# OCCUPATIONAL THERAPY USING HIPPOTHERAPY FOR CHILDREN WITH DEVELOPMENTAL DISABILITIES

by

Ainsley Ellen Dillon, OTR/L

Liberty University

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

Doctor of Philosophy

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2023

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## ABSTRACT

The purpose of this quantitative study was to explore the impact of incorporating equine movement (hippotherapy) as a treatment tool in occupational therapy (OT) sessions for children with developmental disabilities. This study posed research questions relating to the impact of this treatment tool in OT practice on mobility and daily activity skills within the population of interest. A non-randomized controlled trial with pretest-posttest design was utilized to explore the research questions. Sixteen subjects enrolled in this study by convenience sampling and participated in six weeks of 45-minute OT sessions incorporating equine movement (intervention group, n = 8) or six weeks of 45-minute adaptive riding sessions involving equine movement without OT (control group, n = 8). All research activities took place at a PATH Intl. Member Center in Western Pennsylvania. Caregivers completed the Pediatric Evaluation of Disability Inventory Computer Adaptive Test (PEDI-CAT) before and after the six-week treatment period, and occupational therapy practitioners (OTPs) completed the Goal Attainment Scale (GAS) after the six-week treatment period based on individualized, measurable goals created based on needs identified on the PEDI-CAT. Data was analyzed using repeated measures and multivariate ANOVAs. Results indicated a statistically significant improvement in mobility and daily activity skills as determined by OTP-reported outcomes. These results were accompanied by caregiver-reported data that revealed a need for more carryover of therapeutic outcomes to everyday life. Skill areas that had caregiver- and OTP-reported improvements include: balance, motor planning, standing and sitting endurance, attention to task, functional mobility, dressing, fastener and container manipulation, and food preparation.


*Keywords*: occupational therapy, hippotherapy, equine movement, developmental disabilities, pediatrics

**Acknowledgements**

I would like to thank my dissertation committee for the role they played in the completion of my dissertation. Thank you to Dr. Williamson for her direction and guidance throughout the process, Dr. Chelette for sharing her statistical knowledge and critical eye for detail, and Dr. Sexton for her encouragement and praise at the end of the journey.

I would also like to thank all of the volunteers and staff at the study site who made this work possible. An extra special shoutout to occupational therapist, Rebecca Lord, OTD, OTR/L, and therapeutic riding instructors, Suzy Hardman and Karin Peterson, for their talent and passion in providing equine assisted services.

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## List of Abbreviations

American Hippotherapy Association, Inc. (AHA)

Autism Spectrum Disorder (ASD)

Fibrosis, Neurodegeneration, and Cerebral Angiomatosis (FINCA) Syndrome

Goal Attainment Scale (GAS)

International Classification of Function, Disability and Health (ICF)

Occupational Therapy (OT)

Occupational Therapy Practitioner (OTP)

Occupational Therapy Practice Framework (OTPF)

Pediatric Evaluation of Disability Inventory Computer Adaptive Test (PEDI-CAT)

Professional Association of Therapeutic Horsemanship International (PATH Intl.)

# CHAPTER ONE: INTRODUCTION

## Overview

This study aims to consider the effectiveness of using hippotherapy as a treatment tool in occupational therapy services for children with developmental disabilities in order to improve mobility and daily living skills. First understanding the prevalence of these diagnoses and the relevance of occupational therapy, and its associated treatment tools, is necessary to understanding this issue. As 17.8% of children, 3-17 years of age, experience a developmental disability in the United States (Zablotsky & Black, 2020), and occupational therapy services are significantly more prevalent for these children (Cogswell et al., 2022), exploring new therapy tools is relevant and necessary to improve care options for this population. To do this, current evidence related to hippotherapy will be reviewed and related to the intended population and rehabilitative service. After identifying what is already known, and gaining an understanding of the challenges related to this topic, a new study will be proposed in order to contribute to the clinical relevance of occupational therapy practitioners utilizing hippotherapy in practice with children experiencing developmental disabilities.

## Background

### Developmental Disabilities

Developmental disabilities are diagnosed in 17.8% of children aged 3-17 in the United States. This group of disabilities is comprised of conditions that impact development in one or more areas (physical, learning, language, and/or behavioral) that are typically experienced to some degree throughout the lifespan and are diagnosed before the age of 22. Common diagnoses

that are considered developmental disabilities include autism spectrum disorder, attention deficit disorder, and cerebral palsy (Zablotsky & Black, 2020).

### *Need for Specialized Services*

These children often experience difficulty with play and mobility, self-care skills, and require specialty care and equipment, that often lead to an increased need for healthcare and educational services that often goes unmet (Zablotsky & Black, 2020) (Cogswell et al., 2022). A 2022 study found that children with developmental disabilities were eighteen times more likely to receive special education and early intervention services than their peers (Cogswell et al., 2022). As the number of children diagnosed with developmental disabilities continues to increase, more widespread and innovative healthcare approaches are necessary to meet the need of this population (Zablotsky & Black, 2020).

## Occupational Therapy

Occupational therapy was formalized under a practice framework in 1979 in order to set a federal precedent for areas of practice for the emerging practice (American Occupational Therapy Association, 2020). Occupational therapy services are conducted by an occupational therapist or occupational therapy assistant and can be provided on an individual, group, or population basis, regardless of disability status, in an effort to support everyday life occupations (American Occupational Therapy Association, 2020).

### *Relevance to Children with Developmental Disabilities*

Occupational therapy is a common rehabilitative service provided to children with developmental disabilities, as this population is two to seven times more likely to receive specialty services, such as occupational therapy (Cogswell et al., 2022). For children with developmental disabilities, treatments often focus on promoting independence and participation

in everyday activities such as school participation, play, and home routines (Novak & Honan, 2019). Many treatment strategies can be employed by occupational therapists to meet individualized goals of the child and family. Common occupational therapy practices that are considered accepted practices for children with developmental disabilities include parent education, home programs, goal-directed training, among a total of 40 other treatment strategies that are considered to have strong evidence for use in practice. An additional 75 intervention options were identified as promising, yet of weaker evidence for use in occupational therapy - One of these interventions being hippotherapy (Novak & Honan, 2019).

**Hippotherapy as a Treatment Tool**

One therapy tool that can be utilized by physical, occupational, and speech therapists to address the needs of these children is *hippotherapy*. With this treatment tool, equine movement is used as a dynamic platform to translate three-dimensional, rhythmic movements from the horse to the astride client in a way that challenges balance and stimulates musculature and other body systems (Donaldson et al., 2019). First identified in 1875 as a treatment that involves the use of equine movement for the treatment of a variety of neurological and physical conditions (Donaldson et al., 2019), this tool incorporates equine movement into treatment sessions in order to promote a variety of social, cognitive, and physical benefits (Georgieva & Veselina, 2020). The American Hippotherapy Association, Inc. was later formed in 1992 to formalize the use of this treatment tool for healthcare providers in the United States and abroad. Since that time, hippotherapy has become an accepted treatment tool within the scope of practice of occupational therapy practitioners as determined by the American Occupational Therapy Association (American Hippotherapy Association, 2019).

### *In Practice*

Hippotherapy can be utilized for various disabilities, lengths of times, and durations of sessions. Wood & Fields (2021) identified that the average length of time that hippotherapy was utilized in a treatment session was 38 minutes for an average of 12.7 weeks. Common components of hippotherapy that were manipulated include the horse's speed/gait, position of the client on the horse, and the incorporation of other therapeutic activities and exercises (Wood & Fields, 2021).

### *Relevance to Children with Developmental Disabilities*

Novak and Honan (2019) list hippotherapy as a potentially promising treatment tool in occupational therapy for children with developmental disabilities. Various studies have been conducted on specific developmental disabilities, such as autism spectrum disorder, cerebral palsy, and attention deficit hyperactivity disorder to explore this statement (Scotland-Coogan et al., 2021) (Georgieva & Veselina, 2020) (du Plessis et al., 2019), and many benefits of utilizing hippotherapy as a treatment tool for children with developmental disabilities have been identified, including physical, social, and behavioral improvements (Maresca et al., 2022) (Zoccante et al., 2021) (Prieto et al., 2021).

### *Accepted Terminology*

This treatment tool differs from other forms of equine assisted services by the purposeful manipulation of the equine movement for therapeutic purposes of the client. Terms such as equine therapy, equine assisted therapy, and hippotherapy program are not accepted terms when describing the use of equine movement (hippotherapy) in healthcare. This treatment tool also differs from other equine assisted services such as adaptive (therapeutic) riding and equine assisted psychotherapy (American Hippotherapy Association, Inc., 2021a).

## Theoretical Background Overview

The theoretical framework of this study will combine the parameters outlined in the occupational therapy practice framework (American Occupational Therapy Association, 2020) with best practice principles defined by the American Hippotherapy Association (American Hippotherapy Association, Inc., 2021b) in order to produce results relevant and replicable to both the profession of occupational therapy and the specialty treatment area. This study will also follow the educational and safety standards outlined by the Professional Association of Therapeutic Horsemanship International (PATH Intl.) in order to ensure that therapy services follow best practice related to treatment space and delivery of services.

## Problem Statement

The overall problem that this study aims to explore is the effectiveness of hippotherapy as a treatment tool within the field of occupational therapy for children with developmental disabilities in a way that informs practitioners and families of its potential for other children in need. To do this, challenges found in previous research need to be identified and addressed through methodological design.

### Limited Scope

Limited research has been conducted involving children with developmental disabilities in order to determine effective interventions (Smythe et al., 2021). A 2021 scoping review found that the majority of research pertaining to hippotherapy focused on cerebral palsy as the diagnosis and physical therapy as the predominant practicing profession, with only 7% of studies identifying occupational therapy as a providing service (Wood & Fields, 2021). Another study found that only autism spectrum disorder has evidence that was soundly replicable in practice, while research is lacking for other developmental disabilities (Maresca et al., 2022). In a study

that did encompass a wider range of disabilities, the therapy professions providing the services incorporating hippotherapy were not clearly identified. Because of this design challenge, the study noted that the impact of the specific rehabilitative professions (occupational, physical, and speech therapies), in the context of utilizing hippotherapy, could not be determined (Potvin-Belanger et al., 2021). Both the limited research involving occupational therapy practitioners, and the lack of studies on more encompassing diagnoses, contribute to a narrow body of evidence that limits the applicability of hippotherapy within occupational therapy for supporting children with developmental disabilities.

**Ambiguous Terminology**

Many publications exist describing the potential for hippotherapy as a treatment tool. However, there is variability in the therapy profession that is utilizing this treatment tool (physical therapy, occupational therapy, or speech language pathology) within methodology (Prieto et al., 2021) (Maresca et al., 2022). There is also noteworthy variability in terminology used surrounding the use of a variety of equine assisted services (Stern & Chur-Hansen, 2019) (Tan & Simmonds, 2018) (Trzmiel et al., 2019). Variability in terminology used in research involving hippotherapy creates ambiguity in the subject. Terms such as “equine therapy” or “equine assisted therapy” or “therapeutic riding” are used in place of “hippotherapy” in a way that is often inaccurate, as these other terms are either discontinued by the American Hippotherapy Association or refer to other areas of the practice within the equine assisted services industry (American Hippotherapy Association, Inc., 2021a). Because of this terminology challenge, there is often a lack of clarity of the treatment being performed in the study, as well as the specific professional (occupational therapist, physical therapist, or speech therapist) who is performing the service.

## Purpose Statement

The purpose of this study is to analyze the impact of using hippotherapy as a treatment tool in occupational therapy to support functional skill development (mobility and daily living skills) in children with developmental disabilities between the ages of 3 and 17.

## Significance of the Study

This study aims to add to the current body of evidence relating to the use of equine movement in the practice of occupational therapy for children with developmental disabilities. Based on the current challenges of unclear methodology in research (Stern & Chur-Hansen, 2019), this study will further clarify areas that were previously vague in terms of conclusions and practical clinal use.

### Application to Population

A 2022 quantitative study involving the use of the equine environment and movement for children with autism spectrum disorder showed statistically significant differences in the goal attainment of groups participating in the equine environment versus non-equine environment (Peters et al., 2022). To build on these findings, this study intends to further apply the effects of equine movement to a broader population than autism spectrum disorder alone. This study will also look at children between the ages of 3 – 17 years old in order to align with other relevant research studies focusing on developmental disabilities (Zablotskly & Black, 2020) (Cogswell et al., 2022). Providing conclusions that are relevant to a diverse group of diagnoses and ages will improve the clinical applicability of results.

### Application to Clinical Practice

Commonly, studies completed on the use of hippotherapy in practice focus on more than one therapy profession (Prieto et al., 2021) (Roux, 2020). This study will aim to clearly report

on the role of occupational therapy within the realm of hippotherapy by focusing on this professional solely within the methodology. In this way, the research findings can be applied to the practice of occupational therapists directly and contribute the evidence related to this treatment tool in practice. As Novak and Honan (2019) point out, hippotherapy's effectiveness within occupational therapy has shown promise, but does not yet have strong evidence to back its usage with children with developmental disabilities. Adding to the body of knowledge on this topic will serve to strengthen the available evidence for usage in practice. Because equine movement has been shown to be reproduceable across different sizes, shapes, and breeds of horses, the results of this study will be applicable to other clinical settings that utilize horses in practice (Donaldson et al., 2019).

## Research Questions

**RQ1:** Do children with developmental disabilities, between 3 and 17 years old, experience a significant difference in pre- and post-testing of *mobility* when receiving occupational therapy services incorporating hippotherapy?

**RQ2:** Do children with developmental disabilities, between 3 and 17 years old, experience a significant difference in pre- and post-testing of *daily activities* when receiving occupational therapy services incorporating hippotherapy?

## Overview of Methodology

To explore the impacts of using hippotherapy in occupational therapy sessions for children with developmental delays, quantitative methods will be utilized. Aspects of mobility and daily living skill development will be analyzed as it relates to the use of equine movement in weekly occupational therapy sessions.

## Research Design

A non-randomized controlled trial with pretest-posttest design will be used to collect and analyze data before and after participation in up to 6 weekly occupational therapy sessions incorporating hippotherapy. Outcome measures that will be utilized include the Goal Attainment Scale (GAS) and the Pediatric Evaluation of Disability Inventory Computer Adaptive Test (PEDI-CAT). Data will be analyzed for statistical and clinical significance for children with developmental disabilities.

## Assumptions

Post-positivist interpretive framework will be attributed to the research design in that assumptions about the use of this treatment tool and subjects will have an impact on perspectives and perceptions. Ontological assumptions guide research decisions concerning the choice of incorporating multiple perspectives, while the choice to observe real-world experiences lends itself to epistemological assumptions.

## Limitations

Limitations of this study include the lack of ability to blind raters from the intervention, as the parents and therapists completing outcome measures are aware of the treatment tools being utilized in therapy sessions. Measures are also somewhat subjective in nature in terms of parent and therapist reporting. There are also factors that may deem the use of equine movement unsafe during one or more weekly sessions, such as weather conditions, equine injury, or change in the medical condition of a participant.

## Definitions

1. *Adaptive Riding* – An adaptive sport taught by a therapeutic riding instructor designed as a recreational and wellness activity for children and adults with disabilities (Professional Association of Therapeutic Horsemanship International, 2018).
2. *American Hippotherapy Association, Inc.* – A professional organization that provides educational resources for therapists who utilize hippotherapy in practice as well as advocates for best practice (American Hippotherapy Association, Inc., 2021a).
3. *Developmental Disabilities* – A group of lifelong conditions, diagnosed in childhood, that limit a person's performance in one or more of the following areas: physical, learning, language, or behavioral (Zablotsky & Black, 2020).
4. *Equine/Horse* – The general term for horses, ponies, mules and donkeys (American Hippotherapy Association, Inc., 2021a).
5. *Goal Attainment Scale (GAS)* – A technique utilized by therapists to objectively measure progress on individualized goals using a five point scale (May-Benson, 2021).
6. *Hippotherapy* – Hippotherapy involves the purposeful manipulation of equine movement as a treatment tool in therapy services. Services are provided by a physical therapist, occupational therapist, or speech-language pathologist as part of an overall treatment plan, along with other treatment tools and strategies (American Hippotherapy Association, Inc., 2021a).
7. *International Classification of Functioning, Disability and Health (ICF)* – A classification system designed by the World Health Organization to define health conditions and components (World Health Organization, 2001a).

8. *Occupational Therapy* – Occupational therapy involves the therapeutic habilitation, rehabilitation, and wellness promotion of everyday life occupations of individuals, groups, and populations with or without a disability. Services are provided by occupational therapists and occupational therapy assistants (American Occupational Therapy Association, 2020).
9. *Occupational Therapy Practitioner (OTP)* – A practitioner who provides occupational therapy services and may include occupational therapists, occupational therapy students, occupational therapy assistants, and occupational therapy assistant students.
10. *Occupational Therapy Practice Framework (OTPF)* – This framework outlines the scope of practice of occupational therapists as described by the American Occupational Therapy Association (American Occupational Therapy Association, 2020).
11. *Pediatric Evaluation of Disability Inventory Computer Adaptive Test (PEDI-CAT)* – Assessment tool utilized by therapists to determine a child's function in mobility, daily living skills, social/cognitive skills, and responsibility through a digital platform and completed by a parent or caregiver (Fragala-Pinkham et al., 2020).
12. *Professional Association of Therapeutic Horsemanship International (PATH Intl.)* – This organization provides certification and accreditation guidelines and opportunities for professionals and facilities looking to provide equine assisted services (Professional Association of Therapeutic Horsemanship International, 2018).

## Summary

This study will analyze the impact that occupational therapy services incorporating hippotherapy have on the mobility and daily living skills of children, ages 3-17, with developmental disabilities. Evidence surrounding the use of hippotherapy for a variety of

developmental disabilities indicates potential for its use in occupational therapy practice. However, the limited research relating hippotherapy to both occupational therapy and children with developmental disabilities specifically, indicate a need for further research to determine, and further clarify, the clinical and statistical relevance of this treatment tool in practice.

# CHAPTER TWO: LITERATURE REVIEW

## Overview

Evidence-based practice is imperative for occupational therapists to ensure that treatment strategies are safe and effective for the population they are working with. The body of research regarding the diagnosis and the therapy intervention should be incorporated into working practice as well as inform future research. First assessing relevant perspectives and available evidence is necessary to creating a fully informed research design that builds upon what is known to generate new knowledge for ongoing research efforts and clinical practice. Publications available regarding relevant theoretical frameworks, occupational therapy and hippotherapy as a treatment tool, developmental disabilities, and valid assessment tools to assess outcomes will be explored for application in this research study.

## Relevant Framework

A multitude of frameworks exist in which occupational therapists can view their work with children with developmental disabilities. Because of the broad spectrum of needs of children with developmental disabilities, a flexible framework is necessary for appropriate application for all involved. As Schalock et al. (2021) points out, a holistic approach to the theoretical framework is necessary. Dynamic Systems Theory allows for this flexibility in application.

### Dynamic Systems Theory

Dynamic systems theory involves the interaction between the person, environment, and task in a nonlinear interplay of complex components. The motor learning theory, first described by Esther Thelen in her 1984 publication, is one approach to the dynamic systems theory that describes the development and acquisition of developmental skills. This theory speaks to the

neuroplasticity of development, or the reorganization of neural circuits to change the response to a stimulus or intention (Zimmerman et al., 2020).

### *Application to Practice Area*

**Occupational Therapy.** The OTPF emphasized throughout its extensive contents, the importance of considering environmental factors, personal factors, and occupational components (American Occupational Therapy Association, 2020). All three of these areas relate directly to the three elements of the dynamic systems model (person, environment, and task) and make this a relevant model for occupational therapists to utilize in practice (Zimmerman et al., 2020).

Clinically, Zimmerman et al., (2020) points out methods to put this framework into practice. Elements include skills practice that is:

- Repetitive
- Massed then distributed over time
- Variable
- Random

Feedback of the skill should be intrinsic, provided after several trials, and focused on the effect of the skill completion (Zimmerman et al., 2020).

**Hippotherapy.** Hippotherapy can be used to adapt the environmental piece of the dynamic systems theory model. The equine movement is manipulated in a way that evokes a self-organizing response in the patient that then impacts task performance (Granados & Agis, 2011). On a biomechanical level, studies have shown that equine movement is translated through the human pelvis in a way that causes greater activation in the musculature (Silva et al., 2021) (Donaldson et al., 2019). This again supports the concept of equine movement effectively impacting the environmental component of the dynamic systems theory.

# Related Literature

## Developmental Disabilities

The ICF defines developmental disabilities through the World Health Organization (2001b) as,

> A severe, chronic disability of a person 5 years of age or older which: (a) Is attributable to a mental or physical impairment or is a combination of mental and physical impairments; (b) Is manifested before the person attains age twenty-two; (c) Results in substantial functional limitations in three or more of the following areas of major life activity: (I) self care;(ii) receptive and expressed language; (iii) learning; (iv) mobility; (v) self direction; (vi) capacity for independent living; and (vii) economic self sufficiency; and (e) reflects the person's need for a combination and sequence of special, interdisciplinary or generic care, treatment or other services which are lifelong or extended duration and are individually planned and coordinated; except that such term, when applied to infants and young children (meaning individuals from birth to age 5, inclusive),who have substantial developmental delay or specific congenital or acquired conditions with a high probability of resulting in developmental disabilities if services are not provided (pp. 2-3).

This definition encompasses many diagnoses that fall underneath this category. Common diagnoses include autism spectrum disorder, attention-deficit/hyperactivity disorder (ADHD), and cerebral palsy (Zablotsky et al., 2020).

### *Prevalence*

Developmental Disabilities are diagnosed in 17.8% of the United States population in children 3-17 (Zablotsky & Black, 2020). Autism spectrum disorder is one of these

developmental disabilities with rising prevalence. In the United States, it is estimated that autism spectrum disorder is prevalent in 1 out of every 59 children and is most commonly found with a comorbidity of attention deficit hyperactivity disorder (ADHD) (Joshi et al., 2021). Cerebral palsy is another developmental diagnosis that is classified as a movement disorder caused by damage to the central nervous system during critical early development (Prieto et al., 2021). This diagnosis is found in 2.11/1000 live births in developed countries (Guindos-Sanchez et al., 2020). Individuals with Down syndrome who experience a genetic difference on chromosome 21, account for 1 out of 650-1000 live births (Portaro et al., 2020).

