

Supplementary Information

Article Title: Mindful Movement Intervention in an Urban Public School Setting Improves Motor and Cognitive Control

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Author Names: Laura C. Ricea, Alyssa DeRonda, Sylee Kiran, Kate Seidl, Kerianne Brown, Keri S. Rosch, Stewart H. Mostofsky

Corresponding Author: Dr. Stewart Mostofsky, M.D

Affiliation: Center for Neurodevelopmental and Imaging Research, Kennedy Krieger Institute, Baltimore, MD 21205

Email: mostofsky@kennedykrieger.org

Mindful Movement Program: School Based Intervention 2019 - 2020

Authored By: Peter Redgrave, Kerianne Brown, Laura Rice, Karen Seymour, and Stewart Mostofsky

Purpose: This Mindful Movement Intervention is designed to help children improve bodily and cognitive control. Specifically, it was designed to help children improve their ability to regulate their behavior through a process of engaging in controlled actions. There are five components that together make up this Mindful Movement Intervention: modified Tai Chi sequence, Yoga postures and Biomechanical Warm-ups, Imaginative Play, and Reflection.

Background: This School Based Mindful Movement Intervention has been extended and adapted from our 8-Week Mindful Movement Intervention for children ages 8-12 with ADHD. Initially, the instructional content of the 8-week course was heavily influenced by what the original instructor practiced - *Zheng Zong taiji*, with a significant focus on still postures and *Qigong*. The first instructor had extensive experience in youth education, and practice in both Tai Chi and “hard” martial arts.

However, as the development of the treatment of children ages 8-12 with ADHD progressed, we transitioned to a program that provided greater accessibility for both students and teachers. Specifically, we began using the first eight movements of the “Simplified 24-Movement” Form. This simplified form is perhaps the most widely practiced Tai Chi form in the world, with many recordings available on YouTube. To make the technical movement of Tai Chi even more accessible, child-appropriate warm-ups were sourced from dance, Yoga, Somatics, and still meditation practices were added to support the learning of the Tai Chi form. Imaginative Play activities were broadly sourced from typical schoolyard and theatrical games (e.g., mirroring games, races with “freezing,” obstacle courses) and were adapted to include elements from practiced Tai Chi forms. In particular, we included slow walking, awareness of breath, and personal space to further increase participant learning and engagement.

For this School-Based Intervention, we offer 45-minute sessions twice a week to the second and third grade classrooms at City Neighbors Charter School. All second and third graders are invited to participate in the class, while only consented families are assessed.

What are we teaching? In an effort to foster intrinsic motivation, the classroom participants will work toward a shared goal of learning a sequence of Tai Chi movements. During the first half of the year, participants will learn the first 8 movements of the “Simplified 24-Movement” Form. In the second half of the year, participants will learn a more advanced and more traditional Tai Chi sequence. We use complementary Yoga movements to prepare participants for the nuanced movements of Tai Chi practice. Both Yoga and Tai Chi provide a physical framework in which participants can track their own progress. Imaginative Play and Reflection Activities are used to stimulate a deeper curiosity in participants about the everyday use and employment of mindfulness.

One goal of this intervention is to help children to develop the skills needed to cope with naturally occurring changes and to adapt to their environment. In this context, students are learning to control and manage their behavior through implicit procedural learning.

Teacher Assigned Roles: It is suggested to have at least three Mindful Movement teachers on staff for this year-long intervention. Teaching a Mindful Movement class is a bit different than

teaching just Yoga or just exercise activities and games. The movements are nuanced and the cues can be very subtle. Having additional behavioral support is beneficial for teachers and students. Not only is it helpful to have more support, but it also allows teachers to take time off if and when it is needed. Teachers should rotate between leading and supporting roles. In the event that one teacher should be absent, then one teacher acts as lead while the other acts as supporting. In the event that only one teacher can be present, it is suggested to keep students in their classroom and work to integrate mindfulness through scaled down Imaginative Play activities and stories with the support of classroom teachers.

Lead Teacher 1: Covers approximately half of the material for the day. Provides additional support when not leading. This additional support can look like physically modeling what the other Lead Teacher is doing, checking in or standing near students who are disengaged, and providing redirection when necessary.

Lead Teacher 2: Covers approximately half of the material for the day. Provides additional support when not leading. This additional support can look like physically modeling what the other Lead Teacher is doing, checking in or standing near students who are disengaged, and providing redirection when necessary.

Supporting Teacher: Supports both lead teachers. Works to keep students engaged by standing close to students who are talking or not paying attention, providing subtle feedback, and encouraging students to continue practicing.

*The material can be grouped in whatever way the teachers feeling comfortable leading. Lead teachers might opt to alternate throughout one session or split the class material in half.

*At times, it might be appropriate for all three teachers to lead a small portion of the class for one or more sessions. All teachers should be comfortable stepping in and out of the leading/supporting roles.

Engagement Strategies:

Talking about boredom: It is okay to be bored. When one is 'bored' the mind might be wandering or otherwise fixated on something in particular. When a student says that they are bored, it is important to validate their feelings, help them to channel their boredom, and redirect them to the main activity. Boredom is an opportunity to look for interest in one's surroundings. The challenge is that we do not always control our surroundings, but we can control our bodies. We encourage young people who say they are bored to find where they can feel the floor. It is like a puzzle: Can you feel the floor through shoes? Can you bring your attention up through your body from the spot where it is connected to the floor? It is an important step, to realize your mind is fluid. How much can you watch where it goes without getting upset or judging it? Just watching to see what you are thinking about.

Attention as a bodily process: When we want to get as much information about something as we can, we watch things very closely, we observe them. The best way to do that is to turn our bodies so we can see, hear, and smell as much as we can from what we are watching. It takes our whole

body to observe or attend to something, to “give someone your attention” means to use your whole body to exchange information with them. Your attention helps the person speaking get information from you, too. They can tell if what they are saying is interesting to you, or if you understand by the way your body sits.

