Description
Hippotherapy, also referred to as equine movement therapy, describes physical therapy using a horse. Hippotherapy has been proposed as a type of physical therapy for patients with impaired walking or balance.

Policy
Coding Information
Click the links below for attachments, coding tables & instructions.
Attachment I- CPT & HCPCS Coding Table

When a service is considered investigational
Hippotherapy, treatment is considered investigational for all diagnoses including but not limited to, mental health substance abuse, autism spectrum disorders and intellectual disabilities.

Background
Patients with spastic cerebral palsy frequently have impaired walking ability due to hyperactive tendon reflexes, muscle hypertonias, and increased resistance to increasing velocity of muscle stretch. These abnormalities result in a lack of selective muscle control and poor equilibrium responses. Hippotherapy has been proposed as a technique to decrease the energy requirements and improve walking in patients with cerebral palsy. It is thought that the natural swaying motion of the horse induces a pelvic movement in the rider that simulates human ambulation. In addition, variations in the horse’s movements can also prompt natural equilibrium movements in the rider. Hippotherapy is also being evaluated in patients with multiple sclerosis and developmental disorders such as Down syndrome.

Hippotherapy is a therapeutic intervention that is typically conducted by a physical or occupational therapist and is aimed at improving impaired body function. Therapeutic horseback riding is typically conducted by riding instructors and is
more frequently intended as social therapy. It is hoped that the multisensory environment may be beneficial to children with profound social and communication deficits, such as autism spectrum disorder, intellectual disability and schizophrenia. When considered together, hippotherapy and therapeutic riding are described as equine-assisted activities and therapies. This policy addresses equine-assisted activities that focus on improving physical functions such as balance and gait.

Simulated hippotherapy using a new device has been studied in European centers. Therapeutic interventions using such a device would be conducted in physical and occupational therapy settings and are outside the scope of this policy.

Habilitative and Rehabilitative Services

Habilitative and rehabilitative services are services provided to achieve normal functions and skills necessary to perform age-appropriate basic activities of daily living, including ambulation, eating, bathing, dressing, speech, and elimination.

Habilitation and rehabilitation services may include respiratory therapy, speech therapy, occupational therapy and physical medicine treatments. Habilitation and rehabilitation services may be performed by those who are qualified to perform such services and do so within the scope of their license. Such services are evaluated based on objective documentation of measurable progress toward functional improvement goals. Measurement methods must be valid, reliable, repeatable, and evidence-based. Habilitative services, including devices, are provided for a person to attain a skill or function never learned or acquired due to a disabling condition.

Rehabilitation services, including devices, on the other hand, are provided to help a person regain, maintain or prevent deterioration of a skill or function that has been acquired but then lost or impaired due to illness, injury, or disabling condition.

The following services are excluded from benefits under our certificates of coverage: custodial care, vocational, recreational, educational services, and services that show no likelihood of improvement and/or no therapeutic benefit

Rationale

The most recent literature review was conducted through January 26, 2016. Following is a summary of key studies to date.

Cerebral Palsy

A number of systematic reviews on hippotherapy in children with cerebral palsy (CP) have been published. In 2011, Zadnikar and Kastrin published a meta-analysis of hippotherapy and therapeutic horseback riding in children with CP.1 Included were 8 studies that met the inclusion criteria of a quantitative study design and outcomes that included postural control or balance. The meta-analysis included 84 children with CP in the intervention groups and 89 children in the comparison groups (39 with CP, 50 nondisabled). The treatment effect on postural control or balance showed a positive effect in 76 (90%) of the 84 children in the intervention groups. In the comparison group of 39 children with CP, 21 (54%) experienced positive effects from the
comparison treatment, which consisted of continuation of their weekly physical therapy and/or occupational therapy, or sitting on a barrel or in an artificial saddle. Although this difference was statistically significant (p<0.001), the clinical significance of the effect cannot be determined from this analysis. In addition, the analysis found heterogeneity among the studies, which typically would preclude meta-analysis, and a funnel plot showed asymmetry, indicating a possible publication bias. Finally, the inclusion of poor-quality studies in the meta-analysis further limited clinical interpretation.

