

Enhancing the physical activity and health of children/youth with neurodevelopmental disorders



Benefits of physical activity for children/youth



- 60 minutes of daily physical activity can:
 - Improve mental health
(lower levels of anxiety and depression)
 - Positive impacts on physical health
(blood pressure and blood sugar)
 - Academic scores
(math, reading and writing scores)

Benefits of physical activity for children/youth



- Develop positive peer relationships
- Learn new skills and movement patterns
- Increased likelihood for physical activity in adulthood

For children/youth with neurodevelopmental disorders



- Facilitate schedules and routines
- Enhance psychological well-being
(stress/anxiety)
- Improvements in attention

Among children/youth with ASD



- Decreases in self-injurious behaviour
- Reductions in stereotypical behaviour
- Improvements in social and communication skills

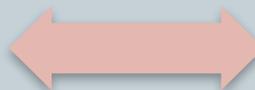
Among children/youth with ASD



Increased
Physical
Activity



Social
Improvements



Motor
Improvements

Among children/youth with OCD



- Enhancements in mood
- Decreased self-reported anxiety
- Reductions in compulsions

Among children/youth with ADHD



- Increases in attention
- Improvements in mood
- Improvements in focus and focus on task behaviours

Across all neurodevelopmental disorders



- Participation and inclusion in the community and school based settings
- Enhanced sense of belonging
- Quality of life

BUT



- Less likely to be active than peers
- Inactive in both school and community settings
- Even less active during adolescence

Health impacts of inactivity



- Short and long term health outcomes:
 - ❖ Higher prevalence of obesity
 - ❖ Increased risk of hypertension
 - ❖ Increased risk for diabetes
 - ❖ Increased risk for cardiovascular disease
 - ❖ Increased risk for anxiety
 - ❖ Increased risk for depression

(Criado et al., 2017)

Other impacts of inactivity



- Physical activity associated with:
 - Social/communication skills
 - Self-esteem
 - Cognition
 - Academic performance
 - On-task behaviour
 - Gross-motor skills
 - General development

Why are they inactive?



- Gross motor skill delays
- Social and communication impairments
- Sensory sensitivities
- Cognitive impairments

Why are they inactive?



- Little known how social and psychological factors influence physical activity
- Little research that has directly included children and youth with neurodevelopmental disabilities in research

My PhD Work



- Conducted with children and youth with ASD
- 5 studies
 - Digital stories created by youth: What does PA means to you?
 - Interviews with youth about their experiences
 - Province wide survey
 - Interviews with parents
 - Interviews with physiotherapists

Liam's Digital Story



Attracted participation



- Social and emotional pleasures of movement
- Break from daily life
- Sensory pleasures

Attracted participation



“I do the same thing every single day. Being active is the only time where I feel free. Free from always being told what to do, how to do it, when to do it. Free from doing the same routine of school, home, being a loner and getting beat up. Going for walks with my dog gets me to my happy place. Being active just allows me to be, me”

(Jas, 13 years old)

Learning to be inactive



- Physical activity was often substituted for more therapy time (Behaviour Therapy, OT, SLP)
- Therapy was valued over physical activity
- Sought to address characteristics symptoms of ASD (speech, language, behaviour)

Learning to be inactive



“Sometimes I tried to do active things, but then my mom would tell me that the OT was coming. So then activity like always was just like pushed off to the side. I did a lot of paper cutting when the occupational therapist was here, but not a whole lot of active things”

Kaz, 16 years old

Bullying experiences



- Bullied regarding limited skill, trouble with understanding rules, social cues, and challenges with social communication
- Both in the school and community
- Dissuaded participation

Bullying experiences



“I’ve been snapped with a towel, and beat up in the school change room. My glasses have been broken twice in just 6 months when the boys hit me with a dodgeball in the face. It’s hard to enjoy being active. You learn to hate it, and might as well avoid it”
(Yosuke, 15 years old)

Masking



- Bullying, humiliation, isolation, exclusion had other impacts
- Masking ‘abnormal behaviours’ in an effort to be normal
- Contributed to an internal sense of exhaustion

Masking



- The prolonged effects of masking were debilitating as participants at times would breakdown
- Stigma and bullying experiences negatively impacted participation

