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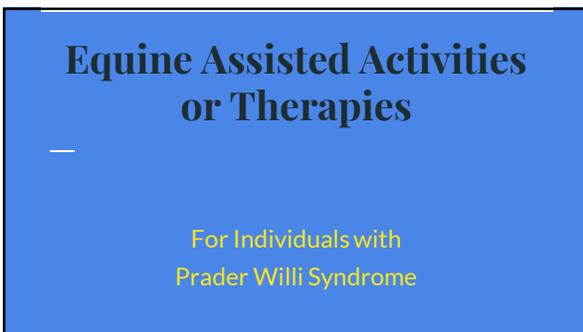
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# Definitions

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- ## Definitions
- Equine Assisted Activities
  - Equine Assisted Therapies
  - Prader Willi Syndrome
  - Adaptive Riding/  
Therapeutic Riding
  - Hippotherapy

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## Definitions

Adaptive Riding/Therapeutic Riding:  
Horseback riding lessons for individuals with special needs.  
Taught by instructors with specialized training and are often certified to work with students with disabilities.  
Instructors adapt their teaching style, environment, and equipment to facilitate acquisition of riding skills and for participation in an enjoyable activity.

Certification in teaching may be obtained through organizations including:  
PATH Intl, CHA, CANTRA, RDA

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**HIPPOTHERAPY**  
HPOT

Refers to how occupational therapy, physical therapy, and speech-language pathology professionals use evidence-based practice and clinical reasoning in the purposeful manipulation of equine movement as a therapy tool to engage sensory, neuro motor and cognitive systems to promote functional outcomes

Hippotherapy exists within a medical model of treatment, in which the equine movement is a treatment tool/strategy applied by a therapist.

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**Prader Willi Syndrome**

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**Prader Willi Syndrome**

Birth defect that results from inactive or missing genes on chromosome 15

Occurs one in approximately 12,000-15,000 births

Equally affects both sexes and all races.

**Causes/Diagnosis**

Genetic Disorder but not generally inherited

No known cause

Loss of genes on paternal chromosome 15

1. Deletion of genes 70% of cases
2. Uniparental disomy 25% of cases
3. Imprinting error 2-5% cases

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### Major Characteristics

- Low Muscle Tone
- Poor Growth
- Learning Difficulties
- Incomplete Puberty
- Excessive drive to eat
- Metabolic disturbances
- Difficult behaviors

MAJOR MEDICAL CONCERN:  
MORBID OBESITY

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### Developmental Concerns

- Growth Deficits
- Newborns are extremely lethargic
- Little interest or ability for feeding/sucking
- Growth hormone medication can improve muscle tone.
- Nasogastric tube or gastric tube may be used to ensure proper nutrition

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### PWS causes Growth Hormone deficiency which results in:

1. Decreased muscle tone
2. Decreased bone strength
3. Shorter stature
4. Smaller hands and feet
5. Increased body fat

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### Physical Developmental Concerns

- > Developmental milestones are typically delayed 1-2 years
- > Muscle tone improves with age
- > Strength, balance and coordination deficits often continue with growth
- > PT, OT, are important to begin as soon as possible with focus on sensory integration, for balance and coordination
- > Physical activity and exercise are critical for weight management and overall health

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### Physical and Sensory Deficiencies

- Trunk/upper and lower extremity weakness
- Skeletal abnormalities-scoliosis and hip dysplasia
- Sensory integration difficulties includes: Vestibular system, Proprioception, Tactile
- Oral -Motor Dyspraxia-difficulty in making and coordinating precise movements which are used in spoken language. Results in speech production difficulties. Problems include : difficulty sucking, blowing, swallowing, textures of food.

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### Sensory Integration Problems

- Vestibular System- Provides information on movement, gravity, and changing positions (esp. head positions) Balance, clumsiness, attention
- Proprioception: provides an unconscious awareness of our body, its position and its relationship to other parts as well other people and objects. Receptors are in all joints. Calms our nervous system.
- Tactile: Provides us with information about light touch, pressure, vibration, temperature and pain. Helps to develop body awareness and motor planning. Problems include: decrease sensitivity to cuts, bruises, pain and temperature.

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### Learning and Cognitive Development

- Typically have learning difficulties
- Common Strengths: Long Term memory, rote memory, receptive language skills
- Areas of Concern: Poor STM, abstract thinking, problem solving
- Should have IEP in Schools: Rights to PT, OT, ST, social skills therapy, by law.

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### Speech Development

Low muscle tone can interfere with babbling, articulation, and speech.

