Therapeutic Horseback Riding Intervention
Manual

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Administration & General Info

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IMPORTANT ADMINISTRATIVE CONSIDERATIONS:

EVALUATIONS

Documentation: new Participant Evaluation Form; THR Evaluation Checklist; Criteria for Participation Worksheet; Parents Information Letter (to hand out).

Purpose: The purpose of evaluations is twofold. First, to determine if candidates meet criteria for participation, and secondly, if participants meet criteria, they are to collect information so that participants can be safely and effectively served.

Structure:

- Office portion – introductions, complete the first page of the New Participant Evaluation Form, go over rider rules.
- Fit helmet
- Ride horse for 10 minutes
- Back to office and do one of these things: accept rider into program, ask for more information and time to discuss with team, or inform family that it is not a good fit.
- If rider is accepted then discuss program logistics, policies, and procedures.

During evaluations the Research Site Coordinator (RSC) goes through the THR Evaluation Checklist. As part of the evaluation, the RSC determines the rider’s level of function in relation to their ability to ride a horse. The participant is then accepted or declined admission into the program. If accepted, the information collected is used to place the rider into a group with others with similar ability. In addition, the RSC screens for those who have significant riding experience who were not identified in the initial phone screening. This inclusion criteria is standardized in the Criteria for Participation Worksheet.

WEEKLY PARENT REPORT MEASURE – The Aberrant Behavior Checklist – Community (ABC-C) is an important piece of data in the research project. A parent or caregiver is designated from the first visit, at hospital, to fill out the ABC-C. The designated parent fills out the ABC-C weekly at the riding center for the 10-week session (not at the evaluation appointment). Parents are asked to complete the form via a link that is sent to their e-mail inbox. They are filling it out based on the previous week. We ask that parents complete the form sometime between when it is sent to them, and the end of this class time. A paper version is also available on site in case there is an issue with the electronic system. Parents are asked to complete the ABC-C each of the 10 weeks of the scheduled riding group, regardless if they are absent from the program.

ABSENCE POLICY – Participants may miss a maximum of 2 classes in the 10 week session. Upon the 3rd absence, the rider will be asked to discontinue their participation. This cancellation policy is written into the research protocol and must be followed regardless if the instructor feels the absence is justified. All families are notified of this policy during their evaluation, and instructors, staff, and the Research Site Coordinator will make every effort to remind families of this policy as cancellations occur.
6 MONTH WAITING PERIOD – Participants in the classes are asked to refrain from riding horses for SIX MONTHS after completion of the riding session (less than 2 hours of mounted activity). This is to support the study of the long-term effects of THR. Participants are told at their hospital and riding site evaluations of this research protocol. Families will receive riding site registration via email, after the 6 month window has expired, unless they request to not have it sent. (See: Final Week Parent Instructions)

LESSON TRACKING PROCEDURES – Please refer to the Attendance Summary for Lessons for more information. The Research Site Coordinator and the Instructor track changes to horses, volunteers, and instructor, for classes throughout the session. This is to measure the consistency in the rider’s experience. In addition, the instructor will measure and record the length of lessons. The Research Site Coordinator will then finalize the summary and submit it to the Principal Investigator.

FIDELITY MEASURE – Twice during each 10 week session, principal investigators will observe classes and complete the Fidelity Measure (observe 80% of classes). The purpose of the fidelity measure is to ensure that we are conducting the sessions in a consistent way and are sticking to our processes.

UNANTICIPATED PROBLEMS (INCIDENT REPORTING) – Please see the “Unanticipated Problem Policy” for more information regarding incident reporting and reporting suspicions of abuse/neglect. There are additional levels of reporting that go beyond the riding center’s usual procedures.

INSTRUCTOR PAPERWORK – Instructor resources are located _____________________.

Instructors are responsible for completing the following documentation:

Weekly:

1. Writing weekly lesson plans on the Lesson Plan Template following the Skill Modules.
2. Completing the Rider Progress & Lesson Evaluation sheet after each class.
3. Printing a hard copy of the Lesson Plan and Rider Progress & Lesson Evaluation from each week to submit to Research Site Coordinator.
4. Completing the Attendance Summary weekly which includes timing the length of class.

Other:

1. Completing Horsemanship Indicators and Therapeutic Indicators for each rider in compliance with riding center policies.
2. Completing an End of Session Evaluation for each rider in compliance with riding center policies.

INSTRUCTOR INFORMATION:

RIDER RULES (picture schedule): wear helmet, walking feet, quiet voices, listen to directions, and show kindness.

THINGS TO KNOW ABOUT RIDER EVALUATIONS: Before their first class each rider has had a mounted evaluation where they were taught above rider rules, mounting and dismounting, how to hold the reins, and whoa and walk on. Most riders do a sitting trot once for a few steps with a lot of support (thigh hold from one side-walker and holding onto front of saddle). Riders also learn: mount/dismount, basic riding position, how to hold the reins, and aids for walk on (voice
only) and whoa. Notes on these evaluations can be found in each rider’s file for careful review before the start of the session.

**BEFORE CLASS (picture schedule):** Participants will arrive around 10 minutes before class start time (more or less depending on individual needs). Offer bathroom when appropriate, check in with side walker and/or instructor, put on helmet, wait on green bench in mounting area, and mount horse. Use picture schedules for these steps.

**DURING CLASS (picture schedule):** Classes follow the same format from week to week. Classes need to provide at least 45 minutes of ride time, with the exception of the first class, where it is expected to take longer to organize volunteers, mount riders and adjust stirrups (be sure volunteers write down stirrup numbers after class). Ride time for first class should be a minimum of 30 minutes. Do not wait to begin mounting riders past class start time even if some of the class has not arrived. If participants are more than 15 minutes late AND the class has completed warm-up, they may not ride that week.

**CLASS FORMAT (picture schedules):** Classes follow the same format from week to week as follows:

1. Mounting (for higher functioning groups introduce Horsemanship Lesson to discuss with volunteers while others are mounting, otherwise, include fun and easy activity to work on).
2. Warm up
3. Review from last week
4. New skill
5. Game/activity
6. Cool down
7. Review
8. Dismount

**TROTting:** Will either be a new skill, review from last week, or utilized to refocus class. Trotting can also be utilized to alternate as a more desirable activity after less desirable ones.

**AFTER CLASS:** Riders will complete one step or partial step in each of the following un-mounted activities steps. Use picture schedule for these steps.

1. Dismount
2. Lead or walk with horse to tacking area
3. Help with un-tacking and grooming
4. Say thank you to volunteers and horses
5. Put tack and grooming bucket away
6. Take off helmet
7. Leave

**VOLUNTEER MANAGEMENT:** Every lesson: post lesson plan in tack room, circle up and brief volunteers as to lesson objectives, remind volunteers of pertinent information especially to limit talking, any necessary follow up from the week previous. Solicit brief volunteer feedback after each class.

**First week:** Brief volunteers on rider needs, age, sensitivities, strengths, precautions, etc. Go over “volunteer briefing week 1” (see handout).
OBJECTIVES: Choose the number and type of objectives depending on the level of the class. Objectives may be revisited and presented out of stated order depending on the needs of the class. The “measurement” part of the objective must be added depending on the needs of the class. For example, the instructor needs to add the number of obstacles to be completed, the number of times a skill should be demonstrated and/or the amount of support that will be provided. Objectives will be scored for each participant either TM (totally met), PM (partially met), UM (un-met), or NA (not attempted). There is room for comments, especially if objectives are PM or UM.

PICTURE SCHEDULES: Use them routinely for all kids at the start of the session as a reminder of the rules and to help transition into the activity. Rules are available for volunteers to have banded to their wrist, for riders who need this level of reminder. Schedules should be out and available so they can be used for transitions when needed. The lesson “mini” schedule can be used during class; there is a large version to post, and smaller versions that side-walkers can hold. The Velcro is so the pictures can disappear to visually mark the task is completed. The mini schedule is appropriate for kids who need to know how long they are to remain on the horse (ex: 3 activities and then get off horse). Questions regarding the picture schedules can be brought to the principal investigator.

SKILL MODULES: Are designed to be used in sequence as they represent a general skill progression. Some classes will complete all ten during a ten week riding session whereas some will only get through 4 or 5. The skill modules do not each represent a week’s worth of material; indeed, some classes may only successfully accomplish 2 or 3 skill modules in a 10 week riding session. In contrast, some riders may master skill module 1 in their new rider evaluation and are ready for module 2 or even 3 during the first class. The instructor should work on the skills in order and move on to the next set of skills when the participants have partially met (PM) or totally met (TM) the objectives.
Week 1 Checklist & Volunteer Briefing

Before Any Arrivals - put schedule out / post lesson plan / post sign about not helping on 1st week

Volunteers – 45 Minutes Before Class

45 prior: Introduce self, overview of class, overview of today’s lesson, others will be communicated to you that week / will post the days plan in tack room each week / will circle briefly before each class. Introduce TT member and empower them

b. How to use picture schedule
c. Importance of consistency with riders, if not going to be here, communicate this to them
d. Welcome feedback after all classes (very important), need to speak with parents as well so do not feel ignored
e. Getting ready early, punctuality
f. Warming up – 5-10 minutes prior to class, will watch and give feedback and answer questions
g. Importance of quiet – Side walker is main communicator but should limit talking
h. While you are tacking – Instructor talk to each ‘team’ about specific rider/horse. Brief on riders: age, sensory sensitivities, strengths, hobbies and interests, behavior management strategies. Horse: behavior, strategies for leading, strengths.
i. Review rules – safety first (no running, watch @ horse, helmets at all times, HL with horse, SW with rider) / your job is to support me (listen and reiterate to riders) / encourage independence / please let me know if at any time you do not feel comfortable – leave behavior management to instructor, bring concerns to me and we will develop a team approach
j. Talk @ rider falls / emergency dismount – hurts everyone and a lot of choices I make is to keep everyone from that hurt, esp. rider / You have the right to call an emergency dismount / Will be going over this during riding later in the session

30 min prior: Get horse and tack up / talk with teams @ horses and riders – Check tack

5 minutes prior to class: Horses enter arena for warm up / give feedback / talk about spacing, corners, position assistance / ask everyone to get into line, put reins on, and pull stirrups down – will do tack check all at once when get back / SW come with me

Parents – Class Time

a. Introduce self
b. Review how today’s class will go – slower (get everyone’s job down) / Rest of session at much quicker pace
c. Please update me @ change of meds, seizure activity, or other changes that could affect your child’s riding
d. Need to complete ABC-C while child is riding
e. Welcome to watch behind red rope or in observation area – but no flash or cell phones – if want to watch tacking process or speak with me must go around and watch behind gate, fence
f. Review rules and process with riders – walking feet, quiet voices, helmets at all times, listen, be kind
g. Introduce SW to riders
h. Check and record helmets

Volunteers - After Class

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a. Horses first, then tack – make it quick  
b. Engage riders on the ground  
c. Questions, concerns – always open to this  
d. Write down stirrups and girth in pencil  

Parents - After Class  

a. Questions or concerns – always open to this  
b. Remember to share specific goals if have any  

ABC-C Parent Instructions  

1. Please find the ABC-C form with your child’s name at the top.  

2. Fill out the form based on the previous week (or since your last visit to the riding center).  

3. Please include any medication or other treatment changes that have occurred in the past week. Also fill in today’s date and your child’s birthdate. (If no changes have occurred then there is no need to fill in the cover page each week).  

4. Place the form in the envelope marked with the day and time of your child’s class.  

5. Your instructor will collect the envelope and store the forms securely.  

If you need a quiet or private place to fill out the form please feel free to utilize your instructor’s office.  

The person filling out the form needs to be the identified caregiver who completed the pre-testing forms. If that individual is not here today, please carry this form to them and have them fill it out before interacting with the participant.  

Let us know if you have any questions, and thank you!
Incident Reports

An incident is any unusual event. It may, or may not result in an injury to a person or a horse.

