Pediatric Top-Rope Rock Climbing Program for Sensory Integration

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History/Introduction

Sensory Integration (SI) was developed by Jane Aryes in 1972 and gives name to neurological processes that determine how the brain organizes, interprets, and deciphers what to do with incoming sensory information, from both outside ourselves in the world around us, as well as inside of our bodies (interoception) (Ayres, 2005). Providing children with SI in the form of rich multisensory experiences has been shown to improve the emotional, physical, cognitive, and social development of children with sensory processing difficulties. Physical exercise has also been shown to have such benefits for children with sensory impairments (Castano et. al., 2024). This literature review discusses the foreseen benefits that top-rope rock climbing can have on the overall life and wellness of children by way of using SI and Sensory Processing (SP) through skilled occupational therapy interventions and leisure activities, through the model of social prescribing.

There are many different kinds of sensory dysfunction, dysregulation, and disorders. Some come foundationally from sensory processing disorders (i.e Sensory Processing Disorder (SPD), Autism Spectrum Disorder (ASD), Attention Hyper-Deficit Disorder (ADHD), and Developmental Coordination Disorder (DCD) (Van Hecke et. al., 2019). However, some sensory processing impairments such as vestibular irregularities are rooted in other ailments or disorders such as vestibular migraines, benign paroxysmal vertigo of childhood (BPVC), and central nervous system disorders (Rine et. al., 2013). These disorders may cause dizziness, vertigo, gravitational insecurity, associated anxiety/panic, and overall hypersensitivity of the vestibular and visual systems, for example.While these children's symptoms and deficits don't primarily originate from a sensory processing diagnosis, these children could also benefit from SI as well, with the idea that strengthening and incorporating other sensory systems will help to regulate the body and mind in those with chronic vestibular hypersensitivity.

Within the umbrella of Sensory Processing Disorder (SPD), there are different sensory disorders: Sensory Modulation Disorder (SMD), Sensory-Based Motor Disorder (SBMD), and Sensory Discrimination Disorder. A child will fall within one of four subtypes for each sensory system according to Winnie Dunn's Model of Sensory Processing (Star Institute, n.d.). A child may be sensation seeking, have sensory sensitivity, be sensation avoiding, or have low registration of sensory input (Dunn, 2007). Sensation seeking means that the child has a high threshold for sensory input and actively wants to engage that sensory system and has active self-regulation. Sensory avoiding means that the child has a low threshold for that sensation as well as active self-regulation and they will try to get away from or avoid a certain sensation. Sensory sensitivity is described as being when a child has low tolerance of a sensation and engages in passive-self

regulation, meaning that they don't tolerate the sensation well, but they are not actively trying to escape the sensory experience.

Common Difficulties or Deficits

There are many difficulties and deficits that come in part when a child has vestibular or other sensory impairments. Most commonly, these deficits impact their everyday lives. While it is not an exhaustive list, many children with these sensory difficulties have trouble with: balance, coordination, postural control, gravitational insecurity, endurance, strength, anxiety, depression, emotional regulation, have lower level academics, and low engagement or inclusion in social participation (Van Hecke et. al., 2019).

Evidence for SI and SP

SI and SP demonstrate how engaging the senses in a way that is tailored to the child, can have many positive benefits and help the child's response to sensations and thus help them be better regulated and able to perform appropriately in their other occupations in life (i.e academics, play, social participation, self-regulation, motor skills, communication skills, self-care, etc) (Camarata et. al., 2020).

Evidence for Physical Activity

There is also evidence showing support that physical exercise is beneficial to kids with sensory difficulties and with disorders such as SPD, ASD, and ADHD, etc. (Ge et. al., 2025). Through meaningful exercise, there have been improvements seen in vestibular function and balance (Fong et. al., 2012) as well as speed, strength, coordination, motor skills, postural control, cognition, emotional regulation, and social skills (Aykora et. al., 2019).

Climbing and Proprioception

Incorporating climbing into the lives of these children provides them opportunities to combine SI with exercise as a purposeful OT intervention and/or leisure activity. Climbing heavily involves proprioception as the climber has to continually receive and interpret proprioceptive input from the rocks/holds, their hands, feet, and the harness, as they shift their body weight to target the rocks/holds they need to climb to and use their strength to lift, pull, and push their way up the wall through a variety of dynamic, weight-bearing movements (Klymus et. al., 2023).

Climbing and Tactile Input

Another sensory system that is heavily involved in climbing is the tactile system. Having exposure to different tactile sensations has been shown to improve tactile processing and decrease a child's tactile defensiveness (Camarata et. al., 2020). Climbing provides a rich tactile experience as there are many different holds with varying sizes, shapes, and textures. The climber also may choose to use chalk throughout their climb as wanted/needed to improve their

ability to execute an initial grasp as well as maintain their grip once they have made contact with a hold.

Climbing and and Motor Coordination

Climbing also requires motor coordination and praxis. Climbers use their whole body to move up the wall, requiring motor planning, hand-eye coordination, balance, muscle strength, postural control, reaction time, reaching, as well as other gross & fine motor skills (Liu et. al., 2022). Children that have sensory impairments often need help with some if not all of these skills (Klymus et. al., 2023). Climbing could also help children develop better fine motor skills such as grip and finger strength, both of which can translate over to better participation in I/ADL tasks.

Emotional and Social Aspects of Sensory Integration

Climbing can also help improve a child's mental health, social interactions, self-confidence, and self-efficacy. (Mazzoni, 2009). Climbing gives the child a sense of mastery and intrinsic motivation that comes from problem solving as they go up the wall (Ceciliani et. al., 2008). Incorporating top rope climbing specifically has great potential to help children socially as it requires being tied to their climbing partner on the ground. This would provide them the opportunity to practice trust and communication skills (Liu et. al., 2022). Top-rope climbing also has the potential to help children lower levels of anxiety, and depression as the child is moving their body, balancing their sensory systems, and achieving a sense of self-accomplishment and mastery. Many children with vestibular deficits/difficulties most likely will have anxiety (Bart et. al., 2009) as they may be dealing with or are afraid of provoking feelings of dizziness, vertigo, gravitational insecurity, etc that can evoke a lot of fear. Therefore, kids with vestibular issues especially may have fear when it comes to rock climbing (May-Benson et. al., 2020). However, there is potential that through using proprioception and repeated exposure to the raising/lowering of the body to the ground in a way that the climber can control movement, that vestibular sensitivity may decrease and/or the child will have less vestibular-triggered fear.

Climbing and Autism (ASD)

Many children with sensory processing deficits also have autism (ASD) Patil, O., & Kaple, M. (2023). Rock climbing can be appealing to children with autism for many reasons. Some children with autism enjoy risk-seeking behaviors such as climbing or jumping (Fahy et. al., 2020). TRC would give them a safe and appropriate environment to do so. Kids with autism also may enjoy the simplicity of rock climbing, as there isn't much sequencing, and there is just one main objective-to get to the top of the wall. These kids also may enjoy the fact that each climb ends with completion of a task, which is a big draw for a lot of children with autism, seeing a task through from start to finish. Expectations are also clear, with routes outlined for them by color so all they have to do is follow the correct color up the wall, which also outlines a more straightforward pathway to completion/the goal, which may not be as clear in other sports. Kids also may enjoy that rock climbing can be performed at varying levels concurrently with others

(should they choose to climb with a group) and that their performance on the wall doesn't include physical contact with other people or having people rely on them to score points like they do in team sports. Fading with stimulus training has been found to be beneficial in teaching kids with autism how to climb (Kaplan et. al., 2011).

How Rock Climbing is Currently Being Used in Pediatric OT

Currently, in some pediatric occupational therapy clinics there are short rock walls where children can boulder (a form of climbing the rock wall without being in a harness, and the climber is not attached to a rope for safety). While this is beneficial to an extent, it is my hypothesis that the use of a harness and rope, and switching from boulder to top rope climbing would benefit kids more than that of bouldering.

For example, if a child is bouldering, they know they aren't fully secure, leading to fear, which can lead to lack of motivation to try the wall, or get as much out of the wall (i.e working on sensory integration, balance, motor control, coordination, motor planning, endurance, strength, etc) as they don't feel as free to move due to the fear of falling. The harness provides more feelings of safety and security which would allow the child to more fully participate in climbing.

Sensory Integration theory says that tactile, visual, and vestibular are 3 sensory systems that work very close together. Top rope climbing allows for sensory-rich exposure in these areas. Proprioception helps to decrease sensory overload from the vestibular system. Therefore, it is also hypothesized that the extra proprioceptive input from the harness at the hips will allow for better sensory integration of the child, being that the more proprioceptive feedback there is, the more balanced the child's vestibular system (for example) will feel.

The Therapist's Perspective

In addition, some occupational therapists currently might not feel totally comfortable facilitating a child up the rock wall in its current state because a child could fall on them if they don't feel strong enough to hold the child. The child can also only get as far off of the ground as the therapist can reach, which isn't far at all. The therapist may also be hesitant to use the rock wall in its current bouldering state because there is more danger due to the falling typically necessary in order to get down from the wall. Although crash pads are in place under the child, the child does still have to land on the ground abruptly, with various points that they could make contact, which isn't as safe as compared to top-rope climbing where the child would be slowly lowered down to the ground, feet first. Also, being lowered upright would trigger less in the vestibular system and cause less fear in the child.

Therapeutic Climbing Through the Social Prescribing Model

Social prescribing is a newer model that is currently being used primarily in the U.K. Through this model, patients can be connected to resources outside of clinical care in their community to

receive additional wellness support through social connectedness and meaningful activities (World Health Organization, 2021). Patients are connected with a link worker who assesses the needs and goals of the patient, and works with them to fill in any gaps in care with activities and/or programs for group learning, physical exercise, and community/social engagement, for example (Bradley & Scott, 2021). After identifying the goals of the patient, the link person helps them create an action plan to address their goals and connects them with the appropriate resources. It is proposed that a rock climbing program/lessons for kids with sensory disorders and dysfunction, overseen by occupational therapists and trained climbing coaches, would be beneficial for these children's physical and emotional health as well as improve social skills. The idea is that improvement in these core areas will lead to improvements in I/ADLs and the skills that they learn, through generalization, can transfer over to other tasks and increase overall feelings of self-mastery and well-being in their daily lives.

Conclusion and Considerations

In conclusion, both SI and physical exercise have been found to be beneficial to children with sensory impairments in a variety of ways. Climbing has been found to be a therapeutic modality that can help children increase their physical, mental, and social well-being. Currently, climbing is used on a small scale for children with sensory impairments. However, there is great potential for climbing programs to be implemented and made available to those children with sensory difficulties, allowing them to work on a number of skills that will help them in their daily occupations in life such as academics, play, social, self-care, and participation (Kompán et. al., 2021). Social Prescribing is a means by which these children could become aware of and receive access to these climbing programs.

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How to use the Social Prescribing Toolkit (for OTs)

Therapeutic Climbing Through the Social Prescribing Model

Social prescribing is a newer model that is currently being used primarily in the U.K with adults. Through this model, patients can be connected to resources outside of clinical care in their community to receive additional wellness support through social connectedness and meaningful activities (World Health Organization, 2021). Patients are connected with a link worker who assesses the needs and goals of the patient, and works with them to fill in any gaps in care with activities and/or programs for group learning, physical exercise, and community/social engagement, for example (Bradley & Scott, 2021). After identifying the goals of the patient, the link person helps them create an action plan to address their goals and connects them with the appropriate resources. It is proposed that a rock climbing program/lessons for kids with sensory disorders and dysfunction, overseen by occupational therapists and trained climbing coaches, would be beneficial for these children's physical and emotional health as well as improve social skills. The idea is that improvement in these core areas will lead to improvements in I/ADLs and the skills that they learn, through generalization, can transfer over to other tasks and increase overall feelings of self-mastery and well-being in their daily lives.

Introduction to Social Prescribing

Social prescribing is a person-centered approach that enables individuals to improve their health and well-being by connecting them with primarily non-medical community-based services. Occupational therapists (OTs) play a vital role in facilitating social prescribing by assessing clients' needs and connecting them to appropriate resources.

Purpose of the Toolkit

This Social Prescribing Toolkit is designed to support OTs in effectively implementing social prescribing programs and interventions. It provides a structured approach to identifying, referring, and monitoring clients as they engage with community-based support. Top rope rock climbing (TRC) was used as an example for how the Social Prescribing Toolkit can be used.

Guide for Using the Toolkit

1. **Situation Analysis and Core Implementation Team**
    - Describes how (TRC) can be beneficial as a modality for social prescribing
    - Identifies the implementation team

2. **Develop an Implementation Plan**

- Plan, Do, Study, Act as the framework
- Describes how TRC is a good option for patients from an occupational therapy standpoint (i.e what skills it helps kids work on)
- Operational management
    - Target population
    - Value
    - Anticipated needs
    - Program objectives
    - Roles of the team
    - Funding
    - Referral Pathway
        1. How link workers get connected to patients
    - How to Monitor and Evaluate the kids in the program
    - Activities/Interventions
        1. Preparatory Interventions
        2. Interventions/Activities While in the Program

3. Community Resources

4. Link Workers

- Describes link worker training and process

5. Monitoring and Evaluation

- Evaluation:
    - Children's Assessment of Participation and Enjoyment (CAPE)
    - Preferences of Activities for Children (PAC)
- OT Likert Scale Questions
- Coach Likert Scale Questions
- Pre and Post Assessment forms for the patient and their families
- Pre and Post Assessment forms for OTs
- Goal Attainment Scale (GAS)
- Coach Communication Log
- Family Communication Log
- Handout-Sensory Processing, Sensory Integration and the Benefits of Rock Climbing
- Rock climbing program flyer for interested patients and their families, referral sources

Social Prescribing for Children and Youth

Step One: Discussion with client and family regarding the purpose of social prescribing.
Sample: Social prescribing is a focused method to link clients receiving healthcare services, such as occupational therapy, to community activities to promote health and well-being. This helps clients increase community access, social participation, and leisure participation all while supporting their therapy goals.

