

Physical activity

Introduction

Physical activity includes any physical movement brought about by the skeletal muscles, which leads to an increase in energy consumption over and above the basal metabolic rate (Caspersen et al. 1985). Especially in childhood and adolescence regular exercise is of great importance for both physical and mental health (Lampert et al. 2007; Janssen, LeBlanc 2010; Hinkley et al. 2014). Physically active children compared with physically inactive children have a higher bone density, as well as a more favourable cardiovascular risk profile, are rarely overweight and are also characterised by a higher degree of mental well-being (Hallal et al. 2006; Boreham, McKay 2011). Physical activity is also proven to have positive effects on educational and cognitive performance (Lees, Hopkins 2013). Conversely, a less pronounced physical activity level contributes towards physical complaints, motor deficiencies and the development of obesity (Rey-Lopez et al. 2008). In addition to short-term effects, long-term effects are to be taken into account which result from physical activity during childhood and adolescence. Long-term studies show that an active lifestyle that is established at a young age often continues into adulthood and thus reduces the risk of the emergence of illnesses and complaints associated with physical inactivity (Telama 2009).

Indicator

Data with regard to the extent of physical activity is available in KiGGS Wave 1 pertaining to children and adolescents aged between 3 and 17 years. For children aged between 3 and 10 years a parent answered the question relating to physical activity, whilst adolescents aged 11 and above were surveyed themselves directly (Manz et al. 2014). The question asked was: “On how many days in a normal week is your child/are you physically active for at least 60 minutes a day?”. The eight response categories ranged from “on no days” up to “7 days”. The World Health Organization (WHO) recommends accumulated daily physical activity of at least 60 minutes of moderate to vigorous intensity for children and adolescents (WHO 2010). In addition, exercises to strengthen the muscles should be performed.

The tables on the one hand show the proportion of children and adolescents physically active for at least 60 minutes per day and who therefore meet the WHO recommendation. On the other hand, the proportion of children and adolescents is reported with relatively low levels of physical activity, whereby this includes all those who are physically active for at least 60 minutes per day on less than two days per week.

The respective prevalences are shown separately for girls and boys, as well as being stratified according to age and social status.

Key results

- ▶ At 27.5%, a little more than a quarter of children and adolescents aged between 3 and 17 years are physically active at least 60 minutes per day and thus meet the WHO recommendation. The proportion of children and adolescents, who are physically active on fewer than two days per week for at least 60 minutes, is 6.3%.
- ▶ At 29.4% boys are significantly more frequently physically active for at least 60 minutes on a daily basis compared to girls at 25.4%. Also with regard to less pronounced levels of regular physical activity there are significant gender differences in favour of the boys (4.7% v. 8.0%). The differences between boys (4.0%) and girls (14.8%) are only evident in the age range from 14 to 17 years in terms of a low level of physical activity.
- ▶ In both sexes the proportion of children and adolescents who are physically active every day for at least 60 minutes, decreases continuously with increasing age, whilst only in girls does the proportion who are only rarely physically active constantly increases.
- ▶ No significant correlation exists between the prevalence of daily physical activity and social status of children and adolescents. On the other hand the following applies: the lower the social status, the higher the percentage of children and adolescents who are physically active for at least 60 minutes on less than two days per week.

Conclusion

The results from KiGGS Wave 1 reveal that only around a quarter of children and young persons in Germany achieved the 60 minutes of daily physical activity recommended by the WHO. When interpreting the results it is to be borne in mind that the question regarding physical activity of at least 60 minutes per day does not fully depict the WHO recommendation (Manz et al. 2014). The recommendation also contains a specification regarding intensity, the activity should be moderate to vigorous, along with the specification that activities to strengthen muscle and bone should be carried out at least 3 times per week (WHO 2010). Comparisons with other studies such as the “mobility module”, a part study in the KiGGS baseline study or the study “Health Behaviour in School-aged Children” (HBSC) are only possible to a limited extent due to methodological limitations (HBSC-Team Deutschland 2011; Jekauc et al. 2012). The age and gender differences highlighted as part of this and other studies also suggest decreasing activity levels with increasing age, as well as generally lower levels of activity among girls compared to boys (Currie et al. 2012). In Germany a range of programmes already exists promoting physical activity of children and adolescents (Jordan et al. 2012). Here, many measures are oriented along the lines of the so-called “settings-based approach” to health promotion and attempt, for example in child day-care facilities and schools to make the environment and everyday life of children and adolescents as conducive to movement as possible. Even within the national health objective “Gesund aufwachsen” the aspect of encouraging movement is of central importance (BMG 2010). In order to prevent the negative effects of lack of exercise, schemes on offer to increase physical activity should already start in early childhood (Manz et al. 2014). There is a particular requirement for measures to promote movement for socially disadvantaged children and adolescents since according to KiGGS Wave 1 these are most affected low levels of physical activity.

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, and in Lange et al. (2014). Further results regarding physical activity can be found in Manz et al. (2014).

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Table 1
Physical activity among 3 to 17 year-old girls according to age and social status

	Daily physically active at least 60 minutes (WHO recommendation fulfilled)		Rarer than two days a week 60 minutes physically active	
	%	(95% CI)	%	(95% CI)
Girls	25.4	(23.6–27.4)	8.0	(6.7–9.5)
Age				
3 to 6 years	50.7	(46.1–55.2)	4.9	(2.8–8.5)
7 to 10 years	30.5	(26.5–34.8)	3.4	(1.9–5.8)
11 to 13 years	12.0	(9.6–14.8)	8.5	(6.2–11.5)
14 to 17 years	8.0	(6.3–10.1)	14.8	(12.1–17.9)
Social status				
low	28.5	(22.6–35.3)	13.1	(9.4–18.1)
medium	24.3	(22.0–26.7)	8.0	(6.7–9.4)
high	26.9	(24.2–29.9)	3.3	(2.3–4.7)
Total (girls and boys)	27.5	(26.0–28.9)	6.3	(5.5–7.3)

Table 2
Physical activity among 3 to 17 year-old boys according to age and social status

	Daily physically active at least 60 minutes (WHO recommendation fulfilled)		Rarer than two days a week 60 minutes physically active	
	%	(95% CI)	%	(95% CI)
Boys	29.4	(27.5–31.4)	4.7	(3.8–5.9)
Age				
3 to 6 years	52.2	(47.8–56.6)	2.8	(1.6–4.8)
7 to 10 years	31.4	(27.7–35.4)	5.6	(3.7–8.3)
11 to 13 years	17.4	(14.5–20.8)	6.8	(4.6–10.1)
14 to 17 years	15.0	(12.5–17.7)	4.0	(2.9–5.7)
Social status				
low	28.0	(23.2–33.4)	10.9	(7.4–15.7)
medium	30.0	(27.5–32.5)	3.7	(3.0–4.7)
high	30.2	(27.3–33.2)	1.3	(0.8–2.1)
Total (girls and boys)	27.5	(26.0–28.9)	6.3	(5.5–7.3)

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