### *Challenges Experienced by Population*

Developmental disabilities can impact a person's abilities in a variety of areas including the areas of language, self-care, mobility, learning, and independent living skills (World Health Organization, 2001b). These challenges are met with an increased need for healthcare and educational services that often times go unfulfilled (Zablotsky & Black, 2020). Many of these individuals are at risk for developing future conditions such as metabolic disorders, Alzheimer's disease, and leukemia (Portaro et al., 2020). It has also been shown that there is an increased risk of this population experiencing adverse childhood experiences that have been shown to impact future health needs in adulthood (Morgart et al., 2021). Given the wide range of challenges presented throughout the developmental disabilities classification, various approaches and interventions have been explored for these diagnoses (Zablotsky et al., 2020).

### *Common Interventions*

**Pharmacological.** Drugs that are considered anti-ADHD medications (i.e. methylphenidate and guanfacine) are commonly utilized in children with autism spectrum disorder and ADHD to improve hyperactive tendencies. A 2021 systematic review found that

these treatments have variable results that often correlated with the participant's intellectual capability and, in many cases, a side effect of these drugs included mood lability (Joshi et al., 2021). Pharmacological approaches are also frequently used for children with cerebral palsy. Medications include those for targeting pain, anti-seizure approaches, and reduced spasticity. A 2021 systematic review reported that low effectiveness was reported with many of the medications trialed (Bohn et al., 2021).

**Rehabilitative and Educational.** Children with developmental disabilities often qualify for a variety of services including special education, mental health, and rehabilitative services (Zablotsky & Black, 2020). In fact, Cogswell et al. (2022) points out that children with developmental disabilities are 18 times more likely to receive early intervention and special education services than their peers. A qualitative study by Scotland-Coogan et al. (2021) reported that the most common rehabilitative therapies mentioned by parents for developmental disabilities include occupational, physical, and speech therapies, as well as vision therapy. Specific treatment tools within these therapies included aquatic therapy and hippotherapy. The setting of these therapies included home, community, and school settings (Scotland-Coogan et al., 2021).

### *Parent Perceptions*

A main theme derived from current literature is the concern parents had for their children's care in the future (Scotland-Coogan et al., 2021). Many parents were concerned with their child's dependency on their parent for basic routine tasks (i.e. getting a bath), as well as who would care for them in the future when the parents were unable (Scotland-Coogan et al., 2021). Another study focusing on cultural differences in the perceptions of their children with autism spectrum disorder showed that parents of Asian culture experienced exceptional

dissociation from their culture due to behaviors of their child that were not accepted in the culture (Shorey et al., 2020). Overall, parents perceive a need for services that is currently unmet.

## Occupational Therapy

Formalized under a practice framework in 1979, occupational therapy services are designed to support the everyday life occupations of people, groups, and populations regardless of disability status. These services are provided by both occupational therapists and occupational therapy assistants. Since the first instatement of the OTPF in 1979, the document has been reviewed every five years and updated as emerging practices and new evidence arise (American Occupational Therapy Association, 2020). The most recent edition was published in 2020 and reflects current best practice that can be applied within the diverse scope of practice of occupational therapists (American Occupational Therapy Association, 2020).

### *In Practice*

Occupational therapy may take on a variety of formats as determined by the therapist and setting. When working with children with autism spectrum disorder, a 2022 qualitative study showed that the majority of occupational therapists work in 1:1 settings with clients (98.1%) for an average of 45-minutes per session (Abu-Dahab et al., 2022, p. 234). The majority of children worked with were between the ages of 2 – 5 years (50%) or 6 – 12 years (38.9%) (Abu-Dahab et al., 2022, p. 234). Within these parameters, a variety of intervention strategies were utilized based on the preference and experiences of the individual therapists (Abu-Dahab et al., 2022).

### *Therapy Strategies*

Occupational therapy aims to improve a person's participation in their daily life roles. There are many treatment tools and approaches that can be utilized by occupational therapist

within a client's plan of care to reach their individualized functional goals. Because of the vast array of treatment approaches available to therapists, it is important that evidence-based practices are utilized (Novak & Honan, 2019).

A 2019 systematic review comprehensively examines many common treatment strategies utilized in occupational therapy for children with disabilities (Novak & Honan, 2019). From the 129 studies included in the review, treatment strategies were categorized as (1) "Do it", (2) "Probably do it", (3) "Probably don't do it", or "Don't do it" (Novak & Honan, 2019, p. 264). Of the 135 interventions indicated, 30% were categorized as "do it", while 56% were categorized as "probably do it" (Novak & Honan, 2019). This indicates that 56% of interventions utilized by occupational therapists require additional research support to confidently make recommendations for their use in therapy. One of the "probably do it" treatment tools recognized in this study was hippotherapy (Novak & Honan, 2019).

**Hippotherapy**

In 1875, hippotherapy was identified as a treatment tool that involves the intentional manipulation of equine movement by physical, occupational, and speech therapists (Donaldson et al., 2019). This treatment was first intended for those with neurological and physical conditions (Donaldson et al., 2019), but is now utilized by therapists for clients seeking improvements in a variety of areas including social, cognitive, and physical abilities (Georgieva & Veselina, 2020). This can be seen in the evolution of hippotherapy from what was considered "classic" to "modern" (Granados & Fernandez, 2011, pp. 191-192). While classic hippotherapy typically was comprised of one equine, one patient, and one rehabilitative therapist working solely towards passive responses of the patient based on the manipulation of equine movement, modern hippotherapy builds on these principles to also include interventions with a more holistic

approach working on functional areas such as cognitive, behavioral, and social goals (Granados & Fernandez, 2011).

### *Characteristics of Equine Movement*

**Physical Components.** The movement provides three-dimensional input to the person astride the horse that replicates the same three-dimensional pattern of the human gait (Silva et al., 2021) in a way that challenges balance while stimulating other body systems such as the musculature, sensory, and neurological systems (Donaldson et al., 2019). Similar trunk and lower limb muscle activation is experienced by a person astride a horse as a person walking, supporting the notion that equine movement can produce a comparable human gait pattern in the astride person. Equine movement has also been shown to activate certain muscle groups at a statistically significant higher rate than walking alone, not only replicating but improving upon the activation experienced by the astride person (Silva et al., 2021). Flores et al. (2019) reports that the type of surface and impulsion of movement changes the activation of postural muscles in children with cerebral palsy, indicating that this movement can be intentionally manipulated by a therapist for the best outcomes of the patient.

**Sensory Components.** Equine movement has been shown to stimulate a multitude of sensory systems including the tactile, proprioceptive, vestibular, visual, and olfactory systems (Granados & Fernandez, 2011) due to the multimodal qualities of the movement (Srinivasan et al., 2018). As sensory processing skills are necessary for functional participation in everyday life activities (Roux, 2020), the components of equine movement that impact these skills are relevant to the overall effect of hippotherapy as a treatment tool in therapy.

### *Functional Improvements in Population*

**Mobility.** Various studies have found benefits of using hippotherapy within the context of outpatient therapy for different developmental disabilities (Georgieva & Veselina, 2020) (Prieto et al., 2021) (Portaro et al., 2020). In a 2020 study involving 19 participants with autism spectrum disorder, researchers focused on the impact of hippotherapy on the motor aspects of the condition. Both body posture and equilibrium stability were assessed through objective measurements before and after treatment. Results indicate that all 19 participants experienced improvements in balance after utilizing hippotherapy in therapy (Georgieva & Veselina, 2020). A 2021 randomized control trial found that weekly hippotherapy implementation in therapy for children with cerebral palsy improved gross motor function and functional performance of participants (Prieto et al., 2021). For children with down syndrome, a six month regimen of therapy services incorporating hippotherapy improved both gait and balance for these individuals (Portaro et al., 2020). A 2019 study found that physical therapy using hippotherapy was more beneficial to mobility improvements in participants with cerebral palsy compared to traditional physical therapy (Abouelkheir et al., 2019).

**Daily Activities.** Hippotherapy implementation has been shown to improve a child's willingness and engagement to participate in daily life activities (Maresca et al., 2020). This notion is also supported by a 2021 systematic review that speaks to 33 ICF levels of activity and participation that are shown to improve positively with the use of hippotherapy in studies conducted between 1980 and 2018 (Wood & Fields, 2021). A 2021 descriptive survey explored the life habits of children with neurodevelopmental differences, including autism spectrum disorder, cerebral palsy, and ADHD, as reported by the parents of these children (Potvin-Belanger et al., 2021). The social-emotional benefits of hippotherapy reported included improved

(1) interpersonal relationships, (2) communication, and (3) self-esteem (Potvin-Belanger et al., 2021). Another qualitative study showed parent-reported improvements in confidence and independence (Scotland-Coogan et al., 2021). These studies (Potvin-Belanger et al., 2021) (Scotland-Coogan et al., 2021) show promise in social-emotional gains for children with developmental disabilities that contribute to success in daily living skills.

### *Parent Perceptions*

In addition to the qualitative data obtained from parents regarding perceived benefits of hippotherapy for their children with developmental disabilities (Scotland-Coogan et al., 2021) (Potvin-Belanger et al., 2021), parent's perceptions of the therapy itself, and their aspirations for the incorporation of this treatment tool, are explored in order to gain perspective on what drives parents to enroll their children in therapy services incorporating hippotherapy. Parents indicated that their top three priorities, in terms of life habits for their children, were (1) communication, (2) education, and (3) interpersonal relationships (Potvin-Belanger et al., 2021). They also indicated that their top five reasons for trying hippotherapy were to improve (1) postural control, (2) strength and mobility, (3) attention and concentration, (4) social skills, and (5) walking and transfer autonomy (Potvin-Belanger et al., 2021).

### *Within Occupational Therapy*

The American Hippotherapy Association, Inc. was formed in 1992 to formalize the use of hippotherapy as a treatment tool for healthcare providers in the United States and abroad. Since that time, hippotherapy as become an accepted treatment tool within the scope of practice of occupational therapy practitioners as determined by the American Occupational Therapy Association (American Hippotherapy Association, 2019). Targeting the functional areas of

mobility and daily living skills are within the OTPF and therefore within the scope of practice of occupational therapists (American Occupational Therapy Association, 2020). A treatment tool that has evidence supporting its use to improve a person's abilities in these areas would therefore also fall within an occupational therapist's scope of practice.

### *Feasibility of Using Hippotherapy as a Treatment Tool*

The studies above have shown evidence for the use of hippotherapy and the potential physical and cognitive benefits. However, the feasibility of its use in treatment also needs to be explored. Peters et al. (2021) delves into this topic through a series of parent questionnaires and therapist focus groups to determine the perceived feasibility of this treatment method. It was found that, compared to non-hippotherapy treatment tools, hippotherapy was accepted as a comparably accessible type of therapy for families (Peters et al., 202). Potvin-Belanger et al. (2021) found that parents reported no obstacles to participating in hippotherapy (35%), while 19% indicated that cost was a barrier to participating in hippotherapy. This study also pointed out that no parents reported the risk of falling or injury as an obstacle in their opinion (Potvin-Belanger et al., 2021).

### *Reproducibility of Results*

Hippotherapy has undergone research to determine its useability and replicability as a therapeutic tool (Donaldson et al., 2019). Quantitative methods were utilized in a 2019 study that involved body sensors on participants and equines to obtain data on movement patterns. This study found that the equine movement was translated to the astride patient and this movement was consistent between a variety of horses. The movement was not muted by physical conditions that the participants had and was experienced consistently among all subjects (Donaldson et al.,

2019). These findings support hippotherapy as a reproducible treatment tool for a variety of patients, using a variety of equines. Because hippotherapy is reproducible, studies surrounding the use of this treatment tool can be applied to clinical applications with relevant populations.

## Measuring Impact

In order to effectively measure change in mobility and daily living skills, appropriate analytical tools are necessary.

### *PEDI-CAT*

The PEDI-CAT is designed to determine a child's function in mobility, daily living skills, social/cognitive skills, and responsibility through a digital platform and completed by a parent or caregiver (Fragala-Pinkham et al., 2020). It is designed for children from birth to 21 years old and has been shown to be less time consuming and have more consistent results than other comparable assessment measures (Cordeiro et al., 2020). This tool has been used with children living with a variety of developmental disabilities (Fragala-Pinkham et al., 2020), supporting its use for future studies involving a similar population. While the PEDI-CAT has promise of validity and reliability overall, some studies have shown that the quality of data decreases as the child's abilities reach the floor or ceiling limits of the scale (Fragala-Pinkham et al., 2020) (Cordeiro et al., 2020).

### *GAS*

GAS has been used across a variety of disciplines and was first introduced in the 1960's for the purpose of measuring outcomes in community mental health. It has since been applied to other settings focused on creating individualized treatment goals (Shogren et al., 2021). Goals are determined by the evaluating OTP and are placed on a five-point scale as depicted by Shogren et al. (2021) as,

- *-2 (Much less than expected)*
- *-1 (Somewhat less than expected)*
- *0 (Expected level of outcome)*
- *1 (Somewhat more than expected)*
- *2 (Much more than expected)*

(p. 9)

Because OTPs are given the freedom to create goals as they see fit for their clients, goals tend to be more client-centered, though may have elements of subjectivity that limit their ability to apply to the five-point scale (Bexelius et al., 2018). To mitigate this, Bexelius et al. (2018) suggests that therapists utilize a SMART goal format (Specific, Measurable, Achievable, Relevant, and Timed) to create goals that will be used with the GAS. Goals using this format on the GAS have been shown to have relevance to both clinical practice and client perspectives (Bexelius et al., 2018).

## Limitations

### *Variability in Terminology*

Many publications exist describing the potential for hippotherapy as a treatment tool. However, there is variability in the therapy profession that is utilizing this treatment tool (physical therapy, occupational therapy, or speech therapy), as well as vagueness in treatment protocol when using hippotherapy. There is also variability in terminology used in research involving hippotherapy that often confuses the subject. For example, some studies may refer to this treatment strategy as “equine therapy”, “equine assisted therapy”, or “therapeutic riding”. According to a position paper published by the American Hippotherapy Association, the

appropriate terminology for the use of equine movement as a treatment tool in occupational, physical, or speech therapies is “hippotherapy” (“American Hippotherapy Association”, 2021). Other terminology refers to other areas of practice or are discontinued terms. Because of this terminology challenge, many research studies cannot be related to hippotherapy due to lack of clarity of the treatment being performed in the study.

### *Methodological Weakness*

While the above research shows support of hippotherapy as a treatment tool, there are still areas that warrant further investigation. A 2019 systematic review shows mixed results from a variety of studies conducted on the topic. Conclusions indicate a “methodological weakness” in study designs that limit the reproducibility and replicability of research (Stern & Chur-Hansen, 2019, p. 361). Another study found that hippotherapy was “probably” a beneficial treatment tool in occupational therapy (Novak & Honan, 2019), indicating a need for stronger evidence support. Yet another study concluded that hippotherapy showed promise, but could not be fully supported, given the current lack of strong methodological quality of studies published in the field (Pérez-Gómez et al., 2020). Considering that three recent systematic reviews found challenges in the strength of methodology surrounding the use of hippotherapy in practice, this is a challenge to be addressed in future research.

## Summary

Children with developmental disabilities comprise a significant portion of the United States population (17.8%) (Zablotsky & Black, 2020) and are 18 times more likely to be in need of rehabilitative and special education services (Cogswell et al., 2022). Occupational therapy is one of the rehabilitative services that is often utilized to improve this population’s daily occupations and living skills. To reach the goals of clients, occupational therapists can utilize a

variety of treatment tools, including hippotherapy (Novak & Honan, 2019). This tool has been utilized by therapists in the United States as a formal treatment tool since 1992 (American Hippotherapy Association, 2019). In children with developmental disabilities, recent evidence has shown improvements in mobility, daily activities, and social/cognitive skills in isolated diagnoses related to developmental disabilities as a result of the implementation of hippotherapy (Georgieva & Veselina, 2020) (Maresca et al., 2020) (Potvin-Belanger et al., 2021). However, these studies are not specific to the field of occupational therapy and do not relate to the overarching developmental disabilities population. As the prevalence of developmental disabilities persists, advancements are in process to improve care for these individuals in the home and community settings (Schalock et al., 2021). By building upon the body of knowledge available and clarifying the role of occupational therapy as the treating profession utilizing hippotherapy for children with developmental disabilities, clinical practice and client outcomes will be improved in a way that continues to advance the value of occupational therapy services and the quality of life of children with developmental disabilities.

# CHAPTER THREE: METHODS

## Overview

To explore the impacts of incorporating hippotherapy as a treatment tool in occupational therapy sessions for children with developmental delays, quantitative methods will be utilized. Aspects of mobility and daily living skills will be explored as it relates to the use of hippotherapy as a treatment tool in weekly occupational therapy sessions through outcome measures that will be completed before and after a series of interventions.

## Design

A non-randomized controlled trial with pretest-posttest design will be used to collect and analyze paired data before and after participation in 6 occupational therapy sessions incorporating hippotherapy. Outcome measures that will be utilized include the Goal Attainment Scale (GAS) and the Pediatric Evaluation of Disability Inventory Computer Adaptive Test (PEDI-CAT). Data will be analyzed for statistical and clinical significance for children with developmental disabilities using ANOVAs and relevant descriptive statistics.

### Rationale

A non-randomized controlled trial with pretest-posttest design was determined as the best fit design for this study, as all participants will be placed in intervention and control groups based on collaborating facility policies. Using a control group that participates in outside occupational therapy services with parent/caregiver report assessments has been utilized in comparison to therapy using hippotherapy in the past (Macauley & Gutierrez, 2004). This type of design will allow for clinical perspectives to be drawn on a traditional model of occupational therapy versus one that incorporates hippotherapy. The PEDI-CAT and GAS have both been used in quantitative analysis for studies involving children with developmental disabilities and

will provide data with test-retest reliability for each participant and dependent variable in question (Cordeiro et al., 2020) (McDougall & King, 2007). Field (2017) outlines statistical analysis options for different types of data through quantitative research. Based on the traits of the data being collected, as well as the information provided by Field (2017), the most realistic statistic test to utilize in this data analysis is the paired t-test. This decision is based on the fact that the data being collected has the following qualities: (1) paired data, (2) interval measurements, and (3) two group comparison. A test of normality would also be necessary to ensure that the use of the paired t-test is appropriate, as well as descriptive statistics comparing the pretest group mean to the posttest group mean (Field, 2017). Similar research designs have been utilized in previous research pertaining to children with developmental disabilities. Beetham et al. (2019) used a t-test to determine the validity of a related outcome measure to this population with statistically significant results drawn from the use of this statistical tool.

## Research Questions

**RQ1:** Do children with developmental disabilities, between 3 and 17 years old, experience a significant difference in pre- and post-testing of *mobility* when receiving occupational therapy services incorporating hippotherapy?

**RQ2:** Do children with developmental disabilities, between 3 and 17 years old, experience a significant difference in pre- and post-testing of *daily activities* when receiving occupational therapy services incorporating hippotherapy?

## Hypotheses

The null hypotheses for this study are:

**$H_0$1:** There is no statistically significant difference in *mobility* of children with developmental disabilities, between 3 and 17 years old, after participating in occupational therapy incorporating hippotherapy as shown by the PEDI-CAT and GAS measurement tools.

**$H_0$2:** There is no statistically significant difference in *daily activities* of children with developmental disabilities, between 3 and 17 years old, after participating in occupational therapy incorporating hippotherapy as shown by the PEDI-CAT and GAS measurement tools.

## Participants and Setting

### Population

Children with a developmental disability between the ages of 3 and 17 years old will be selected for participation based on a set of inclusion criteria relevant to the intervention and control group criteria. Participants will be recruited from collaborating facility's contact list, based on facility policies of admission. This population will be chosen from a nonrandomized convenience sampling of participants who meet criteria and can commit to 6 weeks of participation in this study. Participants that are typically served by this facility have the following characteristics:

#### *Common Diagnoses*

- 25% Autism Spectrum Disorder
- 19% Attention and Behavioral Disorders
- 13% Intellectual and Developmental Disabilities
- 13% Other Genetic Disorders
- 12% Cerebral Palsy

- 9% Down Syndrome
- 6% Spina Bifida
- 3% Other Physical Disorders

("2020 Year in Review", 2020)

***Age Groups***

- 22% - 2-7 years old
- 15% - 8-10 years old
- 16% - 11-13 years old
- 16% - 14-21 years old
- 31% - 21+ years old

(*2020 Year in Review*, 2020)

Characteristics of research participants are expected to follow a similar distribution as those described above, given relevant diagnoses and age groups.

**Sample**

In order to maintain an effective sample size, at least eight participants will be enrolled in both the intervention and control groups. This minimum number of participants has been shown to provide conclusive results with little variance for studies with simple variables (Jenkins & Quintana-Ascencio, 2020).

***Intervention Group – OT with Hippotherapy***

Participants will participate in 6 weekly 45-minute occupational therapy sessions incorporating hippotherapy. Eligible participants will be recruited using convenience sampling

and offered a spot in the research study based on ability to commit to 6 weekly occupational therapy sessions incorporating hippotherapy.

***Control Group – Equine Movement without OT***

Participants will participate in 6 weekly 45-minute adaptive riding sessions. Eligible participants will be recruited using convenience sampling and offered a spot in the research study based on ability to commit to 6 weekly adaptive sessions.

**Table 1**

*Sample Statistics*

| Characteristic | Number of Participants (Intervention Group) | Number of Participants (Control Group) |
|---|---|---|
| ***Age Group*** | | |
| 3-9 years old | 00 | 00 |
| 10-17 years old | 00 | 00 |
| ***Gender*** | | |
| Male | 00 | 00 |
| Female | 00 | 00 |
| ***Severity of Daily Activity Impairments*** | | |
| Mild | 00 | 00 |
| Moderate | 00 | 00 |
| Severe | 00 | 00 |
| ***Severity of Mobility Impairments*** | | |
| Mild | 00 | 00 |
| Moderate | 00 | 00 |
| Severe | 00 | 00 |

**Setting**

***Intervention Group – OT with Hippotherapy***

The collaborating facility is a PATH Intl. Member Center located in Southwestern Pennsylvania that aims to improve lives through the incorporation of equine assisted services, including occupational therapy incorporating hippotherapy and adaptive riding. Occupational

therapy sessions are conducted by a licensed occupational therapist who creates a client-centered treatment plan and utilizes equine movement and the outdoor environment to work towards functional life goals set by the therapist and family (Hilltop Horizons, Inc., 2022). When incorporating hippotherapy in occupational therapy, each participant is supported by an OTP, 1-3 volunteers (serving as horse handler and/or sidewalkers), as well as a PATH Intl. Certified Therapeutic Riding Instructor (the therapist may be dual-certified to meet this requirement). Sessions are an average of 45 minutes in length and are conducted in a variety of spaces including an outdoor riding arena, barn space, and riding trail (Hilltop Horizons, Inc. (2022).