Designated Spaces for Movement: In a large gymnasium, we generally work with two formats:

1. Row Format: Set rolled mats up in rows so that every student can see. Keep the mats rolled up for the Body Wake Up. Allow students to slowly unroll their mats toward them before practicing Yoga. Keep them unrolled for the remainder of class. Whomever is leading at the time will stay at the front, while the other teachers will place themselves on either side. If there are only two teachers for the session, then one teacher leads from the front while the other teacher stands by students who seem to need more visual aid. This is the preferred format for less transitions. Eventually, students will be in rows to practice Tai Chi.
2. Circle Format: Set rolled mats up in a circle with the opening of each mat facing in. Keep the mats rolled up for the Body Wake Up. Allow students to slowly unroll their mats toward them (away from the circle) before practicing Yoga. Keep them unrolled for the remainder of class. The lead teacher(s) set up in the center of the circle, while the supporting teacher walks around offering behavioral guidance.

Direct Verbal Cueing: When cueing any person to move or engage a part of their body in some way, it is helpful to use the word “your” instead of the word “the” when referring to a part of the body. This personalizes the action. In addition, it is less clear for the practitioner/participant when the verb comes before the cue.

Example of indirect verbal cueing: While lifting the right leg, step it through to the front of your mat. *Why is this unclear? Your leg inherently lifts when you step it forward, so there is no need to state the action of lifting. When cueing actions to participants, a good rule to follow is: Verb - Your (Body Part) - Cue

Example of direct verbal cueing: Step your right foot forward.

*It should be noted that children in second and third grade are learning their right from their left, so it is helpful to add additional cues using references in the room. For example: Step your right foot, the one closest to the Exit sign, forward. Physically mirror the students when able (this is more doable for Yoga movements, not so much for Tai Chi).

Asking for Leaders: A helpful tactic for redirecting class flow is to ask students to volunteer as leaders. We have opted to ask for two student leaders per session - one for Yoga and one for Tai Chi. Our goal is to have every student participate as a leader at least once if not more. Students are often eager to get up in front of the class and be the example. This inspires intrinsic motivation. Students inherently want to do well, so that they are called upon to be a leader. Alternatively, we may call on a student who is craving a bit more attention and is disrupting the class, and we work to redirect their behavior by asking them to lead. In an effort to discourage any notion that we might be rewarding “bad behavior” when that happens, we try to reiterate that everyone is going to get a turn and that we are trying to be fair. In the following section we discuss additional ways to address disruptive behavior.

Addressing Disruptive Behavior: We understand that the best way to manage disruptive behavior is to have well-paced engaging instruction. We also recognize that there will be good days and less than good days. In the section that follows, we are going to lay out a series of possible disruptions and the procedure for addressing these behaviors.

The goal of teachers is to minimize the extent to which misbehavior disrupts the class. Teachers should always maintain their respect as the authority figure in the room. It is important that teachers follow through, meaning that if you say you are going to do something, then you actually do it.

If minor misbehavior occurs, it can often be best to practice ignoring the behavior. However, when misbehavior becomes disruptive or dangerous it needs to be addressed immediately.

When misbehavior occurs, it is important to identify the antecedents (things that make the behavior more or less likely) and consequences (things that reinforce or punish the behavior). Common antecedents could be: proximity to certain peers, being tired or hungry, being bored, or the physical proximity of the child to the lead teacher. Common consequences could be: making other children laugh or upset, getting attention, trying to feel better because they are upset, etc. Misbehavior is often a child's way of communicating, so it is important to try to understand what the child is trying to say when addressing the behavior while also trying to minimize the disruption to the rest of the class.

Each class will have a dedicated lead teacher and a floating support teacher. The role of the lead teacher will be to manage the flow of the whole class. Both teachers may lead the whole group, but that will be coordinated before the class begins. It is important that the students see all the adults as 'teachers' able to leverage all the authority that the role implies in service of the good of the class.

Addressing behavior is best done privately, meaning the student involved should be spoken to very quietly or out of the view of the class.

Chatting and talkative behavior: Lead Teacher: Set clear verbal and behavioral expectations that there are times in class in which talking is appropriate and other times when it is expected that participants are silent in order to be able to more clearly connect with their mind and body. In the beginning of the year, setting this expectation must be clear and done with gentle reminders to help students be comfortable. The floating support teacher can help with this transition by standing near them. Children who are clearly disruptive and talking too much may briefly be removed from the class or spoken to privately so as not to disrupt the other students.

Profanity or verbal disrespect: Profanity and verbal disrespect towards either teacher should be immediately addressed by support teacher who should say, "Here at school, we do not use that language." The student should be reminded of the school policy on this behavior and the associated consequences. If the profanity or verbal disrespect is directed towards another student, assess whether the disrespect is part of an ongoing escalation between students. It may be necessary to physically separate students and address the inappropriate language (see above) with one or both students. If this behavior becomes increasingly disruptive, the child should be removed or separated from class for the time being.

Elopement: All efforts should be made to ensure that children remain in the classroom space during the intervention period. That includes keeping external doors shut and frequently

checking the number of participants in the class. However, in the event that a student leaves the area of instruction without letting the teacher know where they are going, the floating teacher should immediately alert the Dean of Students and the class teacher.

Physical Alterations (aka fighting): If a student becomes physically aggressive or threatening to a teacher, the following steps should be taken:

1. The Lead Teacher immediately addresses the student by name and gives a verbal physical command such as, “Take a step back,” or “Put your hands on your chest.” This verbal command directs the student to engage in physical activity in a different way.
2. Lead Teacher reminds student that the behavior is not acceptable in school.
3. When safe to do so, the Supporting Teacher leaves to notify Dean of Students or school counselor.
4. Follow-up measures should be taken according to school policy.

If a student becomes physically aggressive or threatening to a peer, the following steps should be taken:

1. The Lead Teacher immediately addresses the student or students by name(s). If one student appears to be clearly aggressive towards another other student, address that student by name and follow with a verbal command such as, “Step back,” or “Hands off.” Doing this can create just enough space for one or both students to realize what is happening and gives them the opportunity to disengage from a physically harmful situation.
2. If the student(s) do not respond to verbal commands, put your body in between the students, if and only if you feel comfortable doing so. That being said, it is never advised to put your hands on a student.
3. When safe to do so, the Supporting Teacher leaves to notify Dean of Students or school counselor.
4. Follow-up measures should be taken according to school policy.