After the occurrence of any incident:

- Thoroughly fill out an Incident Report form immediately following the incident, including a narrative of what happened with signed statement/reports from any witness or participants in the incident.
- If the incident resulted in an injury, or is otherwise serious in nature even if no injury occurred, it is imperative that contact is made with the Program Coordinator.
  - If the Program Coordinator can't be reached call the Executive Director until contact is made, even if the incident occurs outside of normal business hours.
  - The Executive Director will determine if the insurance company needs to be contacted and, if deemed necessary, will contact them within 24 hours.
- Submit the incident report to the Program Coordinator ASAP.

Incident Report follow up:

- The Program Coordinator will take the following steps:
  - Speak, within 24 hours, directly with the injured person(s)/parent/guardian. Take notes on the conversation. If contact is not made in 24 hours begin calling emergency contacts. Document attempts.
  - Contact volunteers and riders who witnessed the accident. They may need to process their experience. If appropriate ask the Volunteer Coordinator and Instructor to conduct follow up.
- Distribute the Incident Report to the Executive Director, Program Director and other staff as deemed appropriate. For example, if an incident is related to horse behavior then it is appropriate for the Barn Manager to be given a copy. **The Executive Director and Program Director must receive a copy of all incident reports.**
- A copy of the incident report is to be filed in the folders for all related parties - Volunteer, Rider and Horse.
- Inspect the horses, tack or any equipment that may have been involved in the incident. Remove any damaged tack or equipment from use in the program.

Incident Reporting:

- The Program Coordinator will adhere to the outlined reporting requirements:
  - Routinely share at monthly Instructor meeting all Instructor and program safety relevant Incident Reports.
  - Address the staff as a whole, via memo or Staff meeting, to any relevant Incident Reports that impacts changes in safety procedures and/or raises awareness of ongoing safety concerns throughout the year.
  - Present a brief overview of incident trends based on Incident Reports over the past 6 months at Emergency Trainings.
Unanticipated Problem Policy

Applicable to: Research subjects participating in riding groups

Instructors are responsible for following the riding center’s Incident reporting process. In addition to riding center’s standard incident reporting process Instructors will also alert the riding center’s Research Site Coordinator in the case of an incident. The Research Site Coordinator will then contact the Principle Investigator. Participants in Therapeutic Riding Groups are subject to additional reporting requirements beyond the riding center’s regular incident reporting process. Please review your IRB’s Unanticipated Problem Policy.

Any concerns regarding the welfare of participants should be brought to the attention of ________________, the principal investigator.

(Your contact info here)

Related documents:

Incident Report Policy
Incident Report Form
IRB Unanticipated Problem Policy
### Site Requirements

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<th>Not at All</th>
<th>Some what</th>
<th>Very Much</th>
<th>Comments</th>
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<td>Significant experience providing group therapeutic riding classes</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
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<tr>
<td>Current Premier Accredited status</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
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<tr>
<td>Ability to schedule therapeutic riding lessons for 10 consecutive weeks</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
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<tr>
<td>Ability to provide a consistent volunteer team for 10 consecutive weeks</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
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<tr>
<td>Ability to provide consistent horses for participants for 10 consecutive weeks</td>
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<td>2</td>
<td>3</td>
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<tr>
<td>Ability to provide fully qualified instructor for 10 consecutive weeks</td>
<td>1</td>
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<td>3</td>
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<tr>
<td>Indoor riding facilities are available on site</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<td>Participant appropriate un-tacking and grooming area is available after every class</td>
<td>NO</td>
<td>YES</td>
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<td>Ability to provide horses sound of mind and body, and with varying types of movement and size to meet varying sensory needs.</td>
<td>NO</td>
<td>YES</td>
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<td>Classroom space is available for an indoor group with no animal contact for up to one leader, 4 kids and 4 volunteers</td>
<td>NO</td>
<td>YES</td>
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<tr>
<td>Space is available for a ground based horsemanship group of up to one instructor 4 kids, 4 horses and 8 volunteers.</td>
<td>NO</td>
<td>YES</td>
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<td>A system is in place to securely store participant files and that system is routinely used</td>
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<td>2</td>
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How to work with ASD population in a THR setting

Learning Characteristics of ASD

Managing Behaviors
Positive Behavior Management Strategies


- Use “First do this, then get that” directives with the “first” item being something more difficult for the child, and the “then” item being something more enjoyable
  - EX: “(Child’s name), first set the table, then you can watch T.V.”
  - EX: “First do (independent activity), then we can play a game together.”
- Provide visual structure
  - Picture or word schedule (alternating preferred and less preferred activities)
  - Use a timer to indicate how much time an activity lasts and when it is finished
  - Provide mini-schedule/list of step-by-step expectation for group or chore activities
- Lower expectations during difficult times: lower your expectations for the child so they can successfully complete an adult-directed task quickly and successfully then be able to move on to a more enjoyable/preferred activity
- Have child go to quiet area on a regular basis to have fun and be calm
- Use calm, low voice and as few words as possible when addressing an agitated child
- Use positive language, avoid saying “don’t do that,” rather redirect child and say, “here, do this,” providing an alternative idea/solution
- Use adult-directed choices: give child a choice between two behaviors or activities to help him/her feel like(s)he has some control in the situation
  - EX: “(Child’s name), you can choose either to color or to read a book during this time.”
  - EX: “(Child’s name), you can either walk by yourself, or I can help you. Make your choice by the time I count down to one. 3, 2, 1, what is your choice?”
- Ignore mild upset behaviors so that they don’t develop into larger tantrums or problem behaviors. Don’t engage in the argument. Ignore the child by not looking or talking to the child until they are calm. Tell them briefly and calmly, “When you are calm, I will talk to you/do (activity) with you.”
- Provide child with time to complete the requested task. Try counting to _____ in your head before repeating a direction or request.
- Provide fidget materials to help child remain focused in less preferred activities like large groups
- Use natural consequences when child’s actions cause a problem
  - EX: “You can have computer time starting at 3:00 for 15 minutes. So, the faster you finish (activity)/get calm, then you will have all of your computer time>”
  - EX: If the child gets angry and spills milk, the natural consequence is to make him/her clean it up.
- Increase positive time together: teach caregivers how to have fun with their child. The more they can have fun together on a routine basis, the less time the child has to negatively try to get attention. Staff can also use positive time together as a reward following less preferred activity.
- Acknowledge positive behaviors: note when the child shows positive behavior and acknowledge it to them. The goal is to provide motivation for the child to engage in positive behaviors
  - EX: “(Child’s name), I like the way you raised your hand when you wanted to speak.”
  - EX: “(Child’s name), you did a good job listening.”
- Build on strengths: use the child’s strengths to help shape a positive behavior.
  - EX: Ask child to share their special interest with the group
1. Visual learners, trouble with sequences
2. Focus on details, problems with multiple perspectives, difficulty integrating separate ideas
3. Problems with engaging and disengaging attention, inability to differentiate relevant from irrelevant information
4. Time and organizational problems, difficulty sequencing a multi-step task, understanding of the concept of finished
5. Preference for neat and orderly, familiarity, routines and need for sameness
6. Narrow interests, compulsive or driven behaviors, obsessive thoughts
7. Extreme problems with generalization, learns from specific to general

To provide suitable intervention techniques, we need to understand the distinctive ways individuals with an ASD think and learn. ~ The Culture of Autism, Mesibov & Shea (2005)

I. ASD individuals are visual vs. auditory learners
   a. Pictures and visual cues enhance understanding, help organize and sequence, help initiate activities, help motivate
   b. Interventions: Organize environment, provide visual cues/structure, provide predictable routines

II. ASD individuals tend to think concretely
   a. At risk for responding in inappropriate ways or becoming confused by social situations, conversations, or ambiguous rules or rules that don’t make sense (For example, Rule: “Use deodorant after showering,” Interpretation: “If I don’t shower every day, then I don’t put on deodorant every day.”).
   b. Prefer familiarity (repetition, routine, consistency)
   c. Interventions:
      i. Provide visual cues for rules & instructions
      ii. Social Stories ™ (Gray, 2000)
      iii. Learn by “doing” or role-play
      iv. Use “first do this, then get that” directions and schedules
      v. Error correction “Try again” with demonstration
      vi. Highlighting (giving social praise) to appropriate behaviors
      vii. Visual road map

III. ASD individuals see the world in a more narrow way, more intensely focused on details and narrow interests
   a. Harder to see the “big picture” which is necessary for awareness of concepts, making connections, generalizations, & seeing things in context
   b. Interventions:
      i. Role play – notice what was right/wrong
      ii. Road map
      iii. Cause-and-effect planned ignoring: “First get calm, then I will talk with you.”
      iv. Use narrow interests to engage

IV. ASD individuals have problems with distractibility & self-regulation
   a. Sensory stimulation can be very disruptive
   b. Interventions:
      i. Modify environment to decrease sensory distractions or increase alertness
      ii. Teach awareness and expression of feeling states

V. ASD individuals have difficulty with executive functioning skills including:
a. Cognitive flexibility, ability to apply social rules flexibly, controlling impulses, organizing/sequencing, initiating activities (time concepts)
b. **Interventions:**
   i. Structure, routines, visual cues

**Study Guidelines for Managing a Child’s Behaviors in Study Groups**

1. Remember this is a study group setting and not an intensive care setting; therefore, study staff is to avoid physically managing a child’s behaviors.

2. **Proactive behavior management strategies are preferred** in order to avoid a situation when a child becomes behaviorally out-of-control or unsafe. These proactive strategies include the following:
   a. At the beginning of each group, **remind children of the group rules for safe behavior and what the child can do and what the staff will do if they notice a child is starting to get unsafe.** Use visual cues-written and/or picture-word format to convey this information in a clear manner.
      i. Ex: if you start to get upset, your horse will also get upset. Therefore, you need to try to stay calm by taking deep breaths or ask staff to help you get off the horse. If you start to get upset on the horse, your volunteer will help you remember to take deep breaths to calm down or if you cannot calm down, your volunteer will help you get off the horse in a safe way until you can be calm again.
   b. **Praise any positive social behaviors as you notice them in the child** so that they will be more motivated to repeat those behaviors. **Be specific about things you are praising,** telling the child what they are doing well vs. just saying “good job.”
   c. **Give the child adult-directed choices** such as you can choose to finish coloring in 1 or 2 minutes before we have to clean up.
   d. **Give the child a social role,** such as a staff helper, to motivate the child to engage them in a positive way of interacting.
   e. **Use a child’s special interest to capture of maintain their attention and motivation.**
Therapeutic Horseback Riding Group

THR Evaluations
Skill Modules with Visual Aids
Fidelity Measure
Checklist for riding center screening

Materials needed: Picture schedule, sensory toys, and quiet office space.
Have a volunteer scheduled and briefed to help with riding portion of screening.
Make reminder calls 1-2 days out.

- Lesson schedule 10 weeks session with 2 possible make-up days
- ABC –C (to be completed by consistent caregiver)
- Curriculum is designed for beginner riders and not appropriate for those with significant riding experience
- Arrive 5-10 minutes early
- Late rider policy – if arrive after warm up is complete (15 minutes) cannot ride.
- Lesson cancellation policy – Lessons are cancelled in the event of hazardous conditions (extremely cold weather, unsafe driving conditions). If you feel conditions are dangerous use your own judgment.
- Attendance is critical to research project – more than 2 absences means you will be excused and not allowed to continue. If you must cancel call ahead.
- 6 month waiting period (if 6-month evaluations will occur)
- Clothing – long pants, closed toe/heel shoes, zipped up coat and gloves if cold.
- Facility rules (e.g., no pets, speed limit, don’t open gates go through fences, visitors check in at office, check in with instructor, etc.)
- Rider rules – 1. No running; 2. Inside voice; 3. Be kind to horses, volunteers and self; 4. listen to directions
- Risks of horseback riding
- Lesson flow/picture schedule
- Complete helmet fit with participant
- Complete New Participant Evaluation (during riding portion)

Riding Portion:
1. Mount
2. Hold reins
3. Walk on/whoa
4. Basic stretches
5. Very brief sitting trot (2-3 steps)
6. Dismount and “thank yous”
New Participant Evaluation

I. Must answer YES to all of the following (inclusion criteria):

☐ Yes  ☐ No  Mounts and dismounts willingly (fear and apprehension ok)

☐ Yes  ☐ No  Participates in warm up activities with verbal, visual and/or kinesthetic cues (multiple prompts and cues ok).

