HIPPOTHERAPY
Evidence for the Practice
IS YOUR HUMAN A RESCUE TOO?

YEAH, SHE'S GOT SOME ISSUES, BUT I'M WORKING ON IT.
Course Objectives

• Be able to explain the basic principles of hippotherapy/equine movement as a treatment tool, and why it is effective
• Be able to explain current evidence for practicing hippotherapy
• Be able to explain how therapy on the horse translates to improvements in functional skills in land-based goals
Course Outline

• Introduction to Equine-Assisted Activities and Therapies
• Hippotherapy Principles for OT, PT and SLP
• Investigating the current evidence for this practice
• Translating Practice into Function
• Questions and Answers related to animal assisted therapies
Therapy vs Hippotherapy

- Hippotherapy: physical, occupational, or speech therapy treatment strategy utilizing equine movement
  - Hippo is the Greek word for horse: i.e. therapy with the help of a horse
- Treatments address impairments, functional limitations and disabilities in patients with neuromotor and sensory dysfunction
- Part of an integrated treatment program to achieve functional goals

- Treatment strategy, not a different kind of therapy
  - Other examples: bolster swing, therapy ball
Equine-Assisted Activities and Therapies (EAAT)

- **Equine-Assisted Activities (EAA)**
  Therapeutic riding, ground activities, grooming and stable management, shows, parades, in which the center’s clients, participants, volunteers, instructors and equines are involved.

- **Equine-Assisted Therapy (EAT)**
  Treatment that incorporates equine activities and/or the equine environment. Rehabilitative goals are related to the patient’s needs and the medical professional’s standards of practice.
A Comparison

<table>
<thead>
<tr>
<th><strong>Equine-Assisted Activities</strong></th>
<th><strong>Equine-Assisted Therapies</strong></th>
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<tbody>
<tr>
<td>- Adaptive Riding</td>
<td>- Hippotherapy: Occupational, Physical and Speech Pathology</td>
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<tr>
<td>- Equine-Facilitated Learning</td>
<td>- Equine-Facilitated Psychotherapy</td>
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<tr>
<td>- Interactive Vaulting</td>
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<td>- Therapeutic/adaptive driving</td>
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### Clarification

<table>
<thead>
<tr>
<th><strong>Hippotherapy</strong></th>
<th><strong>Adaptive Riding</strong></th>
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<tbody>
<tr>
<td><strong>Definition</strong></td>
<td>Medical treatment (PT, OT, SLP) utilizing the movement of the horse as a treatment strategy to address functional goals</td>
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<tr>
<td><strong>Completed by</strong></td>
<td>Licensed physical, occupational or speech therapist</td>
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<td><strong>Goals</strong></td>
<td>Land-based activities and functional skills individualized to the specific needs of the patient</td>
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<tr>
<td><strong>Setting</strong></td>
<td>One-on-one treatment</td>
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<tr>
<td><strong>Payment</strong></td>
<td>Billable through insurance for partial or full reimbursement</td>
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<tr>
<td><strong>Timeline</strong></td>
<td>Episodes of care model; plan of care individualized to patient, progress is periodically reassessed to determine need for ongoing services</td>
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## Terminology

<table>
<thead>
<tr>
<th>Terminology</th>
<th>Hippotherapy</th>
<th>Adaptive Riding</th>
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<tbody>
<tr>
<td>Treatment session</td>
<td>Riding lesson</td>
<td></td>
</tr>
<tr>
<td>Patient</td>
<td>Rider</td>
<td></td>
</tr>
<tr>
<td>Dynamic moving surface</td>
<td>Horse</td>
<td></td>
</tr>
<tr>
<td>Horse handler</td>
<td>Leader</td>
<td></td>
</tr>
<tr>
<td>Therapy goals</td>
<td>Riding goals</td>
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Let’s see Hippotherapy in action

Neuromotor Disorders

Sensory Disorders
Hippotherapy Principles

• Why is hippotherapy effective as a treatment strategy?
  • Three dimensional movement
  • Rhythmic
  • Repetitive
  • Motivational
Hippotherapy Principles

