



**BENCHMARKING  
AUSTRALIAN CHILDREN'S  
SWIMMING AND WATER  
SAFETY SKILLS:  
SWIM SCHOOL DATA**

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**Part 3: Children Aged 2-4 Years**



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## PROFILE OF CHILDREN AGED 2-4 YEARS ATTENDING PRIVATE SWIMMING SCHOOLS



50% male



79% aged 4 years



95% of children were living in major cities



56% of children attending lessons were from high decile areas



53% pay \$15.50 for a 30 minute lesson per week



The top three skill sets children are learning:  
**floating, breathing, water familiarisation**





## BENCHMARKING REPORT: SWIM SCHOOL DATA PART 3

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## EXECUTIVE SUMMARY

This research report is the final in a series investigating the swimming and water safety ability of children attending private learn to swim lessons (not including government funded school and vacation programs). This report provides an overview of children aged two to four years attending private learn to swim programs, with a focus on four year old children as the biggest group among this cohort attending lessons.

This report specifically addresses the swimming, water safety and survival skills of a cross-section of children aged two to four years attending private learn to swim programs from Victoria (VIC), South Australia (SA), New South Wales (NSW), and Queensland (QLD). This adds to the existing research exploring swimming and water safety skills of primary and secondary school children attending a range of programs, including Royal Life Saving Society - Australia's [RLSSA] Swim and Survive program [1-3]. This study used data obtained from a national database of private swim school providers, consisting of student records from February-2014 to June-2017. All information was de-identified, therefore both individuals and swim schools were anonymous.

The original National Swimming and Water Safety Framework (1999) outlined skills from school years/ grades one to seven [4]. Since 2009, RLSSA's Swim and Survive program has included skills relevant and appropriate for children aged six months to five years (and their parents) to learn and develop within the Wonder and Courage programs [5].

The National Framework has recently been revised to include skills across all levels of development regardless of age, however as the data for this study was obtained and analysed prior to the review commencing, any reference to the National Framework and the Benchmark refers to the original Framework based on primary school years.

This report provides an insight into what children under five years are learning and achieving in learn to swim lessons and fills a gap in our knowledge and understanding of children's swimming and water safety skills across all ages.

Further research is required to determine if these results are representative of all children of this age group attending learn to swim lessons across Australia, and the development of skills at different ages. The findings highlight that young children are learning and developing fundamental skills such as being comfortable and familiar in the water, floating, and learning to breathe in the water.

There are many benefits of introducing children to water from an early age, however it is important the parents and carers apply a range of drowning prevention strategies for this age group, including active adult supervision, installing and maintaining barriers to water and learning CPR in addition to water awareness and swimming lessons.



## Four year old Children

An analysis of four year old children in this study found that an equal proportion of males and females were participating in lessons. The average age these children commenced lessons was 3.3 years, with no differences between males and females.

Four year old children had attended an average of 24 lessons over a period of 5.6 months. Over half (51%) had been attending lessons for a time period between zero and six months.

The most frequent skills being taught to four-year-old children were floating, safe entries and exits and learning to breathe (bubbles).

## Key findings

- 15,307 children aged two to four years old were included in this study
- This age group made up approximately 25% of children attending private swim schools (across the entire study of children aged 2 – 15 years)
- 76% were aged four years old
- An equal number of males and females in this age range were attending lessons
- 95% were living in major cities
- 56% of children attending private swim schools were living in areas of high socioeconomic status
- The average cost for a 30 minutes lesson for this age group was \$15.50 per lesson
- Children aged two – four years are learning and achieving basic fundamental skills such as floating and learning to breathe (bubbles) in the water.
- Few children were learning formal swimming strokes
- Few children were competent at moving through water for 3m, by performing a torpedo or dog-paddle.

## NEXT STEPS

### Policy, Programs and Advocacy

- Continue to advocate for all children and their families to be able to access water safety programs, including provision of facilities and/or provision of subsidised lessons, particularly for those identified as 'high risk' populations (such as those from Aboriginal, Torres Strait Islander and multicultural communities, those living in rural and remote areas, and those from lower socio-economic backgrounds).
- Inform and enhance new and existing drowning prevention and water safety campaigns specific to children under five years.
- Continue to investigate opportunities to collect data on swimming and water safety skills and knowledge competencies at a state and national level, across all ages and types of programs.
- Work with sector stakeholders to review an evidence-based policy statement about the most appropriate age to commence formal lessons.
- Work with industry or those developing and providing programs to implement the (revised) National Swimming and Water Safety Framework as a guide to ensure a comprehensive and progressive range of skills and knowledge is offered.

### Research Agenda

- Further investment into the evaluation of swimming and water safety programs across the life stages, including measuring retention of skills over time.
- Consolidate terminology when referring to and discussing 'swimming lessons', 'learn to swim', 'water safety', 'survival skills' and 'lifesaving skills' for all ages.
- Investigate the retention of skills acquired at an early age and the effectiveness towards drowning prevention.