### *Control Group – Equine Movement without OT*

The collaborating facility is a PATH Intl. Member Center located in Southwestern Pennsylvania that aims to improve lives through the incorporation of equine assisted services, including occupational therapy incorporating hippotherapy and adaptive riding. Adaptive riding sessions are conducted by a PATH Intl. certified therapeutic riding instructor and focus on horsemanship goals (Hilltop Horizons, Inc., 2022). Each participant is supported by 1-3 volunteers (serving as horse handler and/or sidewalkers), in addition to the therapeutic riding instructor. Sessions are an average of 45 minutes in length and are conducted in a variety of spaces including an outdoor riding arena, barn space, and riding trail (Hilltop Horizons, Inc. (2022).

## Instrumentation

### PEDI-CAT

Developed in 2011 as an adaptation of the original Pediatric Evaluation of Disability Index (Thompson et al., 2018), the PEDI-CAT is designed to determine a child's function in mobility, daily living skills, social/cognitive skills, and responsibility through a digital platform

and completed by a parent or caregiver (Fragala-Pinkham et al., 2020) of children between birth and 21 years of age (Cordeiro et al., 2020).

***Format***

The PEDI-CAT is comprised of 276 possible questionnaire items across four domains: (1) mobility, (2) daily activities, (3) social/cognitive, and (4) responsibility (Thompson et al., 2018). In the content-balanced format, responders are presented with an average of 30 items per domain in a computer-based format (*Pediatric Evaluation of Disability Inventory Computer Adaptive Test*, n.d.). Items in the domains of daily activities, mobility, and social/cognitive are based on a four-choice scale: *(1) Unable, (2) Hard, (3) A little hard, and (4) Easy*. The responsibility domain is determined on the five-choice scale: *(1) Adult has full, (2) Adult has most, (3) Shared, (4) Child has most, and (5) Child has full*. Both domains have an option for *(0) I don't know* (Haley et al., 2020, pp. 10-11). The PEDI-CAT is completed using the Q-Global platform (Pearson, 2023). The PEDI-CAT will then generate a report detailing scaled scores, t-scores, and percentile rankings for each domain of the assessment for use in data analysis (Haley et al., 2020). The scaled scores are most useful in determining change over time within one individual (when the PEDI-CAT is administered more than once over a period of time), while the t-scores and percentile rankings standardize scores with same-aged peers to determine age-appropriateness of skills (*Pediatric Evaluation of Disability Inventory Computer Adaptive Test*, n.d.). See Appendix A for a sample report generated for the PEDI-CAT.

***Relevance***

Various studies have been completed using the PEDI-CAT within developmental disabilities (Fragala-Pinkham et al., 2020) (Cordeiro et al., 2020) (Amarol et al., 2020). The items in this assessment tool have been shown to have relevance to the ICF, indicating relevance

and applicability to disabilities defined in this document, such as developmental disabilities (Thompson et al., 2018). The PEDI-CAT has promise of validity and reliability, though Dumas et al. (2021) points out that items relevant to the lower levels of function could be strengthen for improved validity at the lower limit.

## GAS

GAS has been used across a variety of disciplines and was first introduced in 1968 for the purpose of measuring outcomes in community mental health (McDougall & King, 2007). It has since been applied to other settings focused on creating individualized treatment goals (Shogren et al., 2021).

### *Format*

Goals are determined by the evaluating therapist and are placed on a five-point scale: *-2 (Much less than expected), -1 (Somewhat less than expected), 0 (Expected level of outcome), 1 (Somewhat more than expected), and 2 (Much more than expected)* (Shogren et al., 2021, p. 9). Evaluators are given the freedom to create client-centered goals that relate the needs of the participant. This creates an element of subjectivity that can be mitigated using a specific goal writing format called a SMART goal (Specific, Measurable, Achievable, Relevant, and Timed) that has been shown to improve relevance to clinical practice and client perspectives (Bexelius et al., 2018). In addition to using SMART goals, OTPs in this study will utilize the "Goal Attainment Scaling Form" (McDougall & King, 2007, pp. 1-3) for reporting of GAS goals during this study (see Appendix B).

### *Relevance*

Relevant to this study, the GAS has been utilized for various studies pertaining to children with developmental disabilities (May-Benson et al., 2021) (Shogren et al., 2021).

Studies have indicated validity and inter-rate reliability of the GAS for pediatric populations (McDougall & King, 2007) (May-Benson et al., 2021). This assessment tools has also been shown to correlate with the PEDI-CAT in its ability to measure change over time in individual children (Steenbeek et al., 2011).

## Procedures

### IRB Approval

International Review Board approval has been obtained for the research design proposed prior to implementation of methodology (see Appendix H).

### Safety and Training Protocols

In order to ensure that safety and evidence-based procedures are standardized across all therapy sessions, educational guidelines set forth by relevant organizations will be followed throughout. All staff and volunteers will undergo training to ensure adherence to PATH Intl. Standards as well as necessary horse and participant handling skills as related to the use of hippotherapy in practice. All guidelines in the Volunteer Handbook will be adhered to ("Volunteer Handbook", 2022) (see Appendix C). Treating occupational therapists will have participated in at least Level I of the American Hippotherapy Association Treatment Principles prior to implementing intervention.

### Enrolling Participants

#### *Intervention Group – OT with Hippotherapy*

Eligible participants will be recruited using convenience sampling and offered a spot in the research study based on ability to commit to six weekly occupational therapy sessions. Participants who are considered eligible:

1. Are 3-17 years old

2. Have a confirmed developmental disability diagnosis (as determined by ICD-10 code(s) on Physician's Prescription)
3. Have no medical contraindications to the use of equine movement as determined by therapist screening and PATH Intl. Standards (Professional Association of Therapeutic Horsemanship International, 2018)
4. Able to follow all guidelines in the Participant Handbook ("Participant Handbook", 2022) (see Appendix D)
5. Have not participated in hippotherapy in at least the past 6 months.

Potential participants will be educated on research study opportunity based on collaborating facility's current roster and waiting list contacts. Based on the program admission policies of the collaborating facility, intervention group participation will be offered first to previous clients of the facility (who meet all eligibility requirements) and then to waiting list contacts based on timestamp of joining list. Demographic and therapeutic information will be recorded for each participant, including:

- Age
- Sex
- Diagnoses
- Health history
- History of occupational therapy services (See Appendix E)
- Severity of functional limitations (as determined by PEDI-CAT results)

Enrolling participants will complete all relevant facility intake paperwork (see Appendix F) and research consent forms (see Appendix G).

***Control Group – Equine Movement without OT***

Eligible participants will be recruited using convenience sampling and offered a spot in the research study based on ability to commit to six weekly occupational therapy sessions. Participants who are considered eligible:

1. Are 3-17 years old
2. Have a confirmed developmental disability diagnosis (as determined by ICD-10 code(s) on Physician's Prescription)
3. Have no medical contraindications to the use of equine movement as determined by therapist screening and PATH Intl. Standards (Professional Association of Therapeutic Horsemanship International, 2018)
4. Able to follow all guidelines in the Participant Handbook ("Participant Handbook", 2022) (see Appendix D)
5. Have not participated in hippotherapy currently or in at least the past 6 months

Demographic and therapeutic information will be recorded for each participant, including:

- Age
- Sex
- Diagnoses
- Health history
- History of occupational therapy services (See Appendix E)
- Severity of functional limitations (as determined by PEDI-CAT results)

Severity of functional limitations will be used to distribute participants in a comparable ratio to those in the intervention group. Enrolling participants will complete all relevant facility intake paperwork (see Appendix F) and research consent forms (see Appendix G).

## Prior to Intervention

### *Intervention Group - OT with Hippotherapy*

Before participating in intervention, two parent/caregivers per individual will complete the content-balanced PEDI-CAT and treating therapist will determine two client-centered goals for each participant in the intervention group. These goals will be written in a SMART goal format and will align with items of the PEDI-CAT that the participant received a mean score of 2 or less that the therapist deems as most appropriate. These goals will be reported on using the "Goal Attainment Scaling Form" (McDougall & King, 2007, pp. 1-2).

### *Control Group - Equine Movement without OT*

Before participating in control group, two parent/caregivers per individual will complete the content-balanced PEDI-CAT and an occupational therapist will determine two client-centered goals for each participant in the control group. These goals will be written in a SMART goal format and will align with items of the PEDI-CAT that the participant received a mean score of 2 or less that the therapist deems as most appropriate. These goals will be reported on using the "Goal Attainment Scaling Form" (McDougall & King, 2007, pp. 1-2).

## Intervention

### *Intervention Group - OT with Hippotherapy*

Participants will participate in 6 weekly 45-minute occupational therapy sessions incorporating hippotherapy. The hippotherapy component of the session will include an OTP, PATH Intl. certified therapeutic riding instructor (therapist may be dual certified), participant, horse, horse handler, and 1-2 sidewalkers. Hippotherapy will be conducted in flat, sand outdoor riding arena and/or lightly hilled, gravel outdoor trail. In addition to these spaces, other components of occupational therapy sessions may be conducted in barn and outdoor

environment. Equipment used for each participant will be selected by the occupational therapist and based on clinical reasoning for client success. Therapist will maintain weekly notes detailing the parameters surrounding each session including (1) type of equipment used, (2) amount of time incorporating hippotherapy, (3) setting(s) of therapy session, and (4) other treatment tools utilized in session.

### *Control Group – Equine Movement without OT*

Participants will participate in 6 weekly 45-minute adaptive riding sessions. The equine movement component of the session will include a PATH Intl. certified therapeutic riding instructor, participant, horse, horse handler, and 1-2 sidewalkers. Sessions will be conducted in flat, sand outdoor riding arena and/or lightly hilled, gravel outdoor trail. In addition to these spaces, other components of adaptive riding sessions may be conducted in barn and outdoor environment. Equipment used for each participant will be selected by the PATH Intl. certified therapeutic riding instructor and based on professional reasoning for client success. Instructor will maintain weekly notes detailing the parameters surrounding each session including (1) type of equipment used, (2) amount of time incorporating equine movement, (3) setting(s) of session, and (4) other activities utilized in session. Sessions will be comparable to intervention group apart from skilled OT services.

## Post Intervention

### *Intervention Group - OT with Hippotherapy*

After participating in 6 occupational therapy sessions incorporating hippotherapy, the same parents and caregivers will again complete the content-balanced PEDI-CAT. The treating therapist, as well as a second occupational therapy professional, will complete scoring on the

GAS based on the two client-centered goals stated at the beginning of the treatment period after observing the participant's abilities at this time.

### *Control Group – Equine Movement without OT*

After participating in 6 adaptive riding sessions, the same parents and caregivers will again complete the content-balanced PEDI-CAT. Two OTPs will complete scoring on the GAS based on the two client-centered goals stated at the beginning of the treatment period after observing the participant's abilities at this time.

## Data Analysis

Data collected will be analyzed using IBM SPSS Statistics Version 28.0.1.1 to determine statistical and clinical significance of any changes in function experienced by study participants (Field, 2017). Both the PEDI-CAT and GAS will provide quantitative data for each participant that can be compared objectively (Haley et al., 2020) (Shogren et al., 2021). A reliability coefficient will be determined for the GAS scores in order to determine reliability of scores by completing reliability analysis test. Scaled scores from the PEDI-CAT will be compared to assess change for each participant individually, as this is the score suggested for determining change over time within one subject (*Pediatric Evaluation of Disability Inventory Computer Adaptive Test*, n.d.). The mean difference in scaled scores for each group will also be compared for statistical differences between the intervention and control group. Specific analysis techniques that will be utilized to assess each hypothesis include a repeated measures ANOVA, multivariate ANOVA, and descriptive statistics comparing the pretest data to the posttest data. Tests of normality will also be performed to ensure that the use of the paired t-test is appropriate for each data set. Relevant characteristics of the data that were used to determine the most appropriate statistical tests include that data is (1) paired, (2) interval measured, and (3) based on

a two-group comparison. Based on information provided by Field (2017), these characteristics determined that a paired t-test was most appropriate for this research study. This type of statistical analysis has also been utilized in other research studies pertaining to children with developmental disabilities, deeming it appropriate for use in this study (Beethan et al., 2019).

## Summary

A non-randomized controlled trial with pretest-posttest design will be utilized to determine the impact of occupational therapy utilizing hippotherapy as a treatment tool for children, ages 3-17, with a developmental disability. Participants will be placed into intervention and control groups based on eligibility and collaborating facility admission policies through a non-randomized convenience sampling technique. The intervention group will participate in 6 weekly occupational therapy sessions incorporating hippotherapy, while a control group participates in 6 weekly adaptive riding sessions. Each group will undergo the same pretest and posttest measurements involving the PEDI-CAT (completed by two parents/caregivers per participant) and GAS (completed by two occupational therapists). Data collected will be analyzed for changes in mobility and daily activity skills, as well as differences in intervention and control groups, using analytical testing to determine statistical and clinical significance of results.

# CHAPTER FOUR: FINDINGS

## Overview

The findings of this study bring together the evidence-informed methodology and the collected research data to contribute new evidence to better inform the use occupational therapy using equine movement for children with developmental disabilities. Eight participants in the intervention group and eight participants in the control group participated in six weeks of research activities involving the use of equine movement with or without occupational therapy practitioners, respectively, in order to address the posed research questions and determine if the null hypotheses are supported or rejected. Data was collected via caregiver-report pre- and post-intervention using the PEDI-CAT assessment and OTP-report using the GAS based on individualized SMART goals. Relevant demographics of the research subjects were reported, assumptions of normality were considered, and data was analyzed using repeated measures and multivariate ANOVAs for statistical and clinical significance to the use of occupational therapy incorporating hippotherapy for children, ages 3-17, with developmental disabilities. It was found that OTP-reported outcomes showed statistically significant improvements in both mobility and daily activities, though more effective carryover of skills to everyday life.

## Research Questions

**RQ1:** Do children with developmental disabilities, between 3 and 17 years old, experience a significant difference in pre- and post-testing of *mobility* when receiving occupational therapy services incorporating hippotherapy?

**RQ2:** Do children with developmental disabilities, between 3 and 17 years old, experience a significant difference in pre- and post-testing of *daily activities* when receiving occupational therapy services incorporating hippotherapy?

## Hypotheses

The null hypotheses for this study are:

**$H_0$1:** There is no statistically significant difference in *mobility* of children with developmental disabilities, between 3 and 17 years old, after participating in occupational therapy incorporating hippotherapy as shown by the PEDI-CAT and GAS measurement tools.

**$H_0$2:** There is no statistically significant difference in *daily activities* of children with developmental disabilities, between 3 and 17 years old, after participating in occupational therapy incorporating hippotherapy as shown by the PEDI-CAT and GAS measurement tools.

## Descriptive Statistics

Sixteen participants were enrolled in this study, split evenly between the intervention and control groups. Each of these participants met inclusion criteria, meaning that they were between the ages of three and seventeen, and had at least one confirmed developmental disability. Diagnoses represented by the study participants include:

- ADHD
- ASD
- Cleft Lip/Larynx
- Distal Trisomy 10q Syndrome
- Down Syndrome
- FINCA Syndrome
- Global Developmental Delay
- Intellectual Disability
- Pervasive Developmental Delay
- Speech Apraxia

- Trisomy 15

Table 2 describes additional relevant characteristics of these participants.

**Table 2**

*Participant Characteristics*

| Characteristic | Number of Participants (Intervention Group) | Number of Participants (Control Group) |
|---|---|---|
| ***Age Group*** | | |
| 3-9 years old | 6 | 5 |
| 10-17 years old | 2 | 3 |
| ***Gender*** | | |
| Male | 5 | 3 |
| Female | 3 | 5 |
| ***Severity of Daily Activity Impairments*** | | |
| Mild | 0 | 2 |
| Moderate | 5 | 3 |
| Severe | 3 | 3 |
| ***Severity of Mobility Impairments*** | | |
| Mild | 2 | 4 |
| Moderate | 3 | 3 |
| Severe | 3 | 1 |

Each subject underwent caregiver-reported pre- and post-intervention PEDI-CAT assessments that provided mobility and daily activity scaled scores. Each subject was also scored post intervention by occupational therapy practitioners using the GAS rating based on individualized SMART goals created using items on the initial PEDI-CAT. Table 3 summarizes the means and standard deviations of these outcome measures. Summary Statistics are also depicted in Figures 1-3.

**Table 3**

*Summary of Outcome Measures*

| Measurable Outcome | Intervention Group | Control Group |
|---|---|---|
| ***Daily Activities PEDI-CAT Scaled Scores (Caregiver-Rated)*** | | |
| Initial Mean ± Standard Dev. | 51.13 ± 4.87 | 55.38 ± 3.58 |
| Final Mean ± Standard Dev. | 51.88 ± 5.55 | 56.44 ± 4.17 |

| Measurable Outcome | Intervention Group | Control Group |
|---|---|---|
| ***Mobility PEDI-CAT Scaled Scores (Caregiver-Rated)*** | | |
| Initial Mean ± Standard Dev. | 62.94 ± 4.72 | 68.81 ± 2.22 |
| Final Mean ± Standard Dev. | 63.56 ± 5.07 | 69.50 ± 2.80 |
| ***GAS Scores (OTP-Rated)*** | | |
| Daily Activities Mean | 0.56 ± 0.62 | -0.13 ± 0.44 |
| Mobility Mean | 0.31 ± 0.65 | -0.31 ± 0.53 |

**Figure 1**

*Caregiver-Rated Mobility Outcomes*

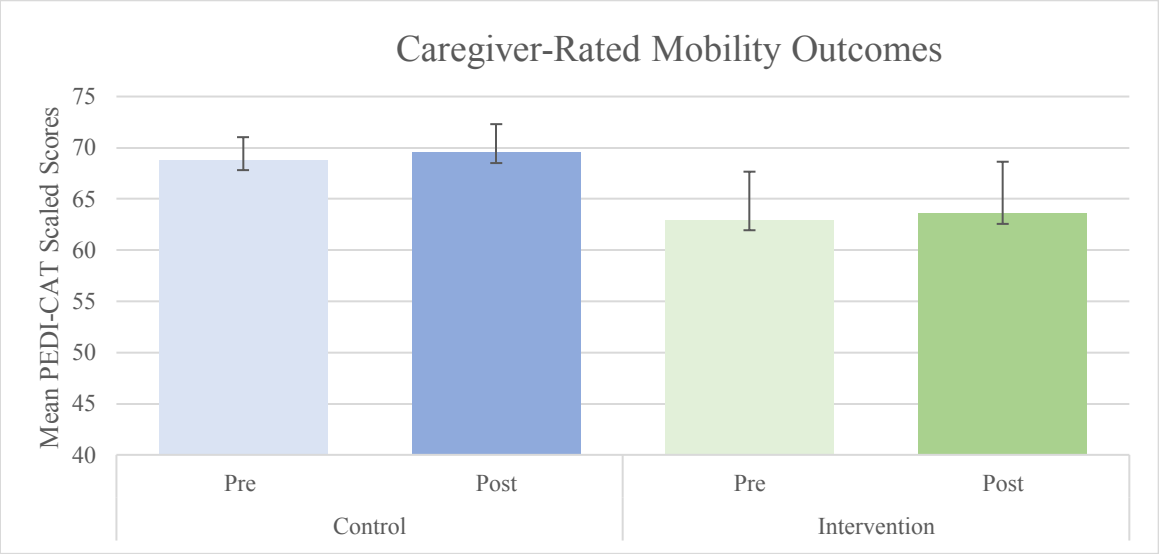



**Figure 2**

*Caregiver-Rated Daily Activities Outcomes*

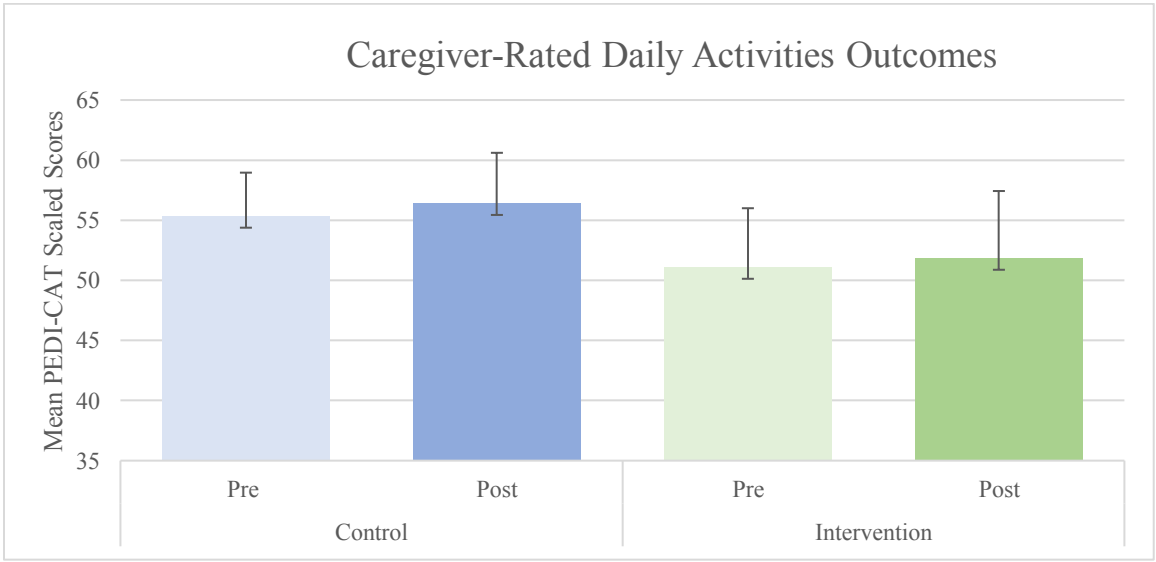
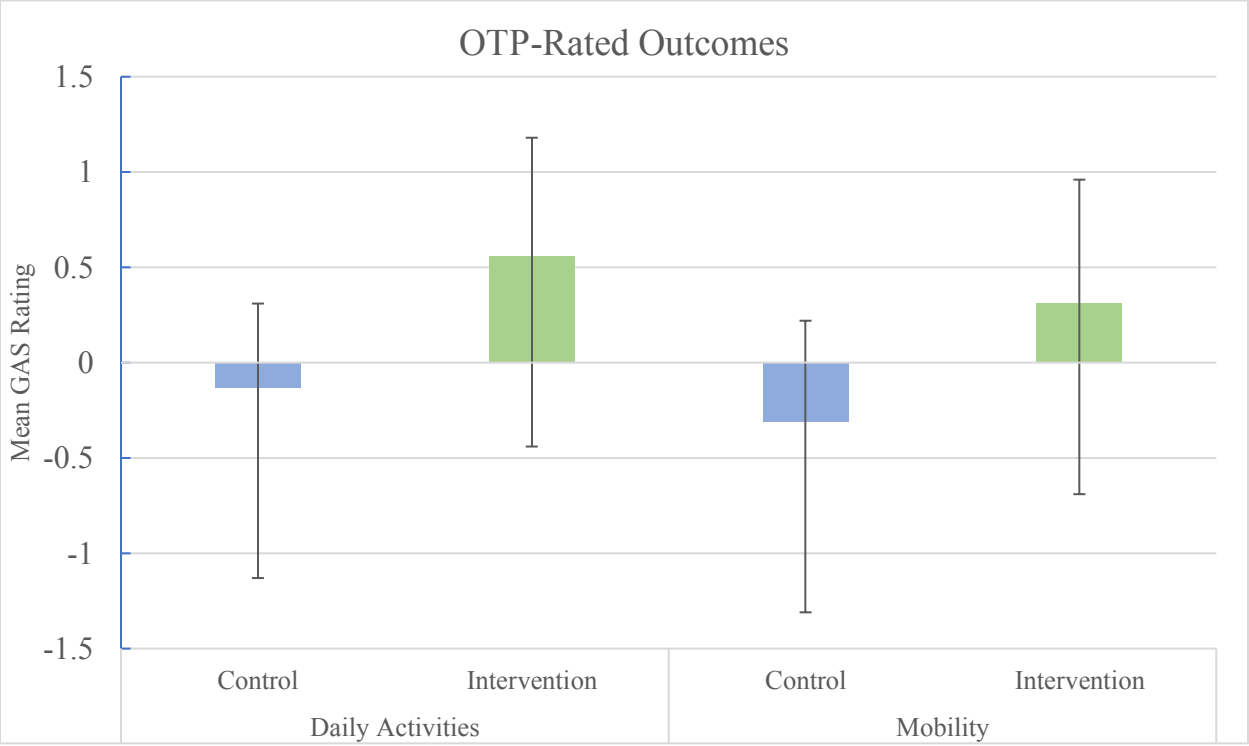


**Figure 3**

*OTP-Rated Outcomes*




While occupational therapists created individualized mobility and daily activities SMART goals for each subject, there were common themes throughout the skill areas addressed, as outlined in Table 4. Improvements were reported by therapists and caregivers in each of these skill areas.

