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METADATA – CHILDREN HEALTH_ DETERMINANTS OF HEALTH AND RISK FACTORS

Description	• **At risk of poverty or social exclusion** refers to the situation of people facing at least one of the following 3 poverty risks: monetary poverty, severe material and social deprivation, or living in a household with a very low work intensity. This rate, i.e. the share of the total population facing the risk of poverty or social exclusion, is the main European indicator for monitoring the 'EU 2030' strategy objective in terms of poverty and social exclusion. (1) • **Physical activity:** Accelerometers were used to objectively measure the amount and intensity of physical activity in children during seven consecutive days including two weekend days, during waking hours (except during water-based activities). The participants also registered in a diary all activities performed when the accelerometer was removed (except for sleeping during the night). The time spent in different intensity levels of physical activity was calculated on each day during which the accelerometer was worn. Average daily durations for the different intensity levels were then calculated and compared to the recommendations of the WHO to identify the proportion of children meeting the guidelines. (2) • **Screen time:** Screen time is defined as any time spent watching screens, including smartphones, tablets, gaming consoles, television, and computers. The screen time of children aged 3 to 9 was assessed by the parents or guardians, who were asked the following questions: ▪ Approximately how many hours a day does your child spend watching films, videos, series, programmes, etc. in their free time? Whether on television, computer, tablet or smartphone. ▪ Approximately how many hours a day does your child usually play computer, video games (*e.g.* Playstation®, Xbox®, GameCube® , etc.), on a tablet, smartphone or other equipment during free time? The screen time of adolescents aged 10 to 17 years was assessed by the following questions: “Approximately how many hours a day do you spend doing the following activities while sitting or lying down, on weekdays / weekend days?” ▪ Watching television, films, series, programmes, etc. on a computer, tablet or smartphone. ▪ Playing games on a computer, games console (e.g. Playstation®, Xbox®, GameCube® , etc.), tablet, smartphone or other equipment. ▪ Surfing the Internet, sending emails, chatting, visiting Facebook, TikTok, Instagram, etc. on a computer, tablet or smartphone. (2)

	For children aged 3 and 4 years, screen time was considered excessive when it exceeded 1 hour per day. For children and adolescents aged 5 to 17 years, exceeding screen time was defined as spending more than 2 hours per day on recreational screen activities. • **Daily breakfast intake** refers to children and adolescents aged 3 to 17 years who reported consuming breakfast (more than just a drink) once per day. For children aged 3 to 9 years, the responses were provided by their parents (2). The FCS team asked the following question: 'How often do you (your child) have breakfast (more than just a drink) ?' Answer options included: 'never', 'less than one day per month', '1-3 days per month', 'one day per week', '2-4 days per week', '5-6 days per week' and 'one time per day'. The answer options 'less than one day per month' and '1-3 days per month' were combined into one single category labeled '3 days per month or less'.To make it easier to interpret some of the results, '5-6 days per week' and 'one time per day' were redefined to 'having breakfast at least 5 days per week'. The groups '3 days per month or less' and 'never' were redefined as 'having breakfast 3 days per month or less'. The question was asked to all age groups (i.e., children of 3 to 9 years (answers were given by the parents of the children) and adolescents) • **Never involvement in meal preparation** Never involvement in meal preparation refers to children and adolescents aged 3 to 17 years who reported to never helping with the preparation of a meal. For children aged 3 to 9 years, the responses were provided by their parents (2). In 2022-2023, FCS team asked parents of children (3-9 years): 'How often does your child help with the preparation of a hot meal?' and adolescents 'How often do you help your (step)parents with the preparation of a hot meal?'. The answer options included: 'Every day or almost every day', '1-4 times per week', '1-3 times per month', 'Rarely' and 'Never'. In 2014-2015, they asked a less specific question to parents of children (3-9 years) 'Is your child involved in meal preparation?' with the answer options 'Yes, always', 'Yes, sometimes' and 'Never'. Similarly, adolescents were asked: 'Do you help with meal preparation?' with the answer options 'Yes'' or 'No'.
Rationale	• While children are generally healthy, the behaviors they develop during this period, as well as the physical and social environments in which they develop, condition their future health. A central indicator of a family's social background is the socioeconomic status (SES), which is usually reflected by parents' education, occupation, and income (3). Children from families with lower socio-economic status tend to face greater health challenges and reduced life expectancy (4). The indicator used to reflect socioeconomic status (SES) is the "**At risk of poverty or social exclusion**" prevalence, based on the results of the Survey on Income and Living Conditions (SILC), conducted by Statbel through interviews and carried out in all European countries (1). • Lack of **physical activity** and sedentary behavior are major risk factors for various health issues in children, including increased adiposity, poorer cardiometabolic health, and reduced sleep duration. Regular physical activity, when reaching a certain threshold, can have significant benefits for