Oral motor and speech therapy should begin at infancy to help with feeding issues.

Assessment for childhood apraxia for speech

Sign language and picture communication boards can aid to reduce frustration.

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### Social and Emotional Development

Most are highly social

Strong desire for friendships

Social skills must be explicitly taught with strategies that are more concrete>Social Stories

Teaching other's perspectives can be difficult.

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### Sexual Development

Hormone levels are typically low

Late Puberty

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### Medical Concerns

1. Hyperphagia (brain fails to regulate appetite) drive to eat, can be life threatening, weight gain even on a low calorie diet.
2. Stomach and Bowel Problems- constipation.
3. High Pain Tolerance- lack of pain signals mask infection and injury.
4. Breathing and Sleeping Problems: due to weak chest muscles, sleep apnea.
5. Sensitive to medication
6. Water toxicity- drinking to much
7. Lack of Vomiting: Life threatening if binging
8. Poor Body temperature regulation.
9. Sores and Bruising.
10. Weak eye muscles.
11. Scoliosis- beginning at a young age
12. Osteoporosis- increase risk of fractures
13. Dental Problems

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### Hippotherapy



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### Hippotherapy: What is it?

- ★ Literally means "treatment with the help of the horse".
- ★ Comes from the greek word "hippos" meaning horse.
- ★ The client actively responds to the movement of the horse but does not attempt to control the horse in any way.
- ★ The horse is used as a therapeutic tool by trained therapists to achieve specific off horse goals/ treatment goals.
- ★ Part of a treatment Plan on Care . It is not a separate therapy discipline.

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### What makes the horse therapeutic?

- The movement of the hind legs and pelvis produces a 3- dimensional input to the patient unmatched by traditional therapy tools
- The movements of the human pelvis while walking are closely mimicked during riding.
- The horse's movement provides simultaneous input into many sensory systems, including :vestibular(assists with balance), tactile, proprioceptive, visual, auditory, and olfactory.
- Limbic system( responsible for basic emotion and drive)is affected resulting in greater sense of well being and motivation.

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### Benefits of Hippotherapy

- Normalization of muscle tone
- Mobilization of joints
- Provides strong simultaneous vestibular, tactile, and proprioceptive input
- Improved: Postural alignment, balance, righting and equilibrium reactions, arousal level and motivation, speech ,language, and communication skills, cognitive functioning, ADL performance and academic performance.

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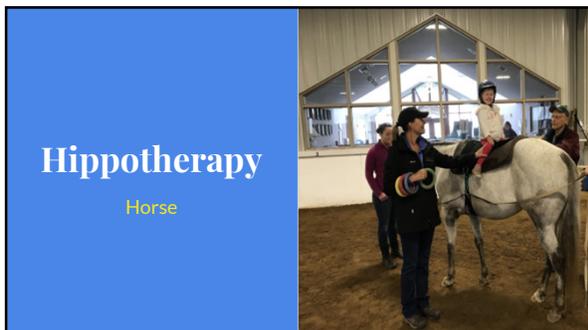
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**Desirable Traits**  
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- Symmetrical and well balanced
- Move with even strides and is capable of tracking up at the walk
- Supple and well muscled
- Trained to work with a rounded frame, good impulsion and smooth transitions.

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**Why include HPOT as a treatment strategy in PT POC for a patient with PWS?**

- Facilitate head and neck control
- Facilitate trunk control
- Provides sensory input of precise and repetitive patterns similar to movement of the human pelvis during gait.
- Facilitates motor planning/ apraxia
- Normal postural responses can be developed on a dynamic surface whose movement is symmetrical, rhythmical, and repetitive.



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### Reasons to include Hippotherapy in POC

Additionally;

- As a therapist you can grade the input that the patient can handle.
- As a therapist you can prevent overstimulation which may result in the use of abnormal muscle tone and postural compensations.

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### When to begin?

Able to hold head up/ head control

Able to sit up



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### When to transition to Therapeutic Riding/ Adaptive Riding

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### Learn to RIDE

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- ❖ Age
- ❖ Appropriate trunk control
- ❖ Able to maintain postural control while adding complexity of using upper extremities and lower extremities.
- ❖ Attention to task
- ❖ Lifelong activity to continue to benefit from the movements of the horse.

Fun activity for exercise and recreational life skill

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### Barn Activities

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- Heavy work
- Chores/ wheelbarrow
- Shoveling/ mucking stalls
- Grooming/ Brushing/ picking out hooves
- Tacking horse/ Carrying saddle

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### DEMONSTRATION

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