Equine Assisted Therapy for Intellectual and Developmental Disabilities: A Brief History & Contemporary Review

Emma Waggett

Abstract

As Equine Assisted Therapy (EAT) has risen in popularity since the mid-20th century, it has become a valuable tool for those with intellectual and/or developmental disabilities (IDD), to assist with specific physical and/or psychological goals; nevertheless, the complicated history of animal therapies is often overlooked. To understand EAT in an IDD context today, the history of horses and other animals as therapeutic tools must be properly understood. This capstone seeks to explore what EAT for IDD does, from its inception and early growth to what it currently encompasses and the emotional and physical benefits it can provide. In conducting research that taps into both the historical and contemporary side of this therapy, EAT for IDD, despite some of its limitations and complications in individual practice, presents as a valid and vital therapeutic resource. This holistic capstone will help readers understand the different types and benefits of EAT for IDD to demonstrate a therapeutic approach that has come to be both physically and emotionally rewarding and successful for most participants, regardless of disability.

Introduction

2.1 Introduction

In seeking to create an encompassing look at EAT for IDD individuals, the following capstone aims to explore the broad history of EAT, its current forms, and benefits. This approach was undertaken to highlight the relatively new emergence of formalized EAT in the late 20th century; This acknowledgment also helps to demonstrate that EAT for IDD pushes against previous ableist boundaries to help clients achieve better qualities of life, both physically and emotionally, while demonstrating that nontraditional linear therapy forms can be successful. In this essay, I will thus take EAT's history and current forms, and showcase how this therapy form can bring success, happiness, and confidence to individuals, and even with sound questioning and concerns, EAT should continue as a genuine and unique therapeutic model that demonstrates the power of the horse and human connection.

3.1 Background: Biotherapy

3.1.1 Animals as Therapeutic Tools: A Brief History

The use of animals in a strictly therapeutic context, as opposed to one of work, transport, or companionship through the Western lens, can be traced to the 1700s when some European mental health institutions began using pet animals in early therapeutic work.[1] These isolated therapeutic

1 Mary Cole and Maureen Howard, "Animal-Assisted Therapy: Benefits and Challenges," in Biotherapy - History, Principles and Practice: A Practical Guide to the Diagnosis and Treatment of Disease Using Living Organisms, ed. Martin Grassberger et al. (Chem: Springer, 2013), 234.

models continued over the next century, varying in type and patient usage; however, in the 1870's the first documented use of a horse for therapeutic purposes was observed by French neurologist R. Chassaigne, who found that horseriding helped many of his patients improve their 'balance, posture and muscle control.'[2] Several years later, the benefits of horse riding were further espoused in American physician G. Durant's 1878 book *Horseback-Riding from a Medical Point of View*, Durant's work praised riding as an exercise that not only strengthened the body but also the mind.[3] After Chassaigne and Durant's observations, the use of horses and other animals in a therapeutic context was largely an isolated observation and pushed aside in favor of emerging medical drugs that could improve bodies and minds faster, for roughly the next century and a half.[4] Following the Second World War, however, the U.S. army became interested in therapeutic animals as a positive tool for veterans and began introducing them into some military care homes.[5] Yet, ideas of therapeutic animals, once more, in practice and training, remained largely disorganized. The next leap for animals in a therapeutic context came in the 1980s as studies demonstrated the positive effects animals could have on human health and well-being. From this renewed research, 'pet therapy' arose, often done through animal shelters and recreation organizations who would bring pets, usually dogs and cats, to care homes and other institutions to interact with patients.[6] Nevertheless 'pet therapy' struggled in effectiveness; without an agreed upon definition across initiatives. Organizers did not understand how to choose or even know what a 'therapeutic' animal was, oftentimes, even with the best of intentions, groups ended up bringing whatever cats and dogs they had to their outreach work, which while providing comfort to many, did not actively achieve any therapeutic measures.[7]

3.1.2 EAT & AAT: Proper Foundations

EAT Foundations

Although the post-war U.S. began to implement therapeutic animal services across a variety of populations, the horse's transition from noted therapeutic qualities in the 1870's and its modern role in EAT truly arose at the 1952 Olympic Games, when Danish equestrian Liz Hartel, who suffered from polio and a walking impairment, but still able to horseback ride, won silver at the games.[8] Hartel used her success to advocate for horseback riding as a valuable rehabilitation and continuing therapeutic resource, as it had become for her polio, and thus inspired renewed interest in the therapeutic qualities of horses. Throughout the following decade, many informal riding opportunities emerged specifically for individuals with IDD. However, these were often carried out by family and friends who had access to horses and a desire to share their passions with others.[9] Although these opportunities advanced, although privately, the accessibility of horse riding to individuals with IDD they nevertheless were the result of preestablished relationships, convenience, and/or accessibility, so many individuals were still