	health. The World Health Organization (WHO) (5) recommends that children aged 3-4 years should also engage in 180 minutes of physical activity, with at least 60 minutes at moderate- to vigorous-intensity. Children and teenagers aged 5-17 should perform at least 60 minutes of moderate- to vigorous-intensity physical activity per day. • Excessive **screen time** in young children can negatively impact motor and cognitive development, as well as social and psychological well-being. For children and adolescents aged 5–17 years, high amounts of screen time may have negative effects on weight, sleep patterns, behavior problems, anxiety, hyperactivity, attention, self-esteem, and psychosocial health. The screen time data were collected through the Food Consumption Survey and include time spent watching television, playing video games, and using the internet on both weekdays and weekends. Exceeding the recommended screen time was defined as more than 1 hour per day for children aged 3–4, and more than 2 hours of recreational screen time per day for those aged 5–17 (2). • **Nutritional habits** are also crucial. Regular meals and a healthy breakfast support better weight outcomes, cognition, and overall health, while skipping breakfast is linked to poorer health. Involvement in meal preparation promotes better food choices, greater vegetable intake, and healthier long-term habits. In Belgium, information on nutritional habits is available from two national Food Consumption Surveys (FCS), conducted in 2014-2015 and 2022-23 (2). Regularity in the eating pattern is important as there is increasing evidence that disrupting our biological rhythm (for example eating at irregular times) can negatively impact our health. During the day it is beneficial to schedule main meals, including a **healthy breakfast**, at regular times. Having a healthy breakfast also ensures a good start to your day. There seems to be a link between a healthy breakfast and overweight, obesity, and overall health. Skipping breakfast increases the chance of having a higher weight and poorer overall health.There are many positive health effects associated with having a daily healthy breakfast, such as improved concentration and cognitive function (2). **Involvement in meal preparation** can help children and adolescents learn about nutrition, healthy eating habits, and the importance of a balanced diet, which can lead to better food choices throughout their lives. Children and adolescents who are involved in cooking are more likely to try new foods, develop healthier eating habits, and have a higher intake of vegetables.Involving children and adolescents in meal preparation promotes their overall development and well-being, fostering healthier lifestyles and better life skills (2).
Primary Data source	• Statbel 2015-2024 • Eurostat 2024 • Food Consumption Survey (FCS) 2014-2015 and 2022-2023
Indicator source	• Statbel • European Union for Eurostat • Sciensano for FCS
Periodicity	• Statbel: every year • Eurostat: every year • FCS: every 8-10 years

Calculation, technical definitions and limitations	• **At risk of poverty of social exclusion:** This indicator is assessed by the parents' level of education. The educational attainment level of the parent is the highest ISCED (International standard classification of education) level successfully completed, the successful completion of an education programme being validated by a recognised qualification, i.e. a qualification officially recognised by the relevant national education authorities or recognised as equivalent to another qualification of formal education. In countries where education programmes, in particular those belonging to ISCED levels 1 and 2, do not lead to a qualification the criterion of full attendance of the programme and normally gaining access to a higher level of education may have to be used instead. When determining the highest level, both general and vocational education should be taken into consideration. [7] • **Physical activity, screen time and nutrional habits:** Food consumption data were collected by the Food Consumption Survey, that is an cross-sectional epidemiologic study carried out in the general population of Belgium. The sampling frame consist of all individuals listed in the National Register. Individual weighting factors were computed for each participant in order to provide results that are representative of the Belgian population aged three years old and more. These weighting factors were computed by taking into account the distribution of the sample according to the province, sex, and age, in comparison with the distribution of the Belgian population (the reference population) in these strata. The computation method was also take into account the daily and seasonal allocation of the interviews to eliminate the influence of daily and seasonal variations. • **Physical activity:** The World Health Organization (WHO) defines physical activity as “any bodily movement produced by skeletal muscles that requires energy expenditure”. Physical activity can be performed at different intensity levels: light, moderate and vigorous. Physical activity and sedentary behaviour have opposite and independent effects on health, i.e. even those who are physically active may still face health risks if they spend too much time in sedentary activities. The physical activity and sedentary time of children (3-9 years) and adolescents (10-17 years) were objectively measured using accelerometers. Selfreported questionnaires are not reliable or valid in this age group to quantify physical activity and sedentary behaviour due to recall bias, social desirability. and the lack of tools with both satisfying methodological quality and good reliability and validity. The procedure used was identical to that of the 2014-2015 FCS to allow comparison between survey years. Results are weighted for age, sex and socioeconomic status, and adjusted for age and sex ton enable comparisons. • **Screen time:** In addition to using accelerometers for children and adolescents, self-report questionnaires from the FCS were administered to provide contextual information about physical activity and sedentary behaviour, particularly to assess time spent on screen-based activities. Results are weighted for age, sex and socioeconomic status, and adjusted for age and sex ton enable comparisons. • **Nutritional habits:** ***Other limitations can be pointed:***

	For the FCS, people who are not listed in the National Register, like homeless and illegal immigrants are not included. People living in an institution, who move out of the selected municipality, people hospitalized during the period of the survey; people who do not speak Dutch nor French (except for the sample in the German speaking Community); people who recently died and people who are not able to be interviewed because of a physical or mental disability were also excluded. For asses physical activity, accelerometers were used but do not cover certain activities, such as swimming, and depend on participants' rigor in wearing the device and keeping an accurate log. Participants may be inclined to provide answers they consider socially acceptable, which could lead to under-reporting of behaviors perceived as negative (e.g., high consumption of high-calorie foods or excessive screen time)
International comparability	• Prevalence of **risk of poverty or social exclusion** for European countries are widely available in Eurostat database. The indicator is harmonized at European level through the EU-SILC (European Union Statistics on Income and Living Conditions) survey. Definitions, thresholds, and calculation methodologies are set by Eurostat, which guarantees a consistent basis for comparison, but some countries experience more non-response or reporting bias, especially on income. (6). • **Physical activity:** The transnational HBSC study, coordinated by WHO Europe, also collects data on physical activity, but only concerns children aged 11 and over. • **Screen time:** The HBSC study looks at data on screen time, but only covers children aged 11 and over. In 2018, PISA included data on weekday and weekend screen use among 15-year-olds. • **Nutritional habits:** The HBSC study looks at data on nutritional habits, but only covers children aged 11 and over.

References

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