Step Two: Evaluation
Evaluate client's preferences and participation patterns using the Children's Preferences for Participation and Enjoyment (CAPE) and the Preferences for Activities for Children (PAC) to determine the client's interests and identify activities they are not currently participating in but would like to, especially those that could support their occupational therapy goals. Couple this with their occupational therapy assessment results to identify strengths in sensory and motor skills to help determine the best community-based activity.

Step Three: Contact the Community Site
See the Social Prescribing Tool Kit on how to form relationships with community sites.
https://www.who.int/publications/i/item/9789290619765

Step Four: Connect Client and Community Site Using Link Worker
Facilitate the communication between the link worker and the site. Ensure clients and the site administrator have completed the provided intake questionnaires. The link worker should ensure that the intake questionnaires are completed and information is shared with the community site.

Step Five: Communication and Progress Monitoring
Establish a method of communication between community site and occupational therapist. Provide method of progress monitoring and consistent communication using the link worker.

Step Six: Implementation
Implement the social prescribing with concurrent occupational therapy services.

The Children's Assessment of Participation and Enjoyment (CAPE) & Preferences of Activities for Children (PAC)

Title
•The Children's Assessment of Participation and Enjoyment
• (CAPE)
•Preferences for Activities of Children
• PAC
Revisions
Information on rationale for revisions not given

Author
• Gillian King
• Susanne King
• Peter Rosenbaum
• Marilyn Kertoy
• Mary Law
• Patricia Hurley
• Steven Hanna
• Nancy Young
Year
• 2004
Target population
• Ages
• 6-21
Purpose
• To determine activity preferences of children. The PAC is considered an extension of the

CAPE; however, it can be used independently (Hanna, 2004).
• Results can be used as an outcomes measure
• May be used as clinical tools

Type
• Self-administered or Interviewer-administered
Time
• Between 15-20 minutes
Materials
• Manual
• The PAC Record Forms
• 57 Activity Cards (including Example Items)
• 10 Category Cards
• The PaC Summary Score Sheets (combined in one booklet)
Training time
• 1-4 hours
Administration
• The assessment is not appropriate for children who are unable to recognize and sort activities

Scoring
• 6 dimensions of participation:
• Diversity
• Intensity
• With whom
• Where
• Enjoyment
• Preference
• Scores for these dimensions have 3 different levels
• Overall
• Domain
• Activity Type
Interpret
• Diversity- a number closer to 55 means the greater variety of participation
• Intensity: higher score indicates more time participating in activities
• With Whom: Low score reflects more solitary activities/ high score mean more social engagement
• Where: low score means the activities are more home-based/ high score indicates that activities are more community-based
• Enjoyment: higher rating means more pleasure from participating in the activities
• Preference: higher score refers to greater preference for activities overall, within a domain, or a

specific type (Hanna, 2004).

Reliability
• Internal Consistency-.76-.84
• Test-retest Reliability- .65-.75 for Overall Participation
Validity
• Test Content
• Typology of Activities
Rating
• 2

How to Use for Social Prescribing

The Children's Assessment of Participation and Enjoyment (CAPE) and the Preferences for Activities of Children (PAC) can be used together to identify the most suitable areas in the community for a child client by providing a comprehensive picture of their current activity involvement and personal interests. CAPE helps assess the diversity, intensity, and social and physical contexts of the child's participation in recreational and leisure activities, while PAC captures their preferences and enjoyment levels for various types of activities. By analyzing both assessments, practitioners can identify patterns in what the child currently engages in and what they would like to do more of, guiding the selection of community resources that align with their interests and promote meaningful participation. This ensures that chosen community areas and services not only support the child's development but also foster motivation, social inclusion, and long-term engagement.

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Children's Assessment of Participation and Enjoyment

Domain Scores

Child's name _____

Age _____ ☐ Male ☐ Female Date _____

Directions: The 55 CAPE items are categorized by Informal and Formal Domains. To calculate the CAPE Domain Scores, you will need to refer to the completed CAPE Summary Score Sheet for Overall Scores. For each activity dimension, transfer each of the child's responses by locating the CAPE item number in one of the Domain categories. Follow the scoring directions to calculate the child's CAPE Domain Scores.

Informal Domain

CAPE Item Number	Item Description	Diversity (0 No, 1 Yes)	Intensity (1 time in past 4 months; 2 times in past 4 months; 3 1 time a month; 4 2–3 times a month; 5 1 time a week; 6 2–3 times a week; 7 1 time a day or more)	With Whom (1 Alone; 2 With family; 3 With other relatives; 4 With friends; 5 With others)	Where (1 Home; 2 Relative's home; 3 In your neighborhood; 4 At school (but not during classes); 5 In your community; 6 Beyond your community)	Enj
1	Doing puzzles					
2	Playing board or card games					
3	Doing crafts, drawing or coloring					
4	Collecting things					
5	Playing computer or video games					
6	Talking on the phone					
7	Going to a party					
8	Hanging out					
9	Visiting					
10	Writing letters					
11	Entertaining others					
12	Playing with pets					
13	Writing a story					
14	Doing pretend or imaginary play					
15	Playing with things or toys					
31	Dancing					
32	Going for a walk or a hike					
33	Bicycling, in-line skating, or skateboarding					
34	Doing water sports					
35	Doing snow sports					
36	Playing on equipment					
37	Playing games					
38	Gardening					
39	Fishing					
40	Doing individual physical activities					
	Subtotals for each dimension Transfer these subtotals to the calculation section.	Diversity	Intensity	With Whom	Where	Enj

CAPE Domain Scores (*continued, page 2 of 3*)

Child's name _____ Date _____

Informal Domain (continued)

CAPE Item Number	Item Description	0 No, 1 Yes — Diversity	1 1 time in past 4 months, 2 2 times in past 4 months, 3 1 time a month, 4 2–3 times a month, 5 1 time a week, 6 2–3 times a week, 7 1 time a day or more — Intensity	1 Alone, 2 With family, 3 With other relatives, 4 With friends, 5 With others — With Whom	1 Home, 2 Relative's home, 3 In your neighborhood, 4 At school (but not during classes), 5 In your community, 6 Beyond your community — Where	1 Not at all, 2 Somewhat; sort of, 3 Pretty much, 4 Very much, 5 Love it — Enjoyment
41	Playing non-team sports					
42	Going to the movies					
43	Going to the public library					
44	Watching TV or a rented movie					
45	Going to a live event					
46	Going on a full-day outing					
47	Reading					
48	Listening to music					
49	Doing volunteer work					
50	Doing a chore					
51	Doing a paid job					
52	Making food					
53	Doing homework					
54	Shopping					
55	Taking care of a pet					

Subtotals for each dimension
Transfer these subtotals to the calculation section below.

	Diversity	Intensity	With Whom	Where	Enjoyment
Subtotal for Items Page 1					
Subtotal for Items Page 2					

Scoring Calculations

Follow the directions provided in each column to calculate the Informal Domain Score for each dimension.

	Diversity	Intensity	With Whom	Where	Enjoyment
Informal Domain Sums	+	+ ÷ 40	+ ÷	+ ÷	+ ÷
	Write sum in box below	Write total in box below	Write total in box below	Write total in box below	Write total in box below
Informal Domain Scores	Diversity Score	Intensity Score	With Whom Score	Where Score	Enjoyment Score

Preferences for Activities of Children

Domain Scores

Child's name _____ Age _____ ☐ Male ☐ Female Date _____

Directions: The 55 PAC items are categorized by Informal and Formal Domains. To calculate the PAC Domain Scores, you will need to refer to the completed PAC Summary Score Sheet. For each activity Domain, transfer the child's response for each item by locating the PAC item number in one of the Domain categories. Follow the scoring directions to calculate the child's PAC Domain Scores.

Informal Domain

PAC Item Number	Item Description	Score 1 2 3
1	Doing puzzles	
2	Playing board or card games	
3	Doing crafts, drawing or coloring	
4	Collecting things	
5	Playing computer or video games	
6	Talking on the phone	
7	Going to a party	
8	Hanging out	
9	Visiting	
10	Writing letters	
11	Entertaining others	
12	Playing with pets	
13	Writing a story	
14	Doing pretend or imaginary play	
15	Playing with things or toys	
31	Dancing	
32	Going for a walk or a hike	
33	Bicycling, in-line skating, or skateboarding	
34	Doing water sports	
35	Doing snow sports	

Informal Domain Subtotal (Column 1) _____

Preference Scores
1. Would not like to do at all
2. Would sort of like to do
3. Would really like to do

Informal Domain (continued)

PAC Item Number	Item Description	Score 1 2 3
36	Playing on equipment	
37	Playing games	
38	Gardening	
39	Fishing	
40	Doing individual physical activities	
41	Playing non-team sports	
42	Going to the movies	
43	Going to the public library	
44	Watching TV or a rented movie	
45	Going to a live event	
46	Going on a full-day outing	
47	Reading	
48	Listening to music	
49	Doing volunteer work	
50	Doing a chore	
51	Doing a paid job	
52	Making food	
53	Doing homework	
54	Shopping	
55	Taking care of a pet	

Informal Domain Subtotal (Column 2) _____
+ Informal Domain Subtotal (Column 1) _____

Informal Domain Sum _____

÷ 40

Preferences Score Informal Activities _____

Formal Domain

PAC Item Number	Item Description	Score 1 2 3
16	Doing martial arts	
17	Swimming	
18	Doing gymnastics	
19	Horseback riding	
20	Racing or track and field	
21	Doing team sports	
22	Learning to sing (choir or individual lessons)	
23	Taking art lessons	
24	Learning to dance	
25	Getting extra help for schoolwork from a tutor	
26	Playing a musical instrument	
27	Taking music lessons	
28	Participating in community organizations	
29	Doing a religious activity	
30	Participating in school clubs	

Formal Domain Sum _____

÷ 15

Preferences Score Formal Activities _____

Rock Climbing Social Prescribing Toolkit

Situation analysis

Pediatric disabilities and deficits in sensory processing could include: sensory processing disorders, motor disorders, and developmental disorders such as autism. These disorders and deficits negatively impact these children's ability to perform activities of daily living (ADLs) such as self-care, academics, play, social participation, and feeding, as well as instrumental activities of daily living (IADLs) like meal prep or chores, for example. Social Prescribing (SP) with top-rope rock climbing (TRC) would be beneficial for kids with a variety of disabilities and areas of dysfunction such as these as it would give them the opportunity to work on a variety of skills in a fun, recreational-based activity. Therapeutic climbing (TC) has been practiced amongst children with a variety of disorders and many benefits have been found in physical, and mental health. Implementation of a TRC program for therapeutic benefits may be affected as social prescribing is an emerging practice in the United States, especially in the field of pediatrics. Funding may also be a concern. Some parents may pay solely out of pocket for such programs. With SP, TRC would allow OTs to be billed through insurance since the child will be receiving OT. Coaches will be compensated by parents, and the link person would either be part of the collaborative program, and paid by parent, or they could be volunteers. Patients would be connected with rock climbing gyms that have the equipment and personnel that would be trained by occupational therapists (OTs). Pediatric occupational therapists help children develop skills needed to complete I/ADLs to promote participation and independence. One method to help address this is through sensory integration. Sensory integration refers to the neurological processes that determine how the brain gathers, interprets, and deciphers what to do with incoming sensory information. Providing children with SI in the form of rich multisensory experiences has been shown to improve the emotional, physical, cognitive, and social development of children with sensory processing difficulties.These OTs would act as link workers on how to work with these children that have sensory processing deficits. OTs would oversee the climbing sessions to observe the children's progress towards physical, social, and emotional goals. Children can be referred to this program from an OT familiar with the program or from other healthcare workers that are familiar with the program such as PTs, SLPs, therapists, and PCPs. Other similar programs have not been identified at this time.

1. **Assemble a Core Implementation Team**
   Implementation team
   - Expert supervisor (OT) and their role:
     i. Developed or just runs SP program
     ii. Educates and trains staff
     - Trains coaches on how to work with kids with sensory needs

        a. Sensory Integration basics
        b. Provides calming strategies for each child
    - Briefs coaches on needs of the children
    - Customize recs when child can't meet demands of program
    - Ensure the accessibility of of the physical location (fall risks, sensory)
    - Know when to refer to OT
        a. OT frameworks to guide data collection and program outcome measurements
  iii. Has hands on experience, knows skilled interventions, skillful clinical observations in the gym during sessions, knows sensory integrations, ideally knows the kids
- Link workers
  i. OT
  ii. Parents, caregivers, or other family members
  iii. Rock climbing staff
  iv. Volunteers
- Referral sources
  i. OTs
  ii. PTs
  iii. Social workers
  iv. Word of mouth
  v. PCPs
  vi. Teachers
  vii. Parents

2. Develop an Implementation Plan

- Using the Plan-Do-Study-Act to develop/assess implementation plan

:e: WHO

Concept

- The incorporation of the harness allows for more feedback for the client and there's more security, which can help them more freely and confidently participate in therapy.
- Sensory processing- how can it help patients orient themselves in space, address vestibular hyperactivity including movement intolerance and gravitational insecurity
- Target sensory processing, fine motor skills, gross motor skills, core strength, balance, motor planning, coordination, endurance, bilateral coordination, confidence, problem solving, visual skills, anxiety from vestibular dysfunction, anxiety in general.
- Climbing is an individual contact sport-a lot of these children may not like physical contact with others or want the social pressures and norms to try to identify and follow of group sports as well as group sports often having more complex, multi-step directions/rules

Sensory Integration theory says that tactile, visual, and vestibular are 3 sensory systems that work very close together. Top rope climbing allows for sensory-rich exposure in these areas. Proprioception helps to decrease sensory overload from the vestibular system. Tactile input is consistent with the use of equipment and the textures of the climbing surface.

