



Teaching Aquatics
Safety to Children
with Autism
Spectrum Disorder

Created By: Dana Tolle

Table of Contents

Related Research.....	3
Benefits.....	5
Aquatic Safety Skills Introduction.....	8
General Pool Safety.....	9
Front and Back Float.....	11
Stroke: Front Crawl.....	14
Swimming to a Safe Location.....	17
Swimming to Safety Fully Clothed.....	18
References.....	19

Online Tools:

Resource

Aquatics PECS

Related Research

Drowning is the leading cause of death for children with autism spectrum disorder (ASD) accounting for 91% of the total deaths in the United States, were a result of accidental drowning (National Autism Society, 2020).

Swimming is a form of physical activity and should create positive memories for others, but many children with ASD are unable to learn water safety skills in the typical swim class environment and prevents these children from developing aquatic skills. Children with ASD deserve access to quality aquatic safety programs so they can enjoy water-based activities and have another option for physical activity. When children learn water safety skills this provides safety and comfort for the child along with allowing other family members to enjoy and participate with the child in an aquatic setting.

Parents have expressed concerns, in regard to water safety, for their children with ASD because they are unable to learn in the typical swimming class environment (Casey et al., 2020). Research has also provided evidence of a strong belief from parents that having their children know simple water safety strategies is more important than supervision techniques (Casey et al., 2020). Parents cannot watch their child as closely as they think they can, along with not knowing proper rescuing techniques if their child was to fall into the water (Casey et al., 2020). Many children with autism run away from the people they know, leading to 32% of children with ASD having a narrow escape with drowning because of wandering (Lawson, 2019). Parents also expressed concerns about not being able to take their child to an aquatic environment because of the worry of the child running off and being put in a dangerous situation.

Many children with ASD have taken swimming lessons, however, the most common techniques taught may not be the most valuable when in a life-threatening situation (Potdevin et al., 2019). Rogers et al. (2010) suggests there should be an entirely new curriculum for teaching children with ASD aquatic skills that would be more beneficial and transfer to realistic situations. Curriculum discussions have touched on the number of support students should get, the time they should be in lessons, and how often the child should receive a lesson (Murphy &

Hennebach, 2020). A study of children with ASD who participated in an adapted swim program showed a 74% improvement of at least one swim level (Lawson, 2019). This information shows that children with ASD can be successful in an aquatic environment if provided the needed support and adaptations.

By creating an interactive PDF, an online resource with links and other tools that can be used before getting into the pool or printed out and used in the pool; has specifically designed skills and curriculum for children with ASD, parents and educators will be able to use this resource allowing the children to gain water safety skills and understand the importance of these skills. Besides providing instructional techniques and skills for students, the PDF will also contain information for parents and educators relating to why the child should know these skills and other information adults need to know to make sure the child with ASD is safe.

Benefits

Adults with disabilities are 53% more likely to be obese than adults without disabilities (Fox, 2014). By providing positive forms of physical activity for individuals with disabilities to participate in, starting at an early age can lower their risk of obesity and allow individuals to live a healthier and more active lifestyle. Sometimes it can be difficult to find an activity individuals with autism enjoy, especially because a lot of these children have severe sensory needs that some forms of physical activity may heighten or not provide the amount of sensory needed for the child to enjoy the activity. Aquatic activities have been shown to provide the right amount of sensory need for children with autism and being the most favorable form of physical activity for individuals with ASD (Lawson, 2019). Besides aquatics being the favorite there are also many other positive overall health benefits from swimming, consisting of pain relief including the relief of muscle spasms, can increase or maintain the range of joint motion in individuals, increases muscle endurance, and improves cardiorespiratory function (Phytanza, 2019). By being in the water children with ASD gain so many benefits along with feeling a sense of freedom and independence that they struggle to feel outside of the water (Phytanza, 2019).