If there is an event where students have a physical altercation, follow school procedure. It is not advised to get in the middle of a physical altercation. Use proximity and make sure the larger group is safe. Separate the participants in the event as soon as possible, but do not use physical restraint unless serious danger is imminent. Alert Dean of Culture or a school counselor and teachers immediately and for follow up consequences. Use a formal reminder form for aggressive outburst, and a behavior review form for serious cases of violence.

Redirection Tactics: Often misbehavior can be redirected; therefore, it is suggested to use redirection tactics when you feel as if you are “losing the class” or noting increased misbehavior. Examples of Redirection Tactics:

1. Candle Breath: Hold one finger up, inhale through your nose, and breath out through your mouth as if you were blowing out a candle.
 - a. If students are extra moody that day, you might hear exasperated or exaggerated breaths to mock the soft candle breath. If this is the case, teach them Lion’s Breath and have them play with the difference between the two.
2. Lion’s Breath: Take a deep breath in, stick out your tongue and exhale “Haaaaaaa.”
3. Belly Breath: Put your hands on your belly, and breath in and out. Which direction does your belly go when you breath in and when you breath out? For most students this age range, they will

need to be taught how to breathe properly. Encourage students to keep working toward filling up their bellies as they inhale, and pulling their bellies in as they exhale.

*Breath is used to refocus and bring students to a general state of calm.

4. Any of the Imaginative Play Activities. *see Imaginative Play Section

5. Change the activity, even if it diverges from this manual. There are some considerations for this redirection tactic. For example, if students start groaning because you just told them that they are going to practice the Tai Chi form three times in a row, then do not diverge unless it is clear that they are very lost and do not understand what you are asking. If that is the case, try offering a simplified version of your original plan.

Glossary of Terms:

Pouring - refers to the action of transferring weight from one leg to the other. Pouring encapsulates the action of sending weight down from the greater trochanter all the way to the sole of the foot. The word “transfer” implies that weight can shift from right to left, in essence we are looking for participants to be able to send the weight straight down into the leg without leaning too far over from right to left side. “Pouring” indicates a vertical line, adding dimension to the movement.

Example: Pour your weight from one foot to the other. Imagine that you had a pitcher of water or sprinkles in one hand, something that is “pourable.” Pour your imaginary sprinkles from your hand down into the opposite foot. *helpful in allowing students to explore shifting weight not only from one side to the other, but filling up that entire leg by pouring the weight straight down through the floor.

Body Coins - are what we ask students to “gather” as we are moving or learning something new. It can be very tempting (for adults and children) to exclaim out loud what it is that they are discovering about their body as movement is happening. Therefore body coins are internal thoughts we ask the children to hold on to until the group shares these thoughts together. In an effort to maintain structure so that no one person’s exclamation of discovery takes another person out of their own discoveries, we have adopted Body Coins. Asking for Body Coins after every movement activity is not necessary, but can be a really helpful reflective and redirection tool.

Dan Tien - This is the Chinese medical term for the location in the body near the center of gravity. With children, I say it is three fingers below your belly button but inside your body. It is the name for the point where healing energy, Chi, is stored. Literally translated as Medicine Field.

Teaching Guide for the Foundational Tai Chi Sequence

Here we explain a series of elemental Tai Chi exercises that are helpful to create a calm environment for exploring the body deeply right from the beginning of the class experience. These elemental exercises give students an isolated introduction to the types of movement Tai Chi demands before those movements arise in the form.

The Foundational Tai Chi form is broken into eight sections. We refer to them as the Opening, Parting the Wild Horse's Mane, Traveling Parting the Wild Horse's Mane, The White Crane Spreads its Wings, Brush Knee Push, Playing the Lute, Repulse the Monkey, and Closing.

Elemental Tai Chi Movements: Prior to engaging in the formal Tai Chi sequence, children are introduced to foundational movements which will be utilized in the 24-Movement Form. Foundational movements are explicitly taught within the first two weeks of intervention during the warm-ups. After that point, the foundational movements are embedded throughout each session and utilized as refinement and reflection tools. The goal of these foundational movements is to begin the process of slowing down participant movement, to ask participants to notice sensation and breath, to begin making connections between different parts of their bodies, and to become more aware of their own personal space.

Tai Chi Ball

Where does it occur in the form? The Opening, Part the Wild Horse's Mane, and Travelling Part the Wild Horse's Mane *see *The Tai Chi Form section*.

Description: This movement begins by setting your feet hips-width apart and raising your hands up to the height of your navel, about six inches away from your body. Turn your palms to face one another with your right hand on top and your left hand on the bottom. Keep your left hand just below your navel and lift your right hand up to the height of your sternum, thus creating the "Tai Chi Ball" between your palms.

Helpful prompts for children: Imagine that you are holding a ball between your hands. Place one hand on the top and one hand on the bottom of your imaginary ball. Can you make it bigger and smaller? Can you move it around from side to side and still keep it between your hands? Can you bounce it like a basketball?

Encouraged Exploration: Use "Tai Chi Ball" as a reference for *Imagination Ball* *see *Imaginative Play Activities*.

Tai Chi Walk

Where does it occur in the form? Everywhere! This is the primary method of transferring weight, and moving yourself through the form.

Description: Stand with your feet hips-width distance apart and bend your knees. Bring your heels together to touch, so that your inner ankles form a 90 degree corner. Pour all of your weight down into your left leg as you lift your right foot off of the ground. Slowly swing your floating, right leg, forward and place your right foot down heel-to-toe so that you land softly, setting the heel of your right foot down where your right big toe once was. Rock forward toward the ball mound of your foot while keeping both soles of your feet on the ground, then rock back onto your heels. Keep your knees bent. Pivot on the heel of your front foot as you rotate the toes out 45 degrees and place the toes down. Slowly draw your back foot up to meet your front foot, connecting at the inner ankles. You are back to where you started. Repeat the movement starting

with your other foot. The trajectory of your movement is forward. Keep your arms and upper body relaxed.