## BACKGROUND

This research follows the previous research reports on the achievement of swimming and water safety skills among Australian children participating in private learn to swim programs. Part one presented the swimming and water safety ability of primary school children (5–12 years) [6], and part two focused on teenagers (13–15 years) [7] attending lessons at private swim schools. This report provides a snapshot of skills being taught to and achieved by children aged two to four years attending lessons.

The Australian Water Safety Strategy 2016-2020 identifies life stages, high-risk populations, locations, and activities for drowning and provides recommendations to achieve a reduction in drowning within these key areas [8]. Goal one is to reduce drowning deaths in children aged 0 - 14 years, focusing on young children aged 0 - 4 years, and school-aged children 5 - 14 years. The second National Swimming and Water Safety Education Symposium, held in May 2018 identified 'Children under Five Years' as a key area for future research and action [9].

### Drowning statistics of children 0 – 4 years

Children under five are the age group at highest risk of drowning and, on average, 27 children under the age of five years drown in Australia every year. Among this age group, drowning most commonly occurs in a domestic environment; the leading location being a home swimming pool, primarily due to a fall into water without adequate adult supervision [10].

Children under five account for 42% of non-fatal drowning incidents, with approximately 7.6 non-fatal drowning incidents requiring hospitalisation occurring for every fatal drowning [11]. More than three quarters (77.6%) of non-fatal drowning incidents among children of this age occurred in a home swimming pool. Children under five account for 44.6% of all non-fatal drowning incidents in public swimming pools [11].

Research undertaken by Royal Life Saving has found that the rate of unintentional fatal drowning among children under five has declined by 67% over the past 25 years (1993/94 – 2017/18) [10] (Figure 1).

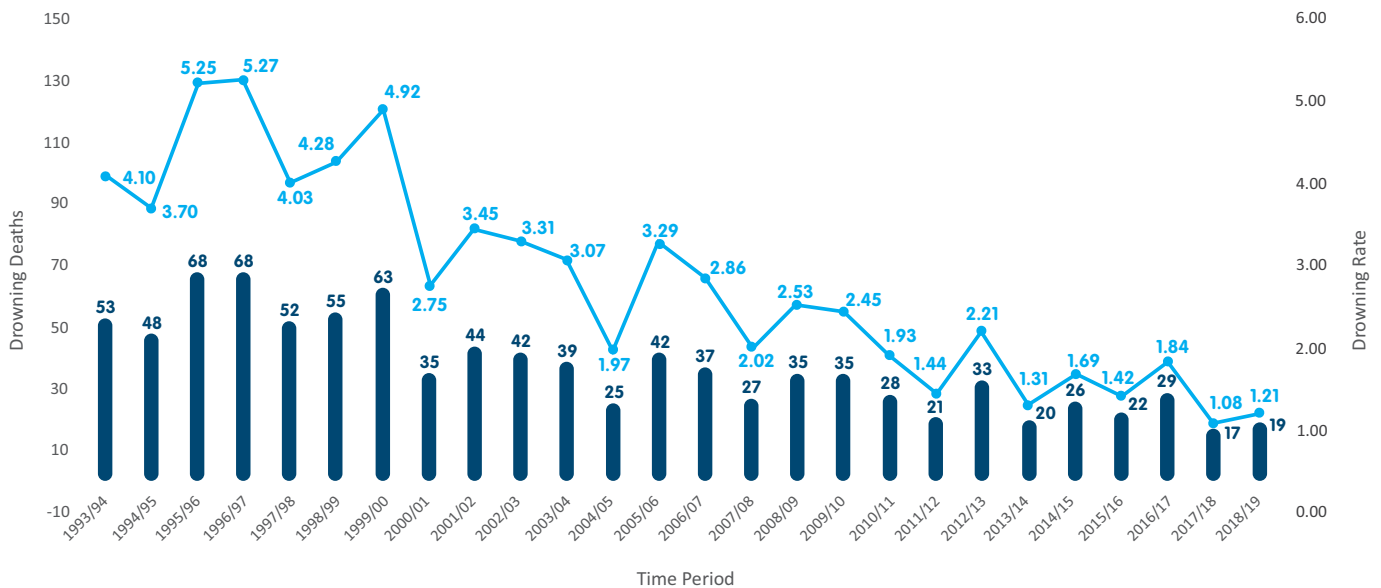


Figure 1: Drowning deaths among children 0 - 4 years by financial year, 1993/94 to 2018/19

## Swimming and water safety skills

The original National Swimming and Water Safety Framework (1999) [4] (applicable to when this entire study was conducted) set the standard for the swimming and water safety skills children should be able to achieve throughout school years. The Framework was only intended to cover school-aged children. The Swim and Survive program Wonder and Courage levels encompass skills from six months to around five years of age [5]. These levels introduce children to water, allowing them to become confident with a parent/carer then gradually gain independence and develop basic skills such as flotation, breathing, submersion and moving through water (propulsion).