When over 800 parents of children with ASD between the age of four and ten were interviewed, about 50% of those parents stated that their child has wandered at some point in their life, leading to a strong feeling of concern from parents that their child may run away and get into a dangerous situation containing water (Grosse, 2014). Because of this concern parents have kept their children with autism away from water. From missing out on family vacations to only going to an indoor facility, so parents are able to keep a close eye on the child has greatly affected these parents. With parents stating information like, “I want to take my child to the pool I’m just too scared something bad will happen” (Lawson, 2019). Allowing parents to help directly teach their children lifelong skills and watching their kids be successful, can build a more positive bond between the individuals. Many parents also believe they know lifesaving skills to be able to help their child if they were in a dangerous situation. But when parents were surveyed and asked how many compressions should be done within a certain time period of resuscitations the majority of parents did not know the correct answer (Casey, 2020). Parents also wish they knew more information about why

their child loves water and how to help them around water so they can be safe. One parent stated, “I don't know why kids with autism love water so much, but they do, don't they? (Lawson et al., 2019 p. 4).” Children with autism can also struggle with social interactions and communication (Phytanza, 2019) so providing a resource that allows parents to interact with their child in a new way can strengthen their relationship and build communication and interactions between the child and parents along with allowing the parent to gain more trust for their child.

Educators will benefit from this resource because it will provide them with a curriculum and activities on how to instruct children with autism along with techniques that can be implemented with all children. Some forms of teaching curriculums that have been used include the top-down teaching approach where the teacher looks at the “big picture” first. Compared to teaching very specific skills for example, teaching the movements and the entire motion of the front crawl before working on flutter kicking (Forde et al., 2020). Another approach that has been successful for kids with ASD is play therapy which incorporates many different forms of play. From participating in group games to individual activities for the student (Phytanza & Burhaein, 2019). The final approach that has shown success is the Constant Time Delay approach where the teacher will teach a skill until the child is able to perform that skill in so much time directly after being asked to demonstrate the skill. For example, if a teacher taught the student how to do a flutter kick the teacher would say while demonstrating the kick, “can you show me how to do the flutter kick?” If the child performed the skill correctly in ten seconds the teacher will move onto a new skill to learn. But if the child is unable to perform or doesn't show the skill correctly the teacher will teach the skill to the student again and will continue until the child can successfully demonstrate the skill (Rogers et al. 2010). This resource also provides different types of water equipment that can be very beneficial for students with ASD. From using different communication devices to different technology equipment to show the students what to do can drastically improve the amount of time needed on a skill for a child (Murphy & Henneback, 2020). Educators will no longer have to turn down parents of children with ASD because they will have information that will help them be a successful educator.

Teachers may also feel more excited and want to teach more information to children since they were provided with these new materials.

There will be five different teaching units or categories that will provide all the needed information pertaining to why the skill is important, how to teach it, the equipment needed at home or at a facility, and demonstrations and interactive pieces to see how to teach the skills. The first topic discussed is pool safety in, and around a body of water, making sure the child, parent, and educator understand the importance of supervision and that water can be dangerous. The next three topics are specific to water safety skills consisting of floating, a stroke, and how to swim to a safe area if fallen into a body of water. The final unit will discuss being in a body of water fully clothed. Explaining why children should practice being in water with clothes on and the importance of understanding how it feels to be in water with clothes on your body.

Safety Skills Introduction

This section is organized by the five distinct categories of safety skills, specific skills within those categories, steps to teach each skill, and blue links that can take you to a helpful resource. The skills are listed by beginning skills to the more challenging ending skills, leading to a child being able to save themselves if they fell into a body of water. When going through the activities please try to go in order of the skills listed. By doing this it will be most beneficial for the student and the teacher to logically progress through the safety skills. If a child is successful in one or multiple skills it's always good to review them before moving on to a more difficult skill. The pool is a wonderful place to build family connections and great relationships that can continue to grow outside of the water, remember to try to stay calm and have fun!

There are many different images, videos, and step by step directions on how to teach each of the skills along with other resources. Within each category there are links for videos, images, or other resources. When implementing the safety skill, simply click on the link to open that resource. Different resources also include social stories, fist then charts, and PECS. Within the document there are not any skills that specifically discuss how to get a child to go under the water, or comfortable with going under water. Instead here is information on how to help a child become comfortable with going under the water and some activities to do to help with [water adjustment](#) (click on the blue word to take you to the resource).

Pool Entry Safety

Children with ASD typically have a fascination with water and don't understand that water can be dangerous which can lead to a child wandering away from supervised adults and jumping into a body of water. Even when there are gates and other boundaries many children will still find a way in. Besides drowning, running on the pool deck, and diving into shallow water can also cause significant injury to a child.