2 Erika L. Berg and Amy Causey, "The Life Changing Power of Horses: Equine Assisted Activities and Therapies in the U.S.," Animal Frontiers 4, no. 3 (July 2014): 73.
3 Nina Ekholm Fry, "Equine -Assisted Therapy: An Overview," in Biotherapy - History, Principles and Practice: A Practical Guide to the Diagnosis and Treatment of Disease Using Living Organisms, ed. Martin Grassberger et al. (Chem: Springer, 2013), 261.
4 Cole and Howard, "Animal-Assisted Therapy: Benefits and Challenges," 234.
5 Cole and Howard, "Animal-Assisted Therapy: Benefits and Challenges," 234.
6 Linda Hines and Maureen Fredrickson, "Perspectives on Animal-Assisted Activities and Therapy," in Companion Animals in Human Health, ed. Cindy C. Wilson and Dennis C. Turner (Thousand Oaks, California: SAGE Publishers, 1998), 25.
7 Hines and Fredrickson, "Perspectives on Animal-Assisted Activities and Therapy," 25.
8 Jane Copeland Fitzpatrick and Jean M. Tebay, "Hippotherapy and Therapeutic Riding: An International Review," in Companion Animals in Human Health, ed. Cindy C. Wilson and Dennis C. Turner (Thousand Oaks, California: SAGE Publishers, 1998), 42.
9 Natalie Bieber, "Horseback Riding and Individuals with Disabilities: A Historical Perspective," Palaestra 12, no. 3 (1996): 2.

unable to access them, and more importantly, a lack of broader EAT programs persisted.[10] Toward the end of the 1960's, however, this trend of privatized EAT experiences led to the establishment of proper therapeutic riding associations in both Europe and the U.S, including the North American Riding for Handicapped Association.[11] Established associations helped to begin the formalization process of EAT for IDD through educational, professional, medical, and therapeutic standards to guide emerging programs, which sprang up across Europe and the U.S. through the 1970's.[12] Many of these programs nevertheless continued to limit riders, often with requirements that riders be able to maintain their balance on a saddle independently of assistance, which excluded many potential riders who needed additional support.[13] These rules slowly but surely changed as individual coaches and handlers demonstrated, to the wider, budding EAT community, that support initiatives were possible that kept riders safe, did not impact therapeutic work, and did not harm the horse. Many of these early initiatives varied between riding centers, riders, and instructors; however, widely adapted forms that persist today include extra horse handlers and therapists gently holding or guiding the rider on the horse from side to side and so forth.[14]

AAT Foundations

As EAT found its footing in the 1970's and onwards, the general idea of therapeutic animal use still struggled to define itself and what was included; especially within the context of dogs and cats being nonchalantly brought into care facilities with no proper training, the seemingly euphemistic "pet therapy." Thus to accurately define the different uses of animals in such settings and further therapeutic means, including EAT, the Delta Society, a non-profit volunteer organization, currently known as Pet Partners, convened in the late 1990's to distinguish "pet therapy" initiatives into two standard categories: Animal Assisted Activities (AAA) which covered programs using animals for 'entertainment or generalized population benefits' and Animal Assisted Therapy (AAT) which used animals for a 'prescribed effect on specific patients'; which thus includes EAT.[15] AAT not only covers the use of an animal for a specific therapeutic purpose but also their handling and care while being used; oftentimes for an animal to be used in AAT, and by extent EAT, the animal must be used for specific therapeutic work, for example a physical or emotional therapeutic aspect, within this prescribed aspect animals must be helping their said patient reach a specific goal for example stretching leg muscles, being a soothing presence while a patient discussed trauma etc.[16] Furthermore the animal must be handled or assisted by a licensed professional, to ensure AAT guidelines are followed practices are often required to keep strict documentation and progress reports.[17] AAT is not without its concerns, however. Animals, even with training and in a 'safe' environment can be unpredictable and place clients in danger if they become aggressive, additionally rejection from the animal or client and the event of illness or death of the animal can also contribute to negative experiences coming out of a perceived therapeutic resource. Thus AAT is further separated from AAA because the bonds formed throughout the therapy and trust needed between all involved parties is an evolving, purposeful and often an emotional force, which, while often positive, can in

10 Bieber, "Horseback Riding and Individuals with Disabilities." 2.
11 Fry, "Equine -Assisted Therapy: An Overview," 262.
12 Fry, "Equine -Assisted Therapy: An Overview," 262.
13 Bieber, "Horseback Riding and Individuals with Disabilities." 2.
14 Bieber, "Horseback Riding and Individuals with Disabilities." 2.
15 Hines and Fredrickson, "Perspectives on Animal-Assisted Activities and Therapy," 25.
16 Cole and Howard, "Animal-Assisted Therapy: Benefits and Challenges," 235.
17 Cole and Howard, "Animal-Assisted Therapy: Benefits and Challenges," 235.

turn be distressing both physically and mentally to each respective party, whereas AAA experiences, while valuable in their own right, usually occur within short, impersonal, goodwill visits where further connection is unlikely.[18]

3.1.3 EAT: A Contemporary Introduction

In understanding AAA, AAT, and EAT, it is crucial to recognize that many definitions of these terms exist, partially due to the relative novelty of recognized and established therapeutic animal work since the 1950s as well as regional and geographic differences. To complicate these factors further general lexicon and media understandings of therapeutic animal use can also result in further definition and implication confusion. Within the umbrella term of AAT that covers EAT, EAT has a its own subclassifications; such as Hippotherapy (HPOT), Adaptive Therapeutic Riding (ATR) and Equine Assisted Psychotherapy (EAP), each of these subcategories have their own unique definitions and yet are often used in everyday, and even some academic use, to encompass all therapeutic horse uses regardless of their goals or methods, which can further complicate and frustrate patients, educators, families, therapists and researchers.[19] For the purposes of simplicity, going forward into a more complex look at EAT, the definitions of AAA and EAT as prescribed by the Delta Society were used in research for this capstone, all other definitions for terms are defined based off the general connections and consensus amongst most of the research used; and cited accordingly in the footnotes, bibliography and the following figure (see fig. 1).

