27
2008**

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/ VonWillebrand 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) must 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.

- Staff must be competent in handling skills

Contraindication:

- Severe hemophilia (<1% Factor) and/or a history of bleeding episodes

- Poor accessibility to emergency medical care (at any level of Factor deficiency)

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.

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.

**J-28 NARHA Standards & Accreditation Manual
2008**

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 require 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.
- 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 adaptive tack.

HIV positive/AIDS

AIDS may present itself in a variety of ways. Treatment consists of addressing the immune systems 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 Breakdown)
- Pain may dictate riding tolerance

Contraindication:

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

**NARHA Standards & Accreditation Manual J-29
2008**

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 it. 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 NARHA center instructor or therapist has any concern about the participant's hypertension, request more information from the physician. Ask if the blood pressure requires monitoring, how often, (you should 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 (i.e. extreme heat) or emotional conditions (fear, stress) may affect blood pressure.

Precaution:

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

**J-30 NARHA Standards & Accreditation Manual
2008**

Contraindication:

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

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:

- Adaptive equipment or alternative mounting procedures may be necessary.
- Pain will dictate tolerance.

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

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's muscular dystrophy, Becker myopathy, limb-girdle dystrophy, fascioscapulohumeral dystrophy, and myotonic myopathy. Duchenne's 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

**NARHA Standards & Accreditation Manual J-31
2008**

may have a different distribution of weakness. For example, in Duchenne's 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 prove 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 NARHA center staff should encourage and support the participant while avoiding setting unreasonable goals. The staff should recognize that the NARHA center may serve as one of the most important supports in the life of a participant with a terminal disease, and that they too (the staff) may need help and counseling to address their own feelings about the participant.

Precaution:

- Fatigue may dictate tolerance.

Contraindication:

- Fatigue that impacts functional activities off of 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 which 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.

**J-32 NARHA Standards & Accreditation Manual
2008**

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.

Contraindication:

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

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 Barre

Guillain Barre 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).

**NARHA Standards & Accreditation Manual J-33
2008**

• **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 must be competent in handling skills.

Contraindication:

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

Osteoporosis

Osteoporosis is a loss of bone density often seen in older people, post-menopausal women, individuals who do not walk, or those with pathologic fractures. Those who have limited physical activity during the developmental years, or for a prolonged time, are also at risk for developing osteoporosis. (See Spina Bifida, Spinal Cord Injury) Radiation therapy and some medications, particularly with long term use, (See Medication - Steroids) may also cause this condition. (See Fracture, Pathologic Fracture)

The loss of bone density may be generalized or localized to one site. The medical history should delineate the location(s) of the osteoporosis and the magnitude of the bone density loss (mild, moderate, severe.)

Precaution:

- Mild osteoporosis without a history of fractures.

Contraindication:

- Moderate to severe osteoporosis
- A history of fractures.
- Pain with activity, particularly of the spine

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.

**J-34 NARHA Standards & Accreditation Manual
2008**

Precaution:

- Condition under control without fractures for at least 2 years.
- The entire team must 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), Thromboangitis 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 breakdown (See Skin Breakdown) 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 (i.e. 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 must 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 must 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.

**NARHA Standards & Accreditation Manual J-35
2008**

If suction is needed to clear an airway, either the participant must be taken off of the equine or the equine must 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, 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

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 is often affected with possibly 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 Behaviors, Communication disorders, Pervasive Developmental Disorder.

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.

J-36 NARHA Standards & Accreditation Manual 2008

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, epilepsy, or seizures may be secondary to brain insults (i.e. brain injury, stroke, cerebral palsy, disease, tumor). The severity of seizures range 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 NARHA center should obtain additional information as to the following:

- Type of seizure
- Typical aura (pre-seizure sensations or behaviors)
- The typical motor activity during the seizure
- The post-seizure behavior and duration
- The average duration of the 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

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

NARHA Standards & Accreditation Manual J-37

2008

Skin Breakdown

Skin breakdown, 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 be obese with skin

fold. 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 breakdown 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. NARHA centers should modify equipment for

participants susceptible to skin breakdown. 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 which 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 4 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

**J-38 NARHA Standards & Accreditation Manual
2008**

cause of the condition can be corrected, seek medical help immediately. **The NARHA 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 Breakdown). 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 without adaptive tack that can assist in stabilization without interference to the movement of the equine and with quick release hardware

Spinal Curvature

The spine has 3 moveable curves to it, one at the neck/cervical, one at the upper back/thoracic and one at the lower back/lumbar. The 4th, 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 - for example, 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.