Masking



“Pretending to be normal drains the life and soul of out me. But sometimes that feels like the only way I can get by. I’ve stopped doing active things because of how much I get bullied and the energy of me trying to be normal is not worth it to break a sweat for a few minutes”

(Michael, 16 years old)

Implications of research



Implications of research



- (In)activity is much deeper than biological impairments
- PA tied into complex social and psychological factors

Implications of research



- Efforts needed to better support children and families
- Work needed to provide quality programs and opportunities
- Multi-system level issue at the local, educational, and policy levels

Immediate Implications



Physical activity, not just sport



Immediate implications



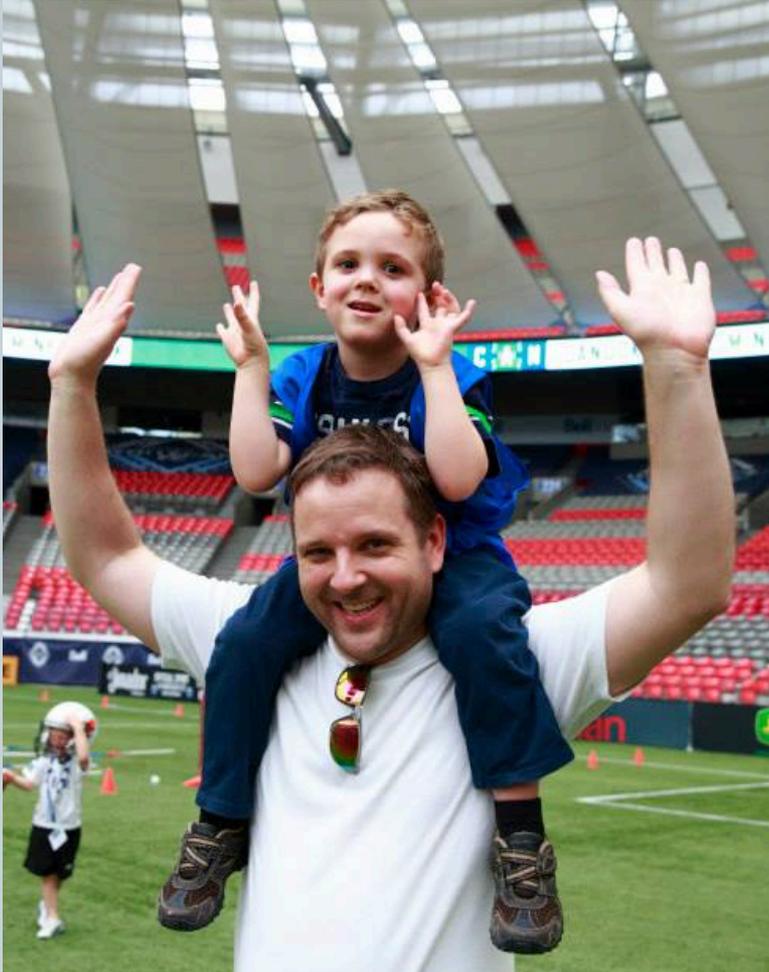
- Physical activity can include walking, tai-chi, yoga, gardening, cultural forms of dance, yoga, martial arts, cultural forms of dance, swimming, fencing, house work

Immediate implications



- Start small: 1-2 times per week
- Break into bits: cumulative benefits
- Celebrate small accomplishments
- Promoting enjoyment and emotional aspects

Immediate implications



- PA as a family: opportunity for family bonding
- Non-competitive PA as an option

Setting up kids for success



- Start with most preferred activities to less preferred
- Watch video or provide story of exactly what the child will do
- Come to beach. Put on wet suit. Say hi to coach. Walk with coach. Listen to coach. Get into water. Have fun