• **Three dimensional movement**
  - Movement of horse’s pelvis is *tri-planar*, mirrors the same three movement planes as the human pelvis
    - Anterior-posterior
    - Lateral
    - Rotational
  - Provides central nervous system stimulation to the muscles involved in walking
  - Simulation of what a **normal gait pattern** should feel like; sense of rhythm
Hippotherapy Principles

- **Rhythm**
  - The movement of the horse is **consistent and predictable**, just as human walking is
  - Movement can be **modified by the therapist** during a treatment session based on patient response
    - Allows patient to work on **feedback** (responsive) and **feedforward** (anticipatory) control
    - Assist with development of **balance reactions and motor control**
Hippotherapy Principles

• **Repetitive**
  • Number of “steps” or movement challenges during a typical treatment session is in **excess of 2,000 repetitions**
  • Compared to number of repetitions in a typical clinic using a balance ball or swing, 30-60, done manually by therapist, not necessarily consistent
  • Allows patient **ample opportunity** to practice and refine balance responses, leading to improvements in motor control
    • Explanation of static vs dynamic balance, weight shifting, gross motor development
Hippotherapy Principles

• **Motivational**
  - Horse as a movement tool is very powerful and motivational to children
  - Has potential to be more exciting than therapy in a standard clinic- seems more like play than therapy
  - Often more motivated to participate
  - Development of relationship with horse, therapy team

• Movement of the horse cannot be duplicated by any piece of equipment
“There is something about the outside of a horse that is good for the inside of a man.”
~ Winston Churchill

- Cuing the horse to **walk/halt** to elicit the rider’s protective responses
- Leading the horse **backward** to encourage the rider to bear weight throughout his upper extremities or placing the patient in reverse
- Leading the horse through a **figure-eight course** or 20-meter circle to facilitate the rider’s **lateral trunk muscles and dynamic stability**
- Keeping the horse stationary while the rider is assisted to play cards or throw a ball for **cognitive skills, balance and upper extremity function**
- Assisting the rider to ride in **quadruped** to build up **scapular stabilization and shoulder and neck strength**
Let’s meet Johnny  
4 year old with Cerebral Palsy

<table>
<thead>
<tr>
<th>Impairment</th>
<th>Body and systems level</th>
<th>Weak abdominal muscles/poor trunk control</th>
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<tbody>
<tr>
<td>Functional Limitation</td>
<td>Activity level</td>
<td>Poor sitting balance/unable to sit for more than 10 seconds unassisted</td>
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<td>Participation Restriction</td>
<td>Community participation level</td>
<td>Unable to sit with peers during circle time at school</td>
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Turning Hippotherapy into Function

• Example of therapy goal:

  “Johnny will be able to sit in ring position on the floor for 3 minutes independently on 4/5 trials to enable him to participate in circle time with his classmates.”

• How can we use the movement of the horse to address this?
Turning Hippotherapy into Function

- Answer:
  
  - Can use movement of the horse to work on trunk control and static balance
    - Alterations in **pace-lengthening and shortening of stride**
    - **Halt-walks**
    - **Schooling figures**: large and small circles, serpentines, reverses

- Importance of trunk control for stability and function- “it’s all about the middle”
  - Proximal vs. distal stability
## Let’s Look at the Evidence

<table>
<thead>
<tr>
<th>Study</th>
<th>Group</th>
<th>Condition</th>
<th>Duration</th>
<th>Result</th>
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<tbody>
<tr>
<td>Silkwood-Sherer D, Warmbier H (2007)</td>
<td>Adults</td>
<td>Multiple Sclerosis</td>
<td>14 weeks</td>
<td>Improve balance reactions</td>
</tr>
<tr>
<td>McGibbon, NH et al. (2009)</td>
<td>Pediatric</td>
<td>Cerebral Palsy</td>
<td>12 weeks</td>
<td>Decrease in adductor muscle asymmetry. Improved GMFM</td>
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REFERENCES


For additional information

• North American Riding for the Handicapped Association
  • www.narha.org

• American Hippotherapy Association
  • www.aha.org

• Healing Reins Therapeutic Center, Oregon
  • www.healingreins.org/hippotherapy

• Horses and Humans Research Foundation
  • www.horsesandhumans.org
Question and Answers