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American Red Cross Advisory Council on First Aid, Aquatics, Safety, and Prevention (ACFASP)

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ACFASP Advisory: Minimum Age for Swim Lessons

American Red Cross Advisory Council on First Aid, Aquatics,
Safety, and Prevention (ACFASP)

(Approved June 2009)

Overall Recommendation as an Option

Based primarily on the consensus of major aquatic agencies and expert opinion, infants and young children may *optionally* start swim lessons for the purpose of building aquatic readiness and water acclimation on an individual basis any time after the first or second year of life. Individual considerations include the child's intellectual and physical capacities, ability to relate to others in groups, and acquisition of fundamental motor skills such as voluntary breath control, upright head and trunk righting, upright balance, and independent walking.

This optional recommendation is made as a result of research evidence that has demonstrated -

- individual infants and young children *are* capable of acquiring selected basic aquatic skills such as entering, submerging, rolling over, floating and gliding, and paddling during the second through fifth years of life but not to the same skill level as older children and adults;
- no evidence exists that introducing voluntary aquatic skills prior to 15-18 months of age produces more advanced levels of skill proficiency or adequately prevents drowning;
- limited evidence exists that early introduction to swim lessons (i.e., prior to age 4 years) may provide some benefits related to later swimming acquisition as well as drowning prevention.

The preponderance of expert and agency opinion also supports the following recommendations:

- Learning to swim, while *eventually* an important factor in reducing the risk of drowning, is neither an adequate nor sufficient means for preventing drowning among children younger than four to five years of age.
- Drowning prevention requires multiple layers of redundant preventive steps including adequate four-sided fencing with self-latching gates as well as childproof locks on all external doors and windows from the residence. The single most important factor in preventing child drowning must be constant appropriate adult supervision of all children. The characteristics of "qualified adult supervision" will be defined in a separate statement.
- Water safety education for children at all ages and their parents/guardians must be an integral component of all aquatic programs as a means to facilitate water safety and drowning prevention.

Because these final three statements were peripheral to the primary questions in this review, a separate scientific review and advisory will be conducted to identify appropriate levels of evidence.

Questions Addressed

Main Advisory Question

What scientific evidence exists to support setting a minimum age for swimming lessons?

Corollary Questions

Does evidence exist to support an optimal age for acquiring swimming and aquatic skills?

Does evidence exist to support a universal order of acquisition for swimming and aquatic skills?

Does evidence exist to identify the most appropriate purposes and methods for aquatic programs for young children?

Introduction/Overview

The earliest and/or optimal age(s) at which aquatic skills should be introduced within structured (a.k.a., formal) swim lessons has remained a controversial issue in the aquatic and medical fields for over four decades. The controversy in part stems from differing theoretical perspectives underlying the nature of skill acquisition (e.g., maturational, learning, or dynamical theories) as well as the varied purposes for which swim lessons are offered (e.g., readiness, skill acquisition, drowning prevention).

A *maturational perspective*, often employed by the medical profession (e.g., American Academy of Pediatrics) assumes that aquatic skill learning is closely related to a person's chronologic age as result of normative hereditary-based processes. In fact, the most recent AAP policy statement (2003) recommends that, while all children should learn to swim, aquatic agencies and parents ought to restrict organized swimming lessons until after a child has reached the age of 4 years (48 months) "due to general developmental limitations" (AAP, 2000). The contrasting *learning theory*, more typically adopted by instructors and swimming agencies, presumes that learning to swim depends less upon age than upon specific experiences such as structured swim lessons. *Dynamical systems (a.k.a., chaos) theory*, a more contemporary approach, claims that learning to swim, like other movement skills, results from emergent dynamic, physical, and psychological factors that interact with age and experience. These very different worldviews strongly influence how persons and organizations understand why and how and why aquatic skills are acquired.

Aquatic programs and learn to swim lessons have been indirectly and subtly influenced by the previously-mentioned perspectives. They also have been shaped

by their underlying purposes such as to develop aquatic readiness and adjustment skills as a means to eventually promote water safety and enjoyment of swimming; to primarily prevent drowning in infants and toddlers, to promote precocious swimming skills for competition or survival, or even to promote enhanced motor control, coordination, and academic skills. Depending upon the purpose of the aquatic programs, different sets of skills are emphasized along with differing types of teaching.