The National Swimming and Water Safety Framework has been recently revised (2018/2019) [12]. This now incorporates three stages (Fundamental, Acquisition and Application), based on skill development throughout the lifespan rather than aligned to the primary school years. The Fundamental Stage outlines basic foundation skills that everyone should master before progressing onto more complex swimming and water safety skills in the Acquisition and Application stages. Skill progression in each stage is measured against three milestones, which an individual at any age should be able to competently perform before progressing onto the next stage.

AUSTSWIM, the national body for swimming and water safety teacher training, recommends that children should not start formal lessons until at least six months of age, where there should be a strong focus on water familiarisation, safety and enjoyment. AUSTSWIM also recommends that parent and carer education should be a core component of infant and toddler programs. They also recommend that children should only start in lessons when they are ready, not based on age [13].

## Background literature

### Who is attending swimming lessons?

The Australian Sports Commission reports that swimming is the most popular out of school physical activity for Australian children, with approximately 32% of Australian children aged 0-14 years, participating in organised swimming activity at least once per year [14]. Previous research suggests that whilst children may be entering lessons at a young age, they are only completing one or two terms of lessons at a time, then recommence at a later stage, before dropping out of lessons around age eight or nine years old [6].

### Drowning Prevention strategies and campaigns

Awareness campaigns, parent testimonials and education programs, including those with first aid and CPR education, have been very beneficial in increasing knowledge and awareness of water safety for young children. The decline in child drowning can, in part, be attributable to the combination of prevention strategies, such as pool safety regulations and legislation, increased awareness of supervision and increased availability of swimming and water safety programs targeting this age group. Parent testimonials and stories have raised awareness of fatal and non-fatal drowning among young children and have helped with advocacy for drowning prevention, most prominently through mass media.

The following case studies highlight the policy, advocacy and practice that have influenced the reduction in child drowning across Australia.

## Aims

- To provide a 'snapshot' of children aged two to four years attending private learn to swim programs
- To identify and provide a better understanding of participation of children under five in private learn to swim programs
- To examine the skills being taught to this age group and their achievement levels

## CASE STUDIES



### Pool Safety Regulations

Home swimming pools are the leading location for drowning among children under five.

Pool fencing can be attributed for the reduction of child drowning in swimming pools in Australia, with Queensland being the first State/Territory in Australia to introduce mandatory pool fencing for backyard swimming pools in the 1970s [15].

In 2010, all existing pool fencing legislation in Queensland was replaced with one single pool safety standard with previous exemptions abolished. Four sided (isolation fencing) has been found to be the most effective in reducing drowning of young children compared to boundary or three sided fences, along with self-closing and self-latching gates.

Recent research of pool owner's attitudes and beliefs towards pool fencing legislation found that simply increasing awareness of the drowning risk to young children may not influence pool owner's intentions for restricting access and/or changing supervision behaviours, reinforcing the need for a multipronged approach to pool safety [16].



### Keep Watch

Royal Life Saving's Keep Watch campaign has promoted drowning prevention and water safety messages to parents and carers of children under five for over 20 years [9]. Annually, a nationwide Keep Watch campaign is conducted based on current statistics and research.

The campaign aims to educate Australian parents and carers on how to keep their young children safe when in, on or around the water across locations such as the swimming pool, the bathtub, on farms and at public pools. The program has four key drowning prevention actions that should always be applied together to maximise child safety. If one line of defence fails, the other prevention measures will be actively working to prevent children from drowning.

#### The four key actions are:

- Supervise
- Restrict Access
- Water Awareness – including water familiarisation or learn to swim
- Resuscitation

**KEEP**   
**WATCH**  
TO PREVENT DROWNING



### Non-fatal drowning

The Samuel Morris Foundation, which was formed by the Morris family after their three-year-old son Samuel survived a drowning event and lived with severe disabilities for seven years before sadly passing away. The Samuel Morris Foundation works tirelessly to raise awareness of non-fatal drowning, and supports families who have experienced non-fatal drowning.



### NT Water Safety Awareness Program

In the past 15 years, over 21,000 children under five and their families have participated in Royal Life Saving - Northern Territory's Water Safety Awareness Program [17].

This program was implemented in 2003 in response to the high drowning rates of children under five years, and is supported by the NT Government. The program consists of five sessions for children and their parents/caregivers. The first session presents CPR and first aid skills for parents/caregivers, followed by four 30 minute practical water safety lessons in the pool. Families across the NT report the program to be very beneficial in raising awareness of water safety and what to do in an emergency.

One such participant is Heidi May, who had recently moved to Darwin from Germany with her family. Heidi registered her four year old son Oliver into the Water Safety Awareness Program after he fell into a public swimming pool.

