

## Ability to swim

### Introduction

In order to move safely and without fear in water it is important to be able to swim. In the worst-case scenario, those who are unable to swim at all or unable to swim to a sufficient level are at risk of drowning. However, the importance of being able to swim is not restricted to the prevention of drowning (Fritz, Kurz 2007). Swimming is fun and is also a leisure activity with great potential for promoting health and development (Pietsch 2007; Haber 2009). For instance, swimming strengthens muscles without causing damage from overloading or incorrect muscle strain. It also trains endurance and key motor and coordination skills. Furthermore, swimming regularly can have a positive effect on the progression of certain chronic diseases in children, such as asthma (Beggs et al. 2013) and autism spectrum disorders (Pan 2010). As it protects the joints, it is also recommended in cases of juvenile idiopathic arthritis (Lange et al. 2012) and for promoting physical activity in significantly overweight children (Graf, Dordel 2011). Swimming is one of the most popular sports among both boys and girls (Meffert et al. 2005; RKI 2014). In 2013, according to the German Olympic Sports Confederation, around 325,000 children and adolescents aged up to 18 were a member of a swimming club (DOSB 2014). Children who are unable to swim often have little or no access to locations such as swimming pools or natural bathing waters (Fritz, Kurz 2007). In light of the numerous positive effects it can have on their development, children should learn to swim as early as possible. The optimum age for participation in a beginners' swimming course is between four and five years old (BAG 2014a).

### Indicator

Data regarding the swimming ability of children and adolescents aged 5 to 17 are available in KiGGS Wave 1. For children aged 5 to 10, the questions were answered by a parent, while adolescents aged 11 and above were surveyed directly. The initial question was "Can your child/can you swim?" (response categories: "Yes", "No"). Those who answered "yes" to this question were then asked "And how old were they/ you when they/you learned to swim?" The respondents were made aware that this refers to the age when the child/adolescent was

able to swim and not the age they started learning to swim. Answers were to be given in full years.

The tables show the proportion of children and adolescents who can swim according to their parents' or their own responses. The average age at which the ability to swim is acquired is also provided. Prevalence and mean values are shown separately for boys and girls and stratified by both age and social status.

### Key results

- ▶ 85.5% of 5 to 17-year-old children and adolescents in Germany can swim and acquired the ability to swim at just over 6 years of age on average.
- ▶ The proportion of children who can swim increases as expected with age. While around four out of ten children aged 5 to 6 can swim (39.5%), this is the case for 85.1% of 7 to 10-year-olds. Almost all 11 to 17-year-old adolescents can swim (98.0%).
- ▶ Overall, there are only minor differences between the sexes as far as the ability to swim is concerned. Among children of preschool and primary school age, however, fewer boys can swim than girls. Girls also learn to swim 4 months earlier than boys on average.
- ▶ It is less common for children with low social status to be able to swim than children of the same age with high social status. Children from the low status group who are able to swim learned to do so around 1.5 years later than children from the high status group.

### Conclusion

In KiGGS Wave 1, information regarding swimming ability among children and adolescents in Germany was collected as part of the KiGGS survey for the first time. The results show that the vast majority of adolescents (11-17 years old) can swim. Around 40% of boys and

girls aged 5 to 6 can also already swim at this age. As the stated aim was for all children to be able to swim by the time they leave primary school, a non-swimmer percentage of around 15 % among 7 to 10-year-olds in particular shows that action is required. In this age group it is also notable that, compared to girls (11.1 %), a significantly higher percentage of boys (18.5 %) are unable to swim. When interpreting the results it must be taken into account that the data collected were either provided by the parents or by the children and adolescents themselves.

Different definitions of the ability to swim as well as the different age groups that are sometimes used mean that direct comparisons with other studies are extremely difficult (BAG 2014b). In a parent survey commissioned by the German Life Saving Association (DLRG) in 2004, the proportion of children who can swim was recorded as 66.1 % (DLRG 2004). According to a more recent DLRG survey from 2010, 74 % of primary school children have the “Seahorse” award for early swimmers (DLRG Barometer 2010). However, if possession of a youth swimming award (minimum bronze; formerly known as “Free Swimmer”) is taken as the criterion for the ability to swim, then only half of the 10-year-old children can be classed as competent swimmers when they finish primary school.