☐ Yes  ☐ No  Follows safety rules with reminders

☐ Yes  ☐ No  Remains mounted willingly for duration of the evaluation (10 minutes – redirection ok)

II. Must answer NO to at least four of the following to be judged a beginning rider:

☐ Yes  ☐ No  Mounts and dismounts safely without instruction.

☐ Yes  ☐ No  Maintains appropriate riding posture without instruction (ear, shoulder, hip, heel alignment).

☐ Yes  ☐ No  Holds reins correctly without assistance or reminding for direct reinig technique.

☐ Yes  ☐ No  Uses reins and words to execute a halt without instruction.

☐ Yes  ☐ No  Uses legs and words to execute a halt-to-walk transition without instruction.

☐ Yes  ☐ No  Executes left and right turns at the walk without instruction.

☐ Yes  ☐ No  Demonstrates a sitting trot with correct body alignment and independence of seat and hand.

III. Must answer NO to the following:

☐ Yes  ☐ No  Demonstrates posting trot and/or canter safely and effectively without horse leader assistance.

Participants must meet criteria in all three sections above. Information may be collected either through interview with parent/caregiver, during on-site mounted evaluation or both.

Justification for criteria:

1. Participants must meet physical, mental, and emotional standards as set forth by the riding center and PATH International.
2. Participants must demonstrate adherence to safety practices that justify inclusion in a group riding setting (2-4 riders).
3. Participants must be beginner riders in order for the curriculum to be pertinent to their learning needs.

Evaluated by:____________________________(print)  Met Criteria  ☐ Yes  ☐ No
____________________________(sign)
Picture Schedule — THR Group Sessions

Mount

Trotting

Cool Down

Trotting

Warm Up

Lesson on White Board

Activity

Dismount

Greet
<table>
<thead>
<tr>
<th>Skill Module</th>
<th>Theme</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Module 1</strong></td>
<td>Getting to Know One Another: Introductions, Orientation, &amp; Safety</td>
</tr>
<tr>
<td><strong>Module 2</strong></td>
<td>Many Parts Make a Whole: Sequencing, Horse Anatomy, &amp; What to Wear</td>
</tr>
<tr>
<td><strong>Module 3</strong></td>
<td>Talking with Our Bodies: Horse Anatomy, Emotions, &amp; Body Language</td>
</tr>
<tr>
<td><strong>Module 4</strong></td>
<td>Listening to Our Horses: Observation and Recognition of Horse Emotion &amp; Body Language</td>
</tr>
<tr>
<td><strong>Module 5</strong></td>
<td>Partnering with Our Horse: Grooming and Speed Changes</td>
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<tr>
<td><strong>Module 6</strong></td>
<td>Together We Are Strong: Teamwork and Tacking</td>
</tr>
<tr>
<td><strong>Module 7</strong></td>
<td>Picking up on Subtleties: Horse Colors &amp; Markings and Backing Our Horse</td>
</tr>
<tr>
<td><strong>Module 8</strong></td>
<td>Be Yourself: Horse Breeds and Independence &amp; Assertiveness</td>
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<tr>
<td><strong>Module 9</strong></td>
<td>Adding It All Up: Measurement and Using Horsemanship Skills</td>
</tr>
<tr>
<td><strong>Module 10</strong></td>
<td>Celebrate Your Work: Review Skills &amp; Awards</td>
</tr>
<tr>
<td>SKILL MODULE</td>
<td>RIDING SKILLS</td>
</tr>
<tr>
<td>--------------</td>
<td>---------------</td>
</tr>
<tr>
<td>Evaluation</td>
<td>Mount/Dismount Position Hold reins Walk on/whoa Sitting trot</td>
</tr>
<tr>
<td>1</td>
<td>Position Hold reins Walk on/Whoa Sitting trot</td>
</tr>
<tr>
<td>2</td>
<td>Lengthen / shorten reins Steering left and right Sitting trot</td>
</tr>
<tr>
<td>3</td>
<td>2 point position Arena figures: circling, half turns, change rein across the diagonal Sitting trot</td>
</tr>
<tr>
<td>4</td>
<td>Correct rein length Rating speed at walk 2 point trot</td>
</tr>
<tr>
<td>5</td>
<td>Circling for control One rein stop Passing etiquette 2 point trot</td>
</tr>
<tr>
<td>6</td>
<td>Independence at walk Post at walk 2 point trot</td>
</tr>
<tr>
<td>7</td>
<td>Form a ride Posting trot</td>
</tr>
<tr>
<td>8</td>
<td>Trail ride or different arena Posting trot</td>
</tr>
<tr>
<td>9</td>
<td>Trot on a circle</td>
</tr>
<tr>
<td>LAST CLASS</td>
<td>Review Certificate of completion</td>
</tr>
</tbody>
</table>
### SKILL MODULE 1:

<table>
<thead>
<tr>
<th>RIDING SKILLS</th>
<th>OBJECTIVES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Position (Handout)</strong></td>
<td>Participant will demonstrate correct alignment by riding with the ear, shoulder, hip heel in alignment</td>
</tr>
<tr>
<td><strong>Holding reins</strong></td>
<td>Participant will hold the reins correctly</td>
</tr>
<tr>
<td></td>
<td>Participant will pick up the reins correctly</td>
</tr>
<tr>
<td><strong>“walk on”</strong></td>
<td>Participant will transition from halt to walk using voice and leg aids</td>
</tr>
<tr>
<td><strong>“whoa”</strong></td>
<td>Participant will transition from walk to halt by sitting tall (shoulder over hip) and using voice and rein aids</td>
</tr>
<tr>
<td><strong>Sitting trot (balance &amp; position)</strong></td>
<td>Participant will sit the trot down one long side of the arena while staying centered on their horse and with minimal bouncing</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HORSEMANSHIP SKILLS</th>
<th>OBJECTIVES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Volunteer &amp; horse names</strong></td>
<td>Participant will verbally demonstrate knowledge of horse and volunteers names</td>
</tr>
<tr>
<td><strong>Ground safety</strong></td>
<td>Participant will demonstrate 2 ways to walk behind their horse in the tacking area; close with hand on haunches or lots of room</td>
</tr>
<tr>
<td></td>
<td>Participants will demonstrate walking in front of their horse when in the arena 100% of the time</td>
</tr>
<tr>
<td></td>
<td>Participant will walk at all times when at CTRC</td>
</tr>
<tr>
<td><strong>Rider rules:</strong> (Handout) Quiet voice Walking only Kindness Listening</td>
<td>Participant will demonstrate kindness to themselves, their horses and volunteers when at CTRC</td>
</tr>
<tr>
<td></td>
<td>Participant will demonstrate the use of a regular speaking voice at all times when at CTRC</td>
</tr>
</tbody>
</table>

**WARM UP:** Include explanation of basic riding position. Basic stretches with movement against gravity (arm circles, helicopter, stretching arms to sky, reaching to head and tail).

**GAME/ACTIVITY:** Red light/green light with stop and go sign.

**COOL DOWN:** Explanation of why we cool down our horses and ourselves. Quiet cool-down lap.
SKILL MODULE 2:

<table>
<thead>
<tr>
<th>RIDING SKILLS</th>
<th>OBJECTIVES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shorten reins</td>
<td>Participant will demonstrate shortening of reins when (verbally or physically) prompted</td>
</tr>
<tr>
<td>Lengthen reins</td>
<td>Participant will demonstrate lengthening of reins when prompted</td>
</tr>
<tr>
<td>Steering left and right</td>
<td>Participant will demonstrate steering both left and right through an obstacle(s) (Please describe: weaving cones, circling around cones etc.)</td>
</tr>
<tr>
<td></td>
<td>Participant will demonstrate correct upright posture (ear, shoulder, hip, heel aligned) while steering through cones</td>
</tr>
<tr>
<td>Sitting trot (aids)</td>
<td>Participant will demonstrate voice and leg aids used to transition into the sitting trot</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HORSEMANSHIP SKILLS</th>
<th>OBJECTIVES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Horse anatomy (Handout)</td>
<td>Participants will identify ears, tail, mane, hoof, withers</td>
</tr>
<tr>
<td>Unsaddle</td>
<td>Participants will unbuckle the girth and remove the saddle and pad</td>
</tr>
<tr>
<td>Groom</td>
<td>Participants will use curry comb in circles, and then brush in the direction of the hair on their horses neck and saddle area</td>
</tr>
</tbody>
</table>

WARM UP: Basic stretches with movement against gravity (arm circles, helicopter, stretching arms to sky, reaching to head and tail).

GAME/ACTIVITY: series of obstacles that involve the skill of steering

COOL DOWN: “holding the buckle” the longest of long reins! How we can tell our horses are relaxed and cool.
### RIDING SKILLS

<table>
<thead>
<tr>
<th>RIDING SKILLS</th>
<th>OBJECTIVES</th>
</tr>
</thead>
</table>
| 2 point position (Handout)    | Participant will keep their lower leg under their hip and heel down and relaxed while moving their upper body during warm-ups  
Participant will demonstrate 2 point position at the halt  
Participant will demonstrate 2 point position at the walk hands on horses neck, weight out of saddle |
| Half turn (Handout)           | Participant will demonstrate a half turn to change directions from left to right and right to left                                                                                                       |
| Change rein across diagonal   | Participant will chance rein across the diagonal both directions                                                                                                                                         |
| (Handout)                    |                                                                                                                                                                                                            |
| Circling (Handout)            | Participant will demonstrate a circle to the right and a circle to the left                                                                                                                                   |
| Sitting trot                  | Participant will demonstrate rein and voice aids for a downward transition from sitting trot to walk                                                                                                        |

### HORSEMANSHIP SKILLS

<table>
<thead>
<tr>
<th>HORSEMANSHIP SKILLS</th>
<th>OBJECTIVES</th>
</tr>
</thead>
</table>
| Recognizing horse emotion through body language | Participant will make a connection between the position of their horses’ ears and how their horse is feeling by naming the feeling behind the expression at least once correctly (using CHA hand out as a guide).  
Participant will make an empathetic connection with their horse while brushing after class by noticing and describing their horse’s expression and adjusting their grooming techniques if appropriate. |

---

**WARM UP:** Exercises will focus on skill development for 2 point: closing hip angle while keeping lower leg position in place with heel under hip. Reach to ears, reach to sky, reach to toes, helicopter, cross body. Add rings on toes for visual and kinesthetic measure of success with lower leg (heel) position.

**GAME/ACTIVITY:** 2 point dice game and/or musical 2 point. For 2 point dice game, riders roll a dice and the number determines how many steps they take in their 2 point position. For musical 2 point, riders are up in their 2 point when the music is on and in their full seat when the music is off.