A 2013 meta-analysis included 5 studies on therapeutic horseback riding and 9 studies on hippotherapy with a total of 277 children with spastic CP. 2 Included in the analysis were RCTs and observational studies that compared pre- and postriding results; 10 of the 14 studies provided level 4 evidence. Methodologic limitations of the studies included use of unvalidated outcome measures and lack of clinically meaningful differences between groups. The authors evaluated Gross Motor Function Measures (GMFM) across studies; meta-analysis indicated that short-term hippotherapy (8 to 10 minutes of total riding time) significantly reduced asymmetrical activity of the hip adductor muscles and could improve postural control in cases of spastic CP (Gross Motor Function Classification System level <5). However, long-term hippotherapy or therapeutic riding (8-22 hours) did not have a statistically significant effect on GMFM in children with spastic CP. A limitation of this meta-analysis is the inclusion of observational studies (pre-post comparisons) without a control group.

A 2009 RCT included children aged 4 to 12 years with CP who completed a 10-week session of hippotherapy with pre- and posttreatment assessments completed by 72 families (representing 35 intervention and 37 control subjects). 3 Randomization to hippotherapy or a waiting-list control with usual therapy was stratified by age and level of gross motor function. The physical therapist assessor was blinded to the randomization, and the participants were asked not to mention if they had completed the intervention at the time of the assessment. No differences between the hippotherapy and control groups were found for functional status (therapist-assessed) or child-reported quality of life. Minor differences were found in parent-reported quality of life and child health scores in the domain of family cohesion. Overall, hippotherapy was not found to have a clinically significant impact on children with CP.

McGibbons et al investigated the impact of hippotherapy on symmetry of adductor muscle activity during walking in children with spastic CP. 4 In phase 1 of the trial, 47 children aged 4 to 16 years with spastic CP were randomized to a single 10-minute session of hippotherapy or barrel sitting. Adductor muscle symmetry was measured before and after the session. The hippotherapy group demonstrated a statistically significant difference in adductor symmetry after this single intervention. Six of the children went on to participate in a phase 2, 36-week study (12 weeks without hippotherapy [baseline], 12 weeks of weekly hippotherapy, 12 weeks without intervention). Four of 6 subjects showed improved symmetry during walking after 12 weeks of hippotherapy; this improvement was maintained for an additional 12 weeks posttreatment. All 6 children improved on the 66-item GMFM (GMFM-66), and 1 child began walking without a walker after 4 weeks of hippotherapy. Five children improved in at least 1 area of the Self-Perception Profile. The authors noted that the study had
a small sample size in phase 2, spasticity was diversely distributed among subjects, and inclusion criteria led to a sample with mixed characteristics.

In 2002, Sterba et al reported the results of 18-week horseback riding intervention in 17 subjects with CP. GMFM was assessed before and after a once weekly horseback-riding program; after 18 weeks, GMFM Total Score improved by 7.6%, and returned to baseline 6 weeks after the program ended. In a 2003 study, Benda et al used remote surface electromyography to assess outcomes in 15 children (age range, 4-12 years) with CP who were randomly assigned to 8 minutes of hippotherapy or sitting stationary astride a barrel. The authors reported that the hippotherapy group showed greater symmetry of muscle activity. The clinical significance of this outcome is uncertain.

In 2015, Kwon et al published an RCT of hippotherapy in children (age range, 4-10 years) with CP. Ninety-one subjects were randomized to hippotherapy (30 minutes twice weekly) or home-based aerobic exercise, both for 8 consecutive weeks. Significant differences in composite measures of gross motor function improvement using the GMFM-88 and -66 were observed between groups. Trial limitations include the unclear clinical significance of the outcomes, uncertain attributes of the control group treatment, and lack of long-term outcomes.

Multiple Sclerosis
The use of hippotherapy for patients with multiple sclerosis (MS) was addressed in a 2010 systematic review of 3 studies. Included in the review is a comparative study by Silkwood-Sherer and Warmbier, which found that 14 weekly sessions of hippotherapy significantly improved balance in 9 patients with MS compared with a control group of 6 patients. Each of the other 2 studies in the review, both case series, included 11 subjects; these studies also reported improvements in balance with hippotherapy. The review concluded that the studies included provided emerging evidence that hippotherapy improves balance in persons with MS, although the reviewers acknowledged the limitations of small sample size, lack of randomization (especially given the variable nature of MS), and lack of controls in 2 studies.