Rule of 3

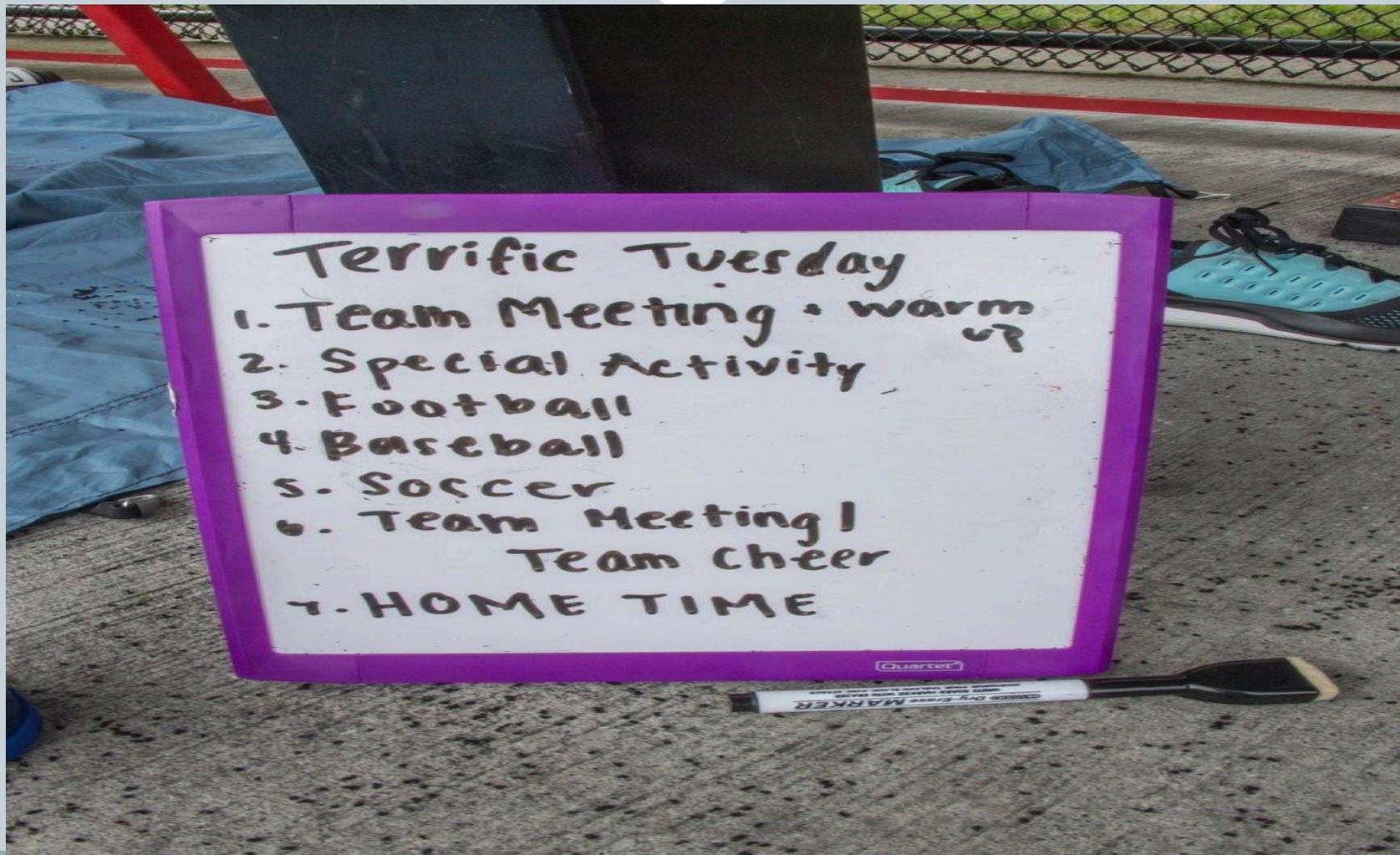


- Chunk and explain the first three rules, allow them to try it out
- Then add more rules/instructions for remember
 - Give hand to coach
 - Step on ice
 - Put hands out like an airplane

Immediate implications

- Determine motivation
 - Try and try again
 - Individualize instructional style
 - Use other forms of teaching other than imitation or observation
- Use interests if possible:
 - Games such as tag
 - Pokemon
 - Superhero Tag
 - Angry Birds Tag

Visual schedules



Adapt games and have fun



Acknowledgements



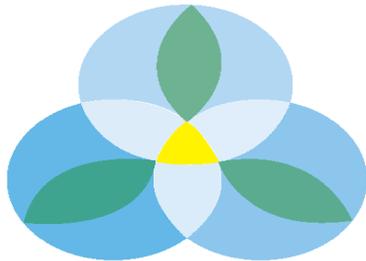
Children and families

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POND NETWORK

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