**Table 4**

*Skill Areas Improved*

| **Skill Areas Improved in OT Sessions Incorporating Hippotherapy** | |
|---|---|
| **Mobility** | **Daily Activities** |
| Balance while Maneuvering Elevated Obstacles | Donning/Doffing Clothing |
| Functional Mobility in Busy Environment | Food Preparation involving Chopping, Cutting, |
| Heavy Work Tasks | Opening/Closing Clothing Fasteners |
| Motor Planning onto and off Elevated Surfaces | Opening/Closing Food Containers |
| Standing Transitions and Endurance | Sustained Attention to Static/Dynamic Sitting |

# Results

## $H_0$1 – Mobility

The null hypothesis states that there is no statistically significant difference in *mobility* of children with developmental disabilities, between 3 and 17 years old, after participating in occupational therapy incorporating hippotherapy as shown by the PEDI-CAT and GAS measurement tools.

### *Caregiver-Rated Outcomes*

**Assumption Tests.** Data was screened for assumptions of normality. The Shapiro-Wilk test of normality indicated a normal data distribution ($p > .05$). All skewness and kurtosis values met the assumption of normality (values between -2 and 2) apart from the final values in both the control and intervention groups (kurtosis = 3.00 and 2.16, respectively). These moderate departures from normality are offset by the equal sample sizes of both groups indicating that data is still appropriate to be analyzed using statistical tests such as an ANOVA.

**Table 5**

*Caregiver-Rated Mobility - Tests of Normality*

| Tests of Normality | Intervention Group | Control Group |
|---|---|---|
| ***Shapiro-Wilk Test*** | | |
| Initial | .92* | .75* |
| Final | .42* | .16* |
| ***Skewness*** | | |
| Initial | -0.24* | .20* |
| Final | -.35* | 1.48* |
| ***Kurtosis*** | | |
| Initial | 1.03* | -0.37* |
| Final | 2.16 | 3.00 |

*Note.* *Indicates normally distributed data

**Statistical Testing.** A repeated measures ANOVA was performed on SPSS to compare pre and post PEDI-CAT scores from two caregivers from each subject. The results of this test indicated that differences in the scores prior to equine movement for the control group (mean =

68.81) and the intervention group (mean = 62.93) and post scores for each of these groups (control group mean = 69.50, intervention group mean = 63.56) were not statistically significant (p-value > .05) according to both multivariate and univariate results. Based on the caregiver-rated outcomes, the null hypothesis would fail to be rejected. However, both group means showed a general increasing trend after the six-week intervention period.

### *OTP-Rated Outcomes*

**Assumptions Tests.** Data was screened for assumptions of normality. The Shapiro-Wilk test of normality indicated a normal data distribution ($p > .05$) for the intervention group but not for the control group ($p = .00$). All skewness and kurtosis values met the assumption of normality (values between -2 and 2), apart from kurtosis in the control group (kurtosis = 3.94). These moderate departures from normality are offset by the equal sample sizes of both groups indicating that data is still appropriate to be analyzed using statistical tests such as an ANOVA.

**Table 6**

*OTP-Rated Mobility - Tests of Normality*

| Tests of Normality | Intervention Group | Control Group |
|---|---|---|
| Shapiro-Wilk Test | 0.09* | 0.00 |
| Skewness | -0.11* | -1.96* |
| Kurtosis | -1.92* | 3.94 |

*Note.* *Indicates normally distributed data

**Statistical Testing.** The GAS ratings provided by occupational therapists after the six-week intervention period (control group mean = -0.31, intervention group mean = 0.31) were analyzed using a multivariate ANOVA. Results indicated a statistically significant difference in GAS ratings between the two groups ($p = .05$). This indicates a statistically significant difference in mobility after receiving six weeks of occupational therapy utilizing equine movement when

compared to equine movement alone. Based on the OTP-rated outcomes, the null hypothesis would be rejected.

**$H_0$2 – Daily Activities**

The null hypothesis states that there is no statistically significant difference in *daily activities* of children with developmental disabilities, between 3 and 17 years old, after participating in occupational therapy incorporating hippotherapy as shown by the PEDI-CAT and GAS measurement tools.

***Caregiver-Rated***

**Assumption Tests.** Data was screened for assumptions of normality. The Shapiro-Wilk test of normality indicated a normal data distribution ($p \geq .05$). All skewness and kurtosis values met the assumption of normality (values between -2 and 2), apart from kurtosis in the intervention group (kurtosis = 3.39 and 4.05). Overall descriptive statistics and tests of normality indicate that data is appropriate to be analyzed using statistical tests such as an ANOVA.

**Table 7**

*Caregiver-Rated Daily Activities - Tests of Normality*

| Tests of Normality | Intervention Group | Control Group |
|---|---|---|
| ***Shapiro-Wilk Test*** | | |
| Initial | .15* | .90* |
| Final | .05* | .50* |
| ***Skewness*** | | |
| Initial | 1.32* | .53* |
| Final | 1.50* | 0.14* |
| ***Kurtosis*** | | |
| Initial | 3.39 | 1.09* |
| Final | 4.05 | -0.80* |

*Note.* *Indicates normally distributed data

**Statistical Testing.** A repeated measures ANOVA was performed on SPSS to compare pre and post PEDI-CAT scores from two caregivers from each subject. The results of this test indicated that differences in the scores prior to equine movement for the control group (mean = 55.38) and the intervention group (mean = 51.13) and post scores for each of these groups (control group mean = 56.44, intervention group mean = 51.88) were not statistically significant (p-value > .05) according to both multivariate and univariate results. Based on the caregiver-rated outcomes, the null hypothesis would fail to be rejected. However, both group means showed a general increasing trend after the six-week intervention period.

***OTP-Rated***

**Assumption Tests.** Data was screened for assumptions of normality. The Shapiro-Wilk test of normality indicated a normal data distribution ($p \geq .05$) for the control group but not for the intervention group ($p = .004$). All skewness and kurtosis values met the assumption of normality (values between -2 and 2) indicating normally shaped distributed data. The moderate departure from normality that presented upon analysis is offset by the equal sample sizes of both groups indicating that data is still appropriate to be analyzed using statistical tests such as an ANOVA.

**Table 8**
*OTP-Rated Daily Activities - Tests of Normality*

| Tests of Normality | Intervention Group | Control Group |
|---|---|---|
| Shapiro-Wilk Test | 0.00 | 0.05* |
| Skewness | -0.90* | -1.03* |
| Kurtosis | -1.13* | 1.85* |

*Note.* *Indicates normally distributed data

**Statistical Testing.** The GAS ratings provided by occupational therapists after the six-week intervention period (control group mean = -0.13, intervention group mean = 0.56) were analyzed using a multivariate ANOVA. Results indicated a statistically significant difference in GAS ratings between the two groups ($p$ = .023). This indicates a statistically significant difference in daily activities after receiving six weeks of occupational therapy utilizing equine movement when compared to equine movement alone. Based on the OTP-rated outcomes, the null hypothesis would be rejected.

# CHAPTER FIVE: CONCLUSIONS

## Overview

The impact of occupational therapy incorporating equine movement as a treatment tool to improve mobility and daily activity skills of children with developmental disabilities are considered and compared to the available evidence in order to present clinically relevant perspectives to contribute to the field. Statistically significant findings and potential gaps in care are identified and considered for implications to practice and future research opportunities.

## Discussion

The overall purpose of this study is to evaluate the impact of occupational therapy services that incorporate equine movement on the mobility and daily activity skills of children with developmental disabilities.

### OT with Equine Movement - Impact on Mobility

#### *Relevant Research Question*

Do children with developmental disabilities, between 3 and 17 years old, experience a significant difference in pre- and post-testing of *mobility* when receiving occupational therapy services incorporating hippotherapy?

#### *Positive Impact on Mobility*

Literature indicates that the incorporation of equine movement can improve mobility skills, such as balance, in children with developmental disabilities, including autism spectrum disorder, cerebral palsy, and down syndrome (Georgieva & Veselina, 2020) (Prieto et al., 2021) (Protaro et al., 2020). These claims are also supported by the physical components of equine movement that have been shown to translate through clients experiencing the movement by activating muscle groups at a significantly higher rate than in walking (Silva et al., 2021).

In this study, OTP-rated outcomes related to mobility support what is shown in the literature, as the results indicate a statistically significant increase in mobility skills as determined by the GAS rating on individualized subject goals. While equine movement alone improved mobility skills of those in the control group, the improvements were significantly greater when occupational therapy practitioners were facilitating the use of equine movement. Table 4 summarizes areas that improvements were noted in this study, which include motor planning, heavy work, functional mobility, standing endurance, and balance.

## OT with Equine Movement - Impact on Daily Activities

### *Relevant Research Question*

Do children with developmental disabilities, between 3 and 17 years old, experience a significant difference in pre- and post-testing of *daily activities* when receiving occupational therapy services incorporating hippotherapy?

### *Positive Impact on Daily Activities*

Sensory processing skills are necessary for successful participation in daily activities (Roux, 2020). Equine movement has been shown in the literature to stimulate and assist in regulating sensory systems needed for these skills (Granados & Fernandez, 2011). The use of hippotherapy in practice also increases clients' motivation to participate in daily activities (Maresca et al., 2020).

OTP-rated outcomes related to daily activities in this study support what is shown in the literature, as the results indicate a statistically significant increase in daily activity skills as determined by the GAS rating on individualized subject goals. While equine movement alone improved daily activity skills of those in the control group, the improvements were significantly greater when occupational therapy practitioners were facilitating the use of equine movement.

Skill areas that improvements were noted in this study include attention to task, container and fastener management, food preparation, and dressing skills (see Table 4).

### Need for Carryover

While this study showed statistically significant improvements in both mobility and daily activity goals for those participating in occupational therapy incorporating hippotherapy, the caregiver reported outcomes were not consistent with this conclusion. Mobility and daily activity skills that were demonstrated during OT sessions were not always reported by caregivers as areas of competency post-intervention. This may indicate that skills were not carrying over to everyday life to the extent that they were being performed in a therapeutic setting and/or that parents were not being empowered to give their children the opportunity to demonstrate these skills during the 6-week research timeframe. For example, a child who could independently open a sealed snack bag during OT sessions by the end of the treatment period was still reported to have a "hard" time with this task by caregivers. Novak and Honan (2019) suggest that parent partnership in OT sessions can strengthen client outcomes and carryover in the home. Because this research study focused mainly on the incorporation of equine movement in practice, parent education and home program training were not emphasized as heavily during visits. Novak and Honan (2019) point out that only 13% of identified pediatric occupational therapy strategies were targeted towards the caregivers. Intentionally adding elements of parent training and home program development may strengthen the carryover of skills seen in clients' daily lives.

## Implications

The results of this study show continued promise for the incorporation of hippotherapy as a treatment tool for OTPs working to improve mobility and daily activity skills of children with developmental disabilities. While caregiver-reported outcomes did not indicate statistical

significance, caregivers and occupational therapy practitioners both reported improvements in various mobility and daily activity skill areas, indicating clinical significance for these research participants. Statistical significance is shown in mobility and daily activity GAS ratings, though the incongruency of OTP-reported outcomes with caregiver-reported outcomes suggests that an important element of the therapeutic process may be overlooked with therapist-intensive treatment strategies. This alludes to the clinical significance of the transferability of therapist-delivered interventions and sheds light on a gap in care that may be present in various occupational therapy settings. The findings of this study should encourage OTPs of the benefits of hippotherapy as a treatment tool, while challenging them to close the gap in care by developing stronger collaborative relationships with families so that clients can more holistically benefit from skilled OT intervention.

## Limitations

Both internal and external threats to validity exist in this study. Reporter bias was an internal threat risk in this study as the raters were not blind to which group study participants were in, and occupational therapists reported GAS ratings on their own clients. This bias was minimized by requiring two OTPs to complete the GAS rating on each study participant. The mean of these values was utilized in data analysis to improve interrater reliability. Limited sample size with convenience sampling methods also limited the study's true representation of the population being studied, as well as evidence of moderately non-normal data distribution. Utilizing the repeated measures and multivariate ANOVAs as analysis tools assisted in accounting for these deviances. This study was also conducted at only one study site, allowing for facility specific factors to potentially impact findings. This threat was minimized by choosing a study site that followed all PATH Intl. Education and Safety Standards and utilized PATH Intl.

certified instructors and AHA trained therapists to align treatment sessions with best practice recommendations.

## Recommendations for Future Research

Future research on this subject that would benefit the profession and population are vast. Below are suggested future research topics to further improve the knowledge-base available:

1. Implementing home programs to improve carryover of skills gained in OT incorporating hippotherapy
2. The impact of OT incorporating hippotherapy in various other populations of interest
3. The impact of OT incorporating hippotherapy in comparison to traditional OT for children with developmental disabilities
4. Long-term study of the retention of skills gained through OT utilizing hippotherapy
5. The impact of OT incorporating hippotherapy on social-emotional skills of children with developmental disabilities

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# APPENDICES

## Appendix A – PEDI-CAT Sample Report

"Removed to comply with copyright"

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## Appendix B - Goal Attainment Scaling Form

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## Appendix C - Volunteer Handbook



# Volunteer Handbook


Hilltop Horizons Therapeutic Equestrian Center
103 Littell Drive
Aliquippa, PA 15001
(412) 979-2778

# Our Mission

*Hilltop Horizons Therapeutic Equestrian Center strives to improve lives through the integration of horsemanship activities.*

**Wellness Services**

- ***Adaptive Horsemanship –*** Also known as Therapeutic Riding, this is an adaptive sport that focuses on horsemanship skills at the level of the participant. Lessons will often include both mounted and unmounted horsemanship activities such as riding, grooming, and leading the horses.
- ***Equine Assisted Learning –*** This unmounted group learning environment utilizes equine interactions to improve life skills such as problem solving, communication, self-esteem, among many others. Groups can be designed for all ages and abilities.

**Therapy Services**

- ***1:1 OT utilizing Equine Movement/Environment –*** Community-based occupational therapy services are offered for participants who have therapeutic need. Each participant works with a licensed OT and has client-centered goals that are determined with the individual and family.
- ***Nature-Based Therapy Groups –*** Small groups of similar-aged children or adults work with a licensed OT in an outdoor environment working on client-centered goals that are determined with the individual and family.

# Volunteer Information

Volunteers provide a vital service to Hilltop Horizons. Whether you are able to dedicate one hour per month or twenty hours per week, your time and effort are much needed and greatly appreciated! We welcome assistance in all aspects of the program. At Hilltop Horizons we promise to:

- Train you. Your safety and knowledge of what is expected of you is important!
- Listen to you. We value your feedback!
- Appreciate you and your time commitment.
- Keep your personal information confidential.

## Opportunities

Below are the typical roles in which volunteers assist:

**Lesson Program**: Lesson volunteers (leaders & side walkers)
**Operations**: Barn/Facility Maintenance and Office Volunteers
**Development**: Special Events and Special Skill volunteers

Please see **Appendix A** for more detailed descriptions of volunteer roles.

## Eligibility

Volunteers must be at least 10 years old to participate as an Operations Volunteer. Volunteers must be at least 14 years old to participate as a Lesson Volunteer. Children 13 and under must co-volunteer with a parent, guardian or designated adult. Age exceptions will be considered on a case by case basis for children with a proven, extensive equine background, or children already in our volunteer program, who have attained the required skills through additional training at our facility.

**Volunteers with Special Needs**

We welcome volunteers with all backgrounds and levels of experience. Depending on a volunteer's abilities, that person will be assigned tasks commensurate with those abilities. If needed, we ask that volunteers living with special challenges be accompanied by a parent, guardian or aide, who will guide them in the completion of their duties. If volunteers with special challenges require full-time participation from HHTEC staff, we encourage them to instead participate in our lesson program.

**Physical Consideration**

Some volunteer roles such as leading and side walking can be physically demanding. It is important for you to inform our staff if you have a condition that may prevent you from lifting, standing, walking or jogging for up to an hour at a time. This will not affect your volunteer eligibility but allows us to assign physically appropriate tasks.

**Commitment and Availability**

We depend on the assistance of our volunteers for lesson and farm operation. Because we depend on our volunteers to function successfully, we ask that volunteers take responsibility for the times that they are scheduled to work. Please make every effort to make your scheduled volunteer time or give notice by call or text if you will be late or absent.

## Orientation and Training

**Paperwork**
Prior to beginning your volunteer service with us, a volunteer application must be completed. Annually, an update form must be completed. Volunteers must also read this handbook and sign a receipt form indicating that it has been reviewed.

**Background Checks**
Prior to volunteering, all volunteers age 18 and over are required to submit a PA State Police Criminal Background Check and PA Child Abuse History Clearance. These clearances are free of charge, and required to be renewed every 60 months. A one time FBI Criminal Background Check is also required if you've lived outside of PA in the past 10 years. The cost of this clearance will be the responsibility of the volunteer. If you need any help with this process, our staff would be glad to assist you.

After the application and applicable background checks are submitted, new volunteers must attend a Volunteer Orientation session. The orientation will cover:

- Background on our program, the population we serve and our programs
- General rules, plus safety/emergency policies and procedures
- Horse handling and safety
- Hands-on training for the tasks volunteers will perform.

**Refresher Training Requirement**
All volunteers are required to view training videos and take a short evaluation on a yearly basis. Fulfillment of this requirement is tracked for all volunteers. Drills and safety reviews will also be held at various times during the year. There are activities like operating machinery, lunging horses, and special mounts/dismounts that will require additional training.

Any volunteer may contact staff at any time to arrange a refresher training or review of a certain procedure.

## Volunteer Program Operating Policies

### Sign-In

Volunteers are required to sign in upon arrival. After signing, volunteers will check with the staff for their task assignments for the day. At the completion of their session, volunteers must notify staff before leaving, sign out and note tasks/activities completed on the log sheet. The tracking of this information is used for insurance and grant writing purposes.

### Cancellations

Our participants and equine friends rely on you. Your absence might mean having to cancel or alter a lesson. We ask that our volunteers cancel their scheduled day and time for **emergencies only**. If you must cancel, **call/text (412) 979-2778 with at least 24 hour notice** to allow time to find a replacement**.** Repeated cancelations may result in more limited volunteer opportunities. Two (2) missed volunteer shifts without notice may result in termination of volunteer activities.

### Confidentiality Policy

We have a legal and ethical obligation to maintain confidentiality of our riders, volunteers and staff. Staff and volunteers will keep confidential all medical, social, referral, personal and financial information regarding a person and his/her family. Anyone who works, volunteers or provides services to Hilltop Horizons is bound by this policy. Unauthorized disclosure of confidential information will result in the offender's dismissal and/or termination from Hilltop Horizons. Staff, volunteers and students must sign our confidentiality policy. Volunteers must seek staff permission before taking any pictures or videos.

**Conduct and Behavior**

Individuals involved with the program are expected to conduct themselves in an appropriate and obliging manner at all times. Examples of inappropriate behavior include any form of harassment, aggressive or abusive behavior to self or others (including horses), inappropriate language or being obstructive. If you are subject to any type of inappropriate behavior, notify a staff member immediately. Do not approach the individual. Individuals exhibiting inappropriate behavior of any kind will be asked to leave immediately. If warranted, the offender may be removed from the premises by law enforcement. Engaging in inappropriate behavior may result in permanent dismissal from the program.