Empirical examinations of swimming ability in the form of practical test procedures were carried out in two regional studies (Fritz, Kurz 2007; Petzold 2012). In a study carried out in North Rhine-Westphalia in 2005/2006, schoolchildren with an average age of 11 were required to complete five different tests, e.g. swimming 25m or diving from the starting block (Fritz, Kurz 2007). Only 30 % of the children managed to fulfil all of the requirements. 28 % of the children in this study must be classified as non-swimmers or as children with extremely limited swimming ability, as they were only able to successfully complete two of the five tests at most. In a study of primary school children in Saxony, swimming ability was assessed over several school years, at the end of each school year, using the two test procedures “diving into the water” and “swimming breaststroke for at least 100m” (Petzold 2012). While around 93 % of schoolchildren passed both tests in the 2003/2004 school year, in 2009/2010 the figure was only around 74 %. However, it should be noted that in the earlier years only third-year pupils were taught in the school swimming centre investigated in the study. From 2007/2008 onwards, only second-year pupils were still taught there, meaning the children were younger on average. Because of the differing age groups, a clear non-swimmer trend can therefore not be identified.

In recent years, however, there have been increasing reports of developments which at least lend plausibility to the claims of negative effects on the swimming ability of children in Germany. One frequently cited issue

is that more and more indoor and outdoor swimming pools are either being converted into water parks with limited opportunities for swimming or closed due to local budget constraints (Wilkins 2013). The loss of training pools means that the swimming lessons stipulated in the curriculum can no longer be offered in many schools (BAG 2014b). On top of this, there is often a lack of support from parents (Fritz, Kurz 2007). A key finding of the KiGGS survey from a political point of view is the fact that socially disadvantaged children are significantly less likely to be able to swim than children of the same age from socially better off families. These differences were already alluded to in previous studies (Fritz, Kurz 2007; Wilkins 2013). The findings have given rise to various, mostly regionally limited projects in recent years which aim to help children to learn to swim regardless of their background. Examples include the “QuietschFidel – Schwimmen lernen in NRW” project (Schwimmverband NRW 2015) or the Berlin campaign “Schwimmen für ALLE” (Deutsche Kinderhilfe 2015), which supports socially disadvantaged children in particular. It appears necessary to continue these programmes on a wider scale and to provide further impetus in order to achieve the goal set in 2009 by representatives of sports science, sports teachers and organised sport in the Memorandum on Physical Education and School Sports: “Every child must be able to swim by the time they finish primary school” (DOSB 2009).

Note: A detailed description of the study as well as explanations on the method are available on the KiGGS study website, [www.kiggs-studie.de](http://www.kiggs-studie.de), and in Lange et al. (2014).

In 2014, the annual “Child Safety Day” organised by the BAG Federation focused on safe swimming and playing in pools and lakes. The aim was to promote the prevention of drowning incidents and improve safety in and near the water. A factsheet published in this connection provides tips on learning to swim (BAG 2014a).

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**Table 1**  
**Ability to swim among 5 to 17 year-old girls by age and social status**

	Able to swim		Age at which ability to swim was acquired	
	%	(95 %-CI)	in years	(95 %-CI)
<b>Girls</b>	<b>87.1</b>	<b>(85.3 – 88.8)</b>	<b>5.94</b>	<b>(5.84 – 6.03)</b>
<b>Age</b>				
5–6 Years	41.8	(35.4 – 48.4)	–	–
7–10 Years	88.9	(85.7 – 91.4)	–	–
11–13 Years	98.8	(96.9 – 99.6)	–	–
14–17 Years	97.5	(94.7 – 98.8)	–	–
<b>Social status</b>				
Low	78.2	(71.7 – 83.5)	6.83	(6.52 – 7.14)
Middle	88.8	(86.8 – 90.5)	5.85	(5.76 – 5.95)
High	91.5	(89.3 – 93.3)	5.28	(5.19 – 5.38)
<b>Total (girls and boys)</b>	<b>85.5</b>	<b>(84.1 – 86.8)</b>	<b>6.12</b>	<b>(6.04 – 6.19)</b>

**Table 2**  
**Ability to swim among 5 to 17 year-old boys by age and social status**

	Able to swim		Age at which ability to swim was acquired	
	%	(95 %-CI)	in years	(95 %-CI)
<b>Boys</b>	<b>83.9</b>	<b>(82.0 – 85.6)</b>	<b>6.30</b>	<b>(6.19 – 6.40)</b>
<b>Age</b>				
5–6 Years	37.3	(32.0 – 42.9)	–	–
7–10 Years	81.5	(77.8 – 84.7)	–	–
11–13 Years	97.1	(94.6 – 98.5)	–	–
14–17 Years	98.4	(96.4 – 99.3)	–	–
<b>Social status</b>				
Low	76.0	(69.7 – 81.4)	7.32	(6.95 – 7.69)
Middle	84.8	(82.3 – 86.9)	6.15	(6.04 – 6.26)
High	89.8	(87.5 – 91.6)	5.65	(5.54 – 5.77)
<b>Total (girls and boys)</b>	<b>85.5</b>	<b>(84.1 – 86.8)</b>	<b>6.12</b>	<b>(6.04 – 6.19)</b>

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