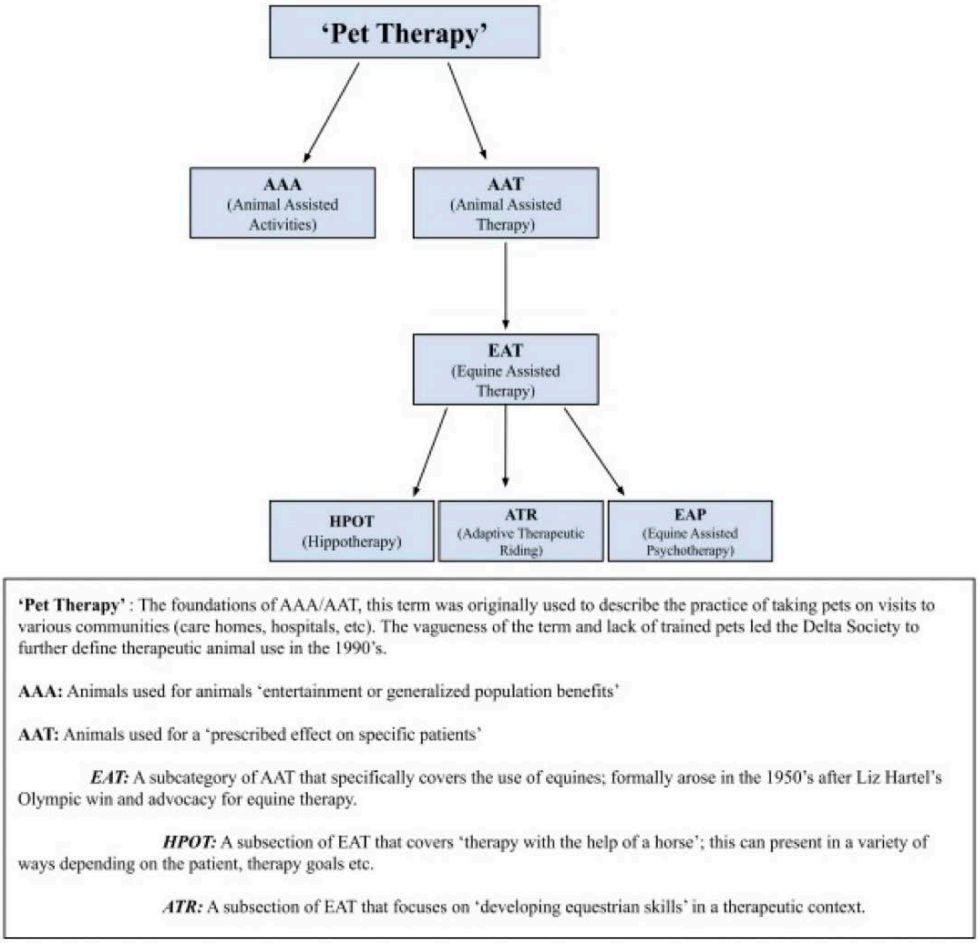

Figure 1. *Breakdown of 'Pet Therapy' Types.*
Source: Emma Waggett. Based on the works of Hines, Linda, Maureen Fredrickson, Jane Copeland Fitzpatrick, Jean M. Teaby, Erika L. Berg, and Amy Causey. Edited by Emma Waggett, April 26, 2025.

18 Cole and Howard, "Animal-Assisted Therapy: Benefits and Challenges," 245.
19 Fitzpatrick and Tebay, "Hippotherapy and Therapeutic Riding," 45.

Adaptive Therapeutic Riding (ATR) vs. Hippotherapy (HPOT)

In light of the aforementioned complications in terminology, covering the full depth and scope of EAT types, even without lexicon and geographical differences, would have overwhelmed the objectives of this paper. Thus, a general survey of EAT was undertaken, with a specialized focus on HPOT. Like many EAT sub-categorizations, HPOT is similar to what is known as Adaptive Therapeutic Riding (ATR); indeed, they are the largest sub-categorizations of EAT, and before exploring HPOT, it is important to distinguish these two terms, at least in the U.S. context, to avoid confusion. To begin, ATR focuses upon 'developing equestrian skills'; on the other hand, HPOT is 'therapy with the help of a horse.'[20] While ATR's focus of developing equestrian skills may appear to align more with recreational AAA pursuits, ATR is required to be done with 'a certified therapeutic riding instructor'; while HPOT due to its broad language of 'therapy with the help of a horse' can include either a physical and/or occupational therapist that has done specific equine training and in some cases, depending on a patient's goals, a speech language pathologist.[21]