Suggested Teaching for Children: This movement really needs to be physically demonstrated. Have the participants watch as a teacher demonstrates the first time. Ask participants to form a horizontal line across the floor with teachers dispersed throughout the line. Talk through the movements and walk together.

Encouraged Exploration: Walk forward together in a horizontal line and then go backwards together. Do the Tai Chi Walk in silence. Once participants have a clear understanding of the physical movements in their bodies, ask participants to pay attention to their breath while they are walking. This walk can be done in a circle. This walk can be used to explore balance and transferring weight.

Elemental Tai Chi Breathing Patterns:

Chi Gong Breathing Pattern 1

Purpose: to activate the breath and connect the breath to movement.

Begin with feet shoulder width apart. Place hands on the Dan Tien, the point three fingers below the belly button. In this position bring awareness to the breath. After a couple of breaths, bring hands away from the body, palms up and fingers facing each other but not touching. On the next inhale let the palms float up on the breath. As the torso fills and hands reach the chest, palms turn downward and sink with the exhale. Prompt young people to feel the connection between their fingertips. Repeat up to six times.

Chi Gong Breathing Pattern 2

Purpose: to activate the breath and connect the breath to movement.

This exercise is intended to follow Breathing Pattern 1. This pattern begins the same way with feet shoulder width apart and hands palms up with fingertips facing each other. The hands float up with the inhale and turn at the chest as the exhale begins, but then they rise palms up over the head. They should be fully extended with the full exhale. As the inhale begins, palms turn down and the hands sink from over the head with the inhale. As the torso fills with the breath, the hands reach the nose. Then continue sinking with the exhale. Repeat up to six times.

Chi Gong Breathing Pattern 3

Purpose: to activate the breath and connect the breath to movement.

This exercise is intended to follow Breathing Pattern 2. This pattern begins the same way with feet shoulder width apart and hands palms up with fingertips facing each other. As the inhale begins, the hands drop and begin following the breath on an arc up until the palms are facing up and rising until the fingers are pointing toward each other at the top of the arc above the head as the inhale completes. Then the hands sink with the breath down toward the Dan Tien. Repeat up to six times.

Variation: the hand movements remain the same, but the breath shifts. The inhale happens as the hands are rising between the Dan Tien and the nose, as the hands pass the nose the mind continues to send the hands up while the breathing pauses. The hands continue along the arc until the hands pass the nose sinking, then the exhale begins, only until the hands meet the Dan Tien

then the breath pauses again. Hands continue to release and extend. Inhale as the hands pass the Dan Tien. Repeat six times.

The Foundational Tai Chi Form: The Foundational Tai Chi form is broken into eight sections. We refer to them as the Opening, Parting the Wild Horse's Mane, Traveling Parting the Wild Horse's Mane, The White Crane Spreads its Wings, Brush Knee Push, Playing the Lute, Repulse the Monkey, and the Closing. Here we explain the Tai Chi form movement pattern as we would explain it to an adult.

The Opening: Find a place in the room where children can stand facing a single direction. (here should be enough space to take a few steps to the left. It is helpful to designate a beginning space for the Tai Chi sequence that the class will always use. In the beginning space, children should stand in staggered rows. Begin with feet together. Check in with breath and with balance, by gently leaning forward, backward, and to the sides. Bring everyone to a stable place with their weight in the center of their feet. Breathe together. On an inhale, let hands float up and bring weight forward. On the exhale let hands float down and rest at the waist, palms down. Practice this section in isolation for a few rounds. Emphasize bodily ease and attention to breath. On the next inhale, add a "Tai Chi Ball." From both hands palm down at waist height, your left wrist rotates so the palm faces up as it comes to the center line, under your belly button. Your right hand floats up so the palm is facing down as it comes to the center line at the height of your sternum. Palms are facing one another. Hands should be one hand's width away from the body.

Cuing language for children – Stand with your feet together. Make two fists and place between the feet to see if feet are hip's width apart. Focus on flow initially, then bring in alignment checks, reminding the young people that their knees should be soft and slightly bent and their belly button should be pointing in the direction they are moving.

Part The Wild Horse's Mane: From the Tai Chi ball position, your weight shifts slightly onto left foot as body rotates on right heel so your hips and Dan Tien are facing to the left. Then shift weight back onto your right foot. Your left elbow stays near your hip and left hand moves forward to align with Dan Tien as your right hand moves back and down in front of your right hip. Meanwhile, your left foot swings forward in a Tai Chi step. Shoulders should remain open. Palms remain energetically connected and facing each other. All the above movements happen at once, smoothly.

Traveling the Wild Horse's Mane: After the first time doing Part the Wild Horse's Mane, you are standing with your left hand palm up and your left elbow at the hip. Your right hand's palm is slightly down at hip height and just in front of your right hip. Knees are slightly bent. Weight is evenly distributed between both feet. Your left foot is in front of your right foot. Your right foot is facing 45 degrees off the center line while your left foot is parallel to the center line. To travel this step, we begin with pouring weight back onto your right foot and rotating your left foot on the heel so it is 45 degrees off the center line. Then draw your weight forward and let your right foot float until the ball of your right foot comes to rest hips' width from your left foot between the heel and the ball of your foot. As you move, begin making another tai chi ball, this time with your left hand at sternum height. Your left hand curves up above your right hand as you bring your right foot under your pelvis. Continue turning your pelvis to face to your right. Then as you turn back to the front let your right foot swing forward, your right hand being the

lower hand, extends while the elbow stays at your hip. As you move, emphasize how you inhale as the tai chi ball is being formed and exhale as the step is taken, in an effort to draw attention to the breath for kids that are picking up on it. In total, you will do this step three times, ending with your left hand and foot in front. Check feet - lead from Dan Tien.