First Skill: Walking on pool deck

Explain to the child that they need to walk outside of the pool

Hold the child's hand/ keep them right next to you when entering the pool area

Take the child around the entire area so they can get used to the unfamiliar environment

Activities:

[Social Story about Walking on the Pool Deck](#)

[Walking on Pool Deck First Then Chart](#)

Second Skill: Entering and exiting the pool (multiple options for entry)

#1 Walk in:

Slowly walk in if zero depth

Read social story ahead of time

#2 Ladder:

Face the ladder

Watching each step slowly go down into the pool

Always keep hands and feet on the ladder



Pool Entry Safety

#3 Slide in:

Sit on your bottom on the side of the pool



Turn onto stomach feet should be in the water with both hands by your side (looks like you are going to do a pushup)



Slowly push off with hands into the water

Activity:

[Social Story on How to Enter the Pool](#)

[Pool Entry First Then Chart](#)

Third skill: Waiting on the edge of the pool

Explain to the student that they wait until someone says the cue (word/ sound to enter)

Once in the pool keep a hold onto the wall until the adult is watching and ready

Let go and swim

Activity:

[Climbing Monkey](#)

Floating

Floating is one of the first skills and can be an extremely hard skill for children with ASD to learn. When children are comfortable enough to float it provides opportunities where they can feel comfortable in various positions in the water and know a water survival skill. Once a child is able to float, continue to practice the skills so the student gets stronger and can hold the float longer. Eventually the float will be automatic and the student won't have to think about it as much when doing it!

First skill: Front Float

Practice standing in the pool like a star



Supporting child with noodles and have them pick their feet up off the ground



Child will put face in water

Practice with support until comfortable



Remove supports

Activity: [Save the Ducks](#)

Floating

Second Skill: Back Float

Have the student lay their head on your shoulder



Use a noodle to support under their knees



Focus on keeping head back and belly up



Remove the supports when ready

Activity:

[Save the Ducks](#)

[Blast Off](#)

Floating

Third Skill: Rotating from front float to back and vis versa

Child starts in front float holding onto a kick board or noodle

Slowly turn child onto back so in back float

Repeat and have child practice on own, provide support if needed

Click on the image for video of skill:



Activity:

[Find the Treasure](#)

[Water Adjustment](#)

Stroke: Front Crawl

If a child falls into a body of water, one of the quickest ways to get them to safety is for the child to get to a well or edge so they can get themselves back onto safe land. The first beginning stroke to teach a child so they are able to get to safety quickly is the front crawl or freestyle. Within this stroke the student will use both legs and arm movements to propel themselves through the water to safety.

First skill: Kick (flutter kick)

Student sits on the edge of the pool and kicks their legs

Click on the image for video of skill:



Student gets into the pool and holds onto the side of pool and kicks



Click on the image for video of skill:

In front float position holding onto kickboard or noodle student will kick around



Student kicks in front float position with no support

Student is able to kick with no support and move around the pool without sinking

Activity:

Red Light, Green Light

Cue: Kick like a ballet dancer (legs straight) not like a bike rider (bend their knees)

Cue: Make small waves, water boil when kicking not big waves/ splashes

Stroke: Front Crawl

Second skill: Arms

Outside of the pool practice big windmill arms

Click on the image for video of skill:



Practice in water standing

Practice in water while holding onto the wall

Activity:

[Scoop the Ducks](#)

Cue: Hands should be in scoops like when scooping ice cream

Cue: Arm reach high next to head fully stretched

Cue: Arms go opposite each other (when one in water the other out of water)

Third Skill: Arms and kick together

Outside of the pool practice arms and legs together

Click on the image for video of skill:



Holding onto the wall practice kick and arms



Using a kickboard, go around the pool practicing arms and legs then practice without any support!

Activity:

[Simon Says](#)

Stroke: Front Crawl

Final Skill: Breathing

Turn head back and forth while standing in the pool

Hold onto wall and put face in water

Click on the image for video of skill:



Practice turning head back and forth

Click on the image for video of skill:



Have the child do three arm movements then breathe holding onto wall

Have the child do three arm movements then breathe on their own

Practice!

Activity:

[How Many](#)

Swimming to a Safe Location

Now since the child knows how to enter and exit the pool, float, and do the front crawl. It is time to teach them how to swim to safety. Children with ASD can get very overwhelmed in a new situation so by having the location or cues known for a child on where to go if they aren't safe in the pool can be beneficial.