**COOL DOWN:** quiet lap used to observe horse emotion and report to group.
How Horses Communicate

Happy

- Ears forward
- Running
- Whinnying
- Rolling in the dirt
- Playing
- Sniffing the Ground
- Eating

Relaxed

- Ears drooping
- Head down
- Eyes partly closed
- Lips relaxed

Sad

- Ears down
- Quiet
- Tears

Excited

- Galloping
- Playing
- Neighing
- Throwing head back and forth

Scared

- Eyes opened wide
- Running away
- Kicking
- Nostrils big
- Heavy breathing

Angry

- Ears pinned
- Head low
- Eyes open very wide
- Screeching at another horse
- Nose snorting
- Heavy breathing
- Pacing
- Kicking

Friendly

- Whither massaging
- Nickering
- Playing
- Staying close together
My Horse Emotions

Very Angry

Startled or surprised

Alert and Interested

Calm and Happy
## SKILL MODULE 4:

### RIDING SKILLS

| Adjusting rein length | Participant will shorten their rein length in preparation for steering exercises  
|                       | Participant will shorten their rein length in preparation for 2 point position at the walk  
|                       | Participant will demonstrate correct rein length and pressure when halting and slowing down. |
| Rating speed at the walk | Participant will use leg cues to ask their horse to walk faster (with beginning extension)  
|                         | Participant will use rein and voice aids to slow their horses step at the walk (beginning collection) |
| 2 point trot            | Participant will trot in 2 point position down one long side of the arena |
| Safe spacing           | Participants will demonstrate safe spacing throughout their lesson by rating speed, circling or steering away from other horses |

### HORSEMANSHIP SKILLS

| Parts of tack | Participant will name (more difficult) or identify (less difficult) parts of tack to include: saddle, stirrup, girth, bridle, reins, halter |

WARM UP: Freeing up the hips to follow our horses movement, walking with our horse (drop stirrups and allow legs to swing in step with horse).

GAME/ACTIVITY: Divide into teams of 2 and line up each group of 2 by a cone. Announce fastest team (walk only) wins or then slowest team at the walk (no halting allowed, straight line only) wins. Send the first of the team to a cone and back. When they get back the next rider can go. If there is time, play a second time.

COOL DOWN: Quiet lap without stirrups
Most bridles have similar parts. The two most common types of bits are snaffle bits and curb bits.
Most bridles have similar parts. The two most common types of bits are **snaffle** bits and **curb** bits.
Many people use a saddle when they ride. This is a flat saddle or an English Saddle. Flat saddles are used for racing, jumping and dressage.
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**SKILL MODULE 5:**

<table>
<thead>
<tr>
<th>RIDING SKILLS</th>
<th>OBJECTIVES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Circling for control</strong></td>
<td>Participants will demonstrate circling their horse in increasingly smaller circles both directions.</td>
</tr>
<tr>
<td></td>
<td>Participants will verbally confirm their knowledge that turning a circle is a safe and effective way to slow their horse.</td>
</tr>
<tr>
<td></td>
<td>Participants will conduct a drill practice of turning a circle, pretending that their horse has started going too fast.</td>
</tr>
<tr>
<td><strong>One rein stop</strong></td>
<td>Participants will demonstrate the ability to conduct a one rein stop off both the left and right rein (both directions).</td>
</tr>
<tr>
<td><strong>shorten inside rein,</strong> stay</td>
<td></td>
</tr>
<tr>
<td><strong>straight and tall in the</strong></td>
<td></td>
</tr>
<tr>
<td><strong>saddle,</strong> bring rein and **</td>
<td></td>
</tr>
<tr>
<td><strong>hand back to pocket,</strong> turn</td>
<td></td>
</tr>
<tr>
<td><strong>until horse stops,</strong> release.</td>
<td></td>
</tr>
<tr>
<td><strong>Passing etiquette</strong></td>
<td>Participants will demonstrate how a faster horse passes a slower horse (going the same direction) by coming to the inside and calling out “on your inside”.</td>
</tr>
<tr>
<td></td>
<td>Participants will describe the arena terms: “inside”, “outside” and “rail”.</td>
</tr>
<tr>
<td></td>
<td>Participants will demonstrate passing left shoulder to left shoulder when traveling opposite directions.</td>
</tr>
<tr>
<td><strong>2 point trot</strong></td>
<td>Participants will demonstrate correct sequence for 2 point trot including these steps (add steps you will incorporate)</td>
</tr>
<tr>
<td><strong>Shorten reins,</strong> get into</td>
<td></td>
</tr>
<tr>
<td><strong>2 point at designated spot,</strong></td>
<td></td>
</tr>
<tr>
<td><strong>say trot,</strong> trot for specified distance, sit in saddle, say whoa, walk, lengthen reins.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HORSEMANSHIP SKILLS</th>
<th>OBJECTIVES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Horse colors</strong></td>
<td>Participants will verbalize their horses color when asked</td>
</tr>
</tbody>
</table>

**WARM UP:** “Cat, Cow” yoga stretches in two point position as a support for finding the correct lower back position in 2 point.

**GAME/ACTIVITY:** Leapfrog! Riders come together about 2-3 horse lengths behind one another (form a ride). The rider in the back of the ride comes to the inside, calls out “on your inside” and asks their horse to walk faster using skills learned in previous lessons. Once the rider has reached the front of the group the next rider can go. To increase difficulty after trying this at the walk have the riders attempt it at the trot, the rider in the rear passes by asking their horse to pass to the inside at a trot, coming back to a walk when reaching the front of the group.

**COOL DOWN:** Quiet lap feet out of stirrups

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Black

WRITTEN BY: Cheryl Sutor  [January 2000]

Black horses have pure black coats with no signs of brown or any other color. Many horse-people mistake dark bays or liver chestnuts for black. If you can see any other color (with the exception of white markings) on the horse's coat in the winter, he is not a true black. The reason I say "in the winter" is because the sun tends to lighten a dark horse's coat in the summer, and the exception is when the hair has been sun-burnt.

"Chuckling Charly" from Sugar Maple Farm © Al Crump

"LJJ Kay Cees Velvet" from Circle J Ranch © Michele Whitl
Buckskin horses are a light-to-dark sandy yellow or tan color with all black points. Buckskins are very similar to duns, however, buckskins do not have a dorsal stripe or other "primitive" markings that are shown in the dun color.
Champagne colored horses are born with bright pink skin which remains pink their entire life. What really distinguishes the champagne color from other colors is that champagne foals are born with bright blue eyes. Their eyes will usually change color as they age, but this takes a long time - whereas in other colors, the color of the eye changes more rapidly. The eye color will usually change from light blue to a hazel/green color.

Champagne colored foals are born with a darker coat than their future adult coat will be, and all Champagne horses have at least 1 Champagne parent.

Ivory Champagne
Horse: Beloved Angel (American Saddlebred)
Photo: Debbie Seale
Chestnut, (also known as "sorrel"), is reddish brown. The points (mane, tail, legs and ears) are the same color as the horse's body (other than white markings). Chestnuts range from light yellowish brown to a golden-reddish or dark liver color. All chestnuts have shades of red in their coats.

Red Chestnut

Bright reddish and/or orange shades. This color is very appealing since it is usually bright and shiny, and very saturated. The red chestnut always has red highlights that really stand out.

Light Chestnut

Light reddish-brown. Light chestnuts do not usually have points that are lighter than their body. The tips of their manes and tails may be lighter, but the base is the same color. If their mane/tail/legs etc. are significantly lighter than their body, they might be a flaxen chestnut or palomino.
**Flaxen Chestnut**

Flaxen chestnuts are a chestnut colored body with a light flaxen (cream/off-white) colored mane and tail. Legs and tip of ears are the same color as the horse's body. Many people get confused between flaxen chestnut, light chestnut and palomino. This horse is a flaxen chestnut.

![Flaxen Chestnut Horse](image)

**Liver Chestnut**

A liver chestnut is the darkest of the chestnut colors. Liver chestnuts do not have black points. Notice the chestnut tint in the horse's mane and tail?

![Liver Chestnut Horse](image)
Cremello & Perlino
WRITTEN BY: Wendy Bockman

Cremellos and Perlinos are often called Whites or Albinos which is incorrect. There are no albino horses, there are however White horses, to learn more about them see the page on White Horses.

Cremellos and Perlinos are "double diluted" which means they have two copies of the creme gene instead of one like a Palomino or Buckskin. In other words a Palomino is a "chestnut" with one creme gene and a Cremello is a "chestnut" with two creme genes. A Buckskin is a "bay" with one creme gene and a Perlino is a "bay" with two creme genes.

Cremellos and Perlinos have pink skin and blue eyes. Their hair coats are not white but are of a light creme color. Some can be so light they appear to be white but if you compare them to a true white horse you will see that they are actually creme.

Cremellos will have white manes and tails while Perlinos will have darker points, as a Buckskin would, but on a Perlino the points are orangish. To learn more about them you can visit the website of the Cremello & Perlino Educational Association, www.doubledilute.com

Cremello
Perlino

Above Left (Cremello): True Blue McCue, owned by Wendy Bockman
Above Right (Perlino): RFF Starbuck, owned by Milynda Milam
Dun horses have a sandy/yellow to reddish/brown coat. Their legs are usually darker than their body and sometimes have faint "zebra" stripes on them. Dun horses always have a "dorsal" stripe, which is a dark stripe down the middle of their back. Sometimes the dorsal stripe continues down the horse's dock and tail, and through the mane. Many dun colored horses also have face masking, which makes the horse's nose and sometimes the rest of the face a darker color than the horse's body.

**Typical Dun:**

Both of these horses are a typical dun color, with a dorsal stripe down the middle of the back, with the legs a darker color than the body color. On the horse to the left, the dorsal stripe continues through the horse's tail.

**Bay Dun:**

This horse is a bay dun. Bay duns have a bay color, but they are not bay since they have the dun characteristic of a dorsal stripe down the middle of their back. An uneducated horse-person might think this is a buckskin, but we know better!
Red Dun:

This horse is a dun, but with reddish/chestnut highlights. He has a dorsal stripe down the middle of the back, and the legs a darker color than the body color.

Zebra Stripes:

Some dun colored horses also have primitive zebra markings on their legs, such as this one.
Gray horses have black skin with white or gray hair. Many horse people will call a gray horse "white", but if their skin is dark, they are gray! Gray horses are born dark, sometimes black or brown, and their hair coat turns lighter as they grow older.

**Light Gray**
This is the type of horse that people mistake for "white". This horse is a light gray, not white. See how the skin (around his nose, inside his ears, and between his hind legs) is black? That is how you can tell that this horse is really a light gray.

**Dapple Gray**
A dapple is like a small, white "eraser" mark. Dapple gray horses usually have dapples throughout their entire body, often with darker colored points.
**Fleabitten Gray**

A fleabitten gray is a horse with a light gray body, but with little speckles of black and/or brown. These speckles are like tiny dots that are pretty much evenly distributed throughout the horse's body. Don't get this color confused with roans or appaloosa coat patterns!

**Steel Gray**

Steel gray horses are a dark gray, silver color. The horse has a black base coat with lightly mixed white/gray hairs. Many steel gray horses lighten and turn into a dapple gray or a light gray with age.

**Rose Gray**

Medium gray whose hairs are tinted with red. This type of hair gives the horse a light "rose" tint. Rose gray horses often have points that are darker than their body color, including mane and tail.
**Grullo/Grulla**

WRITTEN BY: Roxanne Watson  [March 23, 2002]

- **Grullo** - pronounced (grew-yo)
- **Grulla** - pronounced (grew-ya)

Either of the terms are correct in describing the color. AQHA recognizes the color as grullo. The color is the diluted form of black with dun factor. In other words the black color is modified by the dun gene. "Grulla" is the Spanish word for a gray crane which is a slate-gray colored bird.

You may find grullo or grulla definitions in the rule books of different registries under different definitions but for this I will include the AQHA definition:

Body color smoky or mouse colored (not a mixture of black and white hairs, but each individual hair is mouse colored) Usually has a dorsal stripe, shoulder striping or shadowing and black leg barring on lower legs.

Within this definition there are variations of the color often reffered to as slate grulla, silver grulla, olive grulla, black dun or wolf dun. The grullo color in the quarter horse is very rare and only about 0.7% of those registered in the quarter horse breed each year are grullo.

One determining factor of the grulla is the primitve markings which can be seen on all duns to some varying extents.

**Primitive Markings:**

**Dorsal Stripe**

The dorsal stripe will run along the backbone of the horse from the withers to the base of the tail, often going well into the tail. The width will vary, and often will have transverse stripes running of the main dorsal stripe.
**Ear Tips, Edging, & Barring**
Ear tips will appear in the darker/base color of the horse and cover the tip of the ear, edging again in the darker color will outline the ear, often horizontal bars can be found going horizontally through the back of the ear in this same darker coloring.

