

# Swimming Lessons, Water Survival Training and Water Competency

*Extract from the American Academy of Pediatrics; position on drowning prevention.*

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All children should eventually learn to swim. Swim skill and water competency may be the most important drowning prevention measures in natural water settings because fencing and lifeguarding may be impractical in these settings. The position of the AAP has focused on the child being “developmentally ready” for formal swimming lessons. Developmental readiness for swim lessons is multifaceted; the determinant of readiness is not the child’s age but the confluence of physical, social, behavioral and emotional, and cognitive skills balanced against the environmental risks of drowning.

It has been demonstrated that children aged 2–4 years can acquire the motor skills for swimming and that most children aged 4.5 years are developmentally ready to do so; by 5 or 6 years of age, most can master the front crawl.<sup>121–123</sup> Subsequently, Brenner et al revealed the preschool age group experienced a reduction in fatal drowning risk if they had had swim lessons,<sup>124</sup> as did Yang et al in a study of Chinese preschoolers.<sup>125</sup> School-aged children in the Bangladesh SwimSafe Program were demonstrated to have significantly decreased drowning rates.<sup>126</sup>

Before a case-control study of swimming lessons,<sup>124</sup> concerns about early swim lessons were based on the fear that swim lessons might increase drowning risk,<sup>127</sup> with the premise that parents whose children were in swim programs would have a false sense of security, resulting in inadequate supervision around water. Several studies have shown that parents of small children enrolled in swimming lessons were more likely to endorse the statements “swimming lessons are the best way to prevent drowning,” “toddlers can learn to save themselves if they fall into water,” and “it is better to develop swimming ability rather than rely on adult supervision.”<sup>128,129</sup> When these parents were given a targeted educational program to reverse misconceptions about toddler water safety or given feedback about their child’s progress or stories of close calls, they were more likely to agree that their child required more, not less, supervision and more likely to disagree that swimming lessons were the best way to prevent drowning.<sup>58,128</sup> Thus, swim lessons should include parental training to improve the parents’ understanding of their child’s actual swimming abilities and continued risk.

The American Red Cross Scientific Advisory Council defines basic swim skills as the following: ability to enter the water, surface, turn around, propel oneself for at least 25 yards, and then exit the water.<sup>129</sup> It is important to recognize that performance of these water survival skills, usually learned in a pool, is affected by the aquatic environment (water temperature, movement, depth, clothing, distance), for which a person may be unprepared. Demonstration of skills in one aquatic environment may not transfer to another. Effective swim lessons should provide repeated and progressively more experiential training, including swimming in clothes, swimming in life jackets, falling in, and self-rescue. Consequently, achieving basic swim skills requires multiple sessions of lessons. Thus, parents need to be aware of their child’s progress and keep their child in lessons until basic

water competency skills are achieved. More research is needed to determine which types of swim instruction and water survival skills training are most effective in preventing drowning in children of all ages.

The international drowning prevention community has begun to expand the concept of water competency to include needed skills, knowledge, and behaviors.<sup>5</sup> In addition to basic swim skills, water competency should include knowledge of local hazards in the aquatic environment, risk judgment and self-assessment of abilities, and recognition and response to a person in distress in the water, including safe rescue and CPR.<sup>5</sup> Thus, acquisition of water competency is a protracted process that involves learning in conjunction with developmental maturation and physical skill sets by the child.

Barriers to swim lessons and water competency are more commonly based in cultural norms, economics, and access. Black communities have reported a legacy of reluctance to engage in swimming related to long-standing segregation and exclusion from public pools.<sup>130</sup> Vietnamese immigrant families reported that pool environments are alien and cold and recreational swimming is not valued.<sup>131</sup> Clothing that protects modesty may not be allowed in some pools, and, for some religious and ethnic groups, single-sex aquatic settings are required.<sup>17</sup> In addition, the multiple swim sessions required to achieve basic water competency can be costly, and access to affordable, convenient, and culturally appropriate swim lessons may be limited. Moreover, decreased municipal funding for swimming pools and lifeguards has worsened access to swimming lessons and safe water recreation in many communities. These barriers can, and should, be addressed through community-based programs targeting high-risk groups by providing free or low-cost swim lessons, developing special programs and changing pool policies, using language and culturally appropriate instructors to deliver water safety classes, and working with health care clinics and places of worship to refer families to swim programs.<sup>17,132</sup>

Although early instruction may be beneficial, there are currently no data to support a recommendation for infant swim lessons. Aquatic programs for young children (especially those younger than 1 year) pose some medical concerns, and initiation of a swim program should be discussed between an infant's caregiver and pediatrician. These include the risk of gastrointestinal tract infections, dermatitis, and acute respiratory illness that result from exposure to infectious agents and pool chemicals. Hyponatremia from ingesting water and hypothermia are also health risks to the infant.<sup>133</sup> Fortunately, medical problems from swimming are rare, treatable, and preventable events.<sup>134,135</sup> The World Aquatic Babies and Children Network has published guidelines for the operation of aquatic programs for children younger than 3 years. The guidelines recommend (1) required parental involvement, (2) a fun atmosphere with one-on-one teaching, (3) qualified teachers, (4) warm water to prevent hypothermia, (5) maintenance of water purity, and (6) a limited number of submersions to prevent water ingestion and hyponatremia.<sup>136</sup> The American Red Cross has resources for choosing a swim program.<sup>137</sup>

Multiple studies have found that exposure to chlorination byproducts in swimming pools can damage respiratory epithelium and can result in a child's predisposition to asthma and bronchitis and other allergic conditions.<sup>138-142</sup> However, a longitudinal study of children from birth to age 7 to 10 years revealed no increased risk of respiratory symptoms, allergy,

or asthma among those with chronic but noncompetitive swimming pool exposure. In fact, their lung function was better.<sup>141</sup>

The AAP supports swimming lessons for children older than 1 year. Swim lessons are increasingly available for children with various disabilities, including autism, or other health conditions. A parent's decision about when to initiate swimming lessons must be individualized on the basis of a variety of factors, such as frequency of exposure to water, health concerns, emotional maturity, and physical limitations, while considering that toddlers aged 12 to 36 months are at highest risk of drowning. It must be stressed that swimming lessons, in isolation, will not drown-proof a child. The goal of swim lessons is to reduce the risk of drowning but also to promote and prepare for parent-child activities, exercise, fun, and enjoyment of the long process of acquiring aquatic learning and water competency. Swim ability must be considered as only one part of water competency and of a multilayered protection plan involving effective pool barriers, constant and capable supervision, life jacket use, and lifeguards. Parents and guardians of children should become an integral component of aquatic programs to facilitate and continue development of their child's water competence.

Importantly, parental acquisition of water competency knowledge and behaviors are critical to reinforce and promote the child's water competency. Because parents and caregivers are usually the most immediate layer of protection, they need to learn key physical skill sets, too. Untrained rescuers, such as a parent or bystander, often die when they enter the water to attempt the rescue of a drowning victim.<sup>143-145</sup> Even a small child can drown an untrained rescuer. Sometimes the primary drowning victim survives, whereas the intended rescuer, often a male relative, fatally drowns; other times, both die.<sup>144</sup> Because rescuer safety must be the priority, only people trained in the advanced skills of water rescue should enter the water. Safer rescue techniques should be taught to children and their parents as a part of comprehensive water safety training during swim lessons.<sup>146</sup> These techniques involve reaching with an object or throwing something that floats to avoid water entry ("Reach, throw, or row; don't go"). Safe rescue of a drowning person requires knowing one's limitations, risks, and training to avoid putting oneself at risk.

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