White Crane Spreads Wings: This part begins with your body in a slight step and 70% of weight on the front (left) foot. Your left hand is in front palm up. Your Right hand is at waist height palm down comfortably in front of your body. Weight shifts 70% onto back foot (right) as your left hand pronates bringing the palm to the center line facing down just below the Dan Tien. Your right hand supinates as your right elbow comes to the center line and rises along that line. As your elbow gets to shoulder height, your arm rotates externally and your forearm then pronates until your palm faces up. Both hands are now on the center line, your left palm facing toward the ground and your right hand facing the sky.

Brush Knee Push: Brush Knee Push begins with 70% weight on the back foot (right). Your left hand is just below your Dan Tien palm down and right is about forehead high with palm facing away from your body. Weight sinks deeper into your back foot as Dan Tien turns to the right and right hand drops and rotates externally from the shoulder and scoops behind your body as your left hand drops and brushes over your left knee before returning to the center line palm down. Your left foot raises slightly. Your Dan Tien turns to face forward. Your left foot steps forward and returns to the ground. Your right hand pushes toward the front of the body, carving an arc over the shoulder and down. Both hands are back on the center line your left palm facing down and your right arm extended forward with fingers up and palm forward. Weight is evenly spread between both feet.

Play the Lute (Pipa): This part begins with weight evenly spread between both feet; your left foot is forward. Your left hand is palm down and your right hand is pushing out at shoulder height. Both hands are on the center line. Weight pours forward until your right foot can float forward in a half step to the below the hip, parallel to the left foot. The right hand reaches forward and your left hand rises to the inside of the right until the backs of your hands are facing one another. The right draws back toward the torso over the left until it comes to rest at the inside of the left elbow. Weight shifts to the back foot almost completely ~ 90%. Front foot has toes on the ground.

Traveling Brush Knee Push (into Play the Lute): This part begins with 90% of your weight on the back foot. Left hand reaches forward and brushes across your left knee as your left foot comes up to step forward. Move your Dan Tien to the right, to send your right arm rotating and extending back. Your Dan Tien returns to facing front sending your right hand into a push. As the push completes, your weight pours into your back foot enough for your front toes to come off the ground. Then rotate on the front heel bringing the Dan Tien to the left. This twist sends the hands into a Tai Chi ball with right hand on top. Continue moving the Dan Tien to the left to send the left arm back and around into a Push with your left hand. Your right hand brushes the knee as the Dan Tien comes around, rotate on the right heel and do a third Brush Knee Push, on the right side. Then Play the Lute once more.

Repulse the Monkey: Here you are with 90% of the weight on your right foot. Left hand reaches forward and up as your right hand is at rest at the inside of your left elbow. From here, your Dan Tien turns to the right sending your right hand down and back in a fully extended arc, as your left hand rotates so both your palms are facing up. Your Dan Tien then circles around toward the front, your right hand is sent over your head and forward. This brings all your weight onto your right foot, and sends your left hand and foot backward in a reverse step. Keep your Dan Tien flowing to on your left side, pouring 90% of your weight onto your left foot. Your hands come to rest with your left palm up and near your left hip and your right palm down extended at waist height on your center line. You are now in position to repeat the sequence on the other side. This sequence happens a total of three times.

The Closing: The closing begins with 90% of the weight on your left foot. Turn your Dan Tien toward your right side. Your right forearm pronates and scoops with your thumb down, rotate on your left heel as your Dan Tien comes to face the same direction you started in. Bend your knees and gently release into a squat, as your weight gets centered between your feet which should be shoulders-width apart. Hands open with both palms up as if to hold a large arm-span-sized ball. Dan Tien sinks and hands come under the ball. As your Dan Tien rises, your hands come into the Tai Chi salute, left hand open with right hand in a fist resting in the left palm, as you return to standing.

Teaching Guide for Body Wake-Ups

These warm ups are based on Fascial Activation techniques learned from Lynne Price and Kevin O'Connor, as well as Chi Gong exercises learned from Ray Hsu. Fascia is the layer of connective tissue that encases muscles and internal organs. James Earls' Active Fascial Release, views fascia as a vital organ. It is the layer where nerves pass through the body, a network of tissue that connects many layers of the body. The exercises are designed to activate the body and help circulation of blood and energy.

The Shake:

Purpose: to relax muscles, joints, and fascia.

Begin with feet shoulder width apart. Create a small bounce in the body from feet and ankle up to head. Let shoulders and neck relax. Let bounce grow into more and less vigorous shakes. Helpful to say to young people, "Shake the flesh around your bones." Be sure to ease in and out of more vigorous shaking. Saying things like, "As we stop, feel what is still moving in your body."

The Pat:

Purpose: to engage the mechano-receptors in a deep layer of skin.

Begin with feet shoulder width apart. Pat one shoulder with the other hand. The pat should be forceful enough to go into the lower layer skin. Pat down the outside of one arm and back along the inside of the same arm. Pat across the other arm. Make your way down the torso and the back. Finally, pat down the legs.

The Brush:

Purpose: to engage mechano-receptors at the top of the skin.

Begin with feet shoulder-width apart. Keep your knees soft. Begin by holding one hand over the top of the other close to the skin but not touching. Invite the young people to do this with their eyes closed. Then gently brush one hand over the other as close to the other as possible without touching, just brushing the surface. Then brush up the arms, brush down the torso and brush back and brush out the legs. Don't forget the head and face.

Teaching Guide for Yoga

Why Yoga? Yoga is the connection of mind, body, and breath. Yoga poses are used to help participants understand the general structure and framing of a body. When yoga is practiced consistently, individual habits and patterns emerge. It is during the practice of yoga that we ask participants to notice their own bodily habits. For example: Do you hold your breath during a certain pose? Do you hold your breath every time you lift your arms up over your head? Do your knees lock when you stand upright? Use developmentally appropriate language to generalize for children.

Influences: These Yoga movements are largely inspired by the Tai Chi practice and by the Katonah Yoga practice. Katonah Yoga was founded by Nevine Mechaan and Abbie Galvin in Westchester, NY.

Stay Steady: No pose is ever static. There is movement in every pose, no matter how still the pose looks from the outside. When we first began this intervention for children, including those with ADHD, the initial instinct was to strive for stillness. When we asked participants for feedback on the yoga poses, the majority of participants observed that trying to be “still” felt like “lightning bolts moving through the body.” We began to shift our focus. Rather than asking participants to become still, we began asking participants to become steady. Steadiness is a bi-product of balancing effort and ease. Yoga Sutra 4.26 refers to the balance of effort and ease as: *Shtira & Sukha*.

