



World Health
Organization

European Region

WHO European Childhood Obesity Surveillance Initiative (COSI)

A brief review of results
from round 6 of COSI (2022–2024)



FACT SHEET HIGHLIGHTS 2022–2024



About COSI

Overweight and obesity among children remain one of the major public health challenges facing the WHO European Region. Overweight and obesity affect a child's immediate physical and mental health, educational attainment, and quality of life. Additionally, unhealthy body weight in early life can increase the risk of premature death and disability in adulthood, especially from noncommunicable diseases, the leading risk factor for premature mortality in the Region.

The WHO European Childhood Obesity Surveillance Initiative (COSI), established in 2007, has been measuring trends in overweight and obesity among primary school-aged children for over 15 years. Based on a common protocol, it collects nationally representative data from children aged 6–9 years through standardized measurements of body weight and height, along with additional data on dietary intake,

physical activity, sedentary behaviour, family background and school environments.

Participation in COSI has grown from 13 countries in 2007 to 48 countries in 2024, making it one of the largest childhood obesity surveillance initiatives of its kind globally (Fig.1¹). The first six rounds of data collection have gathered anthropometric data from over 1.7 million children.

The sixth round, conducted between 2022 and 2024, measured around 470 000 children in 37 countries in the Region. The full details of the sixth round of data collection are described in a report ^{2,3}.

Fig.1. Description of countries participating in the COSI, by round of data collection

ROUND 1 (2007–2008)	ROUND 2 (2009–2010)	ROUND 3 (2012–2013)	ROUND 4 (2015–2017)	ROUND 5 (2018–2020)	ROUND 6 (2022–2024)
1. Belgium ^a	1. Belgium ^a	1. Belgium ^a	1. Albania	1. Albania	1. Albania (ALB)
2. Bulgaria	2. Bulgaria	2. Bulgaria	2. Belgium	2. Austria	2. Armenia (ARM)
3. Cyprus	3. Cyprus	3. Cyprus	3. Bulgaria	3. Belgium	3. Austria (AUT)
4. Czechia	4. Czechia	4. Czechia	4. Cyprus	4. Bulgaria	4. Azerbaijan (AZE)
5. Ireland	5. Ireland	5. Greece	5. Czechia	5. Croatia	5. Belgium (BEL)
6. Italy	6. Italy	6. Hungary	6. Greece	6. Cyprus	6. Bosnia and Herzegovina (BiH)
7. Latvia	7. Latvia	7. Ireland	7. Hungary	7. Czechia	7. Bulgaria (BUL)
8. Lithuania	8. Lithuania	8. Italy	8. Ireland	8. Denmark	8. Croatia (CRO)
9. Malta	9. Malta	9. Latvia	9. Italy	9. Estonia	9. Cyprus (CYP)
10. Norway	10. Norway	10. Lithuania	10. Latvia	10. Finland	10. Czechia (CZH)
11. Portugal	11. Portugal	11. Malta	11. Lithuania	11. France	11. Denmark (DEN)
12. Slovenia	12. Slovenia	12. North Macedonia	12. Malta	12. Georgia	12. Estonia (EST)
13. Sweden	13. Sweden	13. Norway	13. North Macedonia	13. Greece	13. Finland (FIN)
	14. Greece	14. Portugal	14. Norway	14. Hungary	14. France (FRA)
	15. Hungary	15. Slovenia	15. Portugal	15. Ireland	15. Georgia (GEO)
	16. North Macedonia	16. Spain	16. Republic of Moldova	16. Italy	16. Germany (GER-BR) ^d
	17. Spain	17. Sweden	17. Romania	17. Kazakhstan	17. Greece (GRE)
		18. Albania	18. San Marino	18. Kyrgyzstan	18. Hungary (HUN)
		19. Republic of Moldova	19. Slovenia	19. Latvia	19. Ireland (IRE)
		20. Romania	20. Spain	20. Lithuania	20. Israel (ISR)
		21. San Marino	21. Sweden	21. Malta	21. Italy (ITA)
		22. Türkiye	22. Türkiye	22. Montenegro	22. Kazakhstan (KAZ-AL) ^e
			23. Austria	23. Netherlands (Kingdom of the) (NET)	23. Kyrgyzstan (KGZ)
			24. Croatia	24. North Macedonia	24. Latvia (LVA)
			25. Denmark	25. Norway	25. Lithuania (LTU)
			26. Estonia	26. Poland	26. Malta (MAT)
			27. Finland	27. Portugal	27. Montenegro (MNE)
			28. France	28. Republic of Moldova	28. Netherlands (Kingdom of the) (NET)
			29. Georgia	29. Romania	29. North Macedonia (MKD)
			30. Kazakhstan	30. Russian Federation ^b	30. Norway (NOR)
			31. Kyrgyzstan	31. San Marino	31. Poland (POL)
			32. Montenegro	32. Serbia	32. Portugal (POR)
			33. Netherlands (Kingdom of the)	33. Slovakia	33. Republic of Moldova (MDA)
			34. Poland	34. Slovenia	34. Romania (ROM)
			35. Russian Federation ^b	35. Spain	35. Russian Federation (RUS)
			36. Serbia	36. Sweden	36. San Marino (SMR)
			37. Slovakia	37. Tajikistan	37. Serbia (SRB)
			38. Tajikistan	38. Türkiye	38. Slovakia (SVK)
			39. Turkmenistan	39. Turkmenistan	39. Slovenia (SVN)
			40. Armenia	40. Armenia	40. Poland (POL)
			41. Azerbaijan ^c	41. Azerbaijan ^c	41. Sweden (SWE)
			42. Bosnia and Herzegovina ^c	42. Bosnia and Herzegovina ^c	42. Tajikistan (TJK)
			43. Germany ^d	43. Germany ^d	43. Türkiye (TUR)
			44. Israel ^c	44. Israel ^c	44. Turkmenistan (TKM)
			45. Uzbekistan ^c	45. Uzbekistan ^c	45. Uzbekistan (UZB)
				46. Luxembourg (LUX)	46. Luxembourg (LUX)
				47. Switzerland (SWI)	47. Switzerland (SWI)
				48. Ukraine (UKR)	48. Ukraine (UKR)

Text in red: countries that participated in COSI for the first time.

Text in bold: countries that collected data during the time period of the listed data collection round.

^a) Data were collected only in Flanders.

^b) Data were collected only in Moscow (rounds 4 and 5, RUS-MS) and Yekaterinburg (round 5, RUS-YK).

^c) Data collection was disrupted by the COVID-19 pandemic and hence could not take place.

^d) Data were collected only in the Bremen federal state (GER-BR).

^e) Data were collected only in Almaty (KAZ-AL)

^f) Due to difficulties encountered during the data collection process, the number of children measured is insufficient to estimate the prevalence of overweight and obesity in accordance with the COSI Protocol.



OVERWEIGHT and OBESITY among children aged 7–9 years

in the WHO European Region – latest available data from COSI