- TRC provides opportunities to work on many skills:
    i. Gross Motor
        - Bilateral coordination
        - BUE strength
        - BLE strength
        - Functional Reaching
    ii. Balance
    iii. Weight Shifting
    iv. Weight bearing
    v. Lateral Flexion
    vi. Postural Control
    vii. Motor Planning
    viii. Hand-Eye Coordination
    ix. Fine Motor
        - Grip strength
        - Pinch strength
    x. Cognition
        - Problem-solving
        - Sequencing
    xi. Sensory Integration (particularly vestibular, i.e gravitational insecurity)
    xii. Reaction Time
    xiii. Emotional/Social
        - Trust
        - Self-Efficacy
            a. Self-mastery
            b. Bravery
            c. Willingness to try hard things
        - Social Skills-communication, appropriate level of arousal, boundaries
            a. Target pop
                i. Children with sensory deficits or dysfunction
                1. SPD (sensory processing disorder)
                2. Autism Spectrum Disorder (ASD)
                3. Attention Hyper-Deficit Disorder (ADHD)
                4. Developmental Coordination Disorder (DCD)
                5. Vestibular irregularities rooted in other ailments or disorders such as vestibular migraines, benign paroxysmal vertigo of

childhood (BPVC), and central nervous system disorders

b. How it can bring value
    i. Regulation through climbing through a sensory integration lens can allow for sensory modulation and regulation, allowing the child to be able to have the capacity to improve motor skills, cognition, and emotional, and social skills for improved performance in I/ADLs.
c. Anticipated needs
    i. Each child with sensory dysfunction is expected to be treated as an individual with an individual experience. As such, the child's behavioral patterns and anticipated needs are to be identified by the parent/caregivers of the child, the child, and their OT or other source of referral to the SP program.
    ii. The coach will be given information about the child and how to best work with them (i.e what are their triggers, what are their strengths, what works to regulate them).

xiv. Operational management

- Define:
    a. Program objectives
        i. The TRC program for children with sensory dysfunction is a leisure program overseen by OTs to create a sensory-friendly and enriching experience for children to improve motor skills, increase their tolerance to movement (particularly gravitational insecurity), provide children with risk-taking behaviors a safe outlet to climb and reach new heights, improve cognitive skills like attention, problem-solving, and sequencing. The program also will address social skills, helping kids learn to build trust, with graded levels of social interaction, increase self-efficacy, self-confidence and the ability to self-regulate.
    b. Roles for team
        i. OT
            1. Oversee the program
            2. Train coaches on sensory integration basics

3. Provides coaches with calming strategies for each child/Briefs coaches on needs of the children
4. Customize recs when child can't meet demands of program (i.e how to grade)
5. Ensure the accessibility of of the physical location (fall risks, sensory)
6. OT frameworks to guide data collection and program outcome measurements

ii. Coaches
1. Provide structure to the sessions
2. Belay the kids, instruct them on safety measures

c. How to keep stakeholders informed
i. Communication log for parents/guardians
ii. Communication log for coaches

d. A plan for long-term sustainability
i. Class lengths with therapeutic climbing have had varying numbers of session (i.e amount of weeks, # of sessions during the week)
ii. 2x/wk for 6 weeks for better carry over

e. Financial resources/staff time
i. OT
-Paid through insurance being billed for child that is receiving OT
ii. Link person
-Paid by parent
-Volunteer
iii. Coaches
-Paid by parent

xv. Referral pathway

a. How pt is connected to social prescriptions
i. Referrals from:
1. OT, PT
2. PCP
3. Therapists/counselors (mental health)
4. Social Workers

b. Who can take the role of link worker and are there existing positions that would be suitable for this role?
i. OT

ii. Volunteers

c. How will link workers remain connected and follow up with patients?

i. Link workers can use a variety of methods:

1. Follow-up calls and check-ins
    a. ID how the program impacted them, get feedback, offer continued support
    b. Talk about goals-the progress made from the climbing program, discuss other goals that may still need addressing
2. Schedule follow-up climbing sessions to continue progress
3. Offer caregivers the possibility to use an app to track progress over time and note observations seen in the kids
4. Share resources:
    -upcoming climbing activities or other suitable sports/activities for them, health tips, and any new resources in the community (such as other social prescribing programs or local support groups) could maintain a connection.
5. Surveys and feedback forms
    -to evaluate how the program went, what families found beneficial, and what they need help with going forward. This can help the link workers tailor future support and services.
6. Offer other long-term support
    -connect families with other professionals (such as counselors, physical therapists, or other community health workers) to ensure sustained holistic care

xvi. Community services

-Community services will be mapped based on location

-Each service will provide information on what the program offers, the targeted population, and what the service will offer (i.e TRC for serving children with sensory dysfunction that affects their physical, cognitive, social, and emotional well-being).
-Each community service will identify the capacity as to which they can serve at the time
-The program will be assessed for quality via receiving feedback from parents and coaches via communication logs

xvii. Monitoring and evaluation

i. Success is found when:
-Improvements in the child's health and/or well-being have been identified (i.e improved motor skills, regulation, sensory processing, social skills, ability to problem solve, they enjoy the program, etc)

b. Monitoring indicators (progress, output, outcome, impact; short and long term).
   i. Parents and/or coaches keep notes on how the program is affecting the child
   ii. Progress monitored through Goal Attainment Scale (GAS)
c. Establish timelines for implementation and evaluation.
   i. ID child's goals prior to engagement in the program
   ii. Climbing program is 2x/wk for 6 weeks
   iii. ID how the child is making progress through weekly notes from parents and coaches
   iv. ID how the child has been impacted by the program after the program has finished.
d. Determine how progress and outcomes will be measured.
   i. Observations by parents/caregivers, coach, OT/link worker, child self-report

xviii. Activities

- Pt assessed for social prescription by referral source
- Sample goals and objectives ID'd for children in OT to prepare them for the climbing program
- Children complete preparatory interventions with OT as needed (see intervention sheets)
- Children's baseline is to be documented by referral source
- Child starts the program

- Data collected by caregiver, coach, OT observation through communication logs

xix. Outcomes

a. Sections in surveys or paperwork to ask about different kinds of physical, emotional (i.e ability to self-regulate, maintain appropriate level of arousal, organization of behavior, etc), mental health (i.e anxiety, depression, self-mastery, self-confidence, self-efficacy), as well as different aspects of cognition, motor skills (GM, FM), social skills-trust, communication, etc).

xx. Impact

- Improved sensory modulation, motor, social, social/emotional skills in children with sensory dysfunction, furthering independence and ability in I/ADLs.

3. Community Resources

- There are no known social prescribing programs for top rope climbing at this time.
- In the valley, there are some youth TRC classes (i.e Alta,CMAX, Focus, Ability 360) there are a few companies that may do adaptive climbing at times (i.e for spinal injuries, blindness, etc) but no climbing courses for children with sensory impairments have been found at this time in Arizona.

4. Link Worker Training

i. Training on:

- What is social prescribing-the purpose and importance of it, who can benefit
- Roles and responsibilities of the link worker
- Knowledge of different available services
- Communication skills
- Social determinants of health
  a. I.e employment, housing, food, transport and access to green spaces)
  b. How social determinants of health can impact an individual's health and well-being, and how social prescribing can help address these issues.
- How to use tools to monitor and evaluate the pt's progress

- Link worker process:
  - The link worker gets connected with the pt through the OT that they are working with
  - The pt/caregivers of the pt fills out prior assessment forms

- Link worker goes over the forms

ii. The link worker either meets in person or calls/video calls the pt and their family/caregivers or just the caregivers (depending on the age of the pt?)
- Discusses the needs and wants of the patients and their caregivers.
- Discusses pathways to get to address/achieve their goals. (The link worker has a good understanding of what resources are available in the community). Training for this comes from….
- Discussion of what resources are available in the community
- Create a plan
    a. Get a baseline-give them forms (specific forms based on need) to evaluate how they are prior to connected with resources
    b. Connect them with resources that they have expressed interest in
    c. Book a time to follow up to see how the resource(s) impacted them after they connected with that resource (i.e after the climbing program finishes)

5. Monitoring and Evaluation

- To assess the program, a pre and post assessment will be taken
- Frequency of link workers connecting with patients and their families
    i. It is suggested that the first follow-up appointment takes place 2 weeks after the child starts utilizing the climbing program provided by the link provider
    ii. Follow up appointments can be about 20 mins and can be conducted via video call, in-person, or on the phone
    iii. It is up to the family to decide what is best for them. It is recommended that at the beginning, to create momentum meetings are more frequent and contact is reduced over time as patients make progress.
        a. Follow Up Questionnaire for the link worker to ask the patient and their parents/caregivers (see below)

Considerations

An informal interview was conducted with the manager at Bouldering Project (BP) to discuss her interest and perspective on how this social prescribing rock climbing program could be implemented at BP. She was very interested in bringing the program to her gym. She expressed that she has found that a lot of kids with autism, ADHD, and other forms of sensory dysfunction have frequented her gym and love climbing. Because so many children at the gym have such diagnoses, BP implemented a basic sensory training to give coaches a general knowledge about sensory dysfunction and how to work with kids that have it. It was discussed that before starting the program, it could be beneficial for an OT to do an initial training session for the coaches before the coaches. This training session would give more insight on sensory dysfunction, sensory integration, and how to best work with kids with such needs. The manager expressed that she would have enough staff to cover the program and would like to try out the program with having kids to coaches at a 4:1 ratio to best meet everyone's needs. She expressed that they don't do hands-on regulation, like squishing, but that they can hold hands, if necessary if in eye sight of another coach. When asked about what she thought would be a good length of time for the kids to be enrolled in the program, she stated that 3-4 months would most likely be best for kids to get started and then they could always continue on as well if they so choose. She explained that it takes about a month for the kids to get comfortable and learn the basic skills. After that point, they can build on those skills. She stated that parents wouldn't have to commit financially to 3-4 months, but that they could take it one month at a time. She stated that 1-2 hour sessions would probably be best. AT BP, they currently require Safesport and CPR. BLS is encouraged but not mandatory, and seasonal instructors aren't required to have a fingerprint clearance card, but full time employees are. She expressed that the only thing that she would have to look into prior to taking on the program would be discussing with her legal team if there are any extra liabilities and corresponding procedures that they would need to address (i.e changing wording in waivers) prior to starting the program.

Pediatric Social Prescribing Patient Pre-Program Assessment Form

This form is designed to better understand your child's needs, preferences, and goals to support their overall well-being and access appropriate services and activities.

Demographic Information

1. **Child's Full Name**: _____
2. **Date of Birth**: _____
3. **Gender**: _____
4. **Address**: _____
5. **Primary Caregiver's Name**: _____
6. **Relationship to Child**: _____
7. **Contact Number**: _____
8. **Emergency Contact Name**: _____
9. **Emergency Contact Number**: _____
10. **School/Daycare** (if applicable): _____

Conditions the Patient Has

Please indicate any of the following conditions or concerns your child may have:

- ☐ Physical Health Issues (e.g., asthma, allergies, etc.)_____
- ☐ Mental Health Issues (e.g., anxiety, depression, etc.)_____
- ☐ Developmental Delays or Disabilities_____
- ☐ Behavioral Concerns (e.g., attention, hyperactivity, etc.)_____
- ☐ Chronic Conditions (e.g., diabetes, epilepsy, etc.)_____
- ☐ Dietary Needs or Restrictions (e.g., vegetarian, gluten-free, etc.)_____
- ☐ Sensory Issues (e.g., sensitivity to noise, light, touch, etc.)_____
- ☐ Other (please specify): _____

Lifestyle and Daily Routines

1. **How would you describe your child's general level of activity?**

- ☐ Very active
- ☐ Moderately active
- ☐ Low activity
- ☐ Sedentary

2. **Does your child engage in any physical activities or sports? If yes, please list them.**
   - _____
3. **Does your child participate in any creative activities (e.g., drawing, music, dance)?**
   - ☐ Yes
   - ☐ No
   - If yes, please describe: _____
4. **What is your child's typical sleep routine?**
   - Bedtime: _____
   - Wake-up time: _____
   - Does your child have any trouble with sleep? (e.g., difficulty falling asleep, nightmares) ☐ Yes ☐ No
5. **How would you describe your child's eating habits?**
   - ☐ Healthy and balanced
   - ☐ Occasional unhealthy choices
   - ☐ Picky eater
   - ☐ Other (please specify): _____
6. **How much screen time does your child have daily (e.g., TV, tablet, computer)?**
   - ☐ Less than 1 hour
   - ☐ 1-2 hours
   - ☐ 2-3 hours
   - ☐ More than 3 hours
7. **Does your child spend time outdoors daily?**
   - ☐ Yes
   - ☐ No

What Matters to Your Child

1. **What are the most important things in your child's life right now?**

- _____

2. **What does your child enjoy doing the most?**
   - _____
3. **Does your child have any worries or concerns that they talk about frequently?**
   - ☐ Yes ☐ No
   - If yes, please describe: _____
4. **What does your child want to learn or explore?**
   - _____

Goals and Aspirations

1. **What are your child's short-term goals (e.g., in the next few months)?**
   - _____
2. **What are your child's long-term goals (e.g., in the next few years)?**
   - _____
3. **What are the main challenges preventing your child from reaching their goals?**
   - _____
4. **What support do you think your child needs to reach these goals?**
   - ☐ Physical health support
   - ☐ Mental health support
   - ☐ Social or peer interaction
   - ☐ Educational support
   - ☐ Other (please specify): _____

Interests and Hobbies

1. **What activities does your child enjoy the most (e.g., arts, sports, reading, games)?**
   - _____

2. **Are there any new activities your child would like to try?**
    - ☐ Yes ☐ No
    - If yes, what activities? _____
3. **Does your child enjoy spending time with other children or prefer solitary activities?**
    - ☐ Enjoys group activities
    - ☐ Prefers solitary activities
    - ☐ A mix of both
4. **What community activities or services do you think your child would benefit from?**
    - ☐ After-school programs
    - ☐ Sports or exercise clubs
    - ☐ Arts or music programs
    - ☐ Volunteering opportunities
    - ☐ Peer support groups
    - ☐ Other (please specify): _____

Additional Information

How does your child best feel supported? (i.e things people may want to know about your child and their life)

_____

_____

Is there anything else you'd like to share about your child's health, preferences, or needs that could help in creating a support plan?

