

# A Novel Hybrid Implementation-Efficacy Trial of AquOTic-an occupational therapy based water competency intervention for children on the autism spectrum

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# Objective

**To describe an innovative Type 1 Hybrid Implementation-Efficacy clinical trial design with an evidence-based occupational therapy intervention.**

# Background



- Drowning is a leading cause of unintentional death among autistic children aged 14 and younger<sup>1,2</sup>
- Autistic children often require specialized swim instruction
- A key barrier to increasing water competency in children on the spectrum is a lack of swim instructors trained to meet their needs



# AquOTic™ Intervention



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**An occupational therapy-based water competency intervention tailored for children on the autism spectrum**

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10-week group intervention led by an OT

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6 child-swim buddy dyads

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Follows a structured routine with individualized activities

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# Aims

1

Efficacy

**Determine the efficacy of AquOTic intervention to improve water competency among children on the autism spectrum using professional student and community swim buddies.**

2

Implementation

**Examine the mediators and moderators of AquOTic efficacy.**

3

Implementation

**Calculate the costs and resources needed for AquOTic competency to be reached by both professional student and community swim buddies.**



# Methods: Aim 1

- Recruit 108 autistic children ages 5 to 9 years old and 64 swim buddies
- Randomize to 1 of 3 arms utilizing a waitlist control design
  1. AquOTic intervention with 1:1 swim buddy being **professional therapy students**
  2. AquOTic intervention with 1:1 swim buddy being from the **community in a non-rehabilitation field**
  3. **Will not receive the AquOTic intervention** and will continue with usual water-related activities until eligible the following year
- Primary outcome is the WOTA 2 score rated by blinded evaluator
  - Measured at baseline, immediately after AquOTic, 6 months later and 1 year later



# Methods: Aim 2

- Examine moderators and mediators to determine which are associated with AquOTic effectiveness
  - **Moderators:** professional background
  - **Mediators:** strength of therapeutic alliance; attitudes towards AquOTic and EBP
- Explanatory sequential mixed-methods design
- Outcome measures
  - AquOTic Fidelity Checklist
  - PRIME-O
  - EBPAS
  - Qualitative interviews



# Methods: Aim 3

- Use Strategies Timeline, Activities, and Resources (STAR) Log to systematically track costs and resources
  - Facilitator and swim buddy wages and benefits
  - Training materials
  - Overhead expenditures: pool use and pool equipment
  - Time spent in training
  - Time spent in preparation or mentoring



# Impact



First dual effectiveness–implementation evaluation of an OT drowning-prevention program for autistic children

Model for designing, evaluating, and reporting community-based pediatric OT interventions

Scalable, real-world solution ready for rapid translation to practice



# References

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