A 2011 study compared therapeutic horseback riding (with nontherapist riding instructors) and traditional physical therapy in 27 patients with MS. The therapeutic horseback riding focused on progressively challenging the rider’s motor skills and the individualized physical therapy consisted of aerobic, balance, strengthening, and flexibility exercise sessions. The interventions were self-selected and were provided in 20 sessions over 6 months. The therapeutic horseback riding group showed a significant improvement on the Balance subscale of the Tinetti Performance-Oriented Mobility Assessment and 2 gait parameters (stride time, ground reaction forces). Five (42%) of 12 horseback riders showed a clinically significant improvement. Gait speed and cadence and scores on the Extended Disability Status Scale and the Barthel Index did not improve. No significant change was found in the control group. It was not reported whether the changes found after therapeutic horseback riding were significantly greater than those of the physical therapy control group.

A 2015 RCT by Frevel et al compared an Internet-based home training program to hippotherapy in 18 patients with MS. In this study, hippotherapy was considered to be the control intervention and the home training program to be the
experimental intervention. Although both intervention groups showed significant improvement in static and dynamic balance capacity, no significant difference was seen between groups. The study had weak statistical power to detect a difference between treatments. The study cannot determine whether hippotherapy is effective compared to standard physical therapy.

**Stroke**
Lee et al conducted a small randomized trial of hippotherapy for recovery of gait and balance in 30 patients poststroke.12 Patients were included in the study if they were able to walk independently or with a walking aid, had spasticity in a paretic lower extremity of less than 2 on the Ashworth Scale, and were able to perform training for more than 30 minutes. Patients were randomly assigned to hippotherapy or treadmill for 30 minutes, 3 days a week, for 8 weeks. At the end of training, gait speed and step length asymmetry ratio were assessed and balance was measured with the Berg Balance Scale. The hippotherapy group showed significant improvements in balance, gait speed, and step length asymmetry, while the treadmill training group improved only in step length asymmetry. Improvements in gait speed and step length asymmetry were significantly greater for the hippotherapy group compared with the treadmill group.

**Other Gait and Balance Disorders**
Comparative studies of hippotherapy versus other treatments for the outcomes of balance and gait have been conducted in community-dwelling subjects. Although they show some findings of improved outcomes, the study subjects included did not have any disorder in balance or gait, and so the clinical importance of the findings is unclear. A prospective U.S. study of 9 older adults (mean age, 76.4 years) with balance deficits found improvements in balance and quality of life when measured with a pretest-posttest design.16 Without a comparison group, it is uncertain to what extent the improvements can be attributed to hippotherapy.

Silkwood-Sherer et al reported on the efficacy of hippotherapy in a convenience sample of 16 children with mild to moderate balance deficits secondary to a variety of disorders.17 The most common diagnoses were CP (n=5), Down syndrome (n=3), developmental coordination disorder (n=2), and autism (n=2). Baseline and posttreatment Pediatric Balance Scale tests were videotaped and sent in randomized order to 3 pediatric physical therapists for scoring. The Activities Scale for Kids—Performance questionnaires were completed by the children or their parents. Hippotherapy sessions, conducted twice weekly for 6 weeks, yielded significant improvements on the Pediatric Balance Scale (from a median of 49.0 to 53.0) and the Activities Scale for Kids—Performance (from a median of 81.7 to 92.1). This study is limited by the lack of a control group.

Giagazoglou et al reported the effect of hippotherapy on balance and strength in a controlled trial of 19 adolescents with intellectual disability.18 Balance and strength were assessed with a pressure platform before and after 10 weeks of hippotherapy (n=10) and at the same time points in the nonintervention control group (n=9). There were no significant differences between the groups in double leg stance or left leg stance; however, there were significant group-by-time interactions in balance with the right leg stance. Measures of strength were improved following hippotherapy, with
significant group-by-time interactions. This study is limited by the lack of an active therapy control group.

In another small study of 12 patients with spastic spinal cord injury, hippotherapy resulted in short-term improvements in spasticity and well-being.

**Summary of Evidence**

The evidence for hippotherapy in individuals who have cerebral palsy, multiple sclerosis, stroke, or other gait and balance disorders includes randomized trials and case series studies. Relevant outcomes include symptoms and functional status. Results from several studies are variable for cerebral palsy, multiple sclerosis, stroke, and other indications. The randomized trials are generally small and have significant methodologic problems. In the largest randomized trial conducted to date (72 children), hippotherapy had no clinically significant impact on children with cerebral palsy. There are no randomized controlled trials showing that hippotherapy is superior to alternative treatment for patients with multiple sclerosis. Hippotherapy for other indications has been compared primarily with no intervention and has not been shown to be more effective than other active therapies. Therefore, the treatment is considered investigational.