- _____

_____

Caregiver's Signature: _____
Date: _____

Pediatric Social Prescribing Patient Post-Program Assessment Parent Survey

Demographic Information

11. **Child's Full Name**: _____
12. **Date of Birth**: _____

We appreciate your feedback! Please complete this survey to help us improve our Sensory Integration Rock Climbing Program.

1. **How would you rate your child's overall experience in the program?** (Circle one)
    - Excellent
    - Good
    - Fair
    - Poor
2. **What improvements have you noticed in your child since starting the program?** (Check all that apply)
    - ☐ Better coordination and motor skills
    - ☐ Increased strength and endurance
    - ☐ Improved self-regulation and focus
    - ☐ Greater confidence and self-esteem
    - ☐ Enhanced social interaction skills
    - ☐ Other: _____
3. **Did your child enjoy the rock climbing sessions?** (Circle one)
    - Yes, very much
    - Somewhat
    - Not really
    - No, not at all
4. **What aspects of the program did your child enjoy the most?**

    _____
5. **Were there any challenges or difficulties your child faced during the program?**

    _____
6. **What additional support do you think could help your child reach their goals?**

    _____
7. **Would you recommend this program to other families?** (Circle one)
    - Yes
    - No

- Maybe

8. **Are there any changes you would like to see in the program?**

_____

Link Person Follow-Up Questionnaire

1. Can you list 2 things that have gone well?

_____

2. Were there any challenges or difficulties observed? How were they addressed?

3. Have there been any notable improvements in motor skills like coordination, strength, or endurance?

4. Has the child demonstrated any improvements in self-regulation and focus during the session?

5. Is there anything new with how the child has been interacting with peers or instructors during the sessions?

THERAPY ON THE ROCKS

A SENSORY INTEGRATION ROCK CLIMBING PROGRAM FOR KIDS!

Helping kids reach new heights-physically, mentally, and emotionally!

Benefits of the Program

- Enhance sensory processing skills
- Boost confidence and social skills
- Encourages motor planning, balance, and coordination
- Build strength and endurance
- Foster self-regulation, focus, and attention
- Develop problem-solving skills
- Lower anxiety relative to vestibular/sensory challenges

Program Features

- Guided climbing sessions overseen by experienced climbing coaches and occupational therapists
- Customized climbing routes to cater to different levels, needs, and abilities
- Small group and one-on-one sessions available

More Information:

- Location: (facility name and address)
- Schedule (dates)
- Contact Us: (phone #, email, website)

Who Can Benefit?

Children with sensory processing challenges can thrive in this program!

Why Top-Rope Climbing?

- Sensory Integration theory tells that that tactile, visual, and vestibular sensory systems work very close together. Top rope climbing allows for sensory-rich exposure in these areas. Proprioception (pressure/movement of the hands and feet against the rocks and harness) helps to decrease sensory overload from the vestibular system.
- Incorporation of the harness allows for more feedback for the client and there's more security, which can help them more freely and confidently participate.
- Vestibular rehabilitation-it help patients orient themselves in space, address dizziness/vestibular hypersensitivity, address anxiety associated with dizziness/vestibular hypersensitivity.
- Climbing is an individual contact sport-good for kids sensitive to contact with others
- Climbing has one main rule/objective-get to the top of the wall-good for kids that need simpler rules to follow as well as for kids that like to see tasks through in their entirety

Sensory Processing Handout: Sensory Processing, Sensory Integration, and the Benefits of Rock Climbing

What is Sensory Processing? Sensory processing gives name to the neurological processes that determine how the brain organizes, interprets, and deciphers what to do with incoming sensory information. This includes sensory information from the five traditional senses (sight, sound, touch, taste, and smell), as well as proprioception (body awareness), vestibular input (movement and balance), and interoception (internal body signals). Some children may experience sensory processing difficulties, leading to over-or under-responsiveness to sensory stimuli in one or more sensory systems. This may lead to trouble with motor tasks, self-regulation, social skills, academics, and participation in other tasks that are functional or meaningful in their lives. Occupational therapy (OT) can help support sensory processing through using sensory integration.

What is Sensory Integration?

Sensory Integration (SI) is a theory that was developed by Jane Aryes in 1972 and is a modality for how occupational therapists can help children act on incoming sensory information-giving the different sensory systems what they need, and modulating them. Providing children with SI in the form of rich multisensory experiences during OT intervention has been shown to improve the emotional, physical, cognitive, and social development of children with sensory processing difficulties.

How Rock Climbing Helps with Sensory Integration

Sensory Integration theory says that tactile, visual, and vestibular are 3 sensory systems that work very closely together. Top rope climbing allows for sensory-rich exposure in these areas. It is also important to note that proprioception helps to decrease sensory overload from the vestibular system. Rock climbing provides a lot of proprioceptive input from pushing and pulling oneself up the wall, as well as providing input to the hips from the harness. This proprioceptive input can help modulate other hypersensitized systems as a child works their way through different sensations as they climb up the wall.

Rock climbing is a powerful therapeutic tool in pediatric occupational therapy, offering a unique way to address sensory processing challenges. Benefits also include:

- **Vestibular & Proprioceptive Input:** Climbing engages the vestibular system by requiring balance and movement in space while also providing proprioceptive feedback through gripping, pulling, weight bearing, and stepping. It also gives children a safe and

secure environment to practice linear movement as when being lowered down to the ground.

- **Motor Planning & Coordination:** Climbing requires children to coordinate and plan body movements as well as develop body awareness.
- **Tactile Processing:** Handling different climbing holds, textures, and surfaces provides children with different tactile inputs.
- **Emotional Regulation & Confidence:** Overcoming climbing challenges gives children a sense of self-mastery, building confidence, self-esteem, and problem-solving skills. Children also can learn to build trust and develop social skills as they work with a belaying partner.
- **Core Strength & Endurance:** Climbing enhances strength, endurance, and overall physical fitness, supporting functional activities that they participate in their daily lives.

Preparatory Interventions for Rock Climbing

Interventions are written loosely as goals or as something to put in the 'objective" section

Interventions for: grip strength, pinch strength, BUE strength, force modulation, eye-hand coordination, crossing midline, weight-bearing (WBing), functional reaching (fxl reaching), balance, postural control, lateral flexion, weight-shifting, bilateral coordination, motor planning, visual scanning

For grip strength:

- Pt will engage in grip-strengthening activities (e.g., grip exercises using therapy putty or stress balls) for 5-10 minutes, three times a week, with 80% accuracy in completing the task as measured by the OT's observation.
    - Pt will place/remove items in putty for grip strength for increased function in I/ADLs.
    - Card matching activity with blue Can-Do resistance clips with tip pinch and lateral pinch for INC grip strength and FMC.
    - Pull out ball of blue (firm) putty. Squeeze in hand for 5 seconds for grip strength, 2x with thumb on it, per BUE then 3x without thumb on it.
    - In sitting, pt participated in squigz pattern matching activity for FMC and grip strength for increased function in I/ADLs.
    - In sitting, pt participated in cone/weighted ball activity, reaching to touch corresponding cone as given by OTS for fxl reaching, UE (shoulder) strengthening, cognition-attention, gross dexterity, grip strength.
    - In sitting, pt participated in BUE functional grasps (gross grasp, tripod pinch, tip pinch) of 2.2 lb weighted ball with forward reach for cone taps x5 each rep, 10x3 each grasp per BUE pattern for grip strength (gross, 3 jaw chuck, tip pinch).
    - Pt will use hole punch to create confetti for crafting activity for increased grip strength for better function in I/ADLs.
    - Pt will "milk" the cow (prick the end of a glove and fill with water) by squeezing the fingers of the glove
    - Pt will use a spray bottle to squeeze water onto chalk to clean it off, for grip strength for increased function in I/ALDs.
    - Pt will squeeze glue bottle to squeeze letters out of glue for grip strength for increased function in I/ALDs.
    - Pt will pull a laundry basket full of items by pulling a rope for grip strength for increased function in I/ALDs.
    - Pt will pull a rope HOH with a weighted object at the end such as a scooter board with items on top for grip strength for increased function in I/ALDs.
    - Pt will grasp and lift different cans for grip strength for increased function in I/ALDs.

    - Pt will play with Pop Toobs for grip strength for increased function in I/ALDs.
    - Pt will place/remove squigz onto wall, therapy ball, or dry erase board for grip strength for increased function in I/ALDs.

For pinch strength:

- -Seated, BUE to pull pieces off of theraputty, followed by roll into small balls, squeeze for 5 second hold for grip strengthening, re roll into ball and place on desired target (specific state of US Map, called out by OT) to address FMC, pinch/grip strength, calibration, IHM, visual scanning, and visual motor planning, and short term memory, approx 13 min
- -FMC and tip pinch to wrap rubber bands around small figurines 3x with L hand. Followed by sustained tip pinch and bilateral coordination to undo and remove rubber bands. Additional grip strengthening task to retrieve and transfer small figurines into tub with resistive tennis ball. Approx 20 min.
- In sitting, pt to follow step by step instructions creating "cookies" with blue resistive (firm) putty and beads requiring GMC to roll out the putty, distal strength/grip/pinch to pull out the putty, cut out the cookies, FMC to place beads on top, and sequencing to follow step by step directions. Additional task to use spatula to transfer cookies from tabletop to plate. Pt created 8 "cookies"
- In sitting, pt to make “snakes” out of putty for grip/pinch strength
- In sitting, pt to make “pumpkin, Christmas tree, Easter eggs, hearts, other seasonal object ” out of putty for grip/pinch strength. Pt to use beads to decorate object.
- Pt will use a stapler to staple staples in a heart around a craft for pinch strength for increased function in I/ALDs.
- Pt will remove/place marker lids onto the correct color of markers for pinch strength for increased function in I/ALDs.
- In sitting, pt will pinch blue resistive (firm) putty, roll into logs, and form a maze. Additional task to take an item (i.e pingpong ball) through the maze

Eye-Hand Coordination

- Pt will play bean bag tossing game for eye-hand coordination for increased function in I/ADLs
- Pt will participate in playing darts for eye--hand coordination for increased function in I/ADLs.
- Pt will participate in squirting squirt guns at targets for eye--hand coordination for increased function in I/ADLs.
- Pt will participate in using tongs to _____for eye-hand coordination and force modulation for increased function in I/ADLs.

- Pt will participate in golf tee hammering into a box for eye--hand coordination for increased function in I/ADLs.
- Pt will participate in playing catch for eye--hand coordination for increased function in I/ADLs (grade up-distance, weight and size of ball)

Crossing Midline

- Pt will erase large whiteboard after drawing for crossing midline for increased function in I/ADLs.
- In (sitting or standing), pt will play matching game x20 using yellow Can-Do clips for pinch strengthening and crossing midline. Extra challenge added by wearing 2# WW for BUE strengthening and increased function in I/ADLs.
- In (sitting or standing), pt will paint on a canvas for crossing midline for increased function in I/ADLs.
- In (sitting or standing), pt will use ____pinch to place ___Can-Do clips onto a string for crossing midline and pinch strength for increased function in I/ADLs.
- In sitting, pt will participate in make-shift trail-making test for crossing midline for increased performance in I/ADLs.

Weight-bearing

(can grade up/down by adding obstacles to navigate, change distance traveled,

- Pt will participate in animal walks for increased BUE strength for increased function in I/ADLs
- Pt will participate in yoga for increased BUE strength for increased function in I/ADLs
- Pt will participate in wall push ups for increased BUE strength for increased function in I/ADLs
- Pt will participate in crawling through lycra tunnel for increased BUE strength for increased function in I/ADLs
- Pt will participate in crab kicks, kicking a ball back/forth with a peer for increased BUE strength for increased function in I/ADLs
- Pt will participate in race (crab walking, wheelbarrow) for increased BUE strength for increased function in I/ADLs
- Pt will participate in crab volleyball for increased BUE strength for increased function in I/ADLs
- https://www.instagram.com/kidsphysio.aberdeen/reel/C6aiUdeIx0R/?epik=dj0yJnU9bjliTHBoYk5sdU0yeVdIaFc3RE9ac1ZQYkRLWkJqdkcmcD0wJm49dGowUlFRRkNRTC1HZlRZcmxnWnJqQSZ0PUFBQUFBR2U2bjhB
- Pt will participate in scavenger hunt on dynamic quadrupod for increased BUE strength for increased function in I/ADLs
- In prone, pt will participate in swings by pushing against the floor in a hammock swing for increased BUE strength for increased function in I/ADLs

- In prone on therapy ball, pt will use BUE to grab ring off to the side and place into stack on other side for WBing, BUE strengthening, core strengthening, for increased performance in I/ADLs.

