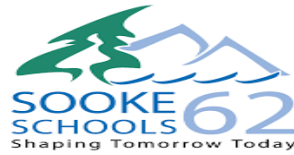




University
of Victoria



Research study

Dino Island: A game-based cognitive training program for parents and children to improve attention, memory, and self-regulation

Attention and executive functions (EF) abilities support success

- Attention and Executive Functions (EF) are needed for self-control, self-regulation, flexibility, perseverance, school/work success, making/keeping friends, mental health, and quality of life.
- Attention and EF problems are very common in children with neurodevelopmental conditions, including ASD, FASD, ADHD, and LDs as well as in children without diagnoses, and failure to treat them may lead to difficulties with learning, self-regulation, and physical/mental health.
- There are very few interventions designed to improve these abilities in children, and those that do exist are typically unaffordable, inaccessible, and difficult to administer, requiring experienced professionals.

Attention and executive function (EF) training can benefit children, families, and communities

- Prior studies show that children can improve their attention, memory, self-regulation, emotional and behavioural control, self-efficacy, use of problem solving strategies, and academic performance, in response to attention and executive function training.
- The process of delivering the intervention also helps intervention coaches to develop their knowledge and skills for supporting children outside of the Dino Island training program.
- More research is needed to determine the best strategies for improving attention, memory and self-regulation in children, particularly when such training programs are delivered in homes and communities!

We would like to inform you of an exciting study, which may be of interest to you. We are seeking parent and child partners for clinical trials of a novel parent-delivered game-based intervention designed to improve attention, memory, and self-regulation in children, called Dino Island. This project is being conducted as a joint initiative between the University of Victoria (Dr. Sarah Macoun) and Sooke School District. The goal of the Dino Island research program is to develop an intervention that improves attention, memory and self-regulation skills in children and that is feasible, accessible and affordable for all children who may benefit.

Research has shown that it is possible to improve attention, memory and self-regulation in children. Many children experience significant difficulties in these areas with impacts on their behaviour, social relations, communication, and learning. It is important to determine how training can improve these abilities in children and benefit learning, behaviour, and quality of life. The training program is delivered by parent coaches to their children. Parents will receive training and ongoing support from the research team. Eligible children are between ages 5-12 years and need to be able to see, hear, and have sufficient mobility to use a tablet, in addition to having some functional use of language (can understand simple vocabulary and instructions).

Please note that Dr. Macoun and the research team do not have any personal information about you or your child. We are disseminating this information on behalf of the university research team, to inform you of this opportunity. Please note that not all interested families may be eligible to participate at this time, and that a brief telephone interview will be conducted to determine eligibility.

For more information, please sign up through the following website link: <https://cnuvic.com/>
Or, you may contact Dr. Macoun at macounlab@uvic.ca (250-472-4195)



Executive Summary

Assessing the impact of a Parent/Child Game-Based Intervention for Attention, Memory, and Executive Functioning in Children with Neurodevelopmental Concerns

Attention, memory, and executive functioning (EF; skills like self-regulation, working memory, flexibility, and inhibition) are essential for successful learning and development. Attention and EF difficulties are very common in children with and without diagnosed neurodevelopmental concerns (Attention Deficit Disorders, Autism, Learning Disorders, Fetal Alcohol Spectrum Disorders, Brain Injuries, etc.). When difficulties in these areas are not remediated, their impact can lead to negative life experiences and 'secondary deficits' (learning disorders, depression, anxiety, interpersonal struggles, etc.) that place a tremendous burden upon children, families, and the broader community (health and school systems and resources).

Dino Island is a parent-delivered cognitive training program designed to improve attention, memory, and EF in children. It combines the appeal of tablet-based gaming with the effectiveness of an in-person, 1:1 parent/child intervention. The parent-coaching component is crucial for helping children apply new skills to other areas of their life (classroom, home, play). The training for parent coaches provides foundational knowledge and skills that are relevant to supporting children outside of the Dino Island intervention.