**Reference Resources**

1. BlueCross and BlueShield Association. MPRM policy for Hippotherapy (8.03.12). Last reviewed March 2016.

Related Policies

Physical Medicine

Document Precedence

Blue Cross and Blue Shield of Vermont (BCBSVT) Medical Policies are developed to provide clinical guidance and are based on research of current medical literature and review of common medical practices in the treatment and diagnosis of disease. The
applicable group/individual contract and member certificate language, or employer’s benefit plan if an ASO group, determines benefits that are in effect at the time of service. Since medical practices and knowledge are constantly evolving, BCBSVT reserves the right to review and revise its medical policies periodically. To the extent that there may be any conflict between medical policy and contract/employer benefit plan language, the member’s contract/employer benefit plan language takes precedence.

Audit Information

BCBSVT reserves the right to conduct audits on any provider and/or facility to ensure compliance with the guidelines stated in the medical policy. If an audit identifies instances of non-compliance with this medical policy, BCBSVT reserves the right to recoup all non-compliant payments.

Administrative and Contractual Guidance

Benefit Determination Guidance

An approved referral authorization for members of the New England Health Plan (NEHP) is required. A prior approval for Access Blue New England (ABNE) members is required. NEHP/ABNE members may have different benefits for services listed in this policy. To confirm benefits, please contact the customer service department at the member’s health plan.

Federal Employee Program (FEP): Members may have different benefits that apply. For further information please contact FEP customer service or refer to the FEP Service Benefit Plan Brochure. It is important to verify the member’s benefits prior to providing the service to determine if benefits are available or if there is a specific exclusion in the member’s benefit.

Coverage varies according to the member’s group or individual contract. Not all groups are required to follow the Vermont legislative mandates. Member Contract language takes precedence over medical policy when there is a conflict.

If the member receives benefits through an Administrative Services Only (ASO) group, benefits may vary or not apply. To verify benefit information, please refer to the member’s employer benefit plan documents or contact the customer service department. Language in the employer benefit plan documents takes precedence over medical policy when there is a conflict.

Policy Implementation/Update information

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<tr>
<th>Date</th>
<th>Action</th>
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<tbody>
<tr>
<td>07/2011</td>
<td>New Policy</td>
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<tr>
<td>08/2012</td>
<td>Added “Document Precedence” section. Updated “Related Policies” section to reflect ECDD medical policy. Minor format changes. Cross referenced all CPT/HCPCS codes to ECDD medical policy, revised/added new coding table. Added “Audit Information” section. RLJ.</td>
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<tr>
<td>03/2015</td>
<td>Adoption of BCBSA policy# 08.03.12. Approved in MPC on 3/9/15.</td>
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Updated references, minor formatting changes, policy statement remains unchanged. Habilitation & Rehabilitation Definitions added. CPT® Codes 97039 and 97139 moved from Benefit Exception to Not medically necessary. CPT 97799 moved from Benefit Exception to Investigational. HCPCS moved from Investigational to Benefit Exclusion. Medical policy name change from Hippotherapy and recreational therapy to Hippotherapy, removed all recreational therapy references.

Approved by BCBSVT Medical Directors

Gabrielle Bercy, MD, MPH, MBA
Senior Medical Director
Chair, Medical Policy Committee

Joshua Plavin, MD, MPH, MBA
Chief Medical Officer

Attachment I

CPT® & HCPCS Coding Table

<table>
<thead>
<tr>
<th>Code Type</th>
<th>Number</th>
<th>Description</th>
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<tr>
<td>CPT®</td>
<td>97039</td>
<td>Unlisted modality, (specify type and time if constant attendance)</td>
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<tr>
<td>CPT®</td>
<td>97139</td>
<td>Unlisted therapeutic procedure (specify)</td>
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The following codes will be denied as Investigational for all diagnoses

| CPT®      | 97799  | Unlisted physical medicine/rehabilitation service or procedure |

The following codes will be denied as a Benefit Exclusion for all diagnoses

| HCPCS     | S8940  | Equestrian / hippotherapy, per session |