**Communication and Questions**

During programming, the instructor/therapist is accountable for the conduct and safety of each rider, horse, staff member and volunteer. All directions from the instructor/therapist should be followed to ensure the safety of everyone involved with the lesson. This includes the assignment of riders, horses and volunteers, mounts/dismounts and lessons structures.

If you are unclear about your volunteer role or responsibilities at any time, please direct questions to the instructor/therapist or a staff member.

**Conflict Resolution**

One of the wonderful characteristics of our center is that we bring together people from many social, economic and cultural settings. Although we embrace diversity in our program, we also understand that conflict and differences of opinion between individuals may occur. Problems or complaints are best handled immediately, confidentially, and directly between the parties involved. If the conflict cannot be resolved privately then the conflict should be brought to the attention of Management.

If a conflict exists within the program setting, the issue needs to be addressed at another time unless the safety and welfare of the students, horses and/or others is in jeopardy. It is our responsibility to conduct ourselves as professionals whose primary consideration is the safety and welfare of our participants.

We desire to provide a healthy, caring environment for all who come through our doors. By keeping the lines of communication open, we can avoid the long-term repercussions that come from unresolved conflict.

**Facility**

Please respect posted off-limit areas. All volunteers should leave the facility at the close of the program, unless directed otherwise by program staff.

**Parking**

Please park in designated areas only. Please leave the most accessible parking spaces for those who need them.

**Telephone**

There is a telephone located near the activity area. This phone is for **Emergency Use Only.** Emergency information is listed near the phone.

**Accidents & Occurrences**

All accidents must be reported immediately to program staff. All involved parties must complete an occurrence form. An occurrence form is available from a staff member.

**Footwear, Clothing & Accessories**

No sandals or open toed shoes are allowed in the barn. Volunteers may wear sneakers or shoes that protect the foot and are comfortable for walking. Any deviations from the footwear policy will be considered on an individual basis by program management.

Volunteers should dress suitably for the weather in clothing appropriate for equestrian and barn related activities. Shirts should not be low cut, and undergarments should not be seen. Wide strapped tank tops are acceptable as long as bra straps and the midriff area are completely covered at all times. Long pants are strongly encouraged. Pants need to be cut high enough that when an individual bends over the pants stay in a respectable position. Clothing, hats or jewelry that restrict movement or vision are considered unsuitable. If you wear dangling jewelry, you may be asked to remove it, tuck it into a shirt, or tape it against your body. Volunteers and who are not dressed appropriately will be asked to change or leave.

**Mounted Activities**

ALL persons participating in a mounted activity are required to wear a well-fitting protective helmet that is ASTM-SEI approved for horseback riding. Footwear must either be a boot with a one-inch heel, or rider must use a set of our facility's safety stirrups. All riders are required to wear long pants.

**Guests of Volunteers**

HHTEC takes pleasure in sharing our work with visitors. Please make an appointment for your guest's visit and check in with a staff member when you arrive. All unaccompanied visitors are limited to the observation area. **Visitors are not permitted in the barn area unless escorted by a staff member or volunteer, with prior staff approval. Please remember that you are responsible for your guest.** If your guest would like more information about our program or a tour of the entire facility, please arrange this with the office in advance

## Rules for Volunteers

- HHTEC is a NO SMOKING facility. This includes all of the premises, including buildings, pastures and surrounding property.
- Cell phones should be silenced while you are assisting in lessons at HHTEC. They can disrupt lessons and startle horses.
- Consumption of alcohol prior to and/or while at HHTEC is prohibited. This excludes events approved by our management.
- Use of illegal substances prior to and/or while at HHTEC is strictly prohibited.
- Use a quiet voice while in the barn and working around the horses.
- Refrain from offering food to participants without guardian's permission. They may have a medical condition requiring a restricted diet (e.g., food allergies, diabetes, etc.)
- Hand feeding our horses is strictly prohibited. Please place treats in the horse's feed bucket instead. Once a horse learns that people have treats on their person, they can be overly aggressive in finding more treats and may bite or knock an unsuspecting person over. Only feed treats with staff permission.
- No dogs or other pets are allowed on our property. Please leave your pets at home where they will be safe and comfortable while you perform your volunteer role.
- Do not perform a volunteer role for which you have not been trained. Records of all staff and volunteer training are on record in the HHTEC office.
- Do not enter the barn, horse stalls, paddocks or pastures without staff permission.
- Do not mount unless under direction of an instructor.
- An adult must accompany children at all times on HHTEC property. With the knowledge of our staff, volunteers 14 years and older may assist in our program without the presence of a parent or guardian.
- Announce yourself loudly before entering or leaving the indoor riding arena by yelling "Gate!" Close the gates when entering and leaving the arena.
- Never kneel on the ground while grooming.
- Never leave the reins on the ground for you or your horse to step on.
- Never wrap the reins or rope around your hands (or any other body part).
- No volunteer should be alone with a student at any time. Either the parent/guardian/caregiver of that student, another volunteer, or HHTEC employee should be within vision of the student and volunteer at all times. This policy is to protect the health and safety of all parties involved.

**Working with Special Needs Populations**

Physical or cognitive impairments may be present at birth, or may be due to injury, disease, or aging. A major barrier for people with special needs is often not the disability itself, but the lack of awareness and knowledge by others. Working with people who have special needs may be a new experience for some volunteers. Please take time to get to know the participant(s) you are assisting and direct questions to the instructors. Above all, please treat individuals with respect and be considerate and sensitive to their needs.

For specific descriptions of the disabilities served by our program and information about how therapeutic riding benefits them, see the Precautions and Contraindications section in the PATH, Intl. CAT manual.

**People First**

There has been much controversy concerning appropriate language to use when referring to someone who has a disability. The current acceptable language is to refer to the person first and then the disability. For example, “people with mental retardation,” not “the mentally retarded.”

The terms, impaired, disability, and handicap often cause confusion. Helander, Mendis, and Nelson (1988) described the relationship of the three terms as the “disability process starts with an impairment, that leads to a disability, and that may in turn lead to a handicap.”

**Impairment:** Is a descriptive term referring to loss or abnormality of psychological, physiological, or anatomical structure or function. The loss or abnormality may result from disease, genetic disorder, accident or environment.

**Disability:** Is any restriction or lack of ability to perform an activity in the manner or way considered normal function. Impairment causes a function-challenge, which is then a disability.

**Handicap:** Is a disadvantage for a person that either limits or prevents the fulfillment of a role that is normal for that person. Usually a handicap is social in nature and has external causes. It affects relations with peers and society. It can be caused by lack of opportunities, environmental barriers or social attitudes. Most handicaps can be lessened or eliminated.

In a "people first" approach it is best to look at a person's characteristics or how the disability manifests itself, not the label of the disability. Labels refer to the names we give disabilities, such a cerebral palsy, mental retardation, multiple sclerosis, etc. We often need to refer to the labels in order for people to share common information. However, when we look to provide therapeutic horseback riding, it is best to look at the characteristics including hyperactivity, cognition problems, high or low tone, behavioral concerns, etc. Different labels (or disabilities) share many common characteristics.[i]

**Meeting and Working with people that have a disability:**

- Remember that people with a disability are PEOPLE. They are like everyone else except they have an extra challenge.
- Be yourself when you meet them.
- Talk about the same things as you would with anyone else the same age.
- Ask if they need assistance. Do NOT assume they need it.
- Be patient – let them set the pace.
- Don't stop and stare.
- Don't judge people ahead of time. You may be surprised at how wrong you were about their personality or disability.
- Don't be afraid to laugh with them.

**Wheelchair Etiquette**

Always ask the wheelchair users if they would like assistance before you help. Someone's wheelchair is an extension of his or her body space. Don't hang or lean on them unless you have permission. Speak directly, and be careful not to exclude the wheelchair user from conversations. If a conversation lasts more than a few minutes, sit or kneel to get yourself on the same level as the wheelchair. If the person has vacated the wheelchair, be respectful of their property and do not assume to sit in their chair.

**Escorting an Individual with a Visual Impairment**

If an individual with a visual impairment looks like they need assistance, please ask first. Remember that they may only need verbal direction/cues. If physical assistance is needed, allow the individual to hold onto your arm above the elbow and walk one-half step ahead. The individual may also have a specific way that they prefer to have assistance. Repeat or verbalize information that may be written/posted. If you're uncertain of what to do, ask your Instructor.

**General Guidelines for Working with Individuals with Hearing/Language Impairment**

Try to maintain good eye contact and look at the individual when speaking to him or her. Speak clearly, but avoid talking slowly or over-emphasizing words. Avoid long verbal instructions and conversation. Become familiar with hand gestures/body positions that the participant may be using to represent words and concepts. Provide assistance with communication when needed (e.g., visual cues, gestures, etc.). Alert the Instructor if the participant is having difficulty with a hearing aid (e.g., ringing or helmet interference).

**Non-Verbal or Limited Verbal Expression**

Many of our participants are non-verbal or limited in their verbal expression. To enhance communication with these individuals, instructors and volunteers may reinforce requests and directions with basic American Sign Language (ASL). See **Error! Reference source not found.** for more information.

## General Safety Guidelines

HHTEC makes every effort to ensure a safe and healthy workplace for its employees, students, families, volunteers, business colleagues and visitors. Harassment (sexual or other), threats of violence and violent acts will not be tolerated in the workplace. Incidents of violence or harassment should be reported immediately.

No volunteer or employee should be alone with a participant at any time. Either the parent/guardian of that participant, an employee, a volunteer, or another caregiver of the participant should be within vision of the student and instructor at all times. This policy is to protect the health and safety of all parties involved.

## Working with Program Horses

The horse is perhaps the most important part of our program. The horses at Hilltop Horizons come from a variety of backgrounds. Some are on loan, some are donated, and others have been purchased. Each has its own unique personality and needs.

We consider many factors when selecting and training the horses used in our program. Horses must meet basic criteria including: possessing an exceptional level of tolerance, being gentle and well mannered, being in good general health, and offering sound, rhythmical, symmetrical, repeatable and three-dimensional movement. [ii]

Horses that meet the criteria are accepted on a trial basis, and then placed in an extensive training program to introduce them to their role in the program. Mock sessions are conducted prior to having “real” riders on the horses.

Our horses receive the very best of care. Each horse is managed to assure good overall health, including veterinary care, hoof care, tooth care and a deworming program.

Volunteers play a critical role in preparing horses for sessions and assisting with lessons. We encourage volunteers to gain additional knowledge of our equine friends by arranging to “shadow” program staff.

**Equine Sense**

When developing relationships and working with horses, communication is key. It is critical to provide a safe environment in a therapeutic riding setting. Understanding the horse's senses, instincts and implications is a step in predicting behaviors, managing risks and increasing positive relationships.

**Hearing**

The horse's sense of hearing is very acute. The horse may also combine its sense of hearing and sight to become more familiar with new or alerting sounds. "Hearing and not seeing" is often the cause of the fright/flight response. When working with horses, note the position of the horse's ears. Forward ears communicate attentiveness and interest. Drooping ears indicate relaxation, inattentiveness (easily startled), exhaustion or illness. Flattened ears indicate anger, threat or fear. Ears flicking back and forth indicate attentiveness or interest. If your horse is acting nervous, talk to him in a quiet, calm and reassuring voice. Watch your horse's ears for increased communication.

**Sight**

Horses' eyes are geared to finding danger. They don't have very accurate vision close up, but they can detect tiny movement at a distance. The horse's eyes are set on either side of the head for good peripheral (lateral) vision but poorer frontal vision. The lens of the horse's eye doesn't change shape as a human's does. Instead, a horse focuses on objects by changing its head position and raising and lowering its head. The horse's visual memory is very accurate. Horses are thought to see quite well in the dark, due to the large size of their eyes. The horse may notice if something in the arena or out on a trail is different. When working with a horse, a leader should remain confident and calm as an example for the horse to reduce the horse's fear and anxiety. Allow the horse an opportunity to look at new objects. Slowly introduce new props that the horse may be unfamiliar with. The horse has better peripheral vision, so consider using a slightly looser rein to enable him to move his head when taking a look at objects. Due to the horse's two blind spots – directly in front and directly behind – the best way to approach a horse is to his shoulder. It may startle him if you approach from behind or directly in front. The horse may be unable to see around the mouth area.

**Taste**

Taste is closely linked with the sense of smell and helps the horse to distinguish palatable foods and other objects. A horse may lick or nibble while becoming familiar with objects and people. Be careful with allowing any horse to lick a person, as this may lead to biting.

**Touch**

The horse's sense of touch is very sensitive, although this may be somewhat lessened depending on breed. They can detect very light touch or pressure. Each horse has sensitive areas, and it is important to be familiar with them. Flanks and belly are typically sensitive. Touch is used as a communication between horses and between horses and people. Horses may also use touch to examine strange objects. They will look, sniff and feel an object with their muzzle. The tongue, lips, and bars of the mouth are especially sensitive places, and we need to use caution when a horse has a bit in his mouth. Horses are trained by applying and removing pressure, and may be sensitive to soft or rough touch with a person's hands or legs. Handlers should treat the horses gently but firmly. Riders may need assistance to reduce squeezing a horse with their legs. Ask the Instructor if you have a question about the best handling technique.

**Smell**

The horse's sense of smell is very acute and allows him to recognize other horses and people. Smell also enables the horse to evaluate situations. Allow horses the opportunity to become familiar with new objects and their environment by smelling. Do not carry treats in your pocket since horses may desire to go after them. Although it may seem cute and endearing, a horse rooting in someone else's clothing may cause a less steady person to fall and hurt himself.

**Sixth Sense**

Horses have a "sixth sense" when evaluating the disposition of those around them. Horses can be hypersensitive in detecting the moods of their handlers and riders. There are occasional personality conflicts between handlers and horses. It is important to let the Instructor know if you're having a difficult time relating to or getting along with a particular horse.

**Flight as Natural Instinct**

Most horses chosen to work in a therapeutic riding setting have less of an instinct to flee. If frightened, however, any horse would rather turn and run away from danger than face and fight it. At a sudden movement or noise, the horse might try to flee. Speak to the horse calmly. A frightened horse being held tightly might try to escape by pulling back. Relax your hold or untie him quickly, and the horse will usually relax. If flight is not possible, the horse may turn to kick out or face the problem and rear, especially in a tight area like a stall. If a horse appears to be frightened or fearful, alert program staff.

**Herd Behavior**

Horses like to stay together in a herd or a group, with one or two horses dominant and a pecking order amongst the rest. Some horses may not like being alone. This is relevant when horses are leaving the arena or a horse loses sight of the others while on a trail ride. Be aware that if the horse in front of a line is trotting or cantering, the horse that is following may also attempt to trot or canter. If one horse spooks at something, the surrounding horses may also be affected. For safety, it is recommended to keep at least one horse's length between horses when riding within a group to respect the horse's space and pecking order.

## Appendix A: Volunteer Position Description

## Lesson Volunteers

**Purpose of the Position**

The lesson volunteer is responsible for assisting the riding instructors during student lessons.

**Scope**

The lesson volunteer reports to staff and is responsible for assisting all instructors in the performance of their duties. When not assisting during lessons, the lesson volunteers may be assigned to assist the barn staff in regular barn upkeep and chores.

**Responsibilities**

1. Leading horses during riding lesson
    - Follow instructor cues during lessons
    - Read horse body language
    - Communicate horse behavior to riding instructor
    - Control the horse in emergency situations
    - Lead horses at multiple gaits
    - Maintain general knowledge of horses to better assist our students
2. Side-walker
    - Assist the student during riding lessons and during groundwork
    - Follow instructor cues during lessons
    - Read student body language
    - Read horse behavior
    - Care for the students during emergency situations
    - Communicate student needs to the instructor
    - Give prompts to the student as directed by the instructor
    - Maintain general knowledge of types of disabilities and teaching techniques to better assist our students
3. Tacking the horse
    - Properly fit and adjust saddles, bridles, stirrups, lead ropes, and other horse equipment
    - Safety check on all equipment every time equipment is used and communicate problems to the riding instructor
    - Maintain general knowledge of tack and equipment to better assist our students and horses
4. Grooming the horse
    - Read horse's body language and behavior
    - Knowledge of brushes and their uses
    - Ability to follow instructor's directions
    - Follow proper safety procedures
5. Assist the barn staff with barn and facility chores as lesson schedule permits
6. Perform other related duties as required

**Knowledge**

Lesson volunteers must have proficient knowledge in the following areas or must demonstrate a willingness to improve in these areas:

- General knowledge of types of disabilities and teaching techniques to better assist our students
- Working knowledge of equine behavior and training
- Working knowledge of safety and emergency policies and procedures

**Skills**

Lesson volunteers must demonstrate the following skills:

- Excellent interpersonal skills
- Decision-making skills
- Effective verbal and listening communication skills
- Stress management skills
- Time management skills

**Personal Attributes**

Lesson volunteers must maintain strict confidentiality. They must also demonstrate the following personal attributes:

- Be honest and trustworthy
- Be respectful
- Possess cultural awareness and sensitivity
- Be flexible
- Demonstrate sound work ethics
- Be caring and compassionate toward animals
- Subscribe to the PATH Intl. Code of Ethics

**Physical Demands**

Lesson volunteers may spend long hours in physical activity, which can cause muscle strain. They may also have to do heavy lifting of hay bales, saddles and tack, water buckets, hoses, wheel barrels, manure shovels, and other barn equipment. Volunteer must be able to negotiate varied terrain on foot for many miles. Working with horses from the ground and in the saddle can be physically demanding. Horses, although domesticated, are unpredictable and due to their strength and size can cause injury to humans.

**Environmental Conditions**

Lesson volunteers may spend long hours in intense concentration. Volunteers may also spend long hours in the barn and outdoors dealing with extreme weather conditions, disagreeable smells, and dust. They must also listen to loud noises from equipment for extended periods of time. Lesson volunteers will come into contact with dust, pollen, mold, animal dander and other possible allergens.

**Mental Demands**

Lesson volunteers may deal with a wide variety of people on various issues. Working with people with disabilities may cause significant emotional stress. They must be capable of caring for students or equines in emergency situations, which can cause severe emotional stress.

## Barn/Facility Maintenance Volunteers

**Purpose of the Position**

The Barn/Facility Maintenance volunteer position is responsible for assisting the Barn Staff in the performance of their duties in the general upkeep of the farm.

## Scope

Facility maintenance volunteers report to the Program Supervisor, and assist in keeping the NNNTRC farm operating smoothly, with a professional manner and appearance.

**Responsibilities**

1. Maintain Barn Facilities
    - Follow barn policies to ensure equine health and safety
    - Follow standards and procedures to ensure human health and safety
    - Maintain safe working environment in the barn for both human and equine
    - Communicate any suspected problems with barn facilities to staff
    - Provide clean water to all horses
    - Provide clean living space to all horses
    - Keep aisles free from obstacles
2. Maintain Horse Pasture and Fields
    - Maintain fencing and pastures
    - Assist barn staff in the upkeep of current and future pastures and fields
    - Mow pastures and fields
    - Communicate any suspected problems with pasture and fields to barn staff
    - Provide clean water to all horses
    - Provide fresh hay to all horses
    - Keep pasture free from obstacles
3. Maintain a professional presentation by ensuring that all facilities represent HHTEC in the best manner possible
4. Maintain Farm Equipment
    - Report any suspected problems with farm equipment to barn staff immediately
    - Repair or arrange for repair of farm equipment depending on the worker's capabilities and the wishes of the barn staff
    - Follow manufacturer recommended safety procedures and NNNTRC's safety procedures for all equipment

**Knowledge**

Facility maintenance volunteers must have proficient knowledge in the following areas or must demonstrate a willingness to improve in these areas:

- Working knowledge of equine behavior
- Ability to keep all records up to date and accurate
- Working knowledge of heavy equipment including: skid loader, tractor, manure spreader, mowers , pick up truck with various trailers, weed whacker, tractor attachments and riding mowers.

**Skills**

Facility maintenance volunteers must demonstrate the following skills:

- Excellent mechanical skills
- Communication skills
- Stress management skills
- Time management skills
- Carpentry skills
- Stall mucking skills

**Personal Attributes**

Facility maintenance volunteers must maintain strict confidentiality to work here. They must also demonstrate the following personal attributes:

- Be honest and trustworthy
- Be respectful
- Possess cultural awareness and sensitivity
- Be flexible
- Demonstrate sound work ethics
- Be caring and compassionate toward animals
- Subscribe to the PATH Intl. Code of Ethics

**Physical Demands**

Facility Maintenance volunteers will spend long hours in physical activity, which can cause muscle strain. They will also have to do heavy lifting of hay bales, saddles and tack, water buckets, hoses, wheel barrels, manure shovels, and other various barn equipment. They must be able to negotiate varied terrain on foot for many miles. Working with horses from the ground can be physically demanding. Horses, although domesticated, are unpredictable and due to their strength and size can cause injury to humans.

## Environmental Conditions

Facility Maintenance volunteers must spend long hours in intense concentration working on heavy equipment. The incumbent will also spend long hours in the barn and outdoors dealing with extreme temperature, extreme weather conditions, disagreeable smells, and dust. The incumbent must also listen to loud noises from equipment for extended periods of time. The incumbent will come into contact with dust, pollen, mold, animal dander and other possible allergens.

**Mental Demands**

Facility Maintenance volunteers must deal with long hours working on heavy equipment. While operating heavy equipment, an individual must maintain caution that people, animals, equipment, and facilities are not injured during the operation.

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# Office Volunteer

**Purpose of the Position**

Office volunteers are responsible for following procedures set by the staff in order to ensure organizational effectiveness and efficiency.

**Scope**

Office volunteers report to staff and are responsible for providing clerical services in our office.