Functional Reaching

- Pt participated in cooking activity for BUE reaching for increased performance in I/ADLs
- Pt participated in cleaning/organizing shelves for BUE reaching for increased performance in I/ADLs.
- In sitting, pt will participate in card matching activity for functional reaching for increased performance in I/ADLs.
- In sitting, pt will participate in block stacking activity for functional reaching for increased performance in I/ADLs.
- In sitting on platform swing, pt participates in placing/removing yellow Can-Do clips onto 4 ropes holding up the swing for ___pinch strength, functional reaching, postural control, and crossing midline for increased functional performance in I/ADLs.
- In standing, pt will place (play dough, theraputty) onto mirror in different planes for fxl reaching, grip/pinch strength, crossing midline for increased performance for I/ADLS. Additional task to place (beads, gems) into putty.
- In standing/stooping (grade up with bosu ball), pt will place squigz onto mirror in different planes. Additional task to place color-corresponding rings onto squigz. Activity done for fxl reaching, balance, hand-eye coordination, grip strength, crossing midline, BLE, BUE strengthening (if WW involved) for increased performance in I/ADLs.

Balance & Postural Control & Weight Shifting

- Pt will participate in walking on balance beam for balance for increased performance in I/ADLs.
- Pt will participate in completing a puzzle while sitting on (therapy ball, glider swing) for postural control, weightshifting for increased performance in I/ADLs.
- Pt will participate in playing darts while on (balance beam,bosu ball) for balance for increased performance in I/ADLs.
- Pt will participate in hopscotch for (balance, motor planning) for increased performance in I/ADLs.
- Pt will participate in obstacle course with (_____) for (_____) increased performance in I/ADLs.
- In standing, pt will stoop to place/remove __squigz from flexion disc for balance for increased performance in I/ADLs.
- In standing, pt will play fishing game on balance board for balance for increased performance in I/ADLs.

- From stooping to standing on bosu ball, pt will follow tape maze on wall for increased balance, BLE strengthening, crossing midline, and functional reaching for increased performance in I/ADLs.
- Pt will play "The Floor is Lava" with stepping stones (grade up=farther apart, different heights/widths) for improved balance for increased performance in I/ADLs.
- Pt will complete a puzzle or task at waist level in standing on one leg (as tolerated i.e 10-15s, switching legs) for balance

Lateral Flexion & Weight Shifting

- Pt will participate in lateral flexion by performing _____ in a __point obstacle course for increased performance in I/ADLs
- Pt will participate in crescent moon pose, held for 10s to each side for lateral flexion for increased performance in I/ADLs.
- Pt will participate in bending/reaching games for lateral flexion for increased performance in I/ADLs.
- In standing, pt will participate in picking up/placing down weighted objects side to side for lateral lateral flexion for increased performance in I/ADLs.
- In sitting on peanut with legs on either side, pt will reach to each side to pick up bean bags to place them in the basket at midline for lateral flexion, postural control, weight shifting for increased performance in I/ADLs.
- In sitting on peanut with legs on either side, pt will reach to each side to pick up colored cubes to place them into color corresponding cups for lateral flexion, weight shifting, crossing midline, and postural control for increased performance in I/ADLs.

Bilateral Coordination and Motor Planning

- Pt will participate in Simon Says for bilateral coordination for increased performance in I/ADLs.
- Pt will participate in stringing beads with BUE for bilateral coordination for increased performance in I/ADLs.
- Pt will participate in an obstacle course for bilateral coordination for increased performance in I/ADLs.
- Pt will participate in balloon volleyball for bilateral coordination in BUE for increased performance in I/ADLs.
- Pt will participate in building blocks or legos for bilateral coordination in BUE for increased performance in I/ADLs.
- Pt will catch/throw a ball for bilateral coordination and motor planning for increased performance in I/ADLs.
- Pt will participate in sorting/matching activity for bilateral coordination for increased performance in I/ADLs

- Pt will participate in cooking task for BUE bilateral coordination for increased performance in I/ADLs.
- Pt will participate in lacing task for BUE bilateral coordination for increased performance in I/ADLs.

Vestibular (for kids with hypersensitivities, gravitational insecurity)

- https://soundsory.com/vestibular-exercises/
- Alternatives for kids in P.E with vestibular hypersensitivity https://sensory-processing.middletownautism.com/sensory-strategies/strategies-according-to-sense/vestibular/over-responsive/
- Pt will participate in climbing in an obstacle course for movement tolerance for vestibular hypersensitivity for increased performance in I/ADLs.
- On a platform swing, in prone, pt will reach to place ball on top of cone for fxl reaching for increased performance in I/ADLs.
- Pt will participate in yoga for movement tolerance in different planes for vestibular hypersensitivity for increased performance in I/ADLs.
- Pt will participate in linear movement (swinging, rocking) with feet on the floor with a weighted aid for muscle compression (lap pad, weighted vest, being held in a tight hug) for movement tolerance for increase performance in I/ADLs.
- Pt will participate in rotary movement with feet on the floor with a weighted aid for muscle compression (lap pad, weighted vest, being held in a tight hug) for movement tolerance for increase performance in I/ADLs.
- Pt will play "don't touch the lava" with stepping stones of different heights for improved gravitational security and tolerance to movement, balance for increased performance in I/ADLs.
- Pt will walk on uneven surfaces (crash pads, gym mats, pillows, etc) with a puzzle or task at the end. Continue walking across the surfaces until the task is completed for for improved gravitational security and tolerance to movement, balance for increased performance in I/ADLs.
- Pt will participate in hula hoop activities (jumping through hula hoop after lifting it over head, hula-hooping around hips) for increased tolerance to movement for increased performance in I/ADLs.
- Pt will follow pictures with eyes, turning head in different directions with (busy background in standing or no background while walking) for tolerance of movement to increase performance in I/ADLs.
- Pt will balance on one leg with eyes closed for 5s with Min distress as observed on ¾ trials for increased tolerance of movement for increased performance in I/ADLs.
- Pt will participate in a task (i.e playing a game or completing a puzzle) while sitting on dynamic object (i.e therapy ball, peanut, swing, trampoline, etc) with feet on the floor for

movement tolerance) (grade up by lifting feet off of ground as tolerable) (grade down by using prop aid ((lap pad, weighted vest, being held in a tight hug)
- Pt will jump on trampoline while holding on for tolerance to movement (prop while getting vestibular) as tolerated for increased tolerance of movement for increased performance in I/ADLs.
- Pt will complete an activity while sitting on a platform swing (grading up by holding swing still>not holding it and not getting pushed>slight pushes as tolerated)
- Pt will jump off of surfaces with varying heights as tolerated for increased tolerance of movement for increased performance in I/ADLs.
- Pt will swing by trapeze from a raised surface (grade by height,width, solidness) as tolerated for increased tolerance of movement and gravitational insecurity for increased performance in I/ADLs.
- https://www.youtube.com/watch?v=Gfeqnk43kBg
- https://neurolaunch.com/gravitational-insecurity-occupational-therapy/
- See Handout at end of document

Core Strength:
- Pt will be in plank position, walking on hands going over different-heighted obstacles for core strength, postural stability, endurance, and BUE strengthening for increased performance in I/ADLs. https://www.pinterest.com/pin/211174976886028/
- Starting from supine in full extension, pt will grab a ring from above their head with BUE, moving into a sit up position and place on top of ring at feet at midline for core strengthening for increased performance in I/ADLs

Reaction Time
- In standing, pt will tap blaze pods with their foot as the lights go off for reaction time, BLE coordination, motor planning for increased performance in I/ADLs. (grade up by standing on bosu ball)
- In standing pt will tap blaze pods with UEs as the lights go off for reaction time, GM coordination, fxl reaching, for increased performance in I/ADLs. (grade up by standing on bosu ball, wearing WWs)
- Pt will hop over the “snake” for reaction time for improved performance in I/ADLs.
- Pt will jump rope for reaction time for improved performance in I/ADLs.
- Pt will play “red light, green light” (can be with a peer) to the finish line for reaction time for improved performance in I/ADLs. (can be in standing, can be with climbing activities, can be with obstacle course)
- Pt will play musical chairs for reaction time for improved performance in I/ADLs.
- Pt will play balloon volleyball for reaction time for improved performance in I/ADLs. (also practices slowing down movements, controlling movements, body awareness)

Proprioception/Body Awareness

- Heavy work
    - In standing, the pt will carry a laundry basket full of items as part of an obstacle course for proprioception for increased performance in I/ADLs.
    - Pt will do animal walks for proprioception for increased performance in I/ADLs.
    - Pt will push a weighted ball through a tunnel for proprioception for increased performance in I/ADLs.
    - In standing, pt will push a therapy ball /weighted ball up the wall with their hands until fatigue for proprioception for increased performance in I/ADLs.
- Jumping
    - Trampoline games (if trampoline available)
    - Pt will play Leap Frog with a peer for proprioception for increased performance in I/ADLs.
    - Pt will zipline and crash into the crashpad for proprioception for increased performance in I/ADLs.
- Climbing
    - Pt will climb on monkey bars and crash into the crashpad for proprioception for increased performance in I/ADLs.
    - Pt will climb on rock wall and crash into the crashpad for proprioception for increased performance in I/ADLs.
- Deep Pressure
    - Pt will engage in washer/dryer (2 lycra swings set up at 1 pt, pt to be bounced in one, twisted/spun in other) for proprioception for increased performance in I/ADLs.
    - Pt will get into acrobat swing, moving through each layer to find stuffed animals for proprioception for increased performance in I/ADLs.
    - Pt will engage in crash pad squishes (can be a burrito, taco, sandwich and add ingredients or number of tacos OT wants) for proprioception for increased performance in I/ADLs.
    - Pt will used weighted (blanket, lap pad, stuffed animal) during (task here) for proprioception for increased performance in I/ADLs.
    - Pt will play catch with weighted ball for proprioception for increased performance in I/ADLs.
    - Pt will play with playdough or knead putty for proprioception for increased performance in I/ADLs.
    - Pt will wear weighted vest while participating in a task for proprioception for increased performance in I/ADLs.

Visual Motor Skills: Visual Scanning

- Pt will participate in a scavenger hunt for visual scanning for increased performance in I/ADLs.
- Pt will participate in "I Spy" for visual scanning for increased performance in I/ADLs.
- Pt will watch a ball roll back and forth with just moving their eyes for visual scanning for increased performance in I/ADLs.
- Pt will play "hide and seek" for visual scanning for increased performance in I/ADLs.
- Pt will participate in color-matching games for visual scanning for increased performance in I/ADLs.
- Pt will play a matching game for visual scanning for increased performance in I/ADLs.

Coping Strategies

- Zones of regulation curriculum
- Breathing exercises
    - Pt will participate in "take 5" breathing for self-regulation for increased performance in I/ADLs.
        - 1. Stretch your hand out like a star
        - 2. Get the pointer finger of your other hand ready to trace your fingers up and down
        - 3. Slide up each finger slowly-slide down the other side
        - 4. Breathe in through your nose and out through your mouth
        - 5. Put it together and breathe in as you slide up and breath out as you slide down
        - Keep going until you have finished tracing your hand.
        - Ask if they are calm now or if they would like to take another 5 breaths
    - Pt will participate in "candle" breathing for self-regulation for increased performance in I/ADLs.
        - Breathe in through your nose like you are smelling flowers
        - Breathe out through your mouth, pretending like you are blowing out a candle.
        - Breathe in again, imagining the sweet scent filling your body.
        - Breathe out, making sure that candle is completely blown out.
    - Pt will participate in belly breathing for self-regulation for increased performance in I/ADLs.
        - Put your hands on your belly, and inhale slowly and deeply for four seconds.
        - You should feel your stomach moving out as you suck in the air. If your breath is still in your chest, it's too shallow.
        - Hold the breath for seven seconds, then slowly release it over eight seconds.

- Five Senses
    - Pt will participate in identifying something in the room for each of their 5 senses (something they can touch, see, hear, taste, smell) for self-regulation for increased performance in I/ADLs.
- Pt will participate in blowing bubbles for self-regulation for increased performance in I/ADLs.
- Pt will play (duck, duck, goose or freeze tag) for self-regulation for increased performance in I/ADLs. (works on social, motor skills, waiting, reaction time)
- Pt will play (Hedbanz) for self-regulation for increased performance in I/ADLs. (works on social,, waiting, inhibition-not shouting out)
- Mental imagery for challenging situations (overcoming it or watching it pass, etc)
- Self-advocacy activities

HELPING YOUR INFANT or TODDLER EXPERIENCE MOVEMENT

Source: OSNS Child Development Centre, 2010; Reviewed by Sunny Hill Health Centre for Children, 2018

Children with **gravitational insecurity** may not feel safe when moved quickly or raised off a stable surface. The child may prefer to stay low to the ground (lying down or seated) and may be stiff so as to prevent movement. The child may also avoid physical tasks and may become quite upset when movement occurs, especially if it is unexpected.
These are some activities to help your child become more comfortable with movement:

- It is important to introduce these activities in a slow, gentle manner while respecting your child's limits.
- Ensure the activities are fun and not distressing.
- If your child indicates they don't like the activity, then stop immediately.
- Start by providing lots of support - as much as your child needs - and then gradually reduce the support over a period of days, weeks or months.