First Skill: swimming from the middle to the side of the pool

Go into the middle of the pool

Practice front and back float then turn and do the front crawl to the edge of the pool with needed assistance (noodle, kick board)

Go back into the middle of the pool and practice without assistance

When the child is able to go from the float into the front crawl to the edge give them space to practice on their own

State, in the middle of pool "I'm tired we need to go to side" or, "time to get out we need to go to side of pool" and practice scenarios

Activity:

[Find the Treasure](#)

[Social Story on How to Swim to a Safe Location](#)

Second Skill: Exiting the pool (multiple options):

After swimming to the side hold onto the wall and use the wall to get to the ladder

Exit ladder

After the child is comfortable with the ladder practice exiting from the side of the pool, the "pull and swing". Student will pull themselves up on the side and swing one leg over to get out

Practice with assistance

Practice on own

Let child choose what way they want to exit the pool

Activity:

[Climbing Monkey](#)

[Social Story on How to Exit the Pool](#)

Swimming to a Safe Location Fully Clothed

One of the most common reasons for drowning is that the child was put into an unknown water environment, slipped, or fell into a body of water. Since it was unexpected and they had clothing on they would panic and be unable to use the skills they know to save themselves. Children with ASD normally have sensory needs and can have a lot of difficulty demonstrating what they need to do to get to safety especially if they are put into a new sensory experience.

Step one: Getting in water fully clothed

Have the child wear a shirt, pants, underwear socks, and shoes but make sure they are all items that are okay to go into the water!

Let the student explore the water with clothes on

Once the student is comfortable practice all the previous learned skills

With assistance practice front crawl to wall and exiting

Practice front crawl to wall and exiting without assistance

Activity:

[Water Adjustment](#)

References

- Baisch, S. (2019). *Blue and clear body of water* [Photograph]. Unsplash. https://unsplash.com/photos/K785Da4A_JA
- Casey, A., Blok, J., Vaughan, K., & O'Dwyer, W. (2020). Parental Perceptions of Water Safety among Children with Autism Spectrum Disorders. *International Journal of Aquatic Research and Education*, 12(4).
- Forde, A. L., Zeman, E. A., & Clarke, L. (2020). Effectiveness of an intensive drowning prevention program and skills retention by children with and without disabilities. *International Journal of Aquatics Research and Education*, 12(2).
- Fox, M. H., Witten, M. H., & Lullo, C. (2015). Reducing obesity among people with disabilities. *Journal of Disability Policy Studies* 25(3), 175-185.
- Grosse, S. J. (2014). Aquatic safety for individuals with autism spectrum disorders. *International Journal of Aquatic Research and Education*, 8, 295-301.
- Lawson, L. M., D'Adamo, J., Campbell, K., Hermreck, B., Holz, S., Moxley, J., Nance, K., Nolla, M., & Travis, A. (2019). A qualitative investigation of swimming experiences of children with autism spectrum disorders and their families. *Clinical Medicine Insights: Pediatrics*, 13, 1-9.
- McIlwain, L. (2012, April 27). *Another child with autism drowns. Before you judge, know the research*. National Autism Association. <https://tinyurl.com/d9su5ke9>.
- Murphy, K.L., & Henneback, K.R. (2020). A Systematic Review of Swimming Programs for Individuals with Autism Spectrum Disorders. *Journal of Disability Studies*, 6(1), 26-32.
- Phytanza, D. T. P., & Burhaein, E. (2019). Aquatic activities as play therapy children autism spectrum disorder. *International Journal of Disabilities Sports & Health Science*, 2(2), 64-71.
- Potdevin et al., F., Moronval, S. J., & Dekerle, J. (2017). What is the best swimming stroke to master for beginners in water safety tests? *European Physical Education Review*, 25(1), 174-186. doi:10.1177/1356336X17713665
- Rogers, L., Hemmeter, M. L., & Wolery, M. (2010). Using a constant time delay procedure to teach foundational swimming skills to children with autism. *Hammill Institute on Disability*, 30(2), 102-111.
- Special Needs + Parent and Tot Resources, (2022). *Autism and Hearing Impaired* [Photograph]. Aquamobile. <https://aquamobileswim.com/instructor-manual-can/special-needs-parent-tot-resources/>
- Swimming New Zealand. (2007, August 02). *Swim start lesson plans*. <https://www.swimming.org.nz/>