The Study

For this study, we are seeking parents/caregivers and child partners to help us evaluate this intervention. We are seeking children ages 5-12 years with confirmed or suspected neurodevelopmental concerns (e.g., ADHD, ASD, FASD, LD etc.) that have primary or secondary difficulties related to attention, memory, or self-regulation. Eligible children are between ages 5-12 years and need to be able to see, hear, and have sufficient mobility to use a tablet, in addition to having some functional use of language (can understand simple vocabulary and instructions).

Parents complete 2-3 hours of online training before beginning the training program with their child and then participate in weekly online parenting support groups to help with learning and implementing the training program. Children and their parent/caregiver engage in 3-4 Dino Island sessions per week (30-45 min each) for approximately 6 weeks. The training program involves parents coaching their child while the child engages in tablet-delivered brain exercises.

This project is a community-based research collaboration between The University of Victoria (Dr. Sarah Macoun, R.Psych, Associate Professor of Clinical Child Neuropsychology) and the Sooke School District. Study results will be shared with stakeholders, community partners, and participants through community-based presentations and reports.

Participating in the Study

The timeline for this project runs from now through June 2023.

Families who are interested in participating can sign up through the following URL: .

Alternately, you can contact our team via email at macounlab@uvic.ca or via phone at 250-472-4197.

We look forward to connecting with you further to discuss Dino Island and this study.

Sincerely,



Dr. Sarah J Macoun, R. Psych
Associate Professor (Clinical Neuropsychology), Department of Psychology, University of Victoria

Child Participant Eligibility Guidelines

In order to be eligible for the study, a child must:

- a) Be between 5 and 12 years of age
- b) Exhibit difficulties with EF and/or attention with or without associated diagnosis (examples below)
- c) Have sufficient mobility to interact with the tablet (i.e., accurately tapping screen)
- d) Have sufficient language ability to understand and follow simple instructions and vocabulary
- e) Have no more severe than a mild intellectual disability (i.e., not moderate or severe ID)

The following conditions typically involve EF and attention difficulties (note this is not an exhaustive list):

- Attention-deficit hyperactivity disorder (ADHD)
- Autism spectrum disorder (ASD)
- Fetal alcohol spectrum disorder (FASD)
- Mental health disorders (e.g., conduct disorder, oppositional defiant disorder, obsessive-compulsive disorder, Tourette syndrome)
- Learning and language disorders
- Brain injury (e.g., spina bifida, hydrocephalus, cerebral palsy, and epilepsy)
- Central nervous system cancer and cancer treatments
- Very premature birth

The following symptoms typically indicate EF and attention difficulties:

- Difficulty listening and paying attention
- Easily distracted
- Loses a train of thought when interrupted
- Needs to be told the directions many times
- Knows something at one time but forgets the same day or the next day
- Unable to think about or do more than one thing at a time
- Difficulty remembering directions, taking notes or understanding something that has just been explained
- Frequently says, “I forgot what I was going to say”
- Poor organization (e.g., loses track of information and things, and loses or misplaces things)
- Does things either quickly and messily or slowly and incompletely
- Impulsiveness (e.g., blurts things out, does unsafe things without thinking it through, or has trouble following rules consistently)
- Self-regulation struggles
 - Difficulty attaining, maintaining and changing level of arousal appropriately for a task or situation
 - Difficulty controlling emotions
 - Difficulty formulating a goal, monitoring goal-progress, and adjusting behaviours

- Difficulty managing social interactions
- Lack awareness of personal strengths and weaknesses, as well as strategies to tackle day-to-day challenges of academic tasks
- Poor emotional control (e.g., trouble accepting negative feedback, overreacts to little injustices, or struggles to finish a task when something upsets them)
- Difficulty getting started on a task
- Overwhelmed when trying to break tasks into smaller, more manageable chunks
- Poor time estimation and time management skills
- Difficulty changing plans or strategies, even when it's clear that the plan or strategy isn't working
- Easily frustrated
- Difficulty switching gears from one activity to another
- Difficulty making decisions
- Doesn't always have the words to explain something
- Needs help processing what something feels/sounds/looks like