Heidi's feedback after completing the Program with Oliver was:

**“It is great to have access to free swimming lessons and there should be no excuses for not using them as they are free. The Program needs to be kept going here as we are surrounded by water in the Territory and it is a good reminder to parents to always be watching.”**

## METHODS

Methods have been explained in detail in part one [6] and part two reports [7]. For further information regarding the methods please refer to these reports. It should be noted that data in this report is not a national representation of children in this age group participating in private learn to swim lessons nationwide. All information was de-identified, therefore neither individuals nor swim schools were able to be identified.

### Data analysis

Records were provided and cleaned in Microsoft Excel TM format and then imported into IBM SPSS Statistics V24 [18] for analysis. Descriptive statistics were utilised. Data has been expressed in percentages and displayed in tables and bar graphs.

### Variables

Variables analysed were: student ID, sex, age, date of birth, participant residential and swim school postcode, state, remoteness classification of the child's residential postcode, duration of lesson, cost per lesson, date started in swim level, name of swim level, calendar days in level, date of last assessment, skill name, competent/not competent.

### Socioeconomic status

Deprivation scale of the child's residential postcode was based on the Index of Relative Socioeconomic Advantage and Disadvantage (IRSAD) [19]; decile 1 being the lowest area of socioeconomic disadvantage and 10 being the area of highest advantage. For reporting purposes, this has been grouped into three categories: High (decile 7 - 10), Mid (decile 4 - 6) and Low (1 - 3).

Table 1: Swimming and water safety skill set definitions

Skills being taught	Includes:
Flotation (ALL)	140 separate skills including variations of: floating on front and back, for a time period, assisted, aided, independent, as part of a sequence, with rotation, to a secure position, shallow and deep water, with/without clothes and goggles, with PFDs, moving towards a target
Breathing	86 separate skills including variations of: blowing bubbles with mouth, nose, face in water, fully submerged, assisted, aided, independent, sequences, with arm strokes, kicking, jump entry, torpedo, gliding, dog paddle, for a time period
Torpedo	45 separate skills including variations of: torpedo on front and back, for a distance, with kicking, face in, blowing bubbles, aided, assisted, independent
Water familiarisation	59 separate skills, including: happy and confident in water, parent/carer education, floating with parent/carer/instructor, socialisation and interaction
Freestyle related skills	98 separate skills, including variations of: assisted, aided, with arms, kicking, distance, breathing, continuously, sequences
Treading water	All treading water related skills, including: aided, assisted, floating and sculling, time period, with/without goggles, signalling for help
Dog paddle related skills	16 separate skills including: introduction, aided, assisted, distance, breathing, rollover, breathing
Backstroke related skills	59 separate skills, including variations of: assisted, aided, with arms, kicking, distance, breathing, continuously, sequences
Survival backstroke	19 separate skills, including variations of: assisted, aided, arms, kicking, with/without goggles, sequences
Safe entries and exits	24 separate skills including: enter/exit the water safely, slide in entry aided/not aided, Jump entry aided/not aided, enter the water and return to the edge aided/not aided,

## LIMITATIONS

### Remoteness classification

The remoteness classification of the child's residential postcode and the swim school postcode was defined using the Australian Standard Geographical Classification – Remoteness Area (ASGC-RA) system [20]. Postcodes were classified into the following categories: major cities, inner regional, and outer regional locations. There were no children from remote or very remote locations in this study.

### Number of lessons

Number of lessons was calculated by taking total days in lessons recorded (calendar days) and dividing by seven days, as children were taking one 30 minute lesson on a weekly basis. Months in lessons was calculated by totalling the calendar days in lessons and dividing by 30 days to approximate the total number of months a child had been attending lessons.

Note that this is not necessarily consecutive months, a child may have been in and out of lessons over a one or two year period.

### Skill definitions

The previous Benchmarking reports in this series utilised the original (1999) National Swimming and Water Safety Framework to determine the skills to be analysed. For the purpose of this study, skills were grouped together based on Royal Life Saving's Swim and Survive Program Wonder and Courage levels that were designed for children from six months to five years of age. Skill sets were grouped according to key terms, such as flotation, breathing, torpedo (Table 1).

These key terms were extracted from the dataset, and whilst some may not be technically correct, this was reflective of the skills swim schools entered into the database prior to the data being received by the research team.

Data analysed in this report was obtained from a third-party database consisting of swim school assessment records. Information was unavailable for a number of variables, such as the child's Aboriginal and Torres Strait Islander status, country of birth and pre-existing medical conditions.

This information is not routinely collected by swim schools, and could not be included in analysis. Lesson specific information such as how many children per class, how often assessments are being conducted and if children are tested in all skills in a level before progressing to the next level were not available.

It was unknown if children were attending more than one lesson per week. Therefore reliability and validity both within and between swim schools was unable to be tested in this study. In-depth assessment information on children's water safety knowledge was also not available and could not be compared to previous benchmarking studies. The age at which parents remain with their children in the water was not recorded, only the child's age at the time of assessment, it is unknown that if they could do the skill without the parent/carer in the water.