Hippotherapy

Throughout research, the mechanics and functions of HPOT stood out as one of the most unique EAT forms; thus, special attention was devoted to understanding it. In its essence HPOT has a distinctly clinical approach, as compared to some other EAT subcategories, here a participant is not learning to ride a horse or skills associated with a horse, but rather using the horse as a means of positive movement for a their body, usually associated with the pelvis and balance.[22] While this form of therapy, like most found in EAT, can vary across geographical regions, qualifications and requirements within a U.S. context 'any person with a neurological based movement dysfunction could potentially qualify for hippotherapy,' making it one of the most diverse therapeutic programs serving a variety of groups including IDD individuals, veterans and amputees, to name a few.[23] What makes HPOT unique and useful in a therapeutic context for a variety of needs is that horseback riding produces physiological sensations in the human pelvis vital for movement, the gentle easing of these sensations while riding can help individuals who have difficulties walking or walking properly.[24] This occurs because a rider must exert force and balance through their pelvis to stay upon a horse, likewise, this exertion is not only found in the pelvis but also the legs, thus HPOT can further help to stretch a rider's leg muscles that are not accessible in traditional therapy methods, additionally the warmth of the horse's body can encourages tense leg muscles and the pelvic region to relax further into stretching.[25] Aside from the correction of pelvic and leg movements, HPOT has also been reported to have other holistic health benefits, including general improvements to 'respiratory, circulatory and digestive health.'[26]

HPOT in Action: Typical Session Layout

While the goals and objectives of each patient, therapist and program differ in HPOT a typical session layout nevertheless presents the power of HPOT and underlines the importance

20 Berg and Causey, "The Life Changing Power of Horses," 73.
21 Berg and Causey, "The Life Changing Power of Horses," 73.
22 Fitzpatrick and Tebay, "Hippotherapy and Therapeutic Riding," 43.
23 Fitzpatrick and Tebay, "Hippotherapy and Therapeutic Riding," 49.
24 Berg and Causey, "The Life Changing Power of Horses," 73.
25 John H "Rusty" Miller and Antoine J. Alston, "Therapeutic Riding: An Educational Tool for Children with Disabilities as Viewed by Parents," Journal of Southern Agricultural Education Research 54, no. 1 (2004): 114–15.
26 B. Rhett Rigby and Peter W. Grandjean, "The Efficacy of Equine-Assisted Activities and Therapies on Improving Physical Function," The Journal of Alternative and Complementary Medicine 22, no. 1 (2016): 10, https://doi.org/10.1089/acm.2015.0171.

of the relationship between therapist, patient and horse. Sessions typically include a horse handler and volunteer assistants as well as a physical and/or occupational therapist; these supports are sometimes additionally supported by other therapists or medical professionals, depending on the established goals of the therapy.[27] Sessions usually begin with patients mounting an assigned horse from some form of mounting block, after which the horse handlers will gently guide the horse away, usually with some form of reins.[28] As the session progresses, regardless of the therapeutic goals, the general side-to-side movements of the horse's gait will begin to positively impact the patient's body, meanwhile, the therapist and patient will work together to address specific session goals. Sessions usually occur in distraction-free indoor riding rings to help ensure the success of the session for all those involved.[29]

3.1.4 EAT: The Horse

EAT Horse Characteristics

Because EAT and its subcategories are therapeutic, the selection of horses used is paramount to the success of patient goals. Just as guide dogs and other working animals are chosen for their characteristics and temperament, the same applies in the world of EAT. Regardless of the type of EAT undertaken, the 'right' horse is generally based on their positive gait, sense of patience, and gentleness; these attributes are selected to help serve the patient best physically and in making them more comfortable emotionally during sessions.[30] Nevertheless, at the center of EAT is the horse itself, an independent and autonomous animal in its own right, and regardless of their perceived docility, they often set their own boundaries with humans.[31] Through physical cues, horses will frequently communicate how they feel, which parties involved in EAT practices should be aware, observant, and respectful of. For instance, during EAT sessions, a horse may demonstrate distress or use physical cues to indicate that they are okay with being touched.[32] These cues are not only helpful in teaching parties to respect the horses' autonomy but can also become a part of the therapeutic practice itself, especially for patients who are working on learning about or improving social boundaries, expectations, etc.[33]

The Horse's Physical & Mental Wellbeing: Respecting & Protecting

Despite the natural behavioral cues of horses, protecting and respecting the physical and mental wellbeing of EAT horses goes beyond the observance of everyday cues. Horses are at the heart of EAT, and their physical and emotional welfare drives its therapeutic programs. If horses are not properly cared for and put themselves, handlers, or patients in dangerous positions as a result, public perception of this already experimental field of therapy would be impacted. In essence, healthy horses make for healthy public relations and promotions of EAT.[34] But understanding the comfort and autonomy of an EAT horse has proven to be more complicated in research than simply reading behavioral cues. Physiological studies of EAT horses, which are incredibly limited at present, have found horses to have both increased and decreased heart rates before beginning therapeutic