- **Rowboat**: Sit facing each other, legs in a V. Hold each other's hands and press your toes or the soles of your feet against your child's (you may need to bend your knees). Sing "Row, Row, Row Your Boat", while pushing and pulling each other's hands. Row backwards and forwards as far as you can.
- **Fishing Boat**: Start by lying on your back and hugging your child against you. When ready, bring your knees to your chest, ankles together. Have your child lie on your shins, straddling your ankles. For more security your can hook your toes outward and anchor them around the back of your child's thighs. Hold his hands or shoulders. Rock back and forth from head to toe as if riding the waves. Finish with a nice hug.

- **Airplane:** Lie on your back, knees bent, toes pointing outward. Place your child on your knees and lower legs and your hands under your child's chest. Gently rock up and down and side to side. Gradually progress to taking your child's hands in yours, placing your feet on his lower tummy and lifting him up for a smooth take-off. How high can the little airplane fly?
- **Horsey**: Kneel and have your child come behind you and put his arms around your neck. Hold his hands with one hand to help him orient his body and to protect yourself from being strangled!! Gradually lower your other hand to the ground until your back is horizontal. Progress to having your child straddle your back and Take him for a horse ride.
- **This Is The Way The Lady Rides**: Hold your child on your lap and sing "This Is The Way The Lady Rides" to the tune of "Here We Go Round The Mulberry Bush". Start by bouncing gently for the first ride, then more vigorously up and down for the second and then alternately raising and lowering your legs so that your child tips more to the left and right for the third ride.

  "This is the way the lady rides, the lady rides, the lady rides,
  This is the way the lady rides, so early in the morning.
  This is the way the gentleman rides…
  This is the way the cowboy rides…"

- **Car Ride:** Go for a "car ride" by pulling and pushing your child along the floor in a laundry basket.
- **Jumping:** Hold your child around the waist and slowly/gently help him to jump up and down on a couch or bed. You can then help him "fall" as this gives him experience in a safe environment. You could bounce him up and down and sing "Ring Around the Rosie" and help the child "fall down" at the end. This then becomes predictable and hopefully your child can start to predict the fall.

OT Interventions for While on the Rockwall

Background info for interventions:

- Heights of the walls
    - Shorter walls are about 10m, but walls can range up to 18m indoors. For the purposes of this project, I am thinking that the kids that I would work with would start on the 10m walls and then if they feel comfortable and have the endurance, they can grade up and move to taller heights. Some rock gyms will have a variety of heights.

Climbing the routes as they are set but tailoring to the child's needs:

- Rock wall settings go from 5.0 up to 5.15+ (rare). The higher the number, the harder the climb
- The levels look as follows:
    - 5.0, 5.1, 5.2, etc increasing the skill level up to 5.10. At 5.10, the skill level increases alphabetically, (i.e 5.11a, 5.11b, 5.11c, 5.11d). This a-d range is repeated up to 5.15+. Most gyms stop at 5.13 levels.
- The rock wall will be set either by the OT or by rock climbing personnel and for beginners will be between a 5.0-5.5.
- As children need increased difficulty, they can go up grades.
- The child will climb the route which will automatically have them working on many different things: i.e vestibular due to linear movement of going up and down the wall, visual skills due to searching out proper holds, tactile skills due to making contact with the holds on the wall and the harness, proprioception due to pushing/pulling/lifting body up the wall.
- Adding tactile or visual cues to routes to get them to better attend, sequence, remind them what to do and when
    - Place appropriate colored rings onto holds
    - See Kaplan et. at., 2019 for stimulus-fading and errorless learning methods
        - Place framed pieces of colored paper to outline the corresponding holds

OT goals for Top Rope Climbing (TRC) as an intervention:

Fine (FM) and Gross Motor (GM) Skills

- **Objective:** Improve hand-eye coordination and fine motor control by completing climbing routes with appropriate grip and hand placement on holds.
    - **Sample Goal:** Pt will independently grip and release climbing holds using proper technique (e.g., open-hand grip or pinch grip) during 80% of climbing sessions.
- **Objective:** Improve balance and gross motor coordination through climbing.

    - **Sample Goal:** Pt will demonstrate the ability to maintain balance by evidence of no LOB while transitioning from one hold to another, without needing additional support, in 4 out of 5 attempts.
    - **Sample Goal:** The child will engage in grip-strengthening activities (e.g., grip exercises using therapy putty or stress balls) for 5-10 minutes, three times a week, with 80% accuracy in completing the task as measured by the therapist's observation.
- **Sample Goal:** The child will complete a rock climbing course with varying hold sizes for at least 5 consecutive minutes, demonstrating sustained grip strength with minimal fatigue or assistance in 4 out of 5 sessions.

Strength and Endurance

- **Objective:** Improve upper body strength and endurance by increasing the ability to climb for longer periods without excessive fatigue.
    - **Sample Goal:** Pt will engage in continuous climbing for 3 minutes (without a break) in ⅘ opportunities.
- **Objective:** Strengthen core stability and postural control while climbing.
    - **Sample Goal:** Pt will maintain an upright posture with minimal support during 80% of climbing activities.

Sensory Processing and Regulation

- **Objective:** Improve sensory processing by supporting the child in tolerating different tactile sensations (e.g., rough climbing holds, texture of climbing surfaces).
    - **Sample Goal:** Pt will engage with various climbing surfaces (smooth, textured, rough) without exhibiting signs of discomfort (e.g., avoidance, distress) in 4 out of 5 climbing sessions.
- **Objective:** Help the child self-regulate and manage sensory overload during high-stimulation activities (e.g., crowded gyms, noise, bright lighting).
    - **Sample Goal:** Pt will use coping strategies (e.g., deep breathing, taking sensory breaks) to manage dysregulation and continue climbing for at least 5 minutes without becoming overwhelmed, in 4 out of 5 sessions.

Motor Planning and Problem-Solving

- **Objective:** Improve motor planning by developing the ability to plan and execute climbing routes.
    - **Sample Goal:** Pt will select appropriate climbing holds and navigate a climbing route with minimal cues or assistance in 4 out of 5 climbing sessions.

- **Objective:** Increase problem-solving skills through the process of planning climbing routes and overcoming obstacles.
    - **Sample Goal:** Pt will demonstrate the ability to strategize their climbing approach (choosing which holds to use, deciding on the best path) with minimal cueing in 4 out of 5 climbing sessions.

Strengthening Social Skills and Collaboration

- **Objective:** Foster social interaction and teamwork while climbing with others.
    - **Sample Goal:** Pt will engage in at least 3 collaborative climbing tasks (e.g., taking turns, giving/receiving feedback) with peers during each climbing session.
- **Objective:** Improve communication skills through verbal and non-verbal interactions with peers and instructors during climbing activities.
    - **Sample Goal:** Pt will initiate and respond appropriately to at least 3 social interactions with peers or instructors during each climbing session.

Self-Confidence and Independence

- **Objective:** Increase self-confidence by providing opportunities for the child to climb independently and achieve small successes while doing something challenging.
    - **Sample Goal:** Pt will complete a climbing route independently (with minimal prompts) in 4 out of 5 climbing sessions.
    - **Sample Goal:** Pt will complete a route with minimal prompts in 80% of sessions.
    - Pt will climb for ____minutes without signs of distress in 4/5 sessions

Spatial Awareness and Body Awareness

- **Objective:** Improve spatial awareness by learning how to position the body and use the environment effectively during climbing.
    - **Sample Goal:** Pt will demonstrate the ability to adjust their body positioning based on the climbing environment (e.g., shifting weight, adjusting reach) in 4 out of 5 attempts.
- **Objective:** Develop increased proprioceptive awareness by practicing body movements and weight shifts during climbing.
    - **Sample Goal:** Pt will demonstrate the ability to shift body weight appropriately and maintain balance while climbing on various angles (e.g., vertical, overhang) in 4 out of 5 attempts.

Safety and Risk Awareness

- **Objective:** Teach and reinforce safety precautions while climbing.

    - **Sample Goal:** Pt will demonstrate proper climbing techniques (e.g., using a helmet, checking equipment) before beginning a climbing session in 90% of sessions.
- **Objective:** Develop an awareness of safe boundaries and limits while climbing.
    - **Sample Goal:** The child will independently recognize when they are physically fatigued or overwhelmed and will take breaks or request assistance as needed in 4/5 sessions.

Self-Advocacy and Self-Regulation

- **Sample Goal:** Pt will participate in self-advocacy and self-regulation when participating in activities they are feeling overwhelmed for increased performance in I/ADLs.
- **Sample Goal:** Pt will participate in practicing deep breathing when feeling anxious for self-regulation for increased performance in I/ADLs.
- **Sample Goal:** Pt will participate in using mental imagery for challenging situations for self-regulation for increased performance in I/ADLs
- **Sample Goal:** Pt will participate in using mental imagery for anxiety for self-regulation for increased performance in I/ADLs
- **Sample Goal:** Pt will incorporate (insert sensory activity here) for increased tolerance to (____sensation) for increased performance in I/ADLs
- **Sample Goal:** Pt will expose themselves to (insert sensory trigger here) for increased tolerance to (____sensation) for self-regulation and increased performance in I/ADLs

- **<u>TRC Activities that OTs can use:</u>**
    - It depends on what the child needs but some ideas are:
        - Climbing the routes as they are set (tailored to the child's needs)
        - Adding tactile or visual cues to routes to get them to better attend, sequence, remind them what to do and when
        - Put rings on holds to collect as they go-make a game out of it.
        - Race kids up routes
        - Finding letters or spelling words on the wall (i.e place letters on wall all over for kids. Kids then get on the route and climb to a letter. They get lowered down or they are able to write/draw on the wall something that starts with that letter.
        - Kids with ADHD or other kids as needed could climb with a weighted vest. This has been found to help with attention, impulse control, and regulation
        - **MSICLIMB**
            - Potential to improve engagement in kids with neurodevelopmental disorders as it sends multisensory signals, measures reaching

times, reaction times, grasps

- Climb while doing therapeutic listening (once they are comfortable on the wall)
- https://blog.schoolspecialty.com/benefits-rock-climbing-children-special-needs/
- Pt will utilize coping skill as needed when overstimulated or anxious for self-regulation for increased performance in I/ADLs.
    - Proprioception-based
        - Chew gum
        - Knee-tapping
        - Muscle squeezes-Tense the whole body like a rock and hold the position for 10 seconds. Then release with "no muscles". Repeat this technique three times.
        - Hand clenches- Squeeze the hands into fists and hold them for 10 seconds. Release and repeat three times.
        - Stress ball, resistive fidget, knee-do
    - Vestibular-based
        - Head down, take deep breaths
    - Oral-based
        - Breathing exercises
            - Pt will participate in "take 5" breathing for self-regulation for increased performance in I/ADLs.
                - 1. Stretch your hand out like a star
                - 2. Get the pointer finger of your other hand ready to trace your fingers up and down
                - 3. Slide up each finger slowly-slide down the other side
                - 4. Breathe in through your nose and out through your mouth
                - 5. Put it together and breathe in as you slide up and breath out as you slide down
                - Keep going until you have finished tracing your hand.
                - Ask if they are calm now or if they would like to take another 5 breaths
            - Pt will participate in "candle" breathing for self-regulation for increased performance in I/ADLs.

        - Breathe in through your nose like you are smelling flowers
        - Breathe out through your mouth, pretending like you are blowing out a candle.
        - Breathe in again, imagining the sweet scent filling your body.
        - Breathe out, making sure that candle is completely blown out.
    - Pt will participate in belly breathing for self-regulation for increased performance in I/ADLs.
        - Put your hands on your belly, and inhale slowly and deeply for four seconds.
        - You should feel your stomach moving out as you suck in the air. If your breath is still in your chest, it's too shallow.
        - Hold the breath for seven seconds, then slowly release it over eight seconds.
  - Five Senses
    - Pt will participate in identifying something in the room for each of their 5 senses (something they can touch, see, hear, taste, smell) for self-regulation for increased performance in I/ADLs.
- Tactile-based
  - Tactile fidget toy
    - Nee Doh
    - Pop It
    - Crazy Aaron's Thinking Putty
    - Tangle
    - Fidget Cube
- Auditory
  - Headphones to block out noise
  - Therapeutic listening

What methods would therapists use to take rock climbing and turn it into a skilled intervention?