Terminology is a limitation associated with this study. The terminology skill sets and individual skills was a direct reflection of the information the swim schools actually recorded, and restricted the ability to compare all skills being assessed. Using these terms may not accurately demonstrate a child's acquisition in a given skill set. Neither does this data provide any information on the retention of skills after assessment.

Another limitation is that some children in the study may have started in the later period of the data collection time and so the length of time in lessons may actually be longer as children may have continued with lessons after the time period of the study. Data was unable to be obtained from children regarding their previous participation in other swim programs.

## RESULTS

### Characteristics

A total of 15,307 children aged between 2 to 4 years old were included in this study, an equal proportion of males and females (50.0% respectively). Over three quarters (78.5%) were aged four years, and 4.6% aged two years. Most were from Victoria (67.6%) and 94.9% resided in areas classified as major cities. When analysed by deprivation scale, 55.8% were living in areas classified as being of high socio-economic advantage (areas ranked decile 7 – 10). Lesson cost ranged from \$15.00 to \$21.80, and the average cost per lesson was \$15.50. (Table 2)

Characteristics	Frequency N	Percent %
<b>Sex</b>		
F	7625	49.8
M	7682	50.2
<b>Age</b>		
2 years	697	4.6
3 years	2591	16.9
4 years	12019	78.5
<b>State</b>		
VIC	10355	67.6
NSW	2391	15.6
SA	2389	15.6
QLD	172	1.1
<b>Remoteness classification</b>		
Major cities	14588	95.3
Inner regional	717	4.7
Outer regional	2	0.0
<b>Deprivation scale</b>		
High (7 – 10)	8540	55.8
Mid (4 – 6)	4136	27.0
Low (1 – 3)	1455	9.5
Unknown	1176	7.7
<b>Cost per lesson</b>		
\$15.00 - \$15.60	8030	52.5
\$16.50 - \$17.00	2073	13.5
\$19.00 – \$21.80	1739	11.4
Unknown	3465	22.6

Table 2: Characteristics of children aged two – four years old attending private swimming lessons



## Skills being taught

The top three skill sets being taught overall were: floating related skills (88.6%), learning to breathe (blowing bubbles) (68.8%), and torpedos (streamline) (31.9%). (Table 3)

Skillset	Number of children learning*	% learning	N competent (at least 1 skill)	% competent (at least 1 skill)
Floating related skills	13558	88.6	9484	69.9
Learning to breathe (blowing bubbles)	10538	68.8	8164	77.5
Torpedo (streamline)	4882	31.9	2845	58.3
Freestyle skills	3113	20.3	1793	57.6
Water familiarisation	3051	19.9	1445	47.4
Treading water	2838	18.5	1900	66.9
Dog paddle skills	2656	17.4	1026	38.6
Backstroke skills	2307	15.1	971	42.1
Survival backstroke skills	552	3.6	398	72.1

\*total % of children learning at least one skill within category, note that this column doesn't add to 100% as the proportion of total individual children learning at least one of the related skills

Table 3: Most common skill sets being taught and achieved by children aged two to four years attending private swimming lessons (all ages)

## Skills being achieved

When broken down by age, there were obvious differences in the skills being achieved between children aged two, three and four years of age. Some skill sets were not being taught to children aged two and three years old, and is reflective of the large number of four year old children in the dataset. In regards to moving or swimming through water, three and four year old children were achieving torpedo for 3m, and dog paddle for 3m (4 year olds only). Across all ages and skills, children were generally competent whilst doing the skills aided (with an adult or buoyancy aid). (Table 4)

Skillset	2 years	3 years	4 years
Floating related skills	<ul style="list-style-type: none"> <li>Buoyancy and flotation activities incorporating attempted movement towards target with and without aids</li> </ul>	<ul style="list-style-type: none"> <li>Float on back</li> </ul>	<ul style="list-style-type: none"> <li>Float on back and recover</li> <li>Float on front aided</li> </ul>
Learning to breathe (blowing bubbles)	<ul style="list-style-type: none"> <li>Sustained effort to blow bubbles on front with face submerged</li> </ul>	<ul style="list-style-type: none"> <li>Submersion with bubbles</li> </ul>	<ul style="list-style-type: none"> <li>Submersion with bubbles</li> </ul>
Torpedo (streamline)	<ul style="list-style-type: none"> <li>Streamlined position, face in the water leading to Torpedo</li> </ul>	<ul style="list-style-type: none"> <li>Torpedo 3m</li> </ul>	<ul style="list-style-type: none"> <li>Torpedo 3m</li> </ul>
Freestyle skills	<ul style="list-style-type: none"> <li>N/A</li> </ul>	<ul style="list-style-type: none"> <li>Freestyle single arm and kick with a board</li> </ul>	<ul style="list-style-type: none"> <li>Freestyle (basic)</li> </ul>
Water familiarisation	<ul style="list-style-type: none"> <li>With support safely enter the water from a seated position towards the carer Be turned towards the edge to hold</li> </ul>	<ul style="list-style-type: none"> <li>Aquatic safety activities with parents and caregivers</li> </ul>	<ul style="list-style-type: none"> <li>Comfortable submerging in the water for a minimum of three seconds</li> </ul>
Treading water	<ul style="list-style-type: none"> <li>N/A</li> </ul>	<ul style="list-style-type: none"> <li>Tread water aided</li> </ul>	<ul style="list-style-type: none"> <li>Tread water aided</li> </ul>
Dog paddle skills	<ul style="list-style-type: none"> <li>N/A</li> </ul>	<ul style="list-style-type: none"> <li>N/A</li> </ul>	
Backstroke skills	<ul style="list-style-type: none"> <li>N/A</li> </ul>	<ul style="list-style-type: none"> <li>Backstroke arms</li> </ul>	<ul style="list-style-type: none"> <li>Backstroke kick with kickboard</li> </ul>