**Shoulder Stripe, Shadowing and/or Transverse Stripe**
Neck shadowing often appears as dark areas throughout the neck, extending into the hollow of the shoulder. Striping or transverse striping most often appears at the withers and dorsal stripe running in a horizontal direction.

**Leg Barring**
Again in the darker base color can be seen on both the front and hind legs usually above the knee and hock, often referred to as tiger striping.

**Face Masking**
The face will be masked often midway on the face or even covering the whole face again this will be in the base color of the horse.

**Cobwebbing**
Will be seen as lines running off from the face masking in varying lengths, usually found on the forehead or around the eyes.

**Mottling**
Can be seen as a circular motif of this base coloring found in the areas of the forearms, gaskins, shoulders, chest, and even on the underbelly.
Mane and Tail Guard Hairs
Best described as white or cream colored hairs at the base of the neck line or interdispersed throughout the mane. Usually also at the base of the tail but can run well into the tail as well.
What is the difference between a Paint and a Pinto? A **Paint** is a specific breed of horse, bred for the conformation and musculature similar to a Quarter Horse, and also bred for unique coloring. Paint horses aren't always colored, some turn out solid but may still carry the genes needed to have colored offspring. **Pinto**, on the other hand, is ANY breed of horse exhibiting the colorations below (Common breeds that you may see exhibiting these colors are Arabian, Saddlebred, Mustang, Icelandic Horse, and many others).

If you have pictures that may fit in on this page, please send them to [cheryl@equusite.com](mailto:cheryl@equusite.com). Thanks to all of you who have already sent your horse's pictures for this page!

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**Tobiano**

Tobiano is a dominant color pattern, and is most common. A tobiano generally has four white legs, at least below the hocks and knees. The dark color of the pattern is usually covering one or both flanks and the spots are regular and distinct (smooth ovals or round patterns that extend down over the neck, chest, and/or shoulders giving the appearance of a "war shield"). Generally, face markings are just like a solid-colored horse (solid, blaze, strip, star or snip) and body color may be either predominantly dark or white. The mane and tail is usually mixed of two colors. A majority of tobianos have spots that are smooth-edged and not jagged like most overos, and many have white over their back and/or neck.

"PT Wishes Tradition" is a black and white tobiano, owned by [Karen Welch](mailto:Karen.Welch@equusite.com)

Click the photos below for larger views of more tobiano colored horses...
Overo

On an Overo colored horse, the white will not usually cross the back of the horse between the withers and tail. It is desirable for all four legs to be dark, or at least one. Face markings are usually bald-faced, apron-faced or bonnet-faced. The white color throughout the overo's body is generally irregular or sometimes 'jagged' instead of forming smooth lines between the colors.

Sabino Overo: Appears speckled or "roany", mostly near the spot's edges. This is the most common overo pattern. Sabinos often have spotted or roan-like facial markings, which can look quite wild. It is rare to find a sabino with a normal star or stripe for a facial marking. Another distinct characteristic of the sabino, is that they generally have three or four white legs.

Frame Overo: White spots along the horse's barrel, with a "frame" of darker color around the white. Over 95% of all frame overos are solid colored along the back from the withers to the tail, and it is uncommon for the mane to be of mixed color.

Splash White Overo: This is a very rare overo color pattern. In my opinion, splash white overos look like a reverse-colored Tobiano...with smooth-edged color patterns, and with a white "shield" in the front covering the shoulders and bottom of the neck being a common trait. Splash whites generally have light-to-medium blue eyes. It is also common for splash whites to have 4 white legs.

Tovero

This color pattern most commonly comes from crossing a Tobiano horse with an Overo colored horse. In most cases, the result will be a mix of the two color patterns. For example: a tobiano with bald-face or apron-face
markings, will most likely be called a "tvero". Or, some overos with a large amount of white color in their manes or past the withers are sometimes considered to be a tovero. However, some overos or tobianos will appear to be toveros even when they aren't genetically a tovero...this is the most confusing color pattern, indeed.
Palomino horses have gold-colored coat with a white or light cream colored mane and tail. The Palomino's coat can range from a light off-white shade to a deep shade of gold.

"Dusty Golden Nugget" © Skip & Penny Tyler

"Sir RH Maximilian" from Living Dream Quarter Horses © Ann Torrez
"RB Glitter N Gold" from Pine Haven Farm © Sue White

"So Beautiful" from Troy Quarter Horses © Deby Manis

"Lakota" © Leah Fuller
Roan horses have otherwise solid colored coats, but with white hairs interspersed. The white hairs are not actual spots, but single white hairs mixed with the darker coat color. You'll find descriptions and pictures of some common roan colors below.

The Roan Gene can be applied to any color of horse. The most common are Red Roans, Bay Roans and Blue Roans. There are also Palomino Roans, Red Dun Roans, Dun Roans, Buckskin Roans, etc. The Roan gene adds white hairs into the body of the horse. The legs and head are not affected and will remain darker then the body. The mane and tail are usually not affected, but some may have some white hairs mixed in.

Bay Roan:
A Bay Roan is a horse with a bay coat and the roan gene. The roan gene gives the horse interspersed white hairs on his body. The Bay roan sometimes looks very similar to a red roan or a blue roan.

Red Roan:
A Red Roan (sometimes called "Strawberry Roan") is a chestnut or sorrel horse with the roan gene. The roan gene gives the horse interspersed white hairs on his body.

Blue Roan:
A Blue Roan is a black horse with the roan gene. The roan gene gives the horse interspersed white hairs on his body.
horse to the left is a blue roan.

More Roan Colors:
- Red Dun Roan
- Palomino Roan

If you have a picture of a roan horse with a base hair color not already listed on this page, please email info@equusite.com

Roan Spots:

Some horses do not have a roan color over their entire body, but only have roan spots or other roan-like markings.
White

WRITTEN BY: Cheryl Sutor  [January 2000]

There are a couple different types of "white" horses. **Dominant Whites** are very rare and must have a white parent. They have pink skin, usually hazel or brown eyes and white hair. There are also **Sabino Whites** which can pop up in any breed that has the Sabino gene, this includes Arabs, Thoroughbreds, Quarter Horses, Paints, Tennessee Walkers, Saddlebreds, and more. A Sabino White is what we call a maximal pinto, just imagine that the white markings on the horse are so big they cover the entire horse. Sabino Whites also have white hair, sometimes with a few dark hairs on the poll or ears, pink skin and dark eyes.

There are also other horses that are mistaken for white, some are greys that have turned white, but they will have dark skin and eyes and are not true white horses. The others are cremellos and perlinos, to learn more about them go to the Cremello and Perlino page.

Pictured in both photos above is "Hunter's Misty Morn". Both Photos: © Pamela Hunter
This filly is a **Sabino White**. Visit Hunter's Pony Farm to learn more about her.
SKILL MODULE 6:

<table>
<thead>
<tr>
<th>RIDING SKILLS</th>
<th>OBJECTIVES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Independence at the walk</td>
<td>Participants will ride independently with the lead tied and the volunteer walking alongside (name what part of the class or how long) Participants will ride independently with the lead tied and the volunteer stationed to the inside of the rail tracking about 10 feet away from the participant Participants will ride independently with the volunteer stationed in one place in the arena (name what part of the class or how long) Participants will steer through a (number of parts) obstacle course with lead tied</td>
</tr>
<tr>
<td>Positing at the walk As a progression towards posting trot</td>
<td>Participants will post to the walk (determine how far or how many strides)</td>
</tr>
<tr>
<td>2 point trot Shorten reins, get into 2 point at designated spot, say trot, trot for specified distance, sit in saddle, say whoa, walk, lengthen reins.</td>
<td>Participants will demonstrate correct sequence for 2 point trot including these steps (add steps you will incorporate)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HORSEMANSHIP SKILLS</th>
<th>OBJECTIVES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age of horse</td>
<td>Participants will compare their age to their horses age Participants will calculate their horses age from the year of birth located in the tack room cubbies. Participants will work as a team to line their horses up in age order.</td>
</tr>
</tbody>
</table>

WARM UP:

GAME/ACTIVITY: Obstacle course to be ridden independently

COOL DOWN:
### SKILL MODULE 7:

<table>
<thead>
<tr>
<th>RIDING SKILLS</th>
<th>OBJECTIVES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form a ride</td>
<td>Participants will maintain a 2-3 horse length spacing between their horse and the horse in front of them for (time, length of a trail ride, distance in arena).</td>
</tr>
<tr>
<td>Posting trot</td>
<td>Participants will attempt posting trot once down the long side of the arena. Participants will post to the trot, in rhythm with their horse (name distance or number of strides) Participants will post to the trot on a large circle</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HORSEMANSHIP SKILLS</th>
<th>OBJECTIVES</th>
</tr>
</thead>
</table>
| Horse Height        | Participants will verbally demonstrate knowledge of their horse’s height and how to calculate the height.  
|                     | Participants will demonstrate cooperation and team work by lining their horses up from shortest to tallest. |

WARM UP:

GAME/ACTIVITY:

COOL DOWN:
Horse Measuring

- The unit of measure for horses is called a “hand”
- One hand equals 4 inches
- The measurement of a horse is written as the number of hands followed by either an h (for hands) or hh (for hands high)
- The “height of a horse is the number of full hands followed by a decimal point and then the number of additional inches
- Horses that are smaller than 14.2 h are usually considered ponies
- The tallest horse in recorded history was a Shire horse born in 1848 named Mammoth. He was 21.2 ½ hands high
- The smallest horse is a fully grown miniature horse named Thumbelina. She is affected by dwarfism and is only 17 inches high – how many hands is she?
Horse Measuring

- People are measured in “inches and feet.”

- Horses are measured in HANDS

  - One “hand” = 4 inches

- Horses that are smaller than 14.2 h are called PONIES
### RIDING SKILLS

<table>
<thead>
<tr>
<th>OBJECTIVES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety skills for trail ride</td>
</tr>
<tr>
<td>Participants will maintain safety spacing during the length of a trail ride</td>
</tr>
<tr>
<td>Participants will communicate with one another regarding spacing or other safety issues that arise during a trail ride.</td>
</tr>
<tr>
<td>Participants will keep rein length short enough to maintain control of their horse during trail ride.</td>
</tr>
</tbody>
</table>

### HORSEMANSHIP SKILLS

<table>
<thead>
<tr>
<th>OBJECTIVES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Horse markings</td>
</tr>
<tr>
<td>Participants will identify and name any markings on their horse</td>
</tr>
</tbody>
</table>

**WARM UP:**

**GAME/ACTIVITY:**

**COOL DOWN:**
Facial Markings
WRITTEN BY: Cheryl Sutor [January 2000]

-- Star --

-- Snip --

-- Stripe --

-- Blaze --

-- Bald --

-- Lip --

-- Muzzle --

Leg Markings
ILLUSTRATED BY: Cheryl Sutor [January 2000]
Unique Markings
WRITTEN BY: Cheryl Sutor [January 2000]

This is our picture page of horses with unique, strange or funny markings. If your horse has markings that are unique, strange or funny, send the picture to us and we will put it on this page for everyone to see! Enjoy!

Send pictures by Clicking Here.

I 'spotted' this gelding at a small farm in Illinois. I thought the heart-shaped spot on his rump was so cute! Later I found that his name is 'Cupid'. How adorable!

Above: ©Cheryl McNamee

Here are some unique striped socks. The horse on the left is a solid gray, with strange brown socks, the horse on the right is a chestnut with a white sock.

Left: ©Cheryl McNamee Right: ©Julie Lord

The horse on the left is a solid bay with a brown spot on his front pastern. The horse on the right is the horse on the left's dam, and she has a question mark stripe/snip.

Left & Right: ©Cheryl McNamee
I can't say I've ever seen another dappled gray horse with a blue eye! This horse's right eye is a light crystal blue. His left eye is a typical dark brown.

I am not sure if he was born with a blue eye or if it was caused by an injury of some sort, but it certainly is possible.

Munchkin has unique dots on his blaze, and also a blue eye (not shown).