27 Fitzpatrick and Tebay, "Hippotherapy and Therapeutic Riding," 49.
28 Fitzpatrick and Tebay, "Hippotherapy and Therapeutic Riding," 49.
29 Fitzpatrick and Tebay, "Hippotherapy and Therapeutic Riding," 49-51.
30 Rigby and Grandjean, "The Efficacy of Equine-Assisted Activities," 21.
31 Merav Moshe-Grodofsky, "Equine-Assisted Therapy Development: Methodology and Rationale," in Guide to Equine Assisted Therapy, ed. Yuval Neria, Prudence W. Fisher, and Allan J. Hamilton (Cham: Springer, 2025), 78.
32 Moshe-Grodofsky, "Equine-Assisted Therapy Development," 78.
33 Moshe-Grodofsky, "Equine-Assisted Therapy Development," 78.
34 Ellen M. Rankins and Karyn Malinowski, "Horse Well-Being in Therapies Integrating Horses," in Guide to Equine Assisted Therapy, ed. Yuval Neria, Prudence W. Fisher, and Allan J. Hamilton (Cham: Springer, 2025), 318.

sessions.[35] These results point to horses being both stressed and perhaps more relaxed in the lead up to sessions.[36] Results such as these point to difficult conclusions, indicating situations in which horses, or at least specific horses, can be uncomfortable with EAT, perhaps the anticipation of being ridden, their patient's temperament, and needs? Or the role of handlers and therapists dictating their movements? These questions still need to be assessed, but at present it is clear that EAT work can both seemingly put horses in states of distress, but also calm.[37] But the increase of a horse's heart rate can also relate to those who handle the them as well, EAT services need to properly take care of and prepare horses for sessions before, during and after patient experiences as a stressed or uncomfortable horse will often not be able to perform the services their patient needs, which can be frustrating for patients and therapists alike.[38] While investigations of EAT horse physical and mental wellbeing are sparse at this time and need to be continued, the central autotomy of the horse should remain paramount in all research. EAT provides many benefits to patients, but this human centric lens can diminish respect and care for the horse at the center of those prescribed benefits, horses in EAT are not just 'useful' therapy tools, they remain their own individual and autonomous beings, and even within their use in EAT, all parties involved should not lose sight of the horses wellbeing in pursuit of improving patients.[39]

3.1 Methods

Upon conducting preliminary research on EAT and HPOT, research shifted to understanding the impact of equine therapy in action. Particular interest was taken in HPOT's benefits for pelvic and leg muscles. Thus, the following results demonstrate EAT's effectiveness in aligning human physiological needs. As conducting independent research was not possible during the completion of this work, results were ultimately derived from the previous steadfast undertakings of Rigby and Grandjean in assessing how EAT, as a broadband therapy form, can improve the physical functions of a variety of patients.

4.1 Results

4.1.1 EAT as a Success

Physically

EAT, despite its various subcategories, is primarily recognized for its effects on

posture. The gait of horses as they walk has been recorded to help with pelvic alignment in patients using EAT, as well as other holistic benefits. Many individuals with IDD experience 'abnormal pelvic kinematics', which can make pelvic functions difficult to perform.[40] As previously explored, horseback riding can help adjust the pelvis and align it properly, which can not only help with general pelvic and walking problems but also the fundamental pelvic positioning.[41] For individuals with IDD these alignments of the pelvic region through EAT have been proven to be most beneficial when participants 'ride one or more times per week', these benefits appear to continue, unless the riding is stopped, in which it takes several weeks for benefits to diminish to what they were before riding was undertaken.[42] In the posture survey of Rigby and Grandjean (see fig. 2), they found evidence that pelvic realignment can also help with the adjustment of the trunk of riders, for instance

35 Rankins and Malinowski, "Horse Well-Being in Therapies," 326.
36 Rankins and Malinowski, "Horse Well-Being in Therapies," 326.
37 Rankins and Malinowski, "Horse Well-Being in Therapies," 326.
38 Rankins and Malinowski, "Horse Well-Being in Therapies," 327.
39 Rankins and Malinowski, "Horse Well-Being in Therapies," 327.
40 Rigby and Grandjean, "The Efficacy of Equine-Assisted Activities," 17.
41 Rigby and Grandjean, "The Efficacy of Equine-Assisted Activities," 17.
42 Rigby and Grandjean, "The Efficacy of Equine-Assisted Activities," 22.