**Responsibilities**

1. Maintain office services
    - Follow office policies
    - Follow standards and procedures
    - Follow office operations and procedures
2. Clerical Positions
    - Office mailings
    - Maintaining databases
    - Filing
    - Ensure protection and security of files and records
    - Scheduling
2. Maintain office efficiency
3. Maintain professional presentation
    - Maintain cleanliness and orderliness of office, waiting room, and restrooms
    - Maintain highest level of customer service and community relations
4. Assist in Volunteer Coordination
    - Scheduling volunteers
    - Training Volunteers
    - Maintaining Volunteer records
5. Perform other related duties as required

**Knowledge**

Office volunteers must have proficient knowledge or a willingness to learn more in these areas:

- Knowledge of office administration
- Knowledge of customer service
- Ability to maintain a high level of accuracy in preparing and entering information

**Skills**

Office volunteers must demonstrate the following skills:

- Excellent interpersonal skills
- Analytical and problem solving
- Effective verbal, written, and listening communication skills
- Attention to detail and high level of accuracy
- Very effective organizational skills
- Computer skills including Microsoft Excel, Word, internet and email at a highly proficient level
- Stress management skills
- Time management skills

**Personal Attributes**

Office volunteers must maintain strict confidentiality in performing the duties of Office Volunteer. They must also demonstrate the following personal attributes:

- Be honest and trustworthy
- Be respectful
- Possess cultural awareness and sensitivity
- Be flexible
- Demonstrate sound work ethics
- Subscribe to the PATH Intl. Code of Ethics

**Physical Demands**

Office volunteers will spend long hours sitting and using office equipment and computers, which can cause eye and muscle strain. They will also have to do some lifting of supplies and materials from time to time.

**Environmental Conditions**

Office volunteers must spend long hours in intense concentration. They must also spend long hours on the computer entering statistical information which requires attention to detail and high levels of accuracy. They may also spend long hours in the barn dealing with extreme temperature, disagreeable smells, and dust.

**Mental Demands**

There are a number of deadlines associated with this position, which may cause significant stress. Office volunteers must also deal with a wide variety of people on various issues. Working with people with disabilities may cause significant emotional stress.

## Special Skills Volunteers

Volunteers are encouraged to share any technical or professional skills that may benefit the program. Some examples are advisory roles, photography, videography, graphic design, fundraising and IT support. For more information about these opportunities please check with our staff.

## Appendix B: Horse Handling & Safety Standards

## Entering the Stall

When entering a stall, get the horse's attention by speaking gently and moving slowly. Close the stall door behind you. Place the halter on the horse's head and connect the lead line. Hold the lead in your right hand, fold excess in left, open the door and lead the horse out of the stall by standing on the horse's left side then stepping out into the aisle and having the horse follow you. Never wrap a lead rope around your hand or any other part of your body. Place the horse on designated cross ties and remove the lead line. When returning horses to their stall, remove halter and close door securely.

## Grooming

Although grooming techniques can differ from barn to barn, we ask that you follow our standards when grooming our horses. Generally horses in our program share grooming equipment unless a particular horse is having an illness. Please check with staff before grooming each time to ensure that you are using the correct tools. Consult with a staff member where each particular horse should be secured for grooming. We groom our horses for a few reasons:

- Remove all dirt and stones from under tack areas and in feet.
- Increase blood circulation
- Check for unsoundness, injury and illness
- Improve appearance
- Develop a personal relationship with the horse

Begin by using the rubber curry comb in a circular motion starting with the neck area and working down the body to the hind end to remove loose dirt and hair. The curry is not used on legs or face, as these areas are more sensitive. Most horses prefer a deep pressure massage with the curry. Some horses may be ticklish with curry motions that are too soft.

Next use the dandy (or hard) brush with a flicking motion to remove loose hair and dirt, brushing in the same direction as the hair on the body of the horse, always working from the neck to the back of the horse. The dandy brush may be used on the legs, but not the face.

Use the body (or soft) brush to remove fine dust from body, legs and face. Use this brush in long sweeping strokes to bring the natural oils up to make the horse's coat look shiny and healthy.

To pick hooves, begin by running your hand down the leg below the knee, gently pull and ask the horse to "lift" their foot. Holding the hoof securely, pick from the heel and forward to the toe,

removing any caked dirt, and clean well between the frog (V shape). Notify the barn staff of any foul-smelling discharge, loose shoes or nails, tenderness or hoof cracks.

Use the mane and tail brush and/or comb on the tail by standing off to the side of the horse. Start at the bottom and work up. Brush or comb carefully to avoid pulling out long hairs. The same brush is used on the mane and forelock. For most manes to be cleaned thoroughly they will need shampoo with conditioner to remove tangles without breaking individual strands of hair.

Once the horse is groomed, please remove hair from brushes and place grooming tools back in their bucket.

## Tacking Up the Horse

The horse's bridle and assigned saddle will be located in the tack room and labeled. If you have never used a particular type of equipment, please ask staff for assistance.

Saddle the horse first by placing the saddle pad on the horse's back, covering the withers. We have different types of pads for different types of saddles including western pads, dressage pads, all purpose pads, corrective pads and half pads.

Place the saddle on top of the pad, and pull the front of the pad up into the gullet of the saddle so that the pad will not rub on the horse's withers.

Then attach the girth or cinch to the saddle. We have a variety of different girths available. Please check on the horse tack assignment sheet or ask a staff member to locate the correct girth. PLEASE LEAVE THE GIRTH COMFORTABLY LOOSE AT THIS POINT, BUT NOT SO LOOSE THAT THE HORSE COULD TANGLE A FOOT IN IT. You should be able to fit your fingers between the sternum of the horse and the girth.
The Horse Leader will do the final check and tightening prior to the rider mounting. Girth tightness should be checked at the sternum of the horse. Instructors will check all girths prior to students mounting, after they've mounted and halfway through lessons.

To bridle, place the reins over the horse's head and around the neck. Holding the bridle crown in your right hand, and the bit in your left palm, slide your right hand up the front of the horse's head, working the bit into the mouth gently. Place the crown piece over one ear at a time. Attach the throat strap, leaving enough room to place the width of your four fingers between the horse's throat and the strap. If the bridle has a noseband then secure it snugly. Tie up the end of the reins so they don't drag. Some of our bridles are equipped with other types of nosebands. Please check with the staff for the proper usage of this equipment.

## Entering the Arena

The tacked-up horse may be brought into the arena. Please call “Gate!” before approaching the arena gate and close the arena gate behind you. Lead the horse around the arena to stretch a bit, and then wait in the center of the arena for the instructor’s directions. Re-check the tack to assure proper fit and condition.

Please bring any problems or concerns regarding horse or tack to the attention of the Instructor before a student is mounted. During the lesson, handle the horse according to the Instructor’s direction.

## Mounting

To limit stress on the horses’ backs, all riders mount from a mounting block. Instructors will advise regarding dismounts. In most cases, dismounts must be done to the ground, and not to a block. The horse leader’s primary role during mounts and dismounts is to position themselves in front of the horse, facing the horse’s head, and prevent it from moving. IN AN EMERGENCY, THE HORSE LEADER STAYS WITH THE HORSE!

## Leading

During lessons the horse leader leads from the side indicated by the Instructor. Outside the lesson leaders should practice leading. When leading, keep slightly behind the horse’s head, but in front of the shoulder. For mounts, dismounts and extended halts, horse leaders “head” the horse.

## Care after Lessons

When a horse has finished a session, return it to the cross-ties to be untacked. After the lesson has ended, take the horse back to its stall. Please return all tack to its proper place. Wipe bits clean and return all saddles, bridles, blankets/pads, and grooming tools neatly to their appropriate place.

## General Rules for Safe Handling of Horses

- Never wrap a lead line around your hand or yourself.
- Hold the lead line with your right hand and fold the excess in your left.
- Walk beside the horse when leading, not ahead or behind.
- Horses are led on the near (left) side, unless otherwise indicated by staff.
- Approach a horse from the side, avoiding quick movements. Speak in a low voice.
- Pat horses on the shoulder, not on the nose.
- Do not leave a cross-tied horse unattended.
- Please do not allow horses to pass each other while on cross ties.
- Walk around the horse in cross ties. Do not duck under horse's neck.
- Never let reins or lead lines hang below your knees or to the ground.
- Always call "Gate!" before entering the arena with a horse.
- Maintain a safe distance between horses.
- Shouting and/or running may startle horses. Use quiet voices and avoid quick movements.
- When working near the hindquarters, stay close, talk softly and keep one hand on the horse. Horses will kick if startled.

## Appendix C: Side-walker and Leader Procedures

## Side-walker

The side-walker's primary role is to walk alongside the rider and provide support as indicated by the Instructor. It may be direct physical support, verbal support to reinforce the Instructor's directions or acting as spotters during sessions. One or two side-walkers may be assigned to each rider, depending on the rider's needs. IN AN EMERGENCY, SIDEWALKERS MUST STAY WITH THEIR RIDERS!

**Side-Walking Techniques**
A variety of side-walking techniques may be used, depending on the activity and rider's needs. The Instructor will indicate which type of support should be used. Please use caution and never force movement or use excessive pressure when applying any of these techniques.
Side-walking support techniques include:

**"Side-walk"**
Side-walkers walks beside the rider (lined up with the rider's shoulder) and are prepared for "hands on" when indicated by the Instructor. Side-walkers should remain close to the student in case the student needs support, but should not be leaning on or bumping into the side of the horse.

**"Thigh hold"**
Side-walkers place the arm closest to the rider over the rider's thigh and parallel to the ground, keeping hand in a fist to avoid grasping the front edge of the saddle. If a side-walker grasps the saddle while using an over the thigh hold then the side-walker could be putting uneven pressure on the rider. If the side-walker cannot maintain a forearm position that is parallel to the ground then the side-walker may be too tall or too short to safely work as a side-walker for that particular student/horse combination.

**"Calf hold"**
Side-walkers perform a "calf hold" by using the hand on the arm that is farthest away from the rider. They cross their arm across their body, and either 1) cup their hand on the front of the rider's shin to block the leg from swinging in front of the rider's center, or 2) cup their hand on the back of the rider's calf to block the leg from swinging behind the rider's center. Don't hold onto the shin of the rider with fingers, as it may interfere with the overall position and balance of the rider.

Occasionally a rider needs support provided by doing multiple holds at the same time.

**Additional Information for Side-walkers**

Side-walkers should take cues from the instructor. Directions from too many sources can distract some students. Only give directions or reinforcements when permissible by the instructor. This could change on a lesson-to-lesson or student-to-student basis.
The role of the side-walker varies greatly between riders. It is important to have an understanding of your rider's needs and knowledge of his or her goals. Please ask the instructor to provide this information to you.

- The side-walker needs to be aware of the rider at all times. Even when the rider is not mounted, the side-walker should be conscious of the rider's safety.
- Never place your hand or fingers in any of the saddle's rings or buckles while side walking.
- If a rider or a horse behaves inappropriately or in an unsafe manner, please notify the instructor or a staff member immediately.
- Never leave your position next to the rider. If you need to stop for any reason, the whole team stops with you. Inform the instructor if you cannot continue your role of side-walker for any reason.
- Side-walking is physically demanding. Please alert your instructor if you need to switch sides or stop. The instructor will stop the whole team, and step in to take your place while you are switching sides with another side-walker.
- Do not interfere with the horse by petting, poking, leaning or bumping. Allow the leader to do the job of moving the horse forward.

Make sure that you absolutely know the policies on how to handle an emergency situation at HHTEC. Know where the fire extinguishers and first aid kits are located. Practice emergency dismounts with your instructors regularly. Please regularly review emergency procedures that are outlined in the risk management policy in **Appendix F**.

**Know your Rider**

**Visual Learners** – like to have visual cues. For example, they prefer reading instructions to listening to them because they understand and remember them better and they prefer looking rather than listening to instruction.

**Auditory learners** – learn and remember when they listen. Thus they prefer the teacher to give oral instructions and they remember things they have listened to more easily than things they have read.

**Kinesthetic Learners** – prefer to learn by doing or by experience – "touch." They prefer demonstration to written or verbal explanations. They will learn better by being actively involved in a task, by acting, drawing or making something.

## Leader

The leader is responsible for maintaining control of the horse, but also needs to stay tuned in to the rest of the TEAM. Pay attention to safety at all times.

Walk on the left hand side of the horse's head-between the horse's head and shoulder.
Lay the loose end of the lead rope across the palm of your hand.

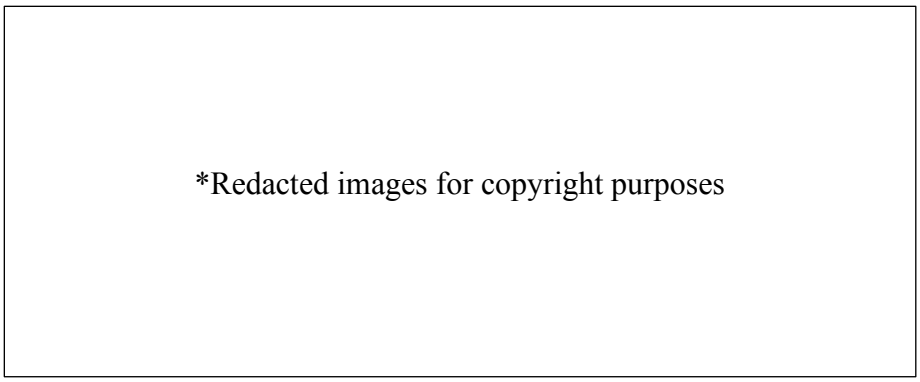
Hold the rope lightly with your right hand about 4-6 inches from the snap. Leave a little slack in the rope. Allow the horse to move its head freely up and down as they walk. Do not hang on the lead rope or hold the lead rope too tight to limit the horse's natural head motion. This rhythmical motion starts at the head and moves all the way down the horse's spine. This movement is key in what makes therapeutic horseback riding therapeutic. If the horse leader interferes with the horse's head, the horse's body will stiffen, taking away the benefit to the rider. It can also annoy and possibly injure the horse.

Keep your attention focused ahead of you.

Do not attempt to drag the horse or look at him. Look forward in the direction of your movement.

Use your voice inflections and body language aids with "walk on" and "whoa" to communicate to the horse instead of pulling on the lead rope.

During the times that a horse must stand still, please "head" the horse by standing in front of it, facing it, and if appropriate, ask the horse to "square."



## Appendix D: Glossary of Horse Terms

**Aids** – signals used by a rider to communicate instructions to the horse. Aids may be natural – hands, legs, voice, seat, or artificial – crop, spurs.
**Bay** – color term for deep brown to blackish colored horse with black mane and tail.
**Bit** – used to control the horse and generally made of metal, bits attach to the bridle and are placed in the mouth.
**Bridle** – The complete outfit of headstall, reins, and bit used to guide the horse when riding.
**Canter** – A three-beat gait of the horse, faster than a trot, a bit slower than a gallop.
**Cantle** – back of the saddle behind the seat.
**Chestnut** – color term used for horse with brownish yellow coat color. Mane & tail are usually the same color.
**Conformation -** structure and general make up of the horse.
**Double-ended lead** – a lead line with two ends, each end with a snap, to be placed on each side of the bit or halter while leading.
**Dressage Pad** – the largest of the cotton pads which goes under the saddle.
**Farrier** – profession of trimming and shoeing horses.
**Gaits** – various movements of the horse at different speeds; e.g. walk, trot and canter.
**Gallop** – fastest of the horse's gaits. A three beat gait.
**Gelding** – a male horse that has been castrated and incapable of breeding.
**Girth** – long strap with buckles on each end, attaches to saddle straps and holds saddle in place.
**Girth Cover** – soft fabric tube that slides over girth to help prevent horse from getting girth sores.
**Gray** – color term used for horses with coat color from white to dark gray in color.
**Ground poles** – wooden pole placed in arena used to school horse and/or practice rider's two-point position.
**Grooming** – caring for horse's coat includes currying, brushing and picking feet.
**Half Circle & Reverse** – change of direction by turning horse toward the center of the ring and back to the rail.
**Halter** – leather or nylon bit-less headstall used to control the horse when leading in or out to the paddock.
**Half seat or Two Point Position** – rider places hands on horse's neck and stands up in stirrups.
**Hand** – a standard unit of measure equal to four inches, used in determining the horse's height from the ground to point of the withers.
**Hoof or hooves** – horse's feet.
**Lead line** – used to lead the horse, a cotton or nylon rope with snap on end that attaches to halter.
**Long line** – use of long reins which run from the bit, through the sides of the saddle or surcingle, to steer the horse from behind.
**Long side –** the longer side of the arena
**Lunging** – exercising the horse by placing it on a long line, and having the horse go around in a circle.
**Mare** – female horse

**Mounting block or ramp** – area and/or step used to mount the rider on to the horse.
**Near side** – refers to the left side of the horse.
**Off side** – refers to the right side of the horse.
**Off side block** – square block used to keep horse next to mounting ramp that the side-walker stands on to assist rider on to the horse.
**Posting** – a rider moving up and down in rhythm with the horse at the trot.
**Rail** – the outside area of the arena along the fence line or wall.
**Reins** – long leather straps attached to the bit held by the rider to steer and control the horse.
**Saddle** – usually made of leather and placed on horse's back for rider to sit on.
**Saddle pad** – cloth pad used under the saddle to protect the horse's back.
**Stirrups** – made of iron, they hang from the saddle and rider places feet in them.
**Tack** – term used to refer to riding equipment.
**Trot** – a two-beat diagonal gait.
**Walk on** – command to have the horse move forward into a walk.
**Withers** – bony projection on horse's back between the shoulders.
**Whoa** – command to stop the horse from any gait..

Appendix E: ASL Signs for Therapeutic Riding

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## Appendix F: Risk Management Policy

Staff members, volunteers, and participants are responsible for supporting all efforts to promote a safe environment including:

- Knowing and following all safety rules, emergency policies and procedures;
- Making full use of safety equipment;
- Reporting immediately any unsafe working conditions or behaviors; and
- Knowing the location of first aid kits, fire extinguishers, emergency exits and emergency plans.

### Emergency Policies & Procedures

We intend to provide a safe environment for all individuals involved with the program. Being prepared in the event of an emergency is part of providing a safe atmosphere. Please review the following policies and procedures on how to handle specific emergencies. It is important to remember in any emergency situation to remain calm, reassure riders and take direction from the instructor. Instructors are responsible for managing an emergency that takes place during a lesson and applying any first aid required. For emergencies outside of lessons, our staff will manage the emergency and volunteers may be called upon to assist.

**Medical Emergencies**

Our staff must be notified of any injury or medical emergency and are responsible for managing the emergency. This includes evaluating the scene, determining if additional medical assistance is required and providing any first aid required. An occurrence report must be completed by program staff and involved individuals for every incident.

**Calling for Emergency Medical Assistance**

In the event of an emergency, volunteers may be asked to call for emergency medical assistance. A telephone is located by the whiteboard on the front wall of the barn.

Emergency call information is posted near the telephone. Emergency exit maps are available throughout the center.

### Location of First Aid Kits

Human first-aid kits are located in the center’s tack room. A primary horse first aid kit is also located in the tack room.

**Severe Weather**

In the event of severe thunderstorms, high winds or threat of tornado or hurricane, program activities will be discontinued. Please take direction from the Instructor regarding escorting participants to a designated safe meeting place and safe placement of horses. **Please see the Emergency Bulletin Board located in stable for detailed preparation and evacuation instructions.**

**High Temperatures**

In the summer lessons may be cancelled due to temperatures with high heat indexes. Working in high temperatures can be hazardous to the health and welfare of our students, staff, and horses. Lesson will be cancelled or modified to work that is appropriate for the day's heat. Students, staff and volunteers will be notified of the appropriate actions that they should take.

**Fire**

HHTEC has fire extinguishers located throughout the buildings. Please take a moment to familiarize yourself with the location and use of this equipment. In a fire emergency, if horses can be evacuated without any risk to humans, horses will be escorted to the closest available pasture. If horses are frightened and will not leave their stalls, then leave the stall doors open and quickly exit the building. Do not risk injury or your life by trying to save horses in an emergency. Quickly evacuate the building by the way of closest exit, ensure that 911 has been notified and meet in the emergency location in the parking lot

**“Emergency” Dismount**

During riding sessions, the instructor performs rider mounts and dismounts. However, in certain situations, the instructor may ask volunteers to perform an emergency dismount as follows:

1. When an emergency dismount is called, the horse leader continues to walk the horse in an even pace, away from the dismounted student(s).
2. Side walkers inform rider of emergency dismount, making sure the rider has put his or her reins forward on the horse’s neck and removed his or her feet from the stirrups. Assistance may be necessary with the reins and/or the stirrups.
3. The side-walker, preferably located on the center side of the arena, places arms around the rider’s waist and gently guides the rider off, safely away from the horse.
4. Horse leaders must keep the horse a safe distance from rider(s).
5. All volunteers await further direction from the instructor.

**Spooked Horse**

Should a horse become frightened or overly nervous, side-walkers are to apply “thigh hold” support to the rider. The horse leader should attempt to halt the horse and head it off. The horse leader must always stay with the horse and be aware that the horse may move quickly forward or side step in either direction. As the horse moves, side-walkers need to continue their support to the rider, staying close to the horse’s side as it moves. Follow direction from Instructor.

**Loose Horse**

Use the following procedure to retrieve a loose horse, whether in the arena, stable or on the facility grounds. One person should approach horse from the side and, using a quiet voice, place a lead rope around neck, then the halter. Do not chase the horse. If needed, a small amount of feed in a bucket can be used to encourage the horse to come to you.

Should a horse become loose in the arena while a session is in progress, all activity immediately stops. Horse leaders are to halt and head off their horses, side-walkers should apply “thigh hold” support and everyone should await further direction from Instructor. If a horse is loose in the barn, any participants should be brought to a safe area, remove any horses from cross ties, close open doors and attempt to herd the loose horse into an empty stall.

**Fallen Rider or Medical Emergency**

Should a rider fall from a horse, become injured or have a medical emergency during a session, all activity will stop. The Instructor is responsible for managing the incident, including the application of any needed first aid. Designated volunteers may be asked to assist by retrieving a first aid kit, calling for emergency medical assistance (911) and locating the rider's emergency medical form. In the event of a fallen rider, the horse leader will move the rider's horse away from the rider, then halt and head off the horse. All other horse leaders are to halt their horses and head them off. Side-walkers of the fallen rider remain with the rider until directed otherwise. All other side-walkers are to apply "thigh hold" support and stay with their riders, waiting for further direction from the Instructor. No one, including riders' parents, should enter or leave the arena without direction from the Instructor.

## Natural Hazards at Our Facility

**Wildlife**

Because of our country setting, we share common space with various wildlife including bears, ground hogs, raccoons, coyotes and opossums. We strive to keep wildlife away from facility operations. However, in the event that wildlife appears, please do not approach or feed. Stray animals including cats and dogs should be treated with caution. Please report any sightings of wildlife and stray animals to our staff.