Yoga Movement 1: Circling the Feet in Mountain Pose

Why: Participants practice “pouring” or transferring weight in a three-dimensional way. Not only are we shifting weight forward and backward (think heels to toes) or just left to right, but we are going all the way around in one direction, and all the way around in the other direction. This makes the “pouring” or transferring of weight more spherical and less linear. Spherical, more dimensional movement lends itself to the practice of Tai Chi.

Frame: *Hips-Width Measurement*

1. Using one foot to determine distance between feet: swivel one foot measure the length of one of your feet (rotate on the heel to send toes to opposite heel), that is your inner hips-width distance. Our bodies are designed to fit, one of your feet is the width of your hips.
2. Make two fists with your hands and place them in between your feet in a standing forward bend. Bring your fists together to touch and let your feet wrap around your fists.

Direction: Stand with your feet hips-width apart. Keep your feet plugged into the earth and begin to circle around yourself in one direction. Start clockwise shifting your weight forward toward your toes, around to the right, back toward your heels, around to the left, and forward toward your toes. Repeat 3-5 times. Then, go counter clockwise shifting your weight forward toward your toes, around to the left, back toward your heels, around to the right, and forward toward your toes again. Repeat 3-5 times. Let your arms and shoulders stay relaxed.

Holding Patterns

Knees locking: Where there is a lock in the knee, there is a lock in the movement. Keep the soles of your feet open and connected to the ground. Keep the backs of your knees open so that energy can travel freely from the ground, through the soles of your feet and the rest of your body.

Feet disconnecting from the ground: As you all begin moving, watch for when toes want to lift or heels want to lift off of the ground. It is important to maintain the boundary of keeping the whole sole of each foot on the ground so that participants can track if they have gone too far in their own movement.

Pelvis or Shoulders trying to lead: Getting your entire body to move clockwise or counterclockwise in a circle altogether is a challenge. Parts of the body that are used to “leading” will inherently try to take over. This looks like a top-heavy circling if the shoulder girdle starts leading. This looks like bottom-heavy circling if the pelvic girdle or hips are trying to lead. You are looking for smooth, connected movement from bottom to top. The movement is subtle and initiated by the feet.

Helpful Imagery for Children: *Imagine that you are a Lego character with a little peg rooting straight from the middle of your foot through the ground, keeping you grounded. Circle around that peg. Try keeping the ball mounds of your feet and heels connected to the ground the whole time.*

Yoga Movement 2: Fold to Unfold - Inspired by the Katonah Yoga Practice

Why: Being able to fold and unfold at the hip crease and through the hip joint is an essential movement in both Yoga and Tai Chi practices. Practicing this in Chair Pose helps participants to develop a strong, stable lower-half. When the lower-half of the body is more stable, then the upper-half of the body has more capacity to move, thus building on range and structure of motion.

Frame: Stand with feet hips-width distance apart. Reach your arms up overhead and grab onto opposite elbows. By doing this, you are quite literally getting your hands out of the way and inviting more of your body to participate. You are building capacity for movement in the core and throughout the entire torso.

Direction: Keep your head in-between the framing of your arms. Stand all the way up into a Standing Backbend; lift your elbows up into your palms as you work to slide shoulder blades down your back. Shift weight forward toward the ball mounds of your feet and lift up through

your heart, look up. Pull low-belly to spine and settle into your Chair Pose, keep the framing of your arms. Don't let go of yourself. Hinge right at the crease of your hips to dive forward and fold over your legs into a Standing Forward Bend. Keep the framing of your arms. Let the weight of your elbows drop into your palms. Keep the weight forward toward the ball mounds of your feet the entire time, while anchoring down through your heels. Rise back up to Chair Pose. Root your feet into the ground and rise all the way up to Standing Backbend. Hold the framing of your arms the entire time. Repeat 3 times with one crossing, and 3 times with the opposite elbow stacked on top.

Holding Patterns:

Knees Locking: Knees will typically lock at the height of the Standing Backbend and at the depth of the Standing Forward Bend. Encourage participants to keep knees slightly bent the entire time as a boundary. If the knees lock out, we have gone too far.

Tension in Shoulders: Because the framing is precise, we are likely to see when and where shoulders are holding tension. Keep encouraging participants make space for themselves by sliding shoulder blades down their back while lifting up through their chest.

Helpful Imagery for Children: Sit back into your imaginary chair. Reach up and grab your elbows! You're going on a rollercoaster ride! Don't let go of yourself. Go all the way up! And all the way down.

Yoga Movement 3: Moon Salutations

Why: Salutations are repetitive movements that link breath to movement. Specifically, the Moon Salutations (Chandra Namaskar) help to activate lunar properties and are meant to cool the practitioner down rather than to heat or amp up (think Sun Salutation, Surya Namaskar).

Frame: The movement begins and ends at the same place. Salutations represent a cycle. You travel from one place to the next using a series of movements and end exactly where you started, only changed. Each time you begin, it is new. In addition, the more precise you are with the framing of your body, the clearer your channel of breath and expression will be. Salutations are a great way to measure form.