Abundant research shows that individual infants and young children are capable of acquiring voluntary aquatic behaviors at young ages during the second through fifth years of life. This is the same age range during which most young children begin to acquire other fundamental locomotor and motor skills such as walking, running, throwing, or kicking. Asher (1995) found that children approximately 3 years of age demonstrated significant changes in rudimentary aquatic safety behaviors after either 8 or 12 weeks of training. In a recent case control study, children who had formal swimming lessons had up to an 88% reduction in drowning death. (Brenner, et al., 2009).

Summary of Scientific Foundation

What Scientific Evidence Exists to Support Setting a Minimum Age for Swimming Lessons?

The developmental research literature clearly indicates that

- many basic aquatic skills (e.g., voluntary breath control, water entry and exit skills, dog paddle) can begin to be acquired between 18 and 60 months of age with wide individual differences (Erbaugh, 1978; 1980; 1982; McGraw, 1939);
- basic aquatic skills acquired during the preschool period primarily serve a role as foundational or readiness skills for later and more advanced swimming skill and stroke acquisition (Erbaugh, 1978; 1980; 1982; Langendorfer & Bruya, 1995);
- skills acquired after the first 12-36 months may have some impact on later learning of swim strokes at adult levels or preventing drowning (Asher, et al., 1995; Brenner, et al., 2003; 2009);
- associated readiness skills (e.g., balance, sitting, standing, walking, jumping plus cognitive and social adaptability) may be more appropriate criteria for making individual decisions about starting aquatic experiences than age alone (Langendorfer & Bruya, 1995).

Recent AAP statements (2000; 2003) called for a minimum age of 4 years before children should enroll in formal swimming lessons because “children are generally not developmentally ready...until after their fourth birthday.” The statements have not relied upon firm scientific evidence and inadequately considered individual differences that allow children at ages younger than four years to begin to learn to swim. While there is no direct evidence that aquatic experiences prior to the first two years of age provide any longstanding, persistent benefits either to

skill acquisition or to reduce the risk of drowning, the same cannot be said of experiences during the second, third, and fourth years of life (Brenner et al., 2009; Asher, et al., 1995).

Does Evidence Exist to Support an Optimal Age for Acquiring Swimming and Aquatic Skills?

In the only study evaluating the optimal age to begin to learn to swim, children ages 4-6 years more rapidly and efficiently acquired traditional beginner swimming skills than younger children (Parker & Blanksby, 1996). Based on the lack of other research as well as the complexity of appropriate research variables, no recommendation can be supported to propose an optimal age at which to begin swimming lessons. An optimal age for starting water experiences to reduce the risk of drowning has not been studied, but the Asher et al. (1995) study suggests that some benefits may occur around age three years.

Does Evidence Exist to Support a Universal Set and Order of Acquisition for Swimming and Aquatic Skills?

Only two studies evaluated the order of skill acquisition; none involved young children or looked at the appropriateness of different skills. There is insufficient information upon which to make any recommendations. Additional, targeted research studies about item order are required.

Does Evidence Exist to Identify the Most Appropriate Purposes and Methods for Aquatic Programs for Young Children?

The appropriate purposes for learn-to-swim and aquatic programs have not been studied and remain a matter of somewhat heated opinion. Only one study (Illuzi, 1990) has examined the effectiveness of different methods of teaching swimming; it found no differences between traditional direct (command) and less traditional indirect (exploration) methods.

Several important questions need to be addressed through larger, prospective studies. Are some swim program purposes more or less appropriate than others? Are some methods more effective than others for achieving different lesson purposes? Are some methods more appropriate for different skill and age groups? Finally, what appropriate roles may parents play in children's swimming programs?

Summary

Limited research supports the option of a minimum age for beginning swimming lessons between two and four years when coupled with other individual developmental markers. Due to lack of sufficient data, categorization for appropriate teaching methods, order for teaching skills, and most appropriate purposes for swim lessons cannot be recommended at this time.