Table 3. Effects of Equine-Assisted Activities and Therapies on Posture

Study	Participants and groups	Duration/mode/frequency of therapy	Measures and methods	Outcomes
Case studies				
Haehl et al.[4]	2 children with CP, age 4.0 and 9.0 y	12 wk, 1 time/wk; 20 min/session for 9-year-old, 40 min/session for 4-year-old	Postural control and stability measured before and after intervention using video motion capture	Postural stability was greater after intervention for both children
Shurtleff et al.[7]	1 child with CP, age 6.0 y	12 wk, 1 time/wk, 45 min/session	Head/trunk control measured using motion capture before, immediately after, 24 wk after, 9 mo after intervention	Significant improvements in head/trunk control from before to immediately after intervention; no change from immediately after to 24 wk after intervention; improvement in postural sway 9 mo after intervention
Champagne et al.[33]	2 children with DS, age 28.0 and 37.0 mo	11 wk, 1 time/wk, 30 min/session	Accelerometry of head/trunk in vertical, A-P and M-L directions, measured during wk 1 and 4 of intervention	Along M-L axis, stability of head was increased at wk 4 for first child, and stability of trunk was increased at wk 4 for second child
Therapeutic horseback riding				
Bertoti[5]	11 children with CP, age ≥2 y	10 wk, 2 times/wk, 60 min/session	Posture assessment scale (scored 0–3, severe–normal) at head/neck, shoulder, trunk, spine, pelvis, assessed before and after intervention	8 of 11 children significantly improved posture after intervention, evidenced by trunk elongation and more erect posture; improvements observed in all 5 areas measured
Mackinnon et al.[6]	19 children with CP, age ≥4 y; 10 in experimental group, 9 in control group	6 mo, 1 time/wk, 60 min/session	Similar to Bertoti[5]	No difference observed between experimental and control groups; in experimental group, those moderately affected showed gains, those mildly affected showed slight decreases in posture
MacPhail et al.[8]	6 children with CP, age ≥5 y; 7 able-bodied children, age ≥6 y	1 session	Lateral trunk displacement measured 3 times during riding using video motion capture	Mean displacement of trunk was significantly greater in the group with CP
MacKay-Lyons et al.[36]	10 adults with MS, age ≥25 y	9 wk, 2 times/wk, 30–45 min/session	Postural sway measured using a force platform and center of pressure before and after intervention	No significant changes from before to after intervention; trend toward a deviation in center-of-pressure displacement after intervention
Hippotherapy				
Ajzenman et al.[46]	6 children with ASD, age ≥5 y	12 wk, 1 time/wk, 45 min/session	Postural sway measured using motion capture before and after intervention	Significant decrease observed in postural sway after intervention

ASD, autism spectrum disorder.

Figure 2. *Effects of Equine-Assisted Activities and Therapies on Posture.*
Source: Rigby, B. Rhett, and Peter W. Grandjean. "The Efficacy of Equine-Assisted Activities and Therapies on Improving Physical Function." The Journal of Alternative and Complementary Medicine 22, no. 1 (2016): 16.

EAT can help adjust the trunk of a child with cerebral palsy (CP) up to 10.2 degrees in just one riding session, over a ten week course these degree improvements can lead to overall better postural balance in the child, not only in their trunk but also in the decreased spasticity of head and neck functions.[43] Furthermore, for patients with ASD (Autism Spectrum Disorder), once weekly riding sessions for children over a twelve-week period can help improve 'postural sways.'[44] The improved posture of riders has also, in some studies, lead to improvements in a riders general gait (see fig. 3), Rigby and Grandjean conclude that while more conclusive studies need to carried out current evidence demonstrates that a riders work toward improved posture control and balance on the horse can thus affect their everyday gait patterns, with the gait stride length of riders being surveyed to improve by up to 29%.[45]

43 Rigby and Grandjean, "The Efficacy of Equine-Assisted Activities," 16.
44 Rigby and Grandjean, "The Efficacy of Equine-Assisted Activities," 16.
45 Rigby and Grandjean, "The Efficacy of Equine-Assisted Activities," 20.

Table 5. Effects of Equine-Assisted Activities and Therapies on Gait

Study	Participants and groups	Duration/mode/frequency of therapy	Measures and methods	Outcomes
Therapeutic horseback riding				
Winchester et al.[19]	5 children, age ≥6 y; diagnoses include spina bifida, autism, DS, and TBI	7 wk, 1 time/wk, 60 min/session	Gait speed assessed 2 times before, immediately after, 7 wk after intervention	No significant differences observed from before to immediately after or from before to 7 wk after intervention
MacKay-Lyons et al.[36]	10 adults with MS, age ≥25 y	9 wk, 2 times/wk, 30–45 min/session	Gait speed, stride time, stride length at free pace, fast pace assessed before and after intervention	Gait speed, stride length significantly greater at normal pace with no change in stride time in 7 participants after intervention
Hammer et al.[38]	11 adults with MS, age ≥35 y	10 wk, 1 time/wk, 30 min/session	Maximum velocity during 10-m walking test assessed before and after intervention	One participant significantly increased gait velocity after intervention
Hippotherapy				
Sunwoo et al.[10]	8 adults with chronic brain disorders (e.g., CP, TBI), age ≥25 y	8 wk, 2 times/wk, 30 min/session	10-m walking test, assessed 8 wk before, immediately before, immediately after, 8 wk after intervention	No change observed from 8 wk before to immediately before intervention; significant improvement observed from immediately before to immediately after intervention; no change observed from immediately after to 8 wk after intervention
McGibbon et al.[18]	5 children with CP, age ≥9 y	8 wk, 2 times/wk, 30 min/session	Stride length, cadence, gait velocity, assessed 8 wk before, immediately before, immediately after intervention	No significant differences were observed at any time point; a trend toward increased stride length, decreased cadence was observed
McGee et al.[23]	9 children with CP, age ≥7 y	1 session, 30–45 min	Time in swing, stance, single and double support, step length, stride length assessed before and after intervention	No significant differences observed after intervention compared with baseline
Kwon et al.[31]	32 children with CP, age ≥4 y; 16 in experimental group, 16 in control group	8 wk of hippotherapy (2 times/wk, 30 min/session) and conventional therapy (2 times/wk, 30 min/session) in experimental group; 8 wk of conventional therapy (2 times/wk, 30 min/session) in control group	Cadence, single-limb support, stride length, gait velocity assessed before and after intervention	Gait velocity increased in both groups after intervention; significant increase in stride length with no change in cadence observed in experimental group after intervention; increase in cadence observed with control group after intervention
Copetti et al.[35]	3 children with DS, age 7.3 ± 2.08 y	13 wk, 1 time/wk, 50 min/session	Angular kinematics of ankle and knee measured before and after intervention	Significant differences in ankle dorsiflexion ROM, observed in balance phase of gait after intervention
Beinotti et al.[45]	20 adults post-stroke, age ≥30 y; 10 in experimental group, 10 in control group	16 wk of hippotherapy (1 time/wk) and conventional therapy (2 times/wk) in experimental group; 16 wk of conventional therapy (3 times/wk) in control group	Cadence and gait speed measured before and after intervention	Significant improvement observed in both groups with cadence after intervention; no differences observed between groups before or after intervention