**Ground Hogs**

Ground hogs are a constant nuisance at our facility. They burrow under buildings and in horse pastures. When horses are turned out in fields with ground hog burrows, those horses could injure themselves by tripping in the holes. If you see a ground hog hole, please report it to the staff so that our maintenance personnel can relocate these pests.

**Bees, Wasps, and Hornets**

We vigorously attempt to eradicate all stinging insects. Not only are these pests problematic for our human population, but also for our equine population. If you see stinging insect activity, please notify staff.

## Manmade Hazards

**Fences**

Our fences are comprised of an electric wire. There is constant electricity fed through all strands of this fencing. Although there is not enough power to injure an individual, there is enough power in the lines to sting. Please do not touch the fence and keep children away from fencing.

**Equipment**

Please do not approach or allow children to play on any machinery and equipment including the trucks, plows, mowers, drags, tractors, sled, wagon, and trailers.. All volunteers and staff will be trained on equipment use before they can operate this equipment. Machinery and equipment may have sharp edges and could injure someone even when it is not in operation. Please keep a safe distance from this machinery unless you have been instructed in its operation. Off limit areas are labeled throughout the facility.

## Conduct and Behavior

All individuals involved with the program including staff, volunteers, students and guests are expected to conduct themselves in an appropriate and obliging manner at all times.

Examples of inappropriate behavior include any form of harassment, aggressive or abusive behavior to self or others (including horses), inappropriate language or being obstructive.

If you are subject to any type of inappropriate behavior, notify a staff member immediately. Do not approach the individual. Individuals exhibiting inappropriate behavior of any kind will be asked to leave immediately. If warranted, the offender may be removed from the premises by law enforcement.

Engaging in inappropriate behavior may result in dismissal from the program.

**Appendix G: Horse Anatomy and Body Language**

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*Redacted images for copyright purposes

## Appendix D – Participant Handbook



# Participant Handbook


Hilltop Horizons Therapeutic Equestrian Center
103 Littell Drive
Aliquippa, PA 15001
(412) 979-2778

## Our Mission

*Hilltop Horizons Therapeutic Equestrian Center strives to improve lives through the integration of horsemanship activities.*

**Wellness Services**

- ***Adaptive Horsemanship –*** Also known as Therapeutic Riding, this is an adaptive sport that focuses on horsemanship skills at the level of the participant. Lessons will often include both mounted and unmounted horsemanship activities such as riding, grooming, and leading the horses.
- ***Equine Assisted Learning –*** This unmounted group learning environment utilizes equine interactions to improve life skills such as problem solving, communication, self-esteem, among many others. Groups can be designed for all ages and abilities.

**Therapy Services**

- ***1:1 OT utilizing Equine Movement/Environment –*** Community-based occupational therapy services are offered for participants who have therapeutic need. Each participant works with a licensed OT and has client-centered goals that are determined with the individual and family.
- ***Nature-Based Therapy Groups –*** Small groups of similar-aged children or adults work with a licensed OT in an outdoor environment on client-centered goals that are determined with the individual and family.

## Participant Information

HHTEC is a member center of the Professional Association of Therapeutic Horsemanship International (PATH Intl.). We follow the standards set forth by this reputable organization to maximize the safety and benefits that our students receive through our programs.

## Benefits of Equine Assisted Services

**Physically**
The horse's movement has a dynamic effect on the rider's body. This movement stimulates the rider's pelvis and trunk, and can help normalize muscle tone in this area. Horseback riding also improves the rider's posture, balance, coordination, and endurance.

**Emotionally**
The success of overcoming fear and anxiety and the ability to achieve riding and other related skills help participants realize their self-worth and increases their self-esteem. The relationships that develop between participants and the horses, staff, other riders and volunteers are an integral part of the positive emotional experience provided by a therapeutic riding program.

**Cognitively**
The horse becomes a strong motivator for participants. Riding and horsemanship lessons incorporate activities designed to help achieve specific goals for each participant; these can include following multi-step directions, staying on task, socialization, color and number recognition, and communication skills. Riding can help reinforce existing skills while helping gain new ones.

**Socially**
Therapeutic riding programs and their associated activities help participants learn respect, commitment, empathy, and trust. Participation is an excellent opportunity to interact with peers, staff, other riders and volunteers in a positive and enjoyable environment.

The horses, instructors, program staff, and volunteers comprise a unique team to provide an opportunity for our participants to experience personal growth in many ways. Horses have the ability to change lives, and our program seeks to share those benefits every day.

## Eligibility

We serve individuals who are three years and up. **An assessment and screening process conducted by staff determines eligibility for the program**. The assessment process lets staff determine which program activities, if any, would be safe and appropriate for the individual and what resources are required (e.g., horse, riding equipment, volunteer and staff manpower).

New participants must complete a paperwork packet including a physician's medical form that is filled out by their physician yearly. All paperwork is required to be updated annually. This paperwork is provided prior to the student's orientation, and must be completed before the rider can participate in HHTEC activities.

Once a participant is accepted into the program, the Instructor/Therapist will establish individual long-term goals and short-term goals for that participant. Lesson plans help the instructor track a rider's progress, and goals are reevaluated annually. Participants ride weekly in lessons that average 45 minutes in length. Lesson activities may include developing basic riding skills, exercises, playing games on horseback and riding on trails. **Not all lessons are mounted lessons,** since learning horsemanship skills involves more than mounted activities and riding.

## Limitations

A successful therapeutic riding program emphasizes safety and maximizes the therapeutic benefits of horseback riding. Due to the capacities of volunteer side-walkers, program horses, insurance requirements, and industry standards, our center is limited to accepting students with the following characteristics:

| | Riding | Non-Riding |
|---|---|---|
| Weigh less than 200 pounds | ✓ | |
| Can be effectively supported by side-walkers | ✓ | |
| Do not exhibit conditions that contraindicate equine-assisted activities | ✓ | ✓ |
| Do not threaten the health or well-being of other participants, horses, staff or volunteers | ✓ | ✓ |
| Have current paperwork, including signed and dated medical release | ✓ | ✓ |
| Will benefit physically, emotionally, socially and/or cognitively from a therapeutic riding program | ✓ | ✓ |

## Acceptance

A potential student is ineligible for therapeutic riding if they have a condition that contraindicates horseback riding, according to the guidelines set by PATH, Intl., or if a student is unable to adhere to the policies as set forth in this Participant Handbook. Program management, the rider's instructor, and their healthcare provider will make the final determination of acceptance and appropriateness for specific programs for any given client. Acceptance will be re-evaluated as needed.

## Available Programs

**Mounted Lessons**

Each lesson incorporates the educational, physical, social, and recreational goals of each individual student. The lessons are 45 minutes on average, but may be shorter due to the physical and cognitive demands of riding. Mounted lessons may include grooming, tacking, mounting, warm-up, an exercise, an activity or game, skill development, skill review, a closing activity and dismounting. Students may or may not be placed in group lessons based on the determination of the instructor. Parents can request private lessons, but due to arena scheduling conflicts this may not be possible. Additionally, private lessons requested by the rider will be charged a higher rate.

**Unmounted Lessons**

Sessions will be about developing horsemanship. Activities can include grooming, exercising, feeding, bathing, leading, etc. These will be incorporated into mounted lessons as well, but at a much slower rate due to lack of time. Unmounted lessons are ideal for students who are not physically able to ride but would like to participate in the program and learn about horses. Unmounted lessons are also taught by certified instructors, and are scheduled subject to the availability of our instructors.

**Family Support Lessons**

Family Support lessons are a fun way for family members to enjoy horses and riding with their HHTEC rider. Family support riders will participate in the same lesson as their rider, since these lessons are designed to be a way for family to share an interest!

**Group Lesson v. Private Lesson**

All lessons at HHTEC should be considered group lessons. We can combine riders of similar skill levels into a group to encourage teamwork and socialization. These groups are arranged at the instructor's discretion. Any rider requesting a private lesson must discuss this with their instructor, and pay an additional private lesson fee.

***All lessons, both mounted and unmounted, are conducted or directly supervised by instructors holding PATH Intl. recognized certification.**

## Appropriate Attire

**Helmets**

All participants and personnel (staff and volunteers) of HHTEC are required to wear well-fitting protective helmets that are ASTM-SEI approved for horseback riding while taking part in any mounted activity. The participant may provide their own approved helmet or may borrow one from the Center for the time of their lesson.

**Safety Stirrups**

Stirrups with safety features that reduce the chance of foot entrapment are equipped on most of our saddles. Approved safety stirrups include "S" shaped, Peacock style and Devonshire boots, and are required for students without a boot with a one inch heel. Safety stirrups are provided by the Center.

**Footwear**

Riding boots with a one-inch heel are ideal for mounted activities. If riding boots cannot be worn, a sneaker or full cover protective shoe must be worn. Any student without riding boots will be required to use safety stirrups. **No sandals or open toed shoes are allowed in the barn.** Alternative footwear for students may be acceptable under specific circumstances. Any deviations from the footwear policy will be considered on an individual basis by program management.

**Clothing & Accessories**

Participants should dress suitable to the weather and season in clothing appropriate for equestrian activities. Shirts should not be low cut, and undergarments should not be seen. Pants need to be cut high enough that when an individual bends over the pants stay in a respectable position. Regardless of temperatures, all mounted individuals will be required to have long pants to ride. Clothing, hats or jewelry that restrict movement or vision are considered unsuitable. If you wear dangling jewelry, you will be asked to remove it, tuck it into a shirt, or tape it against your body. Students who are not dressed appropriately may not be permitted to fully participate in their lesson.

## Conduct

Thoughtful conduct and self-control affect the safety and enjoyment of all participants. All persons at NNNTRC will be expected to adhere to the following code of conduct:

- **Respect all persons—no abusive language or actions.**
- **Respect all property.**
- **Refrain from loud, abrupt noises or actions.**

## Payment and Fees

Lessons can be paid in one or two-time payments per session (typically 8 weeks). **Any student with a balance owed on their account will not be eligible to participate in lessons until the balance is paid in full.** Pricing information for program activities can be obtained from HHTEC staff.

## Changing Your Lesson Time

We make every effort to accommodate schedule changes when necessary. Changes are processed based on the order they are received and the availability of instructors, horses, volunteers and appropriate class groupings.

## Tardiness

Students are expected to arrive and be prepared for their lesson on time. Remember, our volunteers have offered their time to help with your lesson and are expecting you! Students arriving more than 15 minutes late for a lesson will not be able to participate in a mounted lesson. They may have a ground lesson at the instructor's discretion, depending on availability of staff and volunteers. Late arrivals are disruptive to our schedule, and repeated late arrivals can be cause for dismissal from program activities.

## Student Records

Students are required to update their entire registration information and medical history forms annually. This paperwork is not only required to uphold PATH, Intl. standards and insurance eligibility, but also to assist instructors in creating appropriate lesson plans for students. Students are not permitted to ride without these annual renewals. HHTEC notifies students prior to the expiration of these forms. It is the rider's responsibility to have these forms completed and returned to the Center.

## Grounds for Dismissal

Students/Families who cannot adhere to the policies set forth in this handbook or who no longer meet the eligibility requirements will be dismissed from all program activities.

## Attendance, Cancelation & No Show Policy

We ask for a minimum 24-hour notice of cancelation, if possible, to give us time to notify volunteers and make changes to staff scheduling. Cancelations can be communicated by phone or email. Only one uncharged, cancelled lesson will be permitted per every eight lessons. Any subsequent cancelations will be charged.

**Cancelations with Notice (> 24 hours)**

- **1st missed lesson:** student will not be charged for missed lesson
- **2nd missed lesson & beyond** (during same 8-week period): student will be charged for missed lesson(s)

Late notice cancelations (those without 24-hour notice) should only occur in the event of an emergency or serious illness. Late cancelations will be charged. We do understand that unexpected medical conditions can affect our riders, and can discuss these circumstances with you on a case-by-case basis.

**Late Notice Cancelations (< 24 hours) or "No shows"**

- **1st missed lesson & beyond** (during same 8-week period): student will be charged for missed lesson

We may close due to weather conditions. In the event of a closing, we will contact all students scheduled to have a lesson that day via phone and/or email. We also will alert our fans through our Facebook page. If you do not hear from us, you can assume that lessons will be held as scheduled.

## Change of Health or Medication Status

Students must **immediately** inform the office or their instructor, **in writing**, of any changes in health or medication. This includes, but is not limited to, changes in weight, increased/decreased medication dosages, revised diagnoses, medical interventions, surgeries, change in seizure activity etc. Participation in our program is based on the medical information given to us in the Participation Packet, and changes to this information could make riding unsuitable. Failure to notify HHTEC of changes to the rider's health status could result in dismissal from program activities.

**Safety Procedures**

HHTEC strives to provide the safest possible environment for students, volunteers, staff and visitors. Horses, however docile, are capable of reacting in panic to unforeseeable stimuli. Working around and riding horses is a risky activity. The following rules must be followed at all times.

- Hilltop Horizons is a NO SMOKING facility.
- Students should have empty pockets while riding. This includes cell phones, keys and toys.
- The consumption of alcohol prior to and/or while at Hilltop Horizons is prohibited, except for events approved by Hilltop Horizons.
- The use of illegal substances prior to and/or while at Hilltop Horizons is strictly prohibited.
- Use a quiet voice while in the barn and working around horses.
- Refrain from offering food to other participants without permission as they may have a medical condition such as food allergies, diabetes, etc.
- Hand feeding our horses is strictly prohibited. Please place treats in the horse's feed bucket instead. Once a horse learns that people have treats on their person, they can be overly aggressive in finding more treats and may bite or knock an unsuspecting person over. Only feed treats with staff permission and supervision.
- No dogs or other pets are allowed on HHTEC property. Please leave your pets at home where they will be safe and comfortable.
- Do not enter the barn, horse stalls, paddocks, arena or pastures without staff permission.
- Do not mount unless under direction of an instructor.
- An adult must accompany minors at all times on HHTEC property.
- Students must obey off-limit areas.
- Students must be escorted and/or supervised by volunteers or staff members at all times while in the operating areas of Hilltop Horizons Therapeutic Equestrian Center.

## Risk Management Policy

Staff members, volunteers, and participants are responsible for supporting all efforts to promote a safe environment including:

- Knowing and following all safety rules, emergency policies and procedures;
- Making full use of safety equipment;
- Reporting immediately any unsafe working conditions or behaviors; and
- Knowing the location of first aid kits, fire extinguishers, emergency exits and emergency plans.

### Emergency Policies & Procedures

We intend to provide a safe environment for all individuals involved with the program. Being prepared in the event of an emergency is part of providing a safe atmosphere. Please review the following policies and procedures on how to handle specific emergencies. It is important to remember in any emergency situation to remain calm, reassure riders and take direction from the instructor. Instructors are responsible for managing an emergency that takes place during a lesson and applying any first aid required. For emergencies outside of lessons, our staff will manage the emergency and volunteers may be called upon to assist.

**Medical Emergencies**

Our staff must be notified of any injury or medical emergency and are responsible for managing the emergency. This includes evaluating the scene, determining if additional medical assistance is required and providing any first aid required. An occurrence report must be completed by program staff and involved individuals for every incident.

**Calling for Emergency Medical Assistance**

In the event of an emergency, volunteers may be asked to call for emergency medical assistance. A telephone is located by the whiteboard on the front wall of the barn.

Emergency call information is posted near the telephone. Emergency exit maps are available throughout the center.

## Location of First Aid Kits

Human first-aid kits are located in the center's tack room. A primary horse first aid kit is also located in the tack room.

### Severe Weather

In the event of severe thunderstorms, high winds or threat of tornado or hurricane, program activities will be discontinued. Please take direction from the Instructor regarding escorting participants to a designated safe meeting place and safe placement of horses. **Please see the Emergency Bulletin Board located in stable for detailed preparation and evacuation instructions.**

### High Temperatures

In the summer lessons may be cancelled due to temperatures with high heat indexes. Working in high temperatures can be hazardous to the health and welfare of our students, staff, and horses. Lesson will be cancelled or modified to work that is appropriate for the day's heat. Students, staff and volunteers will be notified of the appropriate actions that they should take.

### Fire

HHTEC has fire extinguishers located throughout the buildings. Please take a moment to familiarize yourself with the location and use of this equipment. In a fire emergency, if horses can be evacuated without any risk to humans, horses will be escorted to the closest available pasture. If horses are frightened and will not leave their stalls, then leave the stall doors open and quickly exit the building. Do not risk injury or your life by trying to save horses in an emergency. Quickly evacuate the building by the way of closest exit, ensure that 911 has been notified and meet in the emergency location in the parking lot

**“Emergency” Dismount**

During riding sessions, the instructor performs rider mounts and dismounts. However, in certain situations, the instructor may ask volunteers to perform an emergency dismount as follows:

1. When an emergency dismount is called, the horse leader continues to walk the horse in an even pace, away from the dismounted student(s).
2. Side walkers inform rider of emergency dismount, making sure the rider has put his or her reins forward on the horse’s neck and removed his or her feet from the stirrups. Assistance may be necessary with the reins and/or the stirrups.
3. The side-walker, preferably located on the center side of the arena, places arms around the rider’s waist and gently guides the rider off, safely away from the horse.
4. Horse leaders must keep the horse a safe distance from rider(s).
5. All volunteers await further direction from the instructor.

**Spooked Horse**

Should a horse become frightened or overly nervous, side-walkers are to apply “thigh hold” support to the rider. The horse leader should attempt to halt the horse and head it off. The horse leader must always stay with the horse and be aware that the horse may move quickly forward or side step in either direction. As the horse moves, side-walkers need to continue their support to the rider, staying close to the horse’s side as it moves. Follow direction from Instructor.

**Loose Horse**

Use the following procedure to retrieve a loose horse, whether in the arena, stable or on the facility grounds. One person should approach horse from the side and, using a quiet voice, place a lead rope around neck, then the halter. Do not chase the horse. If needed, a small amount of feed in a bucket can be used to encourage the horse to come to you.

Should a horse become loose in the arena while a session is in progress, all activity immediately stops. Horse leaders are to halt and head off their horses, side-walkers should apply “thigh hold” support and everyone should await further direction from Instructor. If a horse is loose in the barn, any participants should be brought to a safe area, remove any horses from cross ties, close open doors and attempt to herd the loose horse into an empty stall.

**Fallen Rider or Medical Emergency**

Should a rider fall from a horse, become injured or have a medical emergency during a session, all activity will stop. The Instructor is responsible for managing the incident, including the application of any needed first aid. Designated volunteers may be asked to assist by retrieving a first aid kit, calling for emergency medical assistance (911) and locating the rider's emergency medical form. In the event of a fallen rider, the horse leader will move the rider's horse away from the rider, then halt and head off the horse. All other horse leaders are to halt their horses and head them off. Side-walkers of the fallen rider remain with the rider until directed otherwise. All other side-walkers are to apply "thigh hold" support and stay with their riders, waiting for further direction from the Instructor. No one, including riders' parents, should enter or leave the arena without direction from the Instructor.

## Natural Hazards at Our Facility

**Wildlife**

Because of our country setting, we share common space with various wildlife including bears, ground hogs, raccoons, coyotes and opossums. We strive to keep wildlife away from facility operations. However, in the event that wildlife appears, please do not approach or feed. Stray animals including cats and dogs should be treated with caution. Please report any sightings of wildlife and stray animals to our staff.

***Ground Hogs***

Ground hogs are a constant nuisance at our facility. They burrow under buildings and in horse pastures. When horses are turned out in fields with ground hog burrows, those horses could injure themselves by tripping in the holes. If you see a ground hog hole, please report it to the staff so that our maintenance personnel can relocate these pests.

***Bees, Wasps, and Hornets***

We vigorously attempt to eradicate all stinging insects. Not only are these pests problematic for our human population, but also for our equine population. If you see stinging insect activity, please notify staff.

## Manmade Hazards

***Fences***

Our fences are comprised of an electric wire. There is constant electricity fed through all strands of this fencing. Although there is not enough power to injure an individual, there is enough power in the lines to sting. Please do not touch the fence and keep children away from fencing.

***Equipment***

Please do not approach or allow children to play on any machinery and equipment including the trucks, plows, mowers, drags, tractors, sled, wagon, and trailers. All volunteers and staff will be trained on equipment use before they can operate this equipment. Machinery and equipment may have sharp edges and could injure someone even when it is not in operation. Please keep a safe distance from this machinery unless you have been instructed in its operation. Off limit areas are labeled throughout the facility.

## Conduct and Behavior

All individuals involved with the program including staff, volunteers, students and guests are expected to conduct themselves in an appropriate and obliging manner at all times.

Examples of inappropriate behavior include any form of harassment, aggressive or abusive behavior to self or others (including horses), inappropriate language or being obstructive.

If you are subject to any type of inappropriate behavior, notify a staff member immediately. Do not approach the individual. Individuals exhibiting inappropriate behavior of any kind will be asked to leave immediately. If warranted, the offender may be removed from the premises by law enforcement.

Engaging in inappropriate behavior may result in dismissal from the program.