Movements of the Salutation:

1 Child's Pose - Begin in a seat with your shins on the ground and fold over, so that your head is in your lap. Cup your hands around your heels, creating a shell shape in the back. - (while exhaling)

2 Lift Your Arms - Release your hands from feet and reach them up overhead. - (while inhaling)

3 Reach Forward - Reach your arms forward to the top of the mat (Extended Child's Pose). - (while exhaling)

4 Pull Yourself Through - Look where you're going. Slide yourself through to Upward Facing Dog by extending your knees to straight-ish legs supported by the shoe lace side of your foot. You are supported by the tops of your feet and your palms. Keep your hips and thighs

elevated by pressing your hands and feet down into the mat. Slide shoulder blades down your back. Lift your chest up. - (while inhaling)

5 Downward Facing Dog - Roll over your toes. Send your hips high, stretch your heels low for Downward Facing Dog. Keep a bend in your knees. Let your head settle in between the framing of your arms. - (while exhaling)

6 Lunge Right Foot Forward - From Downward Facing Dog, look where you are going and spring your right foot forward by lifting with your hips to create space for the leg to travel forward. Reach your arms up overhead. - (while inhaling)

7 Step Up - Step your left foot up to meet your right foot and Forward Fold. - (while exhaling)

8 Rise Up - Stand all the way up to Mountain Pose and reach your arms up overhead. - (while inhaling)

9 Forward Fold - Swan dive (pull low-belly to spine and extend your arms out to the side as you dive forward to fold over your legs). - (while exhaling)

10 Step Right Foot Back - Lunge your right back so that you are in a Low Lunge now on your left side. Reach your arms up overhead. – (while inhaling)

11 Downward Facing Dog - Return to Downward Facing Dog. – (while exhaling)

12 Plank Pose - Shift forward to Plank. Keep your toes tucked. – (while inhaling)

13 Upward Facing Dog Returns - Resist the ground as you lower your hips down toward the ground, returning to Upward Facing Dog with the toes tucked under. – (while inhaling)

14 Child's Pose - Lower your knees down to the ground, release the tops of your feet back to the earth, and settle your hips back toward your heels. Return to Child's Pose.- (while exhaling)

*Repeat starting with the Left foot lunging forward and back.

Teaching Guide for Imaginative Play

The Imaginative Play part of the experience relates to building the capacity of the children to notice differences in their own body and in others. This section of the treatment adds to the Social Emotional Learning of the children, but in cases where time is short this section can be trimmed. These activities can also be used sparingly as motivation. ** Up to the group to dictate which activity is appropriate for that particular session. These are activities such as Imagination Ball, Slow Motion Ninja, Big C and Little C, Red Light/Green Light as a Walking Meditation, and Push Hands.

Imaginative Play Activities:

Imagination Ball

Skills Practiced: communication, focus, attention to detail, spatial awareness, creativity, ability to stay on task, listening, and observing

Before You Start: An instructor directs everyone to sit in a semicircle. The same or another instructor ducks behind a corner, behind a wall, etc. and “grabs” the Imagination Ball. Decide amongst the group who will go first.

How to Play: One person begins facing everyone in the semicircle. This person holds an imaginary ball between their palms. Person A creates an image for everyone in the semicircle to

try and guess. Students in the semicircle are directed to wait to guess until Person A has completed their object. Students in the semicircle are directed to sit quietly and pay attention to what Person A is making. Students are called on one at a time by Person A to try guessing what the imaginary object is. The first student to guess Person A's imaginary object correctly gets to make something next!

Variations:

Group Imagination Ball: As a group, decide on something to make that requires multiple hands (ex. Castles, spaceships and space stations, rodeo, etc.). Decide amongst the group who will take which part and start silently working together as a team.

Skills practiced: teamwork, social engagement, creativity

Slow Motion Ninja

Skills Practiced: body awareness, concentration, impulse control, logic, and strategic thinking

Before You Start: The instructors assign partners for the activity. It is suggested that instructors work to strike a balance in student energy and focus levels when pairing for activities, especially Slow Motion Ninja. For example: if one child is more hyperactive, pair that child with another student is generally calm, but maybe not quite as focused. This activity is an opportunity for students to influence the behavior of one another. Because there are competitive overtones in this activity, children are eager to improve their strategies and techniques each time that they play.

How to Play: This is a partner activity where both students are energetically trying to touch the other person's "center." The "center" refers to the abdominal and chest area. Two students stand about three feet away from each other with active hands*. Their feet are grounded and a little wider than hips-width distance. Students are invited to go slowly and at the same pace as their partner to try to energetically touch their partner's center and prevent the other person from touching their center. The objective is to keep the same slow, steady pace as your partner while trying to touch your partner's center first. **active hands is the same hand structure that we use for the modified Tai Chi form. Fingers are extended and there is some space between fingers. As if energy (chi) is coming out from the fingertips. Think "active" not "taut."*

Variations:

Slow Motion Ninja Tournament: Students are invited to challenge one another to a game of Slow Motion Ninja. The winner of one group moves on to challenge the winner of another group. The tournament is played out until we have a final winner. The objective is still the same - to act at the right time while moving at a slow and calculated pace that matches the pace of their partner. This is a great redirection activity to get kids back on track and focused. Once the tournament is over, move right into mindful movement or Tai Chi. A tournament should not last more than 5 minutes.

Big C, little c

Skills Practiced: spatial awareness, connectivity, teamwork, empathy, coordination, flexibility, strength, focus, concentration, and movement liberation

Before You Start: Instructors assign partners for this activity based on height. It is suggested that the teachers pair students up that are close to the same height because it poses less of a physical challenge while moving through the activity. This way, children can focus more on staying connected, rather than trying to keep up with their partner. As students' spatial awareness increases, the instructors might allow students to pick their own partner of any height.

How to Play: This is a partner activity where both students imagine that they are connected by a single thread. This thread can be attached to a body part of each student's choosing, within reason. For example: one student's right big toe might be attached to the other student's left elbow point! Start simply, guide students to connect the same body parts at first (i.e. right pinkie finger, to the other person's right pinkie finger). One person begins leading the other person. The objective is to explore and discover a wide variety of movement while keeping the imaginary string connected. Instructors will cue students when to switch taking the lead and when to change body parts. As the students become more familiar with the game, instructors are encouraged to create new challenges for students (i.e. different body parts). This can be done a couple of times, no more than three rounds.

Variations: One way to create variety and keep students curious about how their bodies can move together in space is to imagine that they are somewhere else. Instructors may cue students to imagine that they are trying to stay connected to their partner under water, in outer space, in the desert, the arctic, or on a cloud made out of cotton candy, etc. This is a great opportunity to foster a sense of agency amongst the group; ask the students where they want to go. Use your best judgment when deciding on new territory. Pick environments that are calming (i.e. "the floor is lava" might be fun to try, but something that heightened is likely to overstimulate students and instructors).