- OTs could use rock climbing to assess a child's physical, cognitive, sensory, and emotional abilities.
- OTs could monitor progress by looking at improvements in motor skills, sensory regulation, confidence, trust, etc; could use standardized assessment tools to monitor progress as well as use observation
- OTs could use rock climbing for:
    - Proprioceptive input
        - deep pressure through weight bearing through hands and feet, weight shifting, also getting input from the harness, especially if they need to take a break (they are putting their full body weight into the harness during that time)
    - Eye-hand coordination, body awareness
        - looking around with their eyes, and assessing their surroundings and how their body relates to it and how to adjust their body to follow the route
    - Vestibular Input
        - Climbing involves a lot of dynamic movement, reaching, stretching, getting that input while they move
        - Gravitational insecurity
            - Kids can practice leaving the ground
            - Kids can practice feeling themselves being lowered at a pace that is comfortable to them. Could decrease fear that comes with dizziness, anxiety, panic that comes from gravitational insecurity. The input from the harness in the hips while being lowered helps calm them
    - Tactile Input
        - The different holds (i.e size, shape, texture) provide different tactile experiences.
    - Motor skills
        - FM
            - Rock climbing requires different kinds of grips, manual dexterity, manipulation, finger strength, grip strength
            - The OT can modify climbing routes by varying the size or type of holds to grade up/down
        - GM
            - Coordination, balance, bilateral coordination, body awareness, motor control, motor planning, postural control, endurance, strength

        - The OT can modify routes by varying types of holds, placements of holds in order to grade up/down
- Cognition
    - The climber has to problem-solve and assess their surroundings as they go up the wall- how to move their body in order to get to the next hold up the wall.
    - Sequencing
    - Quicken decision making
        - Depending on how hard the route is, the climber needs to make quick decisions about body placement and how to navigate the route. This can be graded up/down.
        - Attention
        - OT can help child break down routes to make it more manageable
- Emotional
    - Confidence
        - OTs can give positive reinforcement as the child navigates the wall
        - The child will learn that they can do hard things. The child has a sense of control of their body and climbing is an individual task when up on the wall, being that they won't make physical contact with others and their actions won't affect a team for example-gives shyer kids more sport opportunities as it's you against yourself.
        - Provides opportunities for success which can increase self-esteem, feelings of self-efficacy.
    - Regulation
        - OTs can help children with calming strategies if they get frustrated or overwhelmed like focusing on body sensations, breathing, calm thoughts, positive self-talk, taking breaks
- Safety
    - OTs can use rock climbing to teach about safety, limits
        - Kids with sensory processing difficulties sometimes have risk-seeking behavior. Rock climbing gives them a safe outlet to do something that feels risky but they are truly safe as they are tied in.
- Social Skills
    - Can interact with just one other person (belayer) or can make it more social and have other kids on neighboring routes-they are still

going just against themselves (it's an independent movement sport), but can chat here and there with others when on the ground
- Children can teamwork as wanted/needed to discuss how to navigate a route, give each other ideas and tips to complete the routes
- Share the experience and joy of completing a route together and problem-solving together.
- Communication skills
    - The climber and the belayer communicate. This can be graded up/down. It is safe either way. There can be verbal communication, gestures while on the wall, making eye-contact

■ Environmental Changes
- OTs can assess the environment and make changes
    - I.e spacing between routes
    - Lighting, sound
    - Modify routes to meet child's needs (i.e make the routes according to what we are addressing-does it need to be more balance-focused, reaching, tactile (do we use certain holds, add more visual or tactile cues, adaptive grips) color-coded Groperz™ Hand Holds

Goal Attainment Scale (GAS) Goals

Fine (FM) and Gross Motor (GM) Skills:

Objective: Improve hand-eye coordination and fine motor control by completing climbing routes with appropriate grip and hand placement on holds.

- **+2**: Pt independently grips and releases climbing holds with proper technique in 100% of climbing sessions.
- **+1**: Pt independently grips and releases climbing holds with proper technique in 75% of climbing sessions.
- **0**: Pt independently grips and releases climbing holds with proper technique in 50% of climbing sessions.
- **-1**: Pt requires minimal assistance to grip and release climbing holds with proper technique in 25% of climbing sessions.
- **-2**: Pt requires minimal or more assistance to grip and release climbing holds with proper technique in 50% or more of climbing sessions.

Objective: Improve balance and gross motor coordination through climbing.

Sample Goal: Pt will demonstrate the ability to maintain balance by evidence of no LOB while transitioning from one hold to another, without needing additional support, in 4 out of 5 attempts.

- **+2**: Pt maintains balance with no LOB in 5 out of 5 attempts.
- **+1**: Pt maintains balance with no LOB in 4 out of 5 attempts.
- **0**: Pt maintains balance with no LOB in 3 out of 5 attempts.
- **-1**: Pt maintains balance with no LOB in 2 out of 5 attempts.
- **-2**: Pt maintains balance with no LOB in 1 out of 5 attempts or requires additional support.

Sample Goal: The child will engage in grip-strengthening activities (e.g., grip exercises using theraputty or stress balls) for 5-10 minutes, three times a week, with 80% accuracy in completing the task as measured by the therapist's observation.

- **+2**:Pt engages in grip-strengthening activities for 5-10 minutes for more than 75% of the sessions with full engagement and completion of task with no prompts
- **+1**: Pt engages in grip-strengthening activities for 5-10 minutes for more than 75% of the sessions with minimal prompts
- **0**: Pt engages in grip-strengthening activities for 5-10 minutes for more than 75% of the sessions with moderate-max prompts

- **-1**: Pt engages in grip-strengthening activities for 5-10 minutes for more than 50% of the sessions with full engagement and completion of task with no prompts
- **-2**: Pt engages in grip-strengthening activities for 5-10 minutes for less than 50% of the sessions or shows minimal effort with significant prompting to complete the task.

Sample Goal: Pt will complete a rock climbing route with varying hold sizes, demonstrating sustained grip strength with minimal fatigue or assistance in 4 out of 5 sessions.

- **+2**:Pt completes the route with sustained grip strength and minimal fatigue or assist in 5/5 sessions.
- **+1**: Pt completes the route with sustained grip strength and minimal fatigue or assist in 4/5 sessions requiring only occasional prompts or support.
- **0**: Pt completes the route with sustained grip strength and minimal fatigue or assist in 3/5 sessions requiring only occasional prompts or support.
- **-1**: Pt completes the route with sustained grip strength and minimal fatigue or assist in 2/5 sessions requiring moderate prompts or support.
- **-2**: Pt completes the route with sustained grip strength and minimal fatigue or assist in 1/5 sessions requiring moderate prompts or support.

Strength and Endurance

Objective: Improve upper body strength and endurance by increasing the ability to climb for longer periods without excessive fatigue.

Sample Goal: Pt will engage in continuous climbing for 5 minutes without stopping due to fatigue in ⅘ opportunities.

- **+2**: Pt engages in continuous climbing for 5 minutes in 5/5 sessions.
- **+1**: Pt engages in continuous climbing for 4 minutes in 4/5 sessions.
- **0**: Pt engages in continuous climbing for 3 minutes in 3/5 sessions.
- **-1**: Pt engages in continuous climbing for 2 minutes in 2/5 sessions.
- **-2**: Pt engages in continuous climbing for less than 2 minutes or requires frequent breaks.

Objective: Strengthen core stability and postural control while climbing.

Sample Goal: Pt will maintain an upright posture with minimal support during 80% of climbing activities.

- **+2**: Pt maintains an upright posture with minimal support during 80% of climbing activities.
- **+1**: Pt maintains an upright posture with minimal support during 50% of climbing activities.
- **0**: Pt maintains an upright posture with minimal support during 25% of climbing activities.
- **-1**: Pt maintains an upright posture with moderate support during 50% of climbing activities.
- **-2**: Pt maintains an upright posture with moderate support during 80% of climbing activities.

Sensory Processing and Regulation

Objective: Improve sensory processing by supporting the pt in tolerating different tactile sensations.

Sample Goal: Pt will engage with various climbing surfaces (smooth, textured, rough) without exhibiting signs of discomfort (e.g., avoidance, distress) in 4 out of 5 climbing sessions.

- **+2**: Pt engages with various climbing surfaces without signs of discomfort in 5/5 sessions.
- **+1**: Pt engages with various climbing surfaces without signs of discomfort in 4/5 sessions.
- **0**: Pt engages with various climbing surfaces with occasional signs of discomfort in 3/5 sessions.
- **-1**: Pt engages with various climbing surfaces with occasional signs of discomfort in 4/5 sessions.
- **-2**: Pt avoids certain climbing surfaces or frequently exhibits discomfort.

Objective: Help the child self-regulate and manage sensory overload during high-stimulation activities (e.g., crowded gyms, noise, bright lighting).

Sample Goal: Pt will use coping strategies (e.g., deep breathing, taking sensory breaks) to manage dysregulation and continue climbing for at least 5 minutes without becoming overwhelmed, in 4 out of 5 instances.

- **+2**: Pt uses coping strategies to manage dysregulation to be able to return back to the activity in 5/5 instances.

- **+1**: Pt uses coping strategies to manage dysregulation to be able to return back to the activity in 4/5 instances.
- **0**: Pt uses coping strategies to manage dysregulation to be able to return back to the activity in 3/5 instances with MinA.
- **-1**: Pt uses coping strategies to manage dysregulation to be able to return back to the activity in 3/5 instances with ModA.
- **-2**: Pt uses coping strategies to manage dysregulation to be able to return back to the activity in 2/5 instances with ModA.

Sample Goal: Pt will climb during a session without signs of distress in 4/5 sessions.

- **+2**: Pt will independently climb throughout a session without signs of distress in 4/5 sessions.
- **+1**: Pt will independently climb throughout a session without signs of distress in 3/5 sessions.
- **0**: Pt will independently climb throughout a session with min signs of distress in 3/5 sessions.
- **-1**: Pt will independently climb throughout a session with mod signs of distress in 3/5 sessions.
- **-2**: Pt will independently climb throughout a session with mod signs of distress in 4/5 sessions.

Motor Planning and Problem-Solving

Objective: Climb routes with fewer pauses to motor plan.

- **+2**: Pt selects the correct color holds and climbs route independently with no more than 1 pause per route to motor plan in ⅘ routes.
- **+1**: Pt selects the correct color holds and climbs route independently with no more than 1 pause per route to motor plan in 3/5 routes.
- **0**: Pt selects the correct color holds and climbs route with MinA VCs with no more than 2 pauses per route to motor plan in 3/5 routes.
- **-1**:Pt selects the correct color holds and climbs route independently with MinA VCs with no more than 3 pauses per route to motor plan in 3/5 routes.
- **-2**: Pt climbs a route with ModA VCs with no more than 3 pauses per route to motor plan or stay on the right color of holds in 3/5 routes.

Social Skills and Collaboration

Objective: Foster social interaction and build social skills.

Sample Goal: Pt will demonstrate appropriate social skills during a rock climbing lesson by initiating or responding to social interactions (e.g., greeting peers, sharing equipment, offering encouragement) in 4 out of 5 climbing sessions, with minimal prompting from the therapist or coach.

- **+2**: Pt will demonstrate appropriate social skills during a rock climbing lesson by independently initiating or responding to social interactions (e.g., greeting peers, sharing equipment, offering encouragement) in 4 out of 5 climbing sessions.
- **+1**: Pt will demonstrate appropriate social skills during a rock climbing lesson by initiating or responding to social interactions (e.g., greeting peers, sharing equipment, offering encouragement) in 4 out of 5 climbing sessions, with minimal prompting from the therapist or coach.
- **0**: Pt will demonstrate appropriate social skills during a rock climbing lesson by initiating or responding to social interactions (e.g., greeting peers, sharing equipment, offering encouragement) in 4 out of 5 climbing sessions, with moderate prompting from the therapist or coach.
- **-1**:Pt will demonstrate appropriate social skills during a rock climbing lesson by initiating or responding to social interactions (e.g., greeting peers, sharing equipment, offering encouragement) in 3 out of 5 climbing sessions, with moderate prompting from the therapist or coach.
- **-2**: Pt will demonstrate appropriate social skills during a rock climbing lesson by initiating or responding to social interactions (e.g., greeting peers, sharing equipment, offering encouragement) in 2 out of 5 climbing sessions, with moderate prompting from the therapist or coach.

Objective: Improve communication skills through verbal and non-verbal interactions with peers and instructors during climbing activities.

Sample Goal: Pt will initiate and respond appropriately to at non-verbal and verbal climbing signals (thumbs up to get lowered from wall).

- **+2**: Pt will initiate and respond appropriately to at non-verbal and verbal climbing signals (thumbs up to get lowered from wall) independently in ⅘ routes.
- **+1**: Pt will initiate and respond appropriately to at non-verbal and verbal climbing signals (thumbs up to get lowered from wall) independently in 3/5 routes.
- **0**: Pt will initiate and respond appropriately to at non-verbal and verbal climbing signals (thumbs up to get lowered from wall) with MinA in ⅘ routes.
- **-1**:Pt will initiate and respond appropriately to at non-verbal and verbal climbing signals (thumbs up to get lowered from wall) with MinA in 3/5 routes.

- **-2**: Pt will initiate and respond appropriately to at non-verbal and verbal climbing signals (thumbs up to get lowered from wall) with MinA in 2/5 routes.

Self-Confidence and Independence

Objective: Increase self-confidence by completing climbs or climbing a route that they found to be hard.

Sample Goal: Pt will complete a climbing route independently in 4 out of 5 climbing sessions.

- **+2**: Pt completes a climbing route independently in 5/5 sessions.
- **+1**: Pt completes a climbing route independently in 4/5 sessions.
- **0**: Pt completes a climbing route independently in 3/5 sessions.
- **-1**: Pt completes a climbing route independently in 2/5 sessions.
- **-2**: Pt completes a climbing route independently in 1/5 sessions.

Sample Goal: Pt will demonstrate increased self-confidence in rock climbing by attempting new routes or challenges (e.g., different hold sizes, more complex routes) in 4 out of 5 sessions, expressing a positive attitude toward their abilities and persevering through challenges with minimal prompting from the therapist

- **+2**: Pt will demonstrate increased self-confidence in rock climbing by attempting new routes or challenges (e.g., different hold sizes, more complex routes) in 4 out of 5 sessions, expressing a positive attitude toward their abilities and persevering through challenges independently
- **+1**: Pt will demonstrate increased self-confidence in rock climbing by attempting new routes or challenges (e.g., different hold sizes, more complex routes) in 4 out of 5 sessions, expressing a positive attitude toward their abilities and persevering through challenges with minimal prompting from the therapist
- **0**: Pt will demonstrate increased self-confidence in rock climbing by attempting new routes or challenges (e.g., different hold sizes, more complex routes) in 3 out of 5 sessions, expressing a positive attitude toward their abilities and persevering through challenges independently.
- **-1**: Pt will demonstrate increased self-confidence in rock climbing by attempting new routes or challenges (e.g., different hold sizes, more complex routes) in 3 out of 5 sessions, expressing a positive attitude toward their abilities and persevering through challenges with minimal prompting from the therapist
- **-2**: Pt will demonstrate increased self-confidence in rock climbing by attempting new routes or challenges (e.g., different hold sizes, more complex routes) in 2 out of 5

sessions, expressing a positive attitude toward their abilities and persevering through challenges with minimal prompting from the therapist

Spatial Awareness and Body Awareness

Objective: Improve spatial awareness by learning how to position the body and use the environment effectively during climbing.