\*may be skewed due to large number of 4 year olds in the dataset

Table 4: The most common skills being achieved within each skillset (all ages)

## Analysis of four year old children attending swimming lessons

### Characteristics

An equal proportion of four year old children in this study were male and female (50.0% respectively), most were from Victoria (68.3%), living in major cities (95.8%) and were residing in locations of high socio-economic advantage (decile 7-10) (56.7%).

### Time in lessons

Four year old children attended an average of 24 lessons over the study period. A quarter (24.9%) had attended between zero and 10 lessons, 18.2% had attended between 10 and 20 lessons (indicating that some students may have just started lessons at the time of data collection) and 14.0% had attended between 20 and 30 lessons. One-fifth (20.1%) had attended between 50 and 100 lessons. (Figure 2) The average age starting in lessons was at 3.3 years.

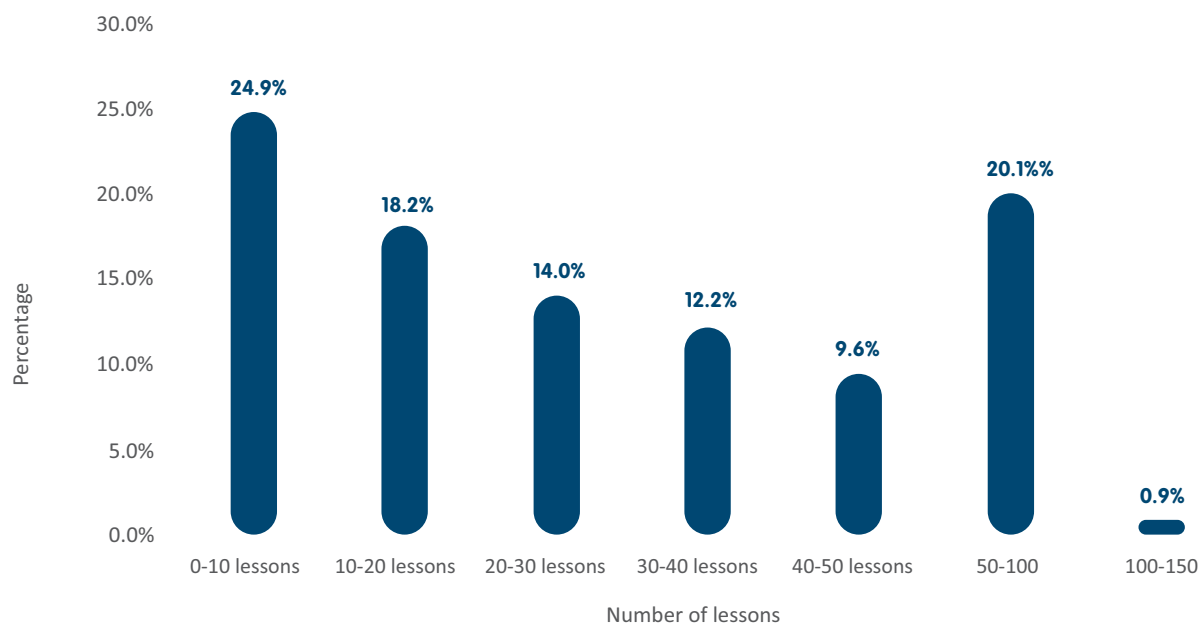


Figure 2: Number of lessons four year old children have attended

On average, four year old children had been participating in lessons for an average of 5.6 months. Approximately 51.5% were in lessons for up to six months total and 80.4% had been in lessons for up to 12 months. (Figure 3).