Here's a solid bay with the flaxen color in his tail.

A Quarter Horse filly with a funny white mark on her leg. Not enough paint to go APHA.
Sonnet, a TB/QH cross mare has a star that is shaped like a horse's head.

The horse on the left is a Belgian filly whose name is "Candle In The Wind" for the obvious candle-shaped blaze. The horse to the right has a star that looks like a cent sign and a uniquely colored muzzle.
The Appaloosa coat pattern is not really a specific color, it is actually a horse breed! Some rare appaloosas don’t have any spots at all, while most have numerous spots all over their bodies. Below are the basic coat patterns found in the appaloosa breed.

**Leopard:** Large spots all over (dark spots on a light base coat).

*Top Left:* **Mr. Peabody © Cheryl Sutor**  
*Top Right:* **Exclusive Dundee © Ashleigh Marr**  
*Bottom Left:* **Unknown © Cheryl Sutor**  
*Bottom Right:* **Waps Reflection © Cheryl Sutor**
Snowflake: Large spots all over (light spots on a dark base coat).

Left: Unknown © Cheryl Sutor    Right: Tabu © Ashleigh Marr

Blanket: White on hips and loins with or without spots.

Horse: Almighty Abe © Ashleigh Marr    Right: Plaudits Grand Niner © Gayle Scarfone

Marble: Small dark sprinkles on a light base coat.
**Frost:** Small light sprinkles on a dark base coat.
SECOND TO LAST CLASS:

<table>
<thead>
<tr>
<th>RIDING SKILLS</th>
<th>OBJECTIVES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continuing work on previously stated skills</td>
<td>Choose appropriate objectives from previous modules</td>
</tr>
<tr>
<td>Design the last class</td>
<td>Participants will choose favorite activities to assist in planning the last class.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HORSEMANSHIP SKILLS</th>
<th>OBJECTIVES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Horse breeds</td>
<td>Participants will name their horses breed when prompted</td>
</tr>
<tr>
<td></td>
<td>Participants will name 3 characteristics of their horses breed</td>
</tr>
</tbody>
</table>

WARM UP:

GAME/ACTIVITY:

COOL DOWN:
A versatile breed developed by the Nez Perce of Idaho, Oregon and Washington. Best known for their spotted coat.
Appaloosas were developed by Native Americans

They are best known for their spotted coats
American Quarter Horse

American breed of horse that can sprint at short distances

Often used by cowboys
American Quarter Horse

American breed of horse that can sprint at short distances
Light, Middle Eastern horses with distinctive “dished” faces and high tail carriage. Bred in the desert.
Arabians

This breed is from the Middle Eastern desert
Large, muscular horse bred to carry knights into battle, now used to pull carriages and for farm work
The largest breed of horses, used for farm work
Old Dutch breed that are always black

They used to carry knights into battle
Friesians

Old Dutch breed, cousin of the Draft horse – always black
American breed from Massachusetts, noted for their stamina, vigor, personality and strength
Morgans

American breed from Massachusetts

They are known for their personality
One of the oldest breeds, usually bred for horse racing
**LAST CLASS:**

<table>
<thead>
<tr>
<th>RIDING SKILLS</th>
<th>OBJECTIVES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Review</strong></td>
<td>Participants will demonstrate mastery of skills learned during the session. Class objectives and lesson plan will be designed based on participant feedback form previous class.</td>
</tr>
<tr>
<td><strong>Closure activity</strong></td>
<td>Participants will participate in an awards ceremony by accepting a certificate</td>
</tr>
<tr>
<td></td>
<td>Participants will demonstrate skills learned during the 10 week riding program to parents/caregivers</td>
</tr>
<tr>
<td></td>
<td>Participants will demonstrate skills learned during the 10 week riding program to classmates and volunteers</td>
</tr>
<tr>
<td></td>
<td>Participants will participate in a closure activity by saying thank you and good bye to horse, classmates and volunteers.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HORSEMANSHIP SKILLS</th>
<th>OBJECTIVES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Review</strong></td>
<td>Participants will name (state number) facts they have learned about their horse to their volunteers</td>
</tr>
<tr>
<td></td>
<td>Participants will name (state number) facts they have learned about their horse to their volunteers, fellow riders and parents/caregivers.</td>
</tr>
</tbody>
</table>

**WARM UP:** Ask riders to each demonstrate their favorite

**GAME ACTIVITY:** chosen by class

**COOL DOWN:** awards ceremony
Half circle reverse
Change direction across the diagonal
Fidelity Measure THR Research Project

Rater _____________________________ Date __________
Instructor ___________________________ Week _______

CIRCLE ONE:               CONTROL GROUP       THERAPEUTIC RIDING GROUP

<table>
<thead>
<tr>
<th>TEACHING TECHNIQUES &amp; CLASS STRUCTURE</th>
<th>Not at All</th>
<th>Somewhat</th>
<th>Very Much</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>LANGUAGE IS APPROPRIATE (Participants are able to understand and respond to instructions, e.g. simple 2 word instructions vs. complex instructions)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>TASK ANALYSIS is presented clearly and is appropriate for participant level. Clear “how to” information for skills is presented.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>TEACHING TO THE GROUP. Instructions for activities are directed to all participants, feedback while individualized, can be heard by the entire group.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CLASS CONTROL is maintained (safe spacing, riders and volunteers are paying attention)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>GROUP LEADER “PRESENCE” is appropriate (engaging, calm, directive, positive)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>LESSON COMPONENTS include: warm up or introduction, review, skill development, activity, cool down or closure activity.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>LESSON PLAN IS FOLLOWED (Lesson plan is attained before group and attached)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>BEHAVIOR MANAGEMENT techniques are utilized appropriately including: positive reinforcement, redirection, adult directed choice, structure, clear expectations, and visual schedule for rules.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>VISUAL CUES are used to explain concepts or expectations (e.g. pictures, dry erase boards, cones, demonstration)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>PICTURE AND/OR WORD SCHEDULES are available before, during and after the lesson</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>SPECIFIC PRAISE is utilized (i.e. “good job using your reins to whoa”)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>INSTRUCTIONAL FOLLOW THROUGH: Instructor provides constructive criticism targeted at skill development. The instructor follows through when teaching a skill by providing accurate feedback. e.g. “next time you trot, keep your eyes looking forward”.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>“WHY’S” are given and are appropriate for participant level (e.g. following group rules keeps us safe).</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>EQUIPMENT is properly adjusted and safe (NA for ground group) (i.e. stirrups are adjusted and even, saddles/ stirrups are correct size, lesson equipment is available, halters fit well)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>SKILL PROGRESSION takes place within the group (i.e. participant brushes horse with hand over hand help, and then independently)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Description</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>----------------------------------------------------------------------------</td>
<td>---</td>
<td>-----</td>
<td>-----</td>
<td></td>
</tr>
<tr>
<td>POSTURE AND ALIGNMENT is corrected by instructor (NA for ground group)</td>
<td>N/A</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Lesson begins on time</td>
<td>No</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lesson ends on time</td>
<td>No</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lesson includes 45 minutes of mounted time, for all riders, within the one hour scheduled lesson or 45 minutes of horse contact time for Ground Group participants.</td>
<td>No</td>
<td>Yes</td>
<td>Minutes:</td>
<td></td>
</tr>
<tr>
<td>Lesson includes 4 participants (if “no” please state number and reason)</td>
<td>No</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VOLUNTEERS:</td>
<td>Not at All</td>
<td>Somewhat</td>
<td>Very Much</td>
<td>Comments</td>
</tr>
<tr>
<td>Volunteers are BRIEFED before class on class objectives and/or any issues from previous week</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Volunteers have access to the day’s LESSON PLAN</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>VOLUNTEERS LISTEN and follow direction (including no unnecessary talking)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Instructor provides necessary FEEDBACK TO VOLUNTEERS related to their safe and effective participation</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ENVIRONMENT</td>
<td>Not at All</td>
<td>Somewhat</td>
<td>Very Much</td>
<td></td>
</tr>
<tr>
<td>VISUAL distractions are minimized (e.g. other classes not going on, toys are put away, extra props are put away)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>AUDITORY distractions are minimized (no spectators or volunteers are having side conversations and environment is quiet and not disrupted by loud noises or parents/siblings)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>OLFACTORY distractions are minimized (manure is cleaned up, fly spray is used sparingly etc.)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>DOCUMENTATION</td>
<td>Not at All</td>
<td>Somewhat</td>
<td>Very Much</td>
<td></td>
</tr>
<tr>
<td>Lesson plan is developed from the skill modules</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Lesson objectives are scored for each participant after class</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Progress notes are kept for each participant</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Lesson tracking sheet is filled in after every class (documenting length of class, and changes to horses, and/or volunteers)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>
Cortisol Collection with ASD

Introduction

Visual Aids
Salivary Cortisol Collection Procedures

Cortisol collection (Baseline):

The saliva samples are collected using foam swab rods. Samples are stored in a freezer bag in their home freezer until turned in to research personnel at the next scheduled group or testing session. The results are averaged across the two days. Participants and their caregivers are instructed that the child participant avoid eating, drinking or brushing teeth for at least 30 minutes before collection of the sample. Subjects and their families will receive instruction on saliva-stimulating exercises utilizing images and simulated chewing, for use as needed.

At the beginning of the week prior to the Intervention Phase, caregivers that consent to the optional nested study will receive a phone call reminding them to collect a saliva samples from the child on two sequential days during this week prior to starting the intervention. Caregivers are also reminded of proper collection procedures, including the collection times for these two days: “collect saliva samples from your child using the foam swab at approximately 1:00 pm on Saturday and Sunday one week prior to the start of the 10-week intervention”. Caregivers are reminded to complete the Sample Collection Log each time a sample is collected. Caregivers are instructed in properly transporting the collected cortisol samples to the riding center the following week, at their child’s first THR group lesson.

<table>
<thead>
<tr>
<th>1 week pre-intervention collection</th>
<th>10-week intervention collections every Saturday between 1:00-5:00</th>
<th>1 week post-intervention collection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home collection on Saturday and Sunday afternoons (collection time determined by time of intervention group)</td>
<td>a. Immediately before group b. 20 minutes after riding the horse</td>
<td>Home collection on Saturday and Sunday afternoons (collection time determined by time of intervention group)</td>
</tr>
</tbody>
</table>

Intervention Phase:

Cortisol collection (During the Intervention Phase) Study staff conducts the collection of participant saliva samples each week during the 10-week intervention. Samples are collected before participants begin lessons and 20 minutes after dismount or conclusion of the group-interaction of their 45 minute THR group lessons. Caregivers are to complete the Sample Collection Log at each sample collection.

Cortisol collection (One week after completing Intervention Phase) Caregivers are provided with saliva collection materials and Sample Collection Logs at the child’s 10th week of the intervention and reminded to collect saliva samples from the child on Saturday and Sunday of the week following. Caregivers are also reminded of the collection times for these two days: “collect saliva samples from your child using the foam swab rods at approximately 1:00 pm on Saturday and Sunday”. Caregivers are reminded to complete the Sample Collection Log each time a sample is collected. Instruct caregivers in properly transporting the collected cortisol samples to their child’s Post-Intervention Assessment visit at the hospital.

Saliva sampling, hormone assays, and caregiver instructions:

You will collect saliva samples from your child at two time points in the study: One week prior to and following the 10 weeks of THR group, once a day on two consecutive days (between the hours of 1 and 5 pm, determined by assigned intervention group time).
Study personnel will collect two saliva samples from your child at each THR group lesson (once a week for 10 consecutive weeks): the first of the two samples collected will occur immediately before the groups begin; the second saliva sample is collected 20 minutes after conclusion of the lesson. During the intervening 20 minutes, participants will help to tack and groom their horse then sit together at a table to draw and/or watch a five-minute cartoon video (Gumby and Pokey).