Figure 3. Effects of Equine-Assisted Activities and Therapies on Gait.
Source: Rigby, B. Rhett, and Peter W. Grandjean. "The Efficacy of Equine-Assisted Activities and Therapies on Improving Physical Function." The Journal of Alternative and Complementary Medicine 22, no. 1 (2016): 20.

Other Successes: Emotional, Quality of life & School

Although much of EAT's success can be attributed to its physical therapy attributes, in children with IDD, the power of working with a horse can extend beyond the riding ring. For instance, the nature of working with a horse encourages patients to exercise control and responsibility, not only in their physical actions but also in respecting the horse, listening to instructors and/or therapists, and engaging with their surroundings.[46] Of EAT's various subcategories, HPOT appears to be one of the most effective at improving mobility, relationships, and general communication within patients' lives.[47] Parents of children with IDD have reported that the lessons their children learn with EAT translate into their home and school life positively, often helping children with their physical coordination and independence, motor skills, attention span, and general virtues of responsibility, patience, and empathy, as well as improved emotional regulation.[48] These positive knock-on effects of EAT have even circled back to the therapy sessions themselves. HPOT structures that work with children can

46 Moshe-Grodofsky, "Equine-Assisted Therapy Development," 78.
47 Alex Potvin-Bélanger et al., "Impact of Hippotherapy on the Life Habits of Children with Disabilities: A Systematic Review," Disability and Rehabilitation 44, no. 26 (January 19, 2022): 8173, https://doi.org/10.1080/09638288.2021.2012847.
48 Miller and Alston, "Therapeutic Riding: An Educational Tool for Children with Disabilities," 119-120.

include specific services to help with reading and arithmetic.[49] These services may be incorporated into therapeutic sessions by having children identify different colors, read signs, count horse features, and so forth, making the learning process more engaging for clients who may struggle in traditional classroom environments or teaching methods.[50]

5.1 Discussion

Upon assessing the conclusions of Rigby and Grandjean in their comprehensive survey of EAT efficiency, including in improving patients' posture and gait, and taking into account the explorations of Miller and Alston in understanding the impact of EAT services on children with IDD, EAT, overall, presents as a positive therapeutic source. This, of course, does not take away from its complexity in terms of lexicon and the role of a horse's physical and mental wellbeing. It is clear that EAT practices need to continue to prioritize the autonomy of horses as working animals, and further establishment of lexicon should be undertaken, if not at an international level, then at least by a national/state level, so that patients, families, therapists and researchers can more easily find and understand services. Despite these setbacks, however, EAT can be successful, and it is for patients across the state, country, and world, improving lives inside and outside the riding ring. Every EAT path is unique and complex, yet when a horse's mental and physical wellbeing is prioritized, proper supports implemented for both the horse and rider, and goals are clearly understood, EAT can be a path to an unlimited and successful future.[51]

6.1 Conclusion

In their individual and emerging forms, the history of AAT, through the lens of EAT and its subcategory of HPOT, and the support they can provide for the IDD community speak to a liberated frontier ripe with change and lasting impact. Within the last sixty years or so, horses have come to be seen as an established therapeutic tool, and at its center, the horse, in all its emotional and physical complexity across human history, society, and culture, seemingly holds the key to a boundless future. EAT is not without its challenges. Understanding the mental and emotional wellbeing of horses working within EAT is paramount, and, due to a lack of studies, is clearly not fully understood at this time. It should also be noted that EAT is highly individualized, and thus may help some patients more than others; its success, as ever, rests on a number of factors. But in concluding this capstone and looking at where EAT arose from: the determination of Hartel, dedication of therapists to make EAT work for patients regardless of disabilities and where is stands today, and the communities it can help serve, including IDD individuals; it is hard with that knowledge, to not recognize, that even with EAT's many complexities, it has a purpose. EAT and its subcategories carry on Hartel's initial legacy, everyday these practices, erase, in their own ways, past stereotypes and beliefs about IDD individuals, and in turn provide ripples of hope for the IDD community, among others, and if given the recognition it deserves, can continue to change the future, one therapy session, one patient and one horse at a time.