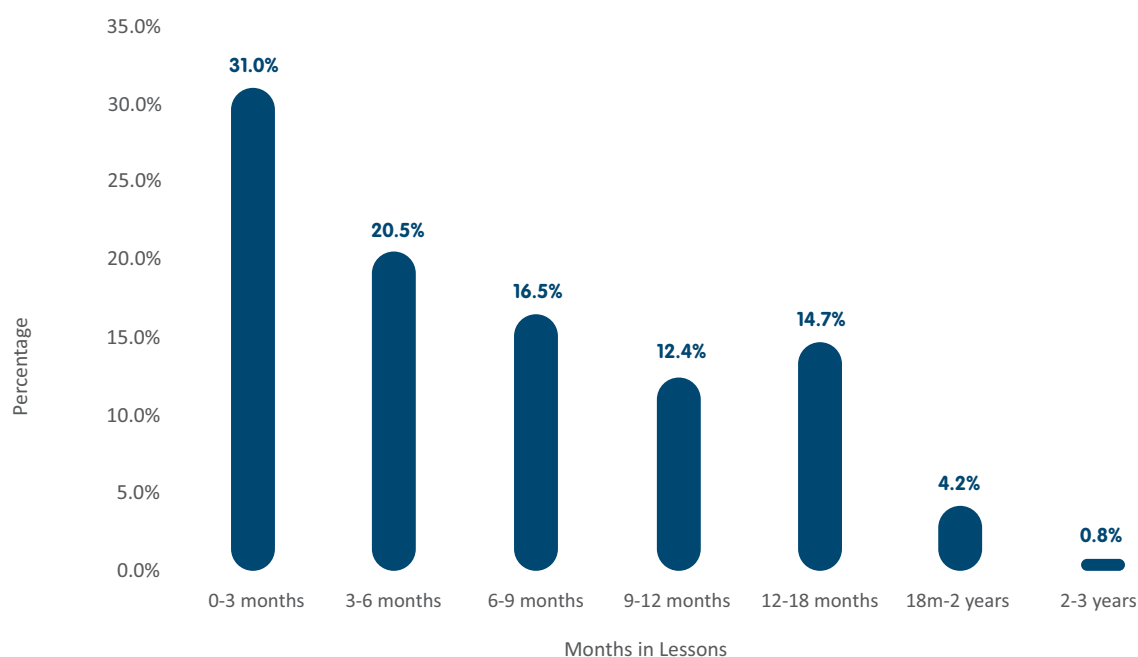


Figure 3: Average total time four year old children spend in lessons

## What are four year old children learning and achieving?

The top 10 skill sets being taught to four year old children were similar to the overall cohort, with the major difference being the inclusion of safe entries and exits and less learning water familiarisation skills. (Table 5) One reason for this difference is that four year old children usually have surpassed the need and skills required for the parent/caregiver to be in the pool.

Rank	Skillsets being taught	% learning at least 1 skill	% competent in at least 1 skill
1	Flotation related skills (All)	74.3	34.1
2	Safe entries and exits	63.7	86.2
3	Breathing/bubbles	58.7	72.5
4	Torpedo (gliding)	51.2	61.6
5	Freestyle related skills	21.5	55.2
6	Backstroke related skills	15.8	52.2
7	Treading water	15.4	65.1
8	Dog paddle related skills	13.4	54.2
9	Water familiarisation (including with parent/carer)	7.7	69.6
10	Survival backstroke related skills	6.8	60.9

\*total % of children learning at least one skill within category, note that this column doesn't add to 100% as the proportion of total individual children learning at least one of the related skills

Table 5: Skills most frequently being taught to four year old children

These results show that four year old children are learning a variety of skills, many children of this age are still working towards competency in these fundamental skills. Only one skill set – backstroke, showed over 50% of children learning as being competent in an individual skill, 'backstroke kick with a kickboard' (67.1%). (Table 6)

Skill	Percentage achieved (of children learning)
<b>Floating-related skills</b>	
Float on back and recover (aided)	26.6
Float on front and back and recover	23.5
<b>Safe entries and exits</b>	
Enter the water safely	32.6
Exit the water safely	20.2
<b>Learning to breathe (incl. blowing bubbles)</b>	
Arms with good body position, fast kicking and blowing bubbles	29.4
Blow bubbles in water with the face fully submerged	25.0
<b>Torpedo (streamline)</b>	
Torpedo 3m	41.0
Torpedo on front or back with a board	22.8
<b>Freestyle</b>	
Freestyle kick with kickboard	42.2
Freestyle arms	23.3
<b>Backstroke</b>	
Backstroke kick with a kickboard	67.1
<b>Treading water</b>	
Tread water (aided)	39.7
Tread water 15sec	17.7
<b>Dog-paddle</b>	
Dog Paddle 3m with breathing	25.2
Dog Paddle	24.9
<b>Survival backstroke</b>	
Survival backstroke leg action (basic)	29.0
Survival backstroke (attempt)	21.4

Table 6: Skills being achieved by 4 year old children attending private lessons

## DISCUSSION

This report is unique in that it provides information on the actual competency of children aged two to four years in private swim school lessons, compared to other research based on self-reported and perceived swimming ability (usually from a parent's perspective) among this age group.