The saliva samples are collected using foam swab rods. Samples are stored in a freezer bag in your home freezer until turned in to research personnel at the next scheduled group or testing session. The results are averaged across the two days. Your child should avoid eating, drinking or brushing teeth for at least 30 minutes before collection of the sample. You will receive instruction on saliva-stimulating exercises using images and simulated chewing, for use as needed.
Saliva Collection Information & Materials

For the R01NR12736 grant that funded Dr. Gabriels’ Therapeutic Horseback Riding research, cortisol consultation was provided by Dr. Douglas Granger, PhD at Arizona State University. Dr. Granger was chosen to assist with this portion of the study as he is a widely known psychoneuroendocrinology researcher for his development of methods related to saliva collection and analysis. You may contact Dr. Granger via email at Douglas.Granger@asu.edu

Samples will be sent to either the Institute for Interdisciplinary Salivary Bioscience Research at Arizona State University, or the Center for Interdisciplinary Salivary Bioscience Research at Johns Hopkins University.

**Swabs, tubes, labels, & storage** items purchased through Salimetrics, Inc. (available online):

![SalivaBio Oral Swab](image1)
![SalivaBio Children’s Swab](image2)
![Swab Storage Tube](image3)
![Swab/Conical Tube 4” Cryostorage Box](image4)
![Bar-coded sample labels](image5)
Other saliva sample related materials can be purchased through websites offering promotional items in bulk, or other retailers:

2-minute sand timers for saliva sample collection

Insulated cooler bags & ice packs to transport samples from home to study staff
Saliva Sample Collection Log – Pre

Child’s Name: ___________________________  Your Name: ___________________________

**Collection instructions:**
1. Put foam rod under child’s tongue in mouth and show child picture of their favorite food.
2. Encourage child to keep foam rod under their tongue in mouth until the sand timer is finished.
3. Put foam rod into bar-coded tube and put cap on.
4. **Record barcode number** on this form (below).
5. Put sample in “USED” baggie and then place inside the insulated bag in my freezer.
6. Record sleep and other information (below).

<table>
<thead>
<tr>
<th>Day 1 - Saturday</th>
<th>Day 2 - Sunday</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target collection time: _____ : _______</td>
<td>Target collection time: _____ : _______</td>
</tr>
<tr>
<td>Actual collection time: _____ : _______</td>
<td>Actual collection time: _____ : _______</td>
</tr>
<tr>
<td>Total time swab was in mouth: __________ minutes</td>
<td>Total time swab was in mouth: __________ minutes</td>
</tr>
<tr>
<td>Barcode number: ___________________</td>
<td>Barcode number: ___________________</td>
</tr>
</tbody>
</table>

1. What time did your child go to bed? ______
2. What time did your child wake up? ______
3. How long did it take your child to fall asleep? ______
4. How many times did your child wake up during the night? ______
5. Did your child take medication to help them sleep?  
   - YES 
   - NO 
6. How restful was your child’s sleep?  
   - 1
   - Not at all 
   - 2
   - Moderately 
   - 3
   - Extremely Restful 
   - 4
   - Restful 
   - 5
   - Restful 
   - 6
   - Restful 
   - 7
   - Restful 

7. Does your child have a fever over 101°F now?  
   - YES 
   - NO 
8. Has your child had a fever over 101°F within the past 2 days?  
   - YES 
   - NO 
9. Is your child having a menstrual cycle?  
   - YES 
   - NO  
   a. If yes, when did they begin their 
   cycle________________
10. Was there any stressful or out of the ordinary routine event(s) that occurred today?  
   - YES 
   - NO  
   a. If yes, please explain:

Saliva Sample Collection Log – Week #_____ / 10

Copyright ©2008 by Robin Gabriels, PsyD, University of Colorado, and Children’s Hospital Colorado. All rights reserved. This contains material protected under International and Federal Copyright Laws and Treaties. Any unauthorized reprint or use of this material is prohibited. No part of this book may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying, recording, or by any information storage and retrieval system without express written permission from the author.
Collection instructions:
7. Put foam rod under child’s tongue in mouth and show child picture of their favorite food.
8. Encourage child to keep foam rod under their tongue in mouth until the sand timer is finished.
9. Put foam rod into bar-coded tube and put cap on.
10. **Record barcode number** on this form (below).
11. Put sample in “USED” baggie and then place inside the insulated bag in my freezer.
12. Record sleep and other information (below).

<table>
<thead>
<tr>
<th>Pre-lesson</th>
<th>Caregiver Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actual collection time: ______ : ____________</td>
<td>11. What time did your child go to bed? ______</td>
</tr>
<tr>
<td>Total time swab was in mouth: ____________ minutes</td>
<td>12. What time did your child wake up? ______</td>
</tr>
<tr>
<td>Barcode number: ____________________________</td>
<td>13. How long did it take your child to fall asleep? ______</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Post-lesson</th>
<th>14. How many times did your child wake up during the night? ______</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actual collection time: ______ : ____________</td>
<td>15. Did your child take medication to help them sleep? YES NO</td>
</tr>
<tr>
<td>Total time swab was in mouth: ____________ minutes</td>
<td>16. How restful was your child’s sleep? Not at all Moderately Extremely</td>
</tr>
<tr>
<td>Barcode number: ____________________________</td>
<td>Restful Restful Restful</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>17. Does your child have a fever over 101°F now? YES NO</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>18. Has your child had a fever over 101°F within the past 2 days? YES NO</td>
</tr>
<tr>
<td></td>
<td>19. Is your child having a menstrual cycle? YES NO</td>
</tr>
<tr>
<td>a. If yes, when did they begin their cycle ____________</td>
<td></td>
</tr>
</tbody>
</table>

|                          | 20. Was there any stressful or out of the ordinary routine event(s) that occurred today? YES NO |
| a. If yes, please explain: |                                                        |
Saliva Sample Collection Log – Post

Child’s Name: ________________________________  Your Name: ________________________________

**Collection instructions:**
13. Put foam rod under child’s tongue in mouth and show child picture of their favorite food.
14. Encourage child to keep foam rod under their tongue in mouth until the sand timer is finished.
15. Put foam rod into bar-coded tube and put cap on.
16. **Record barcode number** on this form (below).
17. Put sample in “USED” baggie and then place inside the insulated bag in my freezer.
18. Record sleep and other information (below).

<table>
<thead>
<tr>
<th>Day 1 - Saturday</th>
<th>Day 2 - Sunday</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target collection time: _____ : _____</td>
<td>Target collection time: _____ : _____</td>
</tr>
<tr>
<td>Actual collection time: _____ : _____</td>
<td>Actual collection time: _____ : _____</td>
</tr>
<tr>
<td>Total time swab was in mouth: _______ minutes</td>
<td>Total time swab was in mouth: _______ minutes</td>
</tr>
<tr>
<td>Barcode number: ______________</td>
<td>Barcode number: ______________</td>
</tr>
<tr>
<td>11. What time did your child go to bed? _______</td>
<td>21. What time did your child go to bed? _____</td>
</tr>
<tr>
<td>12. What time did your child wake up? _______</td>
<td>22. What time did your child wake up? _______</td>
</tr>
<tr>
<td>13. How long did it take your child to fall asleep? _______</td>
<td>23. How long did it take your child to fall asleep? _______</td>
</tr>
<tr>
<td>14. How many times did your child wake up during the night? _____</td>
<td>24. How many times did your child wake up during the night? _____</td>
</tr>
<tr>
<td>15. Did your child take medication to help them sleep? YES NO</td>
<td>25. Did your child take medication to help them sleep? YES NO</td>
</tr>
<tr>
<td>16. How restful was your child’s sleep?</td>
<td>26. How restful was your child’s sleep?</td>
</tr>
<tr>
<td>1 2 3 4 5 6 7</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>Not at all Restful</td>
<td>Not at all Restful</td>
</tr>
<tr>
<td>Moderately Restful</td>
<td>Moderately Restful</td>
</tr>
<tr>
<td>Extremely Restful</td>
<td>Extremely Restful</td>
</tr>
<tr>
<td>17. Does your child have a fever over 101°F now? YES NO</td>
<td>27. Does your child have a fever over 101°F now? YES NO</td>
</tr>
<tr>
<td>18. Has your child had a fever over 101°F within the past 2 days? YES NO</td>
<td>28. Has your child had a fever over 101°F within the past 2 days? YES NO</td>
</tr>
<tr>
<td>19. Is your child having a menstrual cycle? YES NO a. If yes, when did they begin their cycle_________________</td>
<td>29. Is your child having a menstrual cycle? YES NO a. If yes, when did they begin their cycle_________________</td>
</tr>
<tr>
<td>20. Was there any stressful or out of the ordinary routine event(s) that occurred today? YES NO a. If yes, please explain:</td>
<td>30. Was there any stressful or out of the ordinary routine event(s) that occurred today? YES NO a. If yes, please explain:</td>
</tr>
</tbody>
</table>


The professional Association of Therapeutic Horsemanship International. (Summer 2013). Coming through a different gait: Partnering with equines to produce change. *CAFP NEWS*, pp. 30.


Title: Effects of Therapeutic Horseback Riding for youth with Autism Spectrum Disorder

Authorship: Pan, Zhaoxing1; Granger, Douglas A.2,3; Lucas, Jessie1; Dechant, Briar1; Gabriels, Robin1;

Affiliation: (1) University of Colorado Anschutz Medical Center, (2) Institute for Interdisciplinary Salivary Bioscience Research, Arizona State University, (3) Johns Hopkins University School of Nursing, Bloomberg School of Public Health, and School of Medicine

Sponsor: Children’s Hospital Colorado

Preference for Presentation: Poster presentation

Background: In a randomized clinical trial, (Gabriels et al., 2015; NIH/NINR 1R01NR012736) demonstrated that therapeutic horseback riding (THR), as compared to a no horse activity control, benefitted children with autism spectrum disorder (ASD) on measures of irritability, hyperactivity, social cognition and social communication, along with the total number of words and new words spoken during a standardized language sample.

Objectives: To examine whether results reported by Gabriels and colleagues (2015) can be replicated, determine the feasibility of collecting saliva samples from children with ASD, and explore the effect of THR on individual differences in children’s cortisol levels.

Method: Sixteen participants, 6-16 years old with a diagnosis of ASD were randomized with 1:1 ratio into either THR or no-horse barn activity control group (BA). Other inclusion criteria include a combined score of 11 points or higher on the Irritability and Stereotypic Behavior subscales of the ABC-C and nonverbal IQ ≥ 40. Exclusion criteria included physical or behavioral issues that would prevent participation, a history of animal abuse or phobia to horses, more than two hours of EAAT experience within the past six months, or taking steroid medications. Pre- and post-intervention evaluations of Systematic Analysis of Language Transcripts (SALT) were conducted by a speech therapist blinded to intervention condition. A designated caregiver for each participant completed the ABC-C and Social Responsiveness Scale (SRS). Salivary samples were collected pre- and 20 minutes post- THR group sessions and later assayed for cortisol.

Results: THR-related behavior response patterns are presented in Figure 1 and Table 1. The effect of THR, as compared to BA control, was significant on hyperactivity (p<0.05) and marginally significant (ps<0.1) on irritability and social communication. Pre- and post-intervention saliva cortisol were successfully collected in 90% and 40% of the interventions sessions respectively for THR and Barn groups] Linear mixed effects model analysis indicated that greater irritability was associated with greater post-intervention reduction in cortisol in the THR group (p=0.05) and in the Barn group (each p=0.10); Greater hyperactivity is associated with greater cortisol reduction in THR group (p<0.05) but not in the barn group.