Works Cited

Berg, Erika L., and Amy Causey. "The Life Changing Power of Horses: Equine Assisted Activities and Therapies in the U.S." *Animal Frontiers* 4, no. 3

49 Miller and Alston, "Therapeutic Riding: An Educational Tool for Children with Disabilities," 115.
50 Miller and Alston, "Therapeutic Riding: An Educational Tool for Children with Disabilities," 115.
51 Alessandra Prieto et al., "Effects of Equine-Assisted Therapy on the Functionality of Individuals with Disabilities: Systematic Review and Meta-Analysis," Physiotherapy Theory and Practice 38, no. 9 (October 21, 2020): 1104, https://doi.org/10.1080/09593985.2020.1836694.

(July 2014): 73.

Bieber, Natalie. "Horseback Riding and Individuals with Disabilities: A Historical Perspective." *Palaestra* 12, no. 3 (1996): 2.

Cole, Mary, and Maureen Howard. "Animal-Assisted Therapy: Benefits and Challenges." In *Biotherapy - History, Principles and Practice: A Practical Guide to the Diagnosis and Treatment of Disease Using Living Organisms*, edited by Martin Grassberger, Ronald A. Sherman, Olga S. Gileva, Christopher M.H. Kim, and Kosta Y. Mumcuoglu, 234, 235, 245. Chem: Springer, 2013.

Copeland Fitzpatrick, Jane, and Jean M. Tebay. "Hippotherapy and Therapeutic Riding: An International Review." In *Companion Animals in Human Health*, edited by Cindy C. Wilson and Dennis C. Turner, 42, 43, 45, 49, 49–51. Thousand Oaks, California: SAGE Publishers, 1998.

Fry, Nina Ekholm. "Equine -Assisted Therapy: An Overview." In *Biotherapy - History, Principles and Practice: A Practical Guide to the Diagnosis and Treatment of Disease Using Living Organisms*, edited by Martin Grassberger, Ronald A. Sherman, Olga S. Gileva, Christopher M.H. Kim, and Kosta Y. Mumcuoglu, 261, 262. Chem: Springer, 2013.

Hines, Linda, and Maureen Fredrickson. "Perspectives on Animal-Assisted Activities and Therapy." In *Companion Animals in Human Health*, edited by Cindy C. Wilson and Dennis C. Turner, 25. Thousand Oaks, California: SAGE Publishers, 1998.

Miller, John H "Rusty", and Antoine J. Alston. "Therapeutic Riding: An Educational Tool for Children with Disabilities as Viewed by Parents." *Journal of Southern Agricultural Education Research* 54, no. 1 (2004): 114–15, 115, 119–20.

Moshe-Grodofsky, Merav. "Equine-Assisted Therapy Development: Methodology and Rationale." In *Guide to Equine Assisted Therapy*, edited by Yuval Neria, Prudence W. Fisher, and Allan J. Hamilton, 78. Cham: Springer, 2025.

Potvin-Bélanger, Alex, Claude Vincent, Andrew Freeman, and Véronique H. Flamand. "Impact of Hippotherapy on the Life Habits of Children with Disabilities: A Systematic Review." *Disability and Rehabilitation* 44, no. 26 (January 19, 2022): 8173. https://doi.org/10.1080/09638288.2021.2012847.

Prieto, Alessandra, Kênnea Martins almeida Ayupe, Latife Nemetala Gomes, Ana Cristina Saúde, and Paulo Gutierres Filho. "Effects of Equine-Assisted Therapy on the Functionality of Individuals with Disabilities: Systematic Review and Meta-Analysis." *Physiotherapy Theory and Practice* 38, no. 9 (October 21, 2020): 1104. https://doi.org/10.1080/09593985.2020.1836694.

Rankins, Ellen M., and Karyn Malinowski. "Horse Well-Being in Therapies Integrating Horses." In *Guide to Equine Assisted Therapy*, edited by Yuval Neria, Prudence W. Fisher, and Allan J. Hamilton, 318, 326, 327. Cham: Springer, 2025.

Rigby, B. Rhett, and Peter W. Grandjean. "The Efficacy of Equine-Assisted Activities and Therapies on Improving Physical Function." *The Journal of Alternative and Complementary Medicine* 22, no. 1 (2016): 10, 16, 17, 20, 21, 22. https://doi.org/10.1089/acm.2015.0171.

Waggett, Emma. Breakdown of "Pet Therapy" Types. April 26, 2025. Google Docs. Based on the works of Hines, Linda, Maureen Fredrickson, Jane Copeland Fitzpatrick, Jean M. Teaby, Erika L. Berg, and Amy Causey. Edited by Emma Waggett.