**NARHA Standards & Accreditation Manual J-39
2008**

- **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 must be monitored and adjusted to not further exaggerate the curvature.

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 Breakdown, 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 (i.e. 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 4-6 feet may be 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

**J-40 NARHA Standards & Accreditation Manual
2008**

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 which 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 Orthoses

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 physical therapist with experience and training in equine activities,

the NARHA 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 breakdown)

Contraindication:

- Use of a rigid chin support attached to the spinal orthosis

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)

**NARHA Standards & Accreditation Manual J-41
2008**

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 NARHA 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 NARHA 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 Breakdown)

Contraindication:

- If there is an appearance or worsening of neurologic symptoms.

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. NARHA 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.

J-42 NARHA Standards & Accreditation Manual 2008

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.

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 that 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, NARHA 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.

**NARHA Standards & Accreditation Manual J-43
2008**

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 require further investigation

prior to participation. These may include seizure activity, uncontrolled high blood pressure, sensory loss, known aneurysm or artery blockage.

**J-44 NARHA Standards & Accreditation Manual
2008**

Precaution:

- Controlled hypertension, if this is the cause of the CVA (see Heart Conditions)
- Impaired sensation (see Skin Breakdown)
- 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)

Contraindication:

- Uncontrolled seizure activity, an aneurysm, or an angioma.

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 NARHA center. Veterinary and human medications, cleaners, and poisons should be locked up at all times.

Contraindication:

- Active substance abuse.

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. NARHA 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 8-10 weeks following surgery.

NARHA Standards & Accreditation Manual J-45

2008

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 6 to 8 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 3 months to 1 year after surgery. Consult the participant's postsurgical

physical therapist about the participant's functional abilities.

Precautions:

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

Contraindications:

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

Medication

Consideration must be given to the medications, prescription and over the counter, which the

participant is taking. Listed below are general categories of medications common for the participant in NARHA programs. Be certain to be familiar with all of the medications.

Take note of

when the medications are taken (i.e. 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.

**J-46 NARHA Standards & Accreditation Manual
2008**

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.

• **Anti-Convulsants**

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, incoordination, 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.

**NARHA Standards & Accreditation Manual J-47
2008**

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.

• **Anti-Depressants**

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.

• **Anti-Spasmodics**

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 8-12 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.

• **Attention Enhancers**

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

**J-48 NARHA Standards & Accreditation Manual
2008**

Precaution:

Stimulant medication can worsen pre-existing motor tics or result in new tics including those observed in the rare Tourette's Syndrome. 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.

• **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 which 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 occurs 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 must 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 must be taken with these participants.

**NARHA Standards & Accreditation Manual J-49
2008**

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 contraindication, 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 must 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, and dizziness, headache, eye pain. Pay special attention to the participant's fluid intake, particularly on hot days, as fluid loss from sweating without

**J-50 NARHA Standards & Accreditation Manual
2008**

adequate replacement can result in increased concentration of lithium in the blood stream. Coffee, tea and caffeinated sodas are not appropriate for 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 medication 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 that 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 piroxicam 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, than 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.

• **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 Breakdown) Long-term use will lead to osteoporosis and these participants will be at greater risk of bone fractures. (See Osteoporosis, Pathologic Fractures)

**NARHA Standards & Accreditation Manual J-51
2008**

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.dhhs.gov

Cerebral palsy

<http://www.ucp.org/>

Multiple Sclerosis

<http://www.nmss.org/>

Spinal Cord Injury

<http://www.spinalcord.org/>

Brain Injury

www.biausa.org

Chronic Fatigue Immunodeficiency Syndrome (CFIDS) -

<http://www.cfids.org/>

Spina Bifida

www.sbaa.org

ADD/ADHD

<http://www.chadd.org/>

**J-52 NARHA Standards & Accreditation Manual
2008**

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