Conclusion: The effects observed in the prior THR RCT were partially replicated. It was feasible to collect saliva from children with ASD at the riding center. Although this preliminary study did not have sufficient statistical power to evaluate effects on salivary cortisol as outcome for assessing immediate effects of the THR intervention on HPA activity, results suggest that salivary cortisol may be a promising measure for future investigations to explore the mechanisms of THR as having a sensory/calming effect on children with ASD.
Table 1: Analysis of efficacy of Therapeutic Horseback Riding (THR) intervention compared to Barn Activity control

<table>
<thead>
<tr>
<th></th>
<th>THR (Baseline)</th>
<th>THR (EoT)</th>
<th>Change (EoT)</th>
<th>BA (Baseline)</th>
<th>BA (EoT)</th>
<th>Change (EoT)</th>
<th>Interaction (Efficacy)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean (SD)</td>
<td>Mean (SD)</td>
<td>Mean (SEM)</td>
<td>Mean (SD)</td>
<td>Mean (SD)</td>
<td>Mean (SEM)</td>
<td>Mean (SEM) p ES</td>
</tr>
<tr>
<td>ABC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Irritability b</td>
<td>21.75 (13.27)</td>
<td>14.43 (13.38)</td>
<td>-6.44 (4.71)</td>
<td>11.57 (5.56)</td>
<td>18.33 (10.86)</td>
<td>6.97 (5.33)</td>
<td>-13.42 (7.11) 0.08 1.08</td>
</tr>
<tr>
<td>Hyperactivity</td>
<td>22.50 (12.15)</td>
<td>16.00 (8.64)</td>
<td>-5.90 (3.28)</td>
<td>17.14 (4.10)</td>
<td>24.33 (6.07)</td>
<td>7.40 (3.73)</td>
<td>-13.30 (4.97) 0.02 1.49</td>
</tr>
<tr>
<td>SRS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social cognition</td>
<td>19.50 (7.09)</td>
<td>21.29 (3.30)</td>
<td>1.55 (1.85)</td>
<td>16.75 (6.36)</td>
<td>18.71 (7.43)</td>
<td>1.90 (1.85)</td>
<td>-0.66 (2.61) 0.81 0.14</td>
</tr>
<tr>
<td>Social Communication</td>
<td>37.38 (13.41)</td>
<td>34.57 (3.95)</td>
<td>-5.20 (2.48)</td>
<td>30.75 (10.00)</td>
<td>31.29 (10.98)</td>
<td>1.50 (2.48)</td>
<td>-6.70 (3.51) 0.08 1.17</td>
</tr>
<tr>
<td>SALT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number different words used</td>
<td>143.75 (65.40)</td>
<td>152.50 (66.06)</td>
<td>8.18 (11.01)</td>
<td>108.88 (81.04)</td>
<td>107.14 (57.03)</td>
<td>-12.76 (10.40)</td>
<td>21.14 (15.15) 0.19 0.78</td>
</tr>
<tr>
<td>Number words used</td>
<td>343.20 (171.53)</td>
<td>372.17 (170.43)</td>
<td>28.22 (30.85)</td>
<td>252.50 (208.57)</td>
<td>237.86 (138.22)</td>
<td>-39.86 (29.32)</td>
<td>68.07 (42.56) 0.13 0.88</td>
</tr>
</tbody>
</table>

*Analyses included all participants who were randomized and had either baseline line and/or End of treatment (EoT) assessment. Sample means and standard deviation were reported for baseline and EoT. Mean and standard errors of change and the time by group interaction are from mixed effects model analysis of baseline and EoT data for all the outcome variables. The mixed effects model consists of time (baseline-EoT) group (THR vs Barn activity control) and their interaction as fixed effects and an unstructured covariance. Test of the time by group interaction (i.e. THR minus Barn in change from baseline) is used to assess the efficacy of THR.

**Irritability subscale is deemed as the primary efficacy outcome in this study.

***Effect size is calculated as (2 * t value) / √DF from the contrast of the time by group interaction.
Therapeutic Horseback Riding In Children with Autism Spectrum Disorders

Pan Z.1; Agnew, J.A.1; Shoffner, A.2; Vendl, J1; Runde J.1; Gabriels R.L.1
1University of Colorado and Children's Hospital Colorado, Anschutz Medical Campus, CO; 2Colorado Therapeutic Riding Center

Background

- Equine Assisted Activities and Therapies (EAAT) include therapeutic horseback riding (THR), which is frequently sought to address the behavioral disturbances that impair the quality of life for individuals with an autism spectrum disorder (ASD).
- Professional Association of Therapeutic Horsemanship International (PATH Intl., formerly, NAHMA) establishes and develops accreditation standards for training programs and instructors.
- The few THR studies with ASD children suggest that 8 to 12 weeks of intervention can improve motor coordination and planning, mood and emotion regulation, sensory anomalies, adaptive and social behaviors, and awareness in individuals with ASD [1-6].

Methods

Inclusion criteria
- Age 6-16 years.
- Diagnosis of Autism or Asperger's Disorder.
- IGT score of 2 to 11 on Aberrant Behavior Checklist (ABC)-C: combined irritability and stereotypy subscales.
- Nonverbal IQ ≥ 60.

Exclusion criteria
- More than two hours of EAAT experience within the past six months.
- Have medical or behavioral issues that would make participation dangerous.
- Have history of animal abuse or phobia to horses.
- Judged by standards of therapy horse riding screening to be beyond the level of a beginning rider.

Enrollment
- Target: 166 subjects divided between THR and control groups.
- Practiced: Sixteen subjects in the THR group.

Measures

- Subject Characteristics
  - Complete 16 weeks THR (n=16)
  - Complete 6 months post-intervention follow up (n=18)
  - 
  - Mean Age: 11.6 (8.6, 14.3)
  - Male: 12
  - Female: 4
  - Mean THR score: 11.6 (8.6, 14.3)
  - Age: 6-16 years
  - Sex: Male
  - Race: White
  - IQ: 60-120
  - Diagnosis: Autism 10: Asperger's 3

Results

- Post-THR scores were compared with pre-THR score using mixed effects model with heterogeneous auto-regression covariance structure.
- Each outcome showed significant improvement.
- Statistically significant difference found as early as the 1st week (the latest was the 3rd week) and remained significant thereafter.

Discussion

- The post-intervention change in ABC-C from these preliminary data is of the same pattern as observed in the pilot trial.
- It appears that at least part of the effect of THR on ABC-C were preserved at 6 months after intervention.
- Sample size is small in this analysis. Results will be validated when study is completed.

References


Acknowledgements

Funding for this study was provided by the NIH/National Institutes of Nursing Research grant 5R012736-01. Adequan® company provided medication for horses in the study.
Therapeutic Horseback Riding In Children with Autism Spectrum Disorders
Robin Gabriels, Psy.D. (PI), John Agnew, Ph.D., & Zhaoxing Pan, Ph.D.
University of Colorado, Children’s Hospital Colorado; Colorado Therapeutic Riding Center

INTRODUCTION
A four year Randomized Clinical Trial (NIH/NINR NR012736) is testing whether human horse interaction is required for THR to benefit children with an ASD.

BACKGROUND
In our pilot study with 41 ASD children (ages 6-16 years) and a waitlist control group (n = 16), subjects in THR group demonstrated significant improvements on measures of Aberrant Behavior Checklist (ABC-C): Irritability, Lethargy, Stereotypic Behavior and Hyperactivity as compared with the control group (Gabriels et al., 2011). A large randomized trial (NIH/NINR NR012736) involving THR and an active control group is on-going. This preliminary analysis examines a small subset of the data to assess whether changes in self-regulation behaviors observed in the pilot can be replicated and if there are long-term effects of THR on self-regulation behaviors.

DESIGN & METHODS
Refer to our other posters (APA 2011 and IMFAR 2012) for design and methods. The outcome, ABC-C, is assessed by parent report and is the only non-blinded outcome measure.

RESULTS & DISCUSSION
The change in self-regulation behaviors (ABC-C) among the first 16 children in the THR arm was analyzed.

<table>
<thead>
<tr>
<th>Subject Characteristics</th>
<th>Completed 10 weeks THR (n = 16)</th>
<th>With 6 month follow-up (n = 6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Age</td>
<td>11.0 (8.9 – 15.8)</td>
<td>11.6 (8.6 – 14.3)</td>
</tr>
<tr>
<td>Gender</td>
<td>Male: 12</td>
<td>Male: 4</td>
</tr>
<tr>
<td></td>
<td>Female: 4</td>
<td>Female: 2</td>
</tr>
<tr>
<td>Mean nonverbal IQ</td>
<td>90 (52 – 129)</td>
<td>84 (52 – 129)</td>
</tr>
<tr>
<td>Diagnosis</td>
<td>Autism: 10</td>
<td>Autism: 3</td>
</tr>
<tr>
<td></td>
<td>Asperger’s: 8</td>
<td>Asperger’s: 3</td>
</tr>
<tr>
<td>Psychoactive Medications</td>
<td>Yes: 9, No: 7</td>
<td>Yes: 5, No: 1</td>
</tr>
<tr>
<td>Puberty Baseline</td>
<td>Yes: 7, No: 9</td>
<td>Yes: 3, No: 3</td>
</tr>
<tr>
<td>ABC-C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Irritability</td>
<td>15.4 (4 – 28)</td>
<td>19.3 (13 – 26)</td>
</tr>
<tr>
<td>Lethargy</td>
<td>11.7 (2 – 23)</td>
<td>13.7 (3 – 22)</td>
</tr>
<tr>
<td>Stereotypy</td>
<td>5.5 (1 – 14)</td>
<td>4.3 (1 – 14)</td>
</tr>
<tr>
<td>Hyperactivity</td>
<td>19.9 (3 – 33)</td>
<td>27.5 (16 – 33)</td>
</tr>
<tr>
<td>Inappropriate Speech</td>
<td>4.9 (0 – 11)</td>
<td>5 (2 – 11)</td>
</tr>
</tbody>
</table>

Each ABC-C post-THR scores showed significant improvement in THR Group. Statistically significant difference found as early as the 1st week (the latest was on the 3rd week) and remained significant thereafter. Scores of hyperactivity and inappropriate speech rebounded at six months after intervention, but remained statistically significantly smaller than pre-THR level.

IMPLICATIONS & NEXT STEPS
Upon completion of the study, response pattern of THR group will be compared to the activity control group to test whether human horse interaction is required for THR to exert its effect.

ACKNOWLEDGEMENTS
Funding for this study was provided by the NIH/National Institutes of Nursing Research grant NR012736-01. Adequan® company provided medication for horses in the study.
Therapeutic Horseback Riding In Children with Autism Spectrum Disorders

Gabriels, R.L.; Agnew, J.A.; Pan, Z.; Shoffner, A.; Mesibov, G.

1 University of Colorado Denver / Children’s Hospital Colorado; 2 Colorado Therapeutic Riding Center; 3 University of North Carolina, Chapel Hill

Abstract

This study uses a larger sample and a randomized control design to expand on pilot study findings of significant improvements in self-regulation, communication, and motor skills for ASD participants involved in 10 weeks of therapeutic horseback riding compared to a control condition using horseback riding alone. The current study examines the impact of horseback riding on children with Autism Spectrum Disorder (ASD) on a wider range of functional outcomes than in the previous study. The study has found that children who received therapeutic horseback riding had significantly greater improvements in social skills, communication, and self-regulation compared to children in the control group.

Methods

Site Selection

- PATH International “Premiere” level accreditation site with 30 years experience
- Both spring and fall sessions possible
- PATH International advanced level evaluation instructors

Subjects

- Target enrollment: 108 subjects, divided between THR and control groups
- Age 6 – 16 years
- Diagnosis of Autism or Asperger’s Disorder
- Screening score of 2 on Aberrant Behavior Checklist combined Intensity and Stereotypy
- Parental IQ of 40
- No exposure to THR within past three years
- Not having ridden a horse for more than two weeks in the past three years
- No history of animal abuse

Measures

- Autism Diagnostic Observation Schedule
- Social Communication Questionnaire (C)
- Aberrant Behavior Checklist
- Parent and Teacher self-report
- Motor Proficiency
- Sensory Integration and Praxis Test
- Children’s Attitude and Behaviors Toward Animals

Results

- No significant differences between groups for age, IQ, gender, puberty status or presence of psychoactive medications
- Subjects withdrew due to their own desire not to participate, conflicts with class schedule, or due to having high anxiety or limited attending skills that prevented participating in THR.

References