Red Light/Green Light as a Walking Meditation

Skills Practiced: Listening, observation, concentration, deliberate and intentional walking, pacing, self-regulation, impulse control, anger and stress management

Before You Start: Make sure that everyone is clear about the rules and that everyone has space to move safely. Clearly define the playing area with a designated start and finish line. Select one instructor to act as the referee. This referee will determine if and when children need to go back to the start line. Children will be asked to go back to the start line if they are trying to run ahead to the finish line. Select one student to call out "Red Light" and "Green Light."

How to Play: Students who are moving begin lined up horizontally along the start line with their feet hips-width distance apart. Hands are held close to the body so that they are out of the way (down at their side, in prayer position, on their hips) letting students really focus on their feet. When the leader at the finish line calls "Green Light" moving students are instructed to let their feet fall heel-to-toe in order to take a step, so they are walking in slow motion the entire way to the finish line. When the leader at the finish line calls "Red Light" moving students are instructed to pause exactly where they are at and hold a yoga pose of their choosing (i.e. tree, mountain, warrior pose). If a student does not stop and keeps moving toward the finish line, then

that student will be asked to go back to the start line. The round ends when everyone is across the finish line. Typically one or two rounds is enough redirection to get kids focused for the modified tai chi form.

Variations: Use the “Tai Chi walk” instead of straight forward heel-to-toe. Students can also practice some of the arm movements that they’ve learned in the modified Tai Chi form if they are really craving some movement. Linking yoga poses to travel across the floor is another great way to play (i.e. Warrior One to Warrior Three).

Using the Force

Skills practiced - Practice focusing on where your body in relation to one other body.

Partner force field - One person stands centered with their weight firmly rooted and their knees soft. A partner places a hand energetically on their shoulder and tries to stay as energetically connected to their partner, as though they were resting on the person’s clothes but on a force field. Once the connection is established, the standing person begins to move, without walking. The partner tries to remain “stuck” to their shoulder.

Variation - Force field maker stands firmly rooted to the ground with soft knees. The force field tester stands more than one arm’s reach away from the force field maker. Then the tester raises one hand to be in line with one of the force field maker’s shoulders. When both people are ready, the maker says, “Close.” The tester closes their eyes and begins slowly to move their hand toward the shoulder until they are close but not touching, then the maker says, “Stop.” Both people hold in position for a count of three. Then the tester opens their eyes and sees where they are.

Group force field - Three or four people stand in a circle. First they soften their knees and bring all their shoulders to the same height. Then they raise their hands so the left hand is reaching towards the person on the left and the right reaching toward the person on the right. People try to bring their hands as close to one another as they can without touching one another. The group can then try move their arms and remain in energetic contact with each other.

Teaching Guide for Reflection Techniques

The reflection tools are for helping young people share their experiences. The aim is simply for children to practice verbalizing experiences in their body. We will be gathering this language to help young people see the words that we are using. We will share some elemental anatomy vocabulary and use some literacy strategies, like using a class journal to hold our thinking, sharing the pen, and guided partner sharing.

Outline of the program by month:

60 total sessions

Dates according to City Neighbors Charter School calendar

- **September** - 7 sessions [6, 9, 13, 16, 20, 23, 27, (30 closed for students)]
 - Students will learn the class structure: dynamic warm up, yogic work, Tai Chi practice, imaginary play, as well as, reflection procedures and techniques. We will be working with the first third of the foundational Tai Chi form.
- **October** - 6 sessions [4, 7, 11, 14, (18 closed for students) 21, (25 Parent Teacher Conference No class), 28]
 - Students will learn the second third of the foundational Tai Chi form and variations of the imaginary play and reflection procedures.
- **November** - 7 sessions [1, 8, 11, 15, 18, 22, 25]
 - Students will learn the closing third of the foundational form.
- **December** - 6 sessions [2, 6, 9, 13, 16, 20]
 - Students will consolidate their understanding of the foundational form by increasing the flow and connecting the breath to the movement in individual ways.
- **January** - 6 sessions [3, 6, 10, 13, 17, (20 MLK closed and 24 closed for PD), 27, (31 Parent Teacher Conferences No Class)]
 - Students will begin the second section our Tai Chi form, what was named “The Celestial Form” by one of our students. This involves learning another version of the adapted Yang style Tai Chi form. We will be adding the celestial form onto the foundational form in our practice. In January, We will learn the opening of the celestial form.
- **February** - 7 sessions [3, 7, 10, 14, (17 closed), 21, 24, 28]
 - Students will continue the first quarter of celestial Tai Chi form.
- **March** - 8 sessions [2, 6, 9, (13 Closed for PD), 16, 20, 23, 27, 30]
 - Students will begin the second.
- **April** - 5 sessions [3, 17, 20, 24, 27]
 - Students will continue with the third quarter of the celestial Tai Chi form.
- **May** - 7 sessions [1, 4, 8, 11, (15 Parent Teacher Conferences No Class), 18, 22, (25 closed), 29]
 - Students will complete the full celestial Tai Chi form.
- **June** - 5 sessions [1, 5, 8, 12, 15]
 - Students will deepen their understanding of the full form

General outline for sessions in the school-based intervention:

Time	Section	Purpose
0:00	Body Wake Up:	Provide a routine way to begin the experience that has movement right away, but is not too amplifying for young people.
3:00	Yoga	The Yoga practice allows participants to measure their own physical and emotional processes. This is where we build strength and capacity.
11:00	Tai Chi form - Three times the section we know Modelling new material Three times the section we now know.	This is the bulk of the work of the class. Again, there is a routine to this section. Students do the form up to part of the form they are working on three times without talking. A new insight or section or way of approaching the form is presented to the group with teachers in the center of the circle. Do the form one time with the new insights.
31:00	Reflection	Have a way to gather thinking - group journal - individual journals - talking or writing.
34:00	Imaginative Play - practice generalization	A physical activity that expands motor skills into planning and executing movement and communication.
42:00	Closing	Close with doing the Tai Chi form silently with the new insights.
45:00	Dismissal	Dismiss the class.