Sample Goal: Pt will demonstrate the ability to adjust their body positioning based on the climbing environment (e.g., shifting weight, adjusting reach) in 4 out of 5 attempts.

- **+2**: Pt independently adjusts body positioning in 5 out of 5 attempts with efficiency and confidence, demonstrating advanced problem-solving in movement.
- **+1**: Pt adjusts body positioning with Min VC in 5 out of 5 attempts with efficiency and confidence, demonstrating advanced problem-solving in movement.
- **0**: Pt adjusts body positioning with Min VC in 4 out of 5 attempts with efficiency and confidence, demonstrating advanced problem-solving in movement.
- **-1**: Pt adjusts body positioning with Min VC in 3 out of 5 attempts with efficiency and confidence, demonstrating advanced problem-solving in movement.
- **-2**: Pt adjusts body positioning with Min VC in 2 out of 5 attempts with efficiency and confidence, demonstrating advanced problem-solving in movement.

Objective: Develop increased proprioceptive awareness by practicing body movements and weight shifts during climbing.

Sample Goal: Pt will demonstrate the ability to shift body weight appropriately and maintain balance while climbing on various angles (e.g., vertical, overhang) in 4 out of 5 attempts.

- **+2**: Pt independently shifts body weight and maintains balance in ⅘ attempts across all climbing angles with smooth, controlled movements.
- **+1**: Pt independently shifts body weight and maintains balance in ⅘ attempts across most climbing angles with smooth, controlled movements.
- **0**: Pt independently shifts body weight and maintains balance in 3/5 attempts across most climbing angles with smooth, controlled movements.
- **-1**: Pt shifts body weight and maintains balance in 3/5 attempts with MinA across most climbing angles with smooth, controlled movements.
- **-2**: Pt shifts body weight and maintains balance in 3/5 attempts with ModA across most climbing angles with smooth, controlled movements.

Objective: Teach and reinforce safety precautions while climbing.

Sample Goal: Pt will demonstrate proper climbing techniques (e.g., using a helmet, checking equipment) before beginning a climbing session in 90% of sessions.

- **+2**: Pt independently follows all safety protocols in 100% of sessions.
- **+1**: Pt independently follows safety protocols in 100% of sessions with MinA cueing.
- **0**: Pt independently follows safety protocols in 100% of sessions with ModA cueing.
- **-1**: Pt independently follows safety protocols in 100% of sessions with MaxA cueing.
- **-2**: Pt follows safety protocols in 90% of sessions or requires frequent reminders.

Self-Advocacy and Self-Regulation

Objective: Help the child develop self-advocacy and regulation strategies.

Sample Goal: Pt will participate in self-advocacy and self-regulation when participating in activities they are feeling overwhelmed for increased performance in I/ADLs.

- **+2**: Pt independently utilizes self-regulation strategies in all applicable situations.
- **+1**: Pt independently utilizes self-regulation strategies in 90% of applicable situations.
- **0**: Pt utilizes self-regulation strategies in 90% of applicable situations with MinA.
- **-1**: Pt utilizes self-regulation strategies in 75% of applicable situations with MinA.
- **-2**: Pt utilizes self-regulation strategies in 75% of applicable situations with ModA.

Coach Likert Scale Survey

Understanding of Special Needs:

1. I have experience working with children with special needs.
    a. Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree

2. I have worked with children with sensory processing difficulties.
    a. Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree

3. I have received formal training on coaching children with special needs.
    a. Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree

4. I am interested in receiving training on coaching children with special needs.
    a. Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree

5. I feel that I could adapt my coaching style to meet the needs of children with special needs
    a. Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree

6. I would like to be briefed on the child's needs prior to beginning the program
    a. Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree

7. I am aware of sensory-based strategies to use to calm a child down or re-engage them if they become overwhelmed
    a. Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree

8. I know how to adjust the environment to address the needs of kids with sensory difficulties
    a. Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree

9. I would like to learn more about how to adjust the environment to meet the needs of kids with sensory difficulties
    a. Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree

10. I have concerns about working with children who have special needs
    a. Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree

11. There are factors that would influence my decision to choose to work with children that have special needs
    a. Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree

Communication & Interaction:

12. I feel confident in how to communicate with children that have special needs
    a. Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree

13. I feel confident in how to provide feedback to children with special needs
    a. Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree

14. There are communicative methods (visual aids, simple language, etc) that I find effective when working with these children
    a. Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree

15. I am able to ensure that children with special needs understand instructions
    a. Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree

16. I am able to ensure that children with special needs follow through with instructions
    a. Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree

Individualized Approaches:

17. I tailor my coaching to each child's individual strengths and challenges

a. Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree

18. I am able to assess what modifications each child may need
    a. Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree

Support and Resources:

19. I have resources (i.e tools, equipment, support staff, etc) that I feel will be helpful to improve my ability to coach kids with special needs
    a. Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree

20. There are specific accommodations or additional support that would help make my coaching more effective
    a. Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree

Structure of Sessions:

21. I have an idea of how long a session should be
    a. Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree

22. I believe I know what a successful session would look like
    a. Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree

23. I have an idea of how many sessions I would like to have for this program
    a. Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree

Progress and Success:

24. I have an idea of how I would measure progress/success for children with special needs in the program
    a. Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree

25. I have an idea of what milestones to look for to determine if a child with special needs is making progress

a. Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree

26. I celebrate achievements and improvements, even small ones, with children that have special needs
    a. Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree

Challenges and Barriers:

27. I have challenges working with children that have special needs
    a. Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree

28. There are barriers that prevent me from providing the best support to these children (i.e lack of resources, time constraints, lack of training, etc)
    a. Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree

Parent and Family Involvement:

29. I involve parents or guardians in the coaching process
    a. Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree

30. There are ways in which the parents or caregivers can assist me in supporting their child's development in rock climbing
    a. Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree

Inclusive Environment:

31. I foster an inclusive environment where all children feel accepted regardless of their abilities
    a. Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree

32. I encourage teamwork and social interaction among the children that I work with
    a. Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree

33. I encourage teamwork and social interaction among children with and without special needs that I work with
    a. Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree

Sensory Integration and Skill Development:

34. I scaffold climbing challenges to help children progressively develop their sensory processing skills
    a. Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree

35. I scaffold climbing challenges to help children progressively develop their climbing skills
    a. Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree

36. There are certain types of climbing routes that are better suited for children with sensory processing differences
    a. Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree

Parental & Caregiver Involvement:

37. I communicate with parents or caregivers to better understand their child's sensory preferences and needs before and during the climbing session.
    a. Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree

38. Parents are involved in helping to identify specific sensory challenges or strategies that would work best for their child
    a. Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree

39. I incorporate feedback from parents or caregivers about their child's sensory experiences during climbing
    a. Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree

Training and Education:

40. I have received training on sensory integration
    a. Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree

41. I have received training on sensory processing disorders
    a. Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree

42. I would be interested in training regarding sensory processing and sensory integration
    a. Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree

43. I think there are additional resources or training that I feel would help me better understand and address sensory needs when teaching kids to climb
    a. Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree

44. I believe my coaching can be further supported to include more sensory-based techniques or approaches
    a. Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree

OT Likert Scale Survey

- There are sensory challenges that I think children with sensory processing differences might face while rock climbing (e.g., tactile sensitivity, balance, proprioception)?
    - Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree

- There any sensory tools or equipment that could be used to support the children, such as weighted vests, fidget items, or noise-canceling headphones during a climbing session?
    - Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree

- There are types of climbing holds, textures, or materials that seem to be most comfortable for children with sensory impairments
    - Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree

- Using visual aids, step-by-step guides, or sensory cues could help children navigate the climbing process
    - Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree

- I am aware of what other climbing programs have done for children
    - Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree

- Paper-made booklets for each child describing their sensory needs and potential calming strategies would be helpful for climbing coaches to have on hand.
    - Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree

- I have an idea of how I would measure a child's success/progress in the program
    - Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree

- I have an idea of how I would balance sensory integration strategies with skill-building for rock climbing, such as motor planning, strength, and technique?
    - Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree

Pre-Program Survey for Occupational Therapists

Introduction: This survey aims to gather your initial perspectives on the climbing program and its potential therapeutic benefits.

1. Background Information:

- Name: _____
- Years of Experience as an OT: _____
- Have you incorporated climbing or similar activities in therapy before? (Yes/No)

2. Expectations & Preparedness:

- What therapeutic outcomes do you anticipate from this climbing program?

  _____

- On a scale of 1-5, how comfortable are you with integrating climbing into therapy? (1 = Not Comfortable, 2= Somewhat Comfortable, 3=Neutral, 4=Comfortable, 5 = Very Comfortable)

  1 2 3 4 5

- What concerns or barriers do you foresee in using climbing as a therapeutic tool?

  _____

3. Program Logistics & Support:

- Do you feel adequately prepared to support clients in a climbing setting? (Yes/No)
- What training or resources would enhance your confidence?

  _____

Post-Program Survey for Occupational Therapists

1. Program Experience:

- How satisfied are you with the climbing program's effectiveness for therapy? (1-5 scale) (1 = Not Satisfied, 2= Somewhat Satisfied, 3=Neutral, 4=Satisfied, 5 = Very Satisfied)

  1 2 3 4 5

- What therapeutic benefits did you observe in your clients?

  _____

- Were there any unexpected challenges or benefits?

  _____

2. Impact on Therapy Practice:

- Do you feel more confident in using climbing as a therapeutic intervention? (Yes/No)
- What modifications, if any, would you recommend for future programs?

  _____

3. Overall Satisfaction:

- Would you recommend this program to other occupational therapists? (Yes/No)
- Additional comments or feedback:

  _____

Pre-Program Survey for Climbing Coaches

Introduction: Thank you for participating in this survey. Your feedback will help us understand your expectations and preparedness for the climbing program.

1. Background Information:

- Name: _____
- Years of Coaching Experience: _____
- Have you worked with adaptive climbing or therapeutic climbing before? (Yes/No)
- Have you worked with kids before? (Yes/No)
- Have you worked with children with special needs before? (Yes/No)

2. Expectations & Preparedness:

- On a scale from 1-5, how confident do you feel in adapting climbing techniques for individuals with different needs? (1 = Not Confident, 2= Somewhat Confident, 3=Neutral, 4= Confident, 5 = Very Confident)

  1 2 3 4 5

- What challenges do you anticipate in coaching participants with varying abilities?

  _____

3. Program Logistics & Support:

- Do you feel you have adequate resources and training to support participants effectively? (Yes/No)
- What additional support or training would be helpful to you?

  _____

Post-Program Survey for Climbing Coaches

1. Program Experience:

How satisfied are you with the training and support provided? (Please circle a number between 1-5 below)

1 - Very Dissatisfied

2 - Dissatisfied

3 - Neutral

4 - Satisfied

5 - Very Satisfied

1 2 3 4 5

- What were the most valuable skills or insights you gained from this program?

  _____

- What challenges did you encounter, and how were they addressed?

  _____

2. Impact on Coaching:

- Has your confidence in coaching diverse participants improved? (Yes/No)

- What changes, if any, would you suggest for future climbing programs?

  _____

3. Overall Satisfaction:

- Would you recommend this program to other climbing coaches? (Yes/No)

- Additional comments or feedback:

  _____

Sensory Integration Rock Climbing Program – Coach Communication Log

Coach's Name: _____

Child's Name: _____

Program Start Date: _____

Email: _____

Child's Goals for the Program Worked on Today (Sample):

- ☐ Improve motor planning and coordination
- ☐ Enhance proprioceptive and vestibular input
- ☐ Increase strength and endurance
- ☐ Develop self-regulation and focus
- ☐ Build confidence and self-esteem
- ☐ Improve social skills
- ☐ Other: _____

Session Tracking Log:

Date	Goals Targeted	Progress Notes

Coach Observations & Recommendations

(Please note any progress, challenges, or modifications made during the session.)

_____

_____

Parent/Guardian Communication & Feedback

(Use this section to document discussions with parents/guardians and link person about the child's progress.)

Thank you for your dedication to supporting the child's development through our Sensory Integration Rock Climbing Program!

Sensory Integration Rock Climbing Program – Family Communication Log

Child's Name: _____
Date of Birth: _____
Program Start Date: _____
Primary Contact Name: _____
Phone Number: _____
Email: _____

Child's Goals for the Program (Sample):

- ☐ Improve motor planning and coordination
- ☐ Enhance proprioceptive and vestibular input
- ☐ Increase strength and endurance
- ☐ Develop self-regulation and focus
- ☐ Build confidence and self-esteem
- ☐ Improve social interaction and teamwork skills
- ☐ Other: _____

Session Tracking Log:

Date	Goals Targeted	Progress Notes

Parent/Guardian Comments & Feedback

(Please use this section to share observations, concerns, or progress noticed at home.)

_____

_____

_____

_____

Therapist/Instructor Notes & Recommendations

Thank you for your participation! We value your feedback and collaboration in supporting your child's growth through our Sensory Integration Rock Climbing Program.