It is well-known that children under five are a growing population for swim schools, and this study confirmed that a large number of children under five are attending formal swimming lessons. Overall, children aged between two and four years made up 25% of the entire database included in the larger study. In this report, four year old children accounted for 79% of children aged two –four years attending lessons. This indicates that many children are being introduced to water safety and swimming from a young age. Unsurprisingly, most (56%) children in this study were from high socioeconomic areas, similar to the primary school aged children (57%) [7].

These findings emphasise that children from lower socioeconomic areas, and their families, may be less likely to have the same opportunities to access water safety and swimming education from a young age as their more advantaged peers. Across all three studies, the average cost for a 30 minute lesson for all ages was \$15.50. The authors acknowledge that the average cost per lesson quoted in this study may be lower than other swimming lessons across Australia. The cumulative cost is still significant considering that children are starting in lessons around 3.5 years old and may continue for one – two years. For parents, it is worth considering that if children are not spending a lot of time in lessons, then it may be best spent at the age where a child will readily master the foundation skills and be able to better understand water safety concepts.

The results confirmed that the skills most frequently being taught and achieved by children under five children are the foundation level skills such as flotation and learning to breathe in water before progressing to more complex motor skills. Very few children in this study were being taught formal swimming strokes. Unsurprisingly, some differences in skill acquisition were apparent between two-year old children and children aged three and four, however due to the large numbers of four-year old children this may have skewed the results.

Further research is required to fully understand the how long it takes young children to learn a particular skill e.g. independent floating. Tracking a cohort of children through swimming lessons from three or four years of age into primary school and adulthood would be beneficial to fully understand how long children take to learn and achieve a skill, the trends of attendance in swimming lessons and the retention of skills over time. What this study shows is that a broad range of skills are being taught to this age group. Water familiarisation plays an important role for both children and parents in being comfortable and confident in and around water to set them up for life long participation in aquatic activity.

Four year old children accounted for the biggest age group in the study (79%). Four year old children were found to be learning a range of skills from the following skill sets: flotation, entries and exits, breathing, torpedoes (gliding) and basic freestyle. Results of this study showed that four year old children in this cohort are not yet competent in moving through water, or formally swimming, for more than 3m. Further research is required to determine whether skills being taught at this age are learning skills that are age appropriate, and if skills are retained over time.



## CONCLUSION

### What are the implications of these findings?

Children are accessing swimming lessons at an early age, with four year old children accounting for the highest age group attending lessons. It is likely that parents are choosing to spend their money on lessons when children are developmentally, both cognitively and physically, ready to master new skills when they are able to understand what they are learning and why. Children that start formal swimming lessons at four, five or six years of age are more likely to progress faster than if starting at two or three years of age, and they are at no real disadvantage, as supported by previous research [21].

This study confirmed that there are still children that are missing out on accessing water safety education, with the majority of children attending lessons being of high socioeconomic backgrounds and within major city location. Those living in low socioeconomic areas and rural and remote locations, including children, are known to be at higher risk of drowning. Further investigation into the accessibility of programs in these locations is needed to enable all children and their family's access water safety education programs.

The dataset utilised for this study did not indicate at what stage/level or age parents and carers are required in the water. AUSTRALIAN recommends parents/carers stay in the water until the child is ready, as opposed to a certain age, and a key focus should be on parent education [13]. The opportunity to incorporate water safety education during swimming lessons for children and families is sometimes overlooked. Research into parents/carers knowledge, beliefs and attitudes pre-and post-participating in a water safety program would be useful to measure effectiveness in these programs from a parent perspective and if participation has any effect on supervision behaviour for example.

It is important to reiterate that whilst water familiarisation and swimming lessons for young children are important, these lessons do not replace active adult supervision and restricting access to water through the use of compliant barriers. Swimming and water safety programs provide other benefits, such as bonding, socialisation, enjoyment of water, motor skill development and parent education. Therefore, providers should consider promoting programs that provide a range of benefits for young children, and emphasise that these program are not aiming to make children 'drown proof'.

This study presents a snapshot of what skills children aged two to four years are being taught and achieving in private swim school lessons. This is the third and final part of a study investigating swimming and water safety skills of Australian children in private swim schools [7, 8]. Whilst this study is a cross-sectional sample and does not include all children in this age group enrolled in private swim school lessons nationwide, it fills a previous knowledge gap pertaining to who is participating and what children aged two to four years are learning and achieving in private swim school lessons.

Reducing drowning of young children, and more broadly throughout childhood and adolescence, continues to be a priority for Royal Life Saving and the wider water safety sector. These findings will help to inform future policy and advocacy positions and to communicate best time for investment of water safety and drowning prevention strategies for children across Australia, focusing on those children and families most at risk.

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