## Appendix E - History of Occupational Therapy Services

1. **My child has participated in the following settings of occupational therapy:**

   - ___ School-Based - Date of last session: _____
   - ___ Clinic-Based - Date of last session: _____
   - ____ Community-Based - Date of last session: _____
   - ___ Other - Date of last session: _____

   Explain Other: _____

2. **My child CURRENTLY participates in the following settings of occupational therapy:**

   - ___ School-Based - Frequency: ____days/week ____hours/day; Date of first session: _____
   - ___ Clinic-Based - Frequency: ____days/week ____hours/day; Date of first session: _____
   - ____ Community-Based - Frequency: ____days/week ____hours/day; Date of first session: _____
   - ___ Other - Frequency: ____days/week ____hours/day; Date of first session: _____

   Explain Other: _____

3. **My child has participated in a therapy program (occupational, physical, or speech therapy) that incorporates hippotherapy (equine movement) in the past.**

   ____ Yes ____ No

   If your child has experienced hippotherapy as a treatment tool, indicate:

   - The total number of sessions your child has participated in: _____ session(s)
   - Date of first session: _____
   - Date of most recent session: _____

# Appendix F - Participant Application

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## New Participant Application

** indicates a required field*

*** Participant Name**

*** Date of Birth**

*** Height**

*** Weight**

*** Employer/School**

## Health History

*** Diagnoses**

Please indicate current or past challenges in the following areas:

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*** Vision**

- Yes
- No

*** Hearing**

- Yes
- No

*** Sensation**

- Yes
- No

*** Communication**

- Yes
- No

*** Heart**

- Yes
- No

*** Breathing**

- Yes
- No

*** Digestion**

- Yes
- No

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*** Elimination**

- Yes
- No

*** Circulation**

- Yes
- No

*** Emotional/Mental Health**

- Yes
- No

*** Behavioral**

- Yes
- No

*** Pain**

- Yes
- No

*** Bone/Joint**

- Yes
- No

*** Muscular**

- Yes
- No

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*** Thinking/Cognition**

- Yes
- No

*** Allergies**

- Yes
- No

*** MEDICATIONS (include prescription, over-the-counter; name, dose, frequency)**

Describe your abilities/difficulties in the following areas (include assistance required or equipment needed):

*** PHYSICAL FUNCTION (i.e., mobility skills such as transfers, walking, wheelchair use, driving/bus riding)**

*** PSYCHO/SOCIAL FUNCTION (i.e., work/school including grade completed, leisure interests, relationships-family structure, support systems, companion animals, fears/concerns, etc.)**

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* GOALS (i.e., Why are you applying for participation? What would you like to accomplish?)

## Emergency Contact Information

* Emergency Contact Name

* Relationship

* Phone Number

Emergency Contact Name (alternate)

Relationship

Phone Number

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* **I verify the information above as true and complete.** _____

I consent to sharing information provided here.

*** Media Consent**

- ○ I DO
- ○ I DO NOT

* **Consent to and authorize the use and reproduction by Hilltop Horizons, Inc. of any and all photographs and any other audio/visual materials taken of me for promotional materials, educational activities, exhibitions or for any other use for the benefit of the Center, and I give all rights to the photographs to the Center for its use.** _____

I consent to sharing information provided here.

## Doctor's Forms Information

Please download the document titled "Doctor's Forms" from your client portal and have them completed by a medical provider. Forms can be mailed to Hilltop Horizons, Inc. directly from the doctor's office or uploaded to your client portal.

*DOCTOR'S FORMS MUST BE COMPLETED BEFORE PARTICIPATING IN PROGRAMMING*

**Hilltop Horizons Therapeutic Equestrian Center**
103 Littell Drive
Aliquippa, PA 15001
Phone: (412) 979-2778

Date: _____

Dear Health Care Provider:

Your patient, _____
(Participant's name)

is interested in participating in equine assisted services.

In order to safely provide this service, Hilltop Horizons Therapeutic Equestrian Center requests that you complete/update the attached Medical History and Physician's Statement Form. Please note that the following conditions may suggest precautions and contraindications to equine activities. Therefore, when completing this form, please note whether these conditions are present and to what degree.

**Orthopedic**
Atlantoaxial Instability – include neurologic symptoms
Coxa Arthrosis
Cranial Deficits
Heterotopic Ossification/Myositis Ossificans
Joint subluxation/dislocation
Osteoporosis
Pathologic Fractures
Spinal Joint Fusion/Fixation
Spinal Joint Instability/Abnormalities

**Neurologic**
Hydrocephalus/Shunt
Seizure
Spina Bifida/Chiari II malformation/Tethered Cord/Hydromyelia

**Other**
Age – under 4 years
Indwelling Catheters/Medical Equipment
Medications – i.e. photosensitivity
Poor Endurance
Skin Breakdown

**Medical/Psychological**
Allergies
Animal Abuse
Cardiac Condition
Physical/Sexual/Emotional Abuse
Blood Pressure Control
Dangerous to self or others
Exacerbations of medical conditions
(i.e. RA, MS)
Fire Setting
Hemophilia
Medical Instability
Migraines
PVD
Respiratory Compromise
Recent Surgeries
Substance Abuse
Thought Control Disorder
Weight Control Disorder

Thank you very much for your assistance. If you have any questions or concerns regarding this patient's participation in equine-assisted activities, please feel free to contact the center at the address/phone indicated above.

Sincerely,

Ainsley Dillon
Executive Director
ainsley@hilltophorizons.org

# Participant's Medical History & Physician's Statement [145]

Participant: _____ DOB: _____ Height: _____ Weight: _____

Address: _____

_____

Diagnosis: _____ Date of Onset: _____

Past/Prospective Surgeries: _____

Medications: _____

Seizure Type: _____ Controlled: Y N Date of Last Seizure: _____

Shunt Present Y N Date of last revision: _____

Mobility: Independent Ambulation Y N Assisted Ambulation Y N Wheelchair Y N

Braces/Assistive Devices: _____

***For those with Down Syndrome**:* Neurological Symptoms of Atlanto Axial Instability ☐ Present ☐ Absent

Please indicate current or past special needs in the following systems/areas, including surgeries:

| | Y | N | Comments |
|---|---|---|---|
| Auditory | | | |
| Visual | | | |
| Tactile Sensation | | | |
| Speech | | | |
| Cardiac | | | |
| Circulatory | | | |
| Integumentary/Skin | | | |
| Immunity | | | |
| Pulmonary | | | |
| Neurologic | | | |
| Muscular | | | |
| Balance | | | |
| Orthopedic | | | |
| Allergies | | | |
| Learning Disability | | | |
| Cognitive | | | |
| Emotional/Psychological | | | |
| Pain | | | |
| Other | | | |

Given the above diagnosis and medical information, this person is not medically precluded from participation in equine-assisted activities. I understand that Hilltop Horizons Therapeutic Equestrian Center will weigh the medical information given against the existing precautions and contraindications. Therefore, I refer this person to Hilltop Horizons Therapeutic Equestrian Center for ongoing evaluation to determine eligibility for participation.

Name/Title: _____ MD DO NP PA Other: _____
Signature: _____ Date: _____
Address: _____ City: _____ State: _____ Zip Code: _____
Phone: _____ Fax: _____ License/UPIN Number: _____

# Physician's Prescription Form

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***To be completed by participant's physician for OT Only.***
***Please provide BOTH Diagnosis and ICD 10 Code – incomplete forms will be returned***

Client Name: _____ Date of Birth: _____

Primary Dx: _____ ICD 10 Code: _____

Secondary Dx: _____ ICD 10 Code: _____

**Clinical Comments:**

Evaluate and treat, to include Occupational Therapy as a treatment tool.
Frequency: Treatment as needed based on Therapist evaluation

This prescription will be current for one year (12 months) from date of Physician's Signature

Name/Title: _____ MD DO NP PA Other: _____

Signature: _____ Date: _____

Address: _____City:_____State:_____Zip Code:_____

Phone: _____ Fax: _____ License/UPIN Number: _____

When completed with ALL SIGNATURES please return this form to:

Hilltop Horizons, Inc.
103 Littell Drive
Aliquippa, PA 15001

# Appendix G - Participant Consent Forms

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## Informed Consent for Services

Hilltop Horizons, Inc.

103 Littell Drive Aliquippa, PA 15001

info@hilltophorizons.org

Informed Consent for Services

I hereby request and consent to Hilltop Horizons, Inc. to perform treatment and care for my child or myself as prescribed by a physician and/or recommended by a therapist.

1. I understand and am informed that, as in the practice of medicine, occupational therapy and adaptive riding may have some risks. I understand that I have the right to ask about these risks and have any questions answered about my, or my child's, condition prior to treatment.
2. I consent and authorize Hilltop Horizons, Inc. to administer treatment under the direction and supervision of a registered occupational therapist, physical therapist, or PATH Intl. CTRI as appropriate for services.
3. I understand that all service payments are due at, or before, the time of service, and that some services may not be covered by insurance. Hilltop Horizons, Inc. is an out-of-network provider and expects private payment in full, with opportunities for reimbursement after services are provided. I understand that any reimbursement is my responsibility and will not be pursued by Hilltop Horizons, Inc.
4. I have carefully read and fully understand this Informed Consent Form and have had the opportunity to discuss it with a member of Hilltop Horizons, Inc. if I chose.

I agree to hold Hilltop Horizons, Inc. harmless for claims or damages in connection with services provided. This is a contract between myself and Hilltop Horizons, Inc., and I understand that it is also a release of potential liability.

BY CLICKING ON THE CHECKBOX BELOW I AM AGREEING THAT I HAVE READ, UNDERSTOOD AND AGREE TO THE ITEMS CONTAINED IN THIS DOCUMENT.

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# Notice of Privacy Practices

Hilltop Horizons, Inc.

103 Littell Drive Aliquippa, PA 15001

info@hilltophorizons.org

**NOTICE OF PRIVACY PRACTICES**

THIS NOTICE DESCRIBES HOW HEALTH INFORMATION MAY BE USED AND DISCLOSED AND HOW YOU CAN GET ACCESS TO THIS INFORMATION. PLEASE REVIEW IT CAREFULLY.

I. CONFIDENTIALITY POLICY

Hilltop Horizons, Inc. recognizes a legal and ethical obligation to maintain confidentiality of sensitive information it might receive about a rider. Hilltop Horizons, Inc. shall preserve the right of confidentiality for all individuals in its program. Staff and volunteers shall keep confidential all medical, social, referral, personal and financial information regarding a person and his/her family. Anyone who works for, volunteers at, provides services to, or participates in programs at Hilltop Horizons, Inc. is bound to this policy. This confidentiality policy applies to all full- and part-time staff, independent contractors, temporary employees, volunteers, board members, participants and their families, and anyone connected with Hilltop Horizons, Inc. who could obtain this information either accidentally or on purpose. Hilltop Horizons, Inc. will not disclose information to outside agencies or individuals without the consent of the rider and/or parent or legal guardian, except as required by law. Unauthorized disclosures of confidential information will result in dismissal and/or termination from Hilltop Horizons, Inc.

II. PLEDGE REGARDING HEALTH INFORMATION:

Hilltop Horizons understands that health information about you and your health care is personal. We are committed to protecting health information about you. Hilltop Horizons creates a record of the care and services you receive from the organization. We need this record to provide you with quality care and to comply with certain legal requirements. This notice applies to all of the records of your care generated by this practice. This notice will tell you about the ways in which we may use and disclose health information about you. We also describe your rights to the health information we keep about you, and describe certain obligations we have regarding the use and disclosure of your health information. Hilltop Horizons is required by law to:

- Make sure that protected health information (“PHI”) that identifies you is kept private.
- Give you this notice of my legal duties and privacy practices with respect to health information.
- Follow the terms of the notice that is currently in effect.
- I can change the terms of this Notice, and such changes will apply to all information I have about

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you. The new Notice will be available upon request, in my office, and on my website.

III. HOW HILLTOP HORIZONS MAY USE AND DISCLOSE HEALTH INFORMATION:

The following categories describe different ways that Hilltop Horizons use and disclose health information. Not every use or disclosure in a category will be listed. However, all of the ways Hilltop Horizons is permitted to use and disclose information will fall within one of the categories.

For Treatment Payment, or Health Care Operations: Federal privacy rules (regulations) allow health care providers who have direct treatment relationship with the patient/client to use or disclose the patient/client's personal health information without the patient's written authorization, to carry out the health care provider's own treatment, payment or health care operations. We may also disclose your protected health information for the treatment activities of any health care provider. This too can be done without your written authorization. For example, if a health care provider were to consult with another licensed health care provider about your condition, we would be permitted to use and disclose your personal health information, which is otherwise confidential, in order to assist the health care provider in diagnosis and treatment of your condition.

Disclosures for treatment purposes are not limited to the minimum necessary standard. Because other health care providers need access to the full record and/or full and complete information in order to provide quality care. The word "treatment" includes, among other things, the coordination and management of health care providers with a third party, consultations between health care providers and referrals of a patient for health care from one health care provider to another.

Lawsuits and Disputes: If you are involved in a lawsuit, Hilltop Horizons may disclose health information in response to a court or administrative order. Hilltop Horizons may also disclose health information about your child in response to a subpoena, discovery request, or other lawful process by someone else involved in the dispute, but only if efforts have been made to tell you about the request or to obtain an order protecting the information requested.

IV. CERTAIN USES AND DISCLOSURES REQUIRE YOUR AUTHORIZATION:

1. Session Notes: Any use or disclosure of such notes requires your Authorization unless the use or disclosure is:

a. For our use in treating you.

b. For our use in training or supervising associates to help them improve their clinical skills.

c. For our use in defending myself in legal proceedings instituted by you.

d. For use by the Secretary of Health and Human Services to investigate my compliance with HIPAA.

e. Required by law and the use or disclosure is limited to the requirements of such law.

f. Required by law for certain health oversight activities pertaining to the originator of the session notes.

g. Required by a coroner who is performing duties authorized by law.

h. Required to help avert a serious threat to the health and safety of others.

2. Marketing Purposes. We will not use or disclose your PHI for marketing purposes without expressly written consent.

3. Sale of PHI. We will not sell your PHI in the regular course of my business.

V. CERTAIN USES AND DISCLOSURES DO NOT REQUIRE YOUR AUTHORIZATION.

Subject to certain limitations in the law, Hilltop Horizons can use and disclose your PHI without your Authorization for the following reasons:

1. When disclosure is required by state or federal law, and the use or disclosure complies with and is limited to the relevant requirements of such law.

2. For public health activities, including reporting suspected child, elder, or dependent adult abuse, or preventing or reducing a serious threat to anyone's health or safety.

3. For health oversight activities, including audits and investigations.

4. For judicial and administrative proceedings, including responding to a court or administrative order, although my preference is to obtain an Authorization from you before doing so.

5. For law enforcement purposes, including reporting crimes occurring on my premises.

6. To coroners or medical examiners, when such individuals are performing duties authorized by law.

7. For research purposes, including studying and comparing the patients who received one form of care versus those who received another form of care for the same condition.

8. Specialized government functions, including, ensuring the proper execution of military missions; protecting the President of the United States; conducting intelligence or counterintelligence operations; or, helping to ensure the safety of those working within or housed in correctional institutions.

9. For workers' compensation purposes.

10. Appointment reminders and health related benefits or services. I may use and disclose your PHI to contact you to remind you that you have an appointment with me. I may also use and disclose your PHI to tell you about treatment alternatives, or other health care services or benefits that I offer.

VI. CERTAIN USES AND DISCLOSURES REQUIRE YOU TO HAVE THE OPPORTUNITY TO OBJECT.

1. Disclosures to family, friends, or others. Hilltop Horizons may provide your PHI to a family member, friend, or other person that you indicate is involved in your care or the payment for your health care, unless you object in whole or in part. The opportunity to consent may be obtained retroactively in emergency situations.

VII. YOU HAVE THE FOLLOWING RIGHTS WITH RESPECT TO YOUR PHI:

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1. The Right to Request Limits on Uses and Disclosures of Your PHI. You have the right to request that we not to use or disclose certain PHI for treatment, payment, or health care operations purposes. We are not required to agree to your request, and I may say "no" if I believe it would affect your health care.

2. The Right to Request Restrictions for Out-of-Pocket Expenses Paid for In Full. You have the right to request restrictions on disclosures of your PHI to health plans for payment or health care operations purposes if the PHI pertains solely to a health care item or a health care service that you have paid for out-of-pocket in full.

3. The Right to Choose How we Send PHI to You. You have the right to ask me to contact you in a specific way (for example, home or office phone) or to send mail to a different address, and we will agree to all reasonable requests.

4. The Right to See and Get Copies of Your PHI. Other than "session notes," you have the right to get an electronic or paper copy of your medical record and other information that we have about you. We will provide you with a copy of your record, or a summary of it, if you agree to receive a summary, within 30 days of receiving your written request, and we may charge a reasonable, cost based fee for doing so.

5. The Right to Get a List of the Disclosures We Have Made. You have the right to request a list of instances in which we have disclosed your PHI for purposes other than treatment, payment, or health care operations, or for which you provided me with an Authorization. We will respond to your request for an accounting of disclosures within 60 days of receiving your request. The list we will give you will include disclosures made in the last six years unless you request a shorter time. We will provide the list to you at no charge, but if you make more than one request in the same year, we will charge you a reasonable cost-based fee for each additional request.

6. The Right to Correct or Update Your PHI. If you believe that there is a mistake in your PHI, or that a piece of important information is missing from your PHI, you have the right to request that we correct the existing information or add the missing information. We may say "no" to your request, but I will tell you why in writing within 60 days of receiving your request.

7. The Right to Get a Paper or Electronic Copy of this Notice. You have the right get a paper copy of this Notice, and you have the right to get a copy of this notice by e-mail. And, even if you have agreed to receive this Notice via e-mail, you also have the right to request a paper copy of it.

Acknowledgement of Receipt of Privacy Notice

Under the Health Insurance Portability and Accountability Act of 1996 (HIPAA), you have certain rights regarding the use and disclosure of your protected health information. By checking the box below, you are acknowledging that you have received a copy of HIPAA Notice of Privacy Practices.

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# Release and Hold Harmless

**Inherent Risks of Equine Activities**

Anyone who participates in any kind of activities on or about horses, including riding, training, assisting in medical treatment of horses, driving or being a passenger on a horse, or assisting a participant in a horse show or assisting show management, but does not include merely being a spectator to an equine activity, is considered to be engaged in an equine activity.

Equine activities hold inherent risks, defined by statute to include: (1) the propensity of horses to behave in ways that may result in injury, harm, or death to persons on or around them; (2) the unpredictability of a horse's reaction to such things as sounds, sudden movement, and unfamiliar objects, persons, or other animals; (3) certain hazards such as surface and subsurface conditions; (4) collisions with other horses or objects; (5) the potential of a participant to act in a negligent manner that may contribute to injury to the participant or others, such as failing to maintain control over the animal or not acting within his or her ability.

**Acknowledgement of Risk**

I acknowledge that I have read the above statements and definitions, and hereby indemnify and hold harmless, HILLTOP HORIZONS, INC., and their employees or owners from any liability arising from accident, injury, theft, or damages to myself, my representatives, and helpers, all equipment and property, and all animals under my jurisdiction. I understand that I must wear a helmet, secured with a harness, at all times when mounted at HILLTOP HORIZONS, INC. I have been informed of HILLTOP HORIZONS, INC.'s Barn Rules and Policies and Procedures and will adhere to them strictly. This agreement shall continue for each and every visit to HILLTOP HORIZONS, INC.'s property.

The terms of this release form shall be construed as the entire agreement and may not be altered, amended, or modified except in writing and signed by both parties. The terms of this release shall be governed by the laws of the Commonwealth of Pennsylvania.

**Grant of Permission**

I/we the undersigned, (participant above named for, if minor, parents/guardians) hereby grant permission and authority to HILLTOP HORIZONS, INC., its officers and authorized representatives to act for us in executing verbal instructions if unable to contact us, to act for us in dealing with physicians, available ambulance companies and hospitals, to obtain prompt medical attention for the participant named above in the event of any perceived medical emergency. I hereby covenant and agree to release HILLTOP HORIZONS, INC., their officers, agents, and employees, and owners of any property concerned, and hold harmless from liability for any injury or damage which the rider may sustain while at HILLTOP HORIZONS, INC., or participating in any activity sponsored by HILLTOP HORIZONS, INC., and from any liability connected with obtaining prompt medical attention for the participant named above.

BY CLICKING ON THE CHECKBOX BELOW I AM AGREEING THAT I HAVE READ, UNDERSTOOD AND

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AGREE TO THE ITEMS CONTAINED IN THIS DOCUMENT.

## Receipt of Program Handbook

This Participant Handbook has been designed to serve as a quick reference for many issues relating to your participation at Hilltop Horizons, Inc.. It is important for you to be familiar with the information in this handbook. Please review it carefully. Updates and amendments may be made to this handbook. If changes are made to the handbook, you will be notified in writing as the handbook is updated. We hope that you enjoy your participant experience at Hilltop Horizons, Inc.. Please sign below to indicate that you have seen and read this handbook and are responsible for future updates. Give the signed page to the Program Supervisor. This page will be kept in your volunteer file.

BY CLICKING ON THE CHECKBOX BELOW I AM AGREEING THAT I HAVE READ, UNDERSTOOD AND AGREE TO THE ITEMS CONTAINED IN THIS DOCUMENT.

## COVID-19 Release

COVID-19 ACKNOWLEDGEMENT OF RISK AND ACCEPTANCE OF SERVICES

I am aware of the risks of contracting or spreading Covid-19 while working, participating, or volunteering at Hilltop Horizons, Inc.; attending an event; and/or receiving face-to-face services from Hilltop Horizons, Inc.

I am aware that face-to-face services and experiences increase my risk of contracting and passing on the Covid-19 and agree to hold harmless Hilltop Horizons, Inc. and its residents, members, officers, managers, agents, employees and all other individuals I may come in contact with during this interaction and receiving of services, providing services, attending an event or volunteering within this organization.

I am signing under my own free will and agree to follow these and hold harmless all individuals associated with or through my services acquired from Hilltop Horizons, Inc.

BY SIGNING BELOW, I CONFIRM THAT I HAVE READ AND UNDERSTAND THIS DOCUMENT.

# Appendix H – IRB Approval

Date: 12-23-2023

IRB #: IRB-FY22-23-1478
Title: OCCUPATIONAL THERAPY USING HIPPOTHERAPY FOR CHILDREN WITH DEVELOPMENTAL DISABILITIES
Creation Date: 4-28-2023
End Date:
Status: Approved
Principal Investigator: Ainsley Dillon
Review Board: Research Ethics Office
Sponsor:

## Study History

| Submission Type | Review Type | Decision |
|---|---|---|
| Initial | Expedited | Approved |

## Key Study Contacts

| | | |
|---|---|---|
| Member Ainsley Dillon | Role Principal Investigator | Contact [redacted] |
| Member Ainsley Dillon | Role Primary Contact | Contact [redacted] |
| Member Shannon Williamson | Role Co-Principal Investigator | Contact [redacted] |

# Appendix I – Copyright Permission

January 19th, 2024

Ainsley Dillon, OTR/L
PhD Candidate
Liberty University
121 Littell Drive
Aliquippa, PA 15001

Dear Ainsley Dillon,

Hilltop Horizons, Inc. allows the use and publication of the following documents for your research purposes:

- Volunteer Handbook 2023
- Participant Handbook 2023
- Participant Application
- Participant Consent Forms

Sincerely,

[redacted]

Joy Berringer
Treasurer of the Board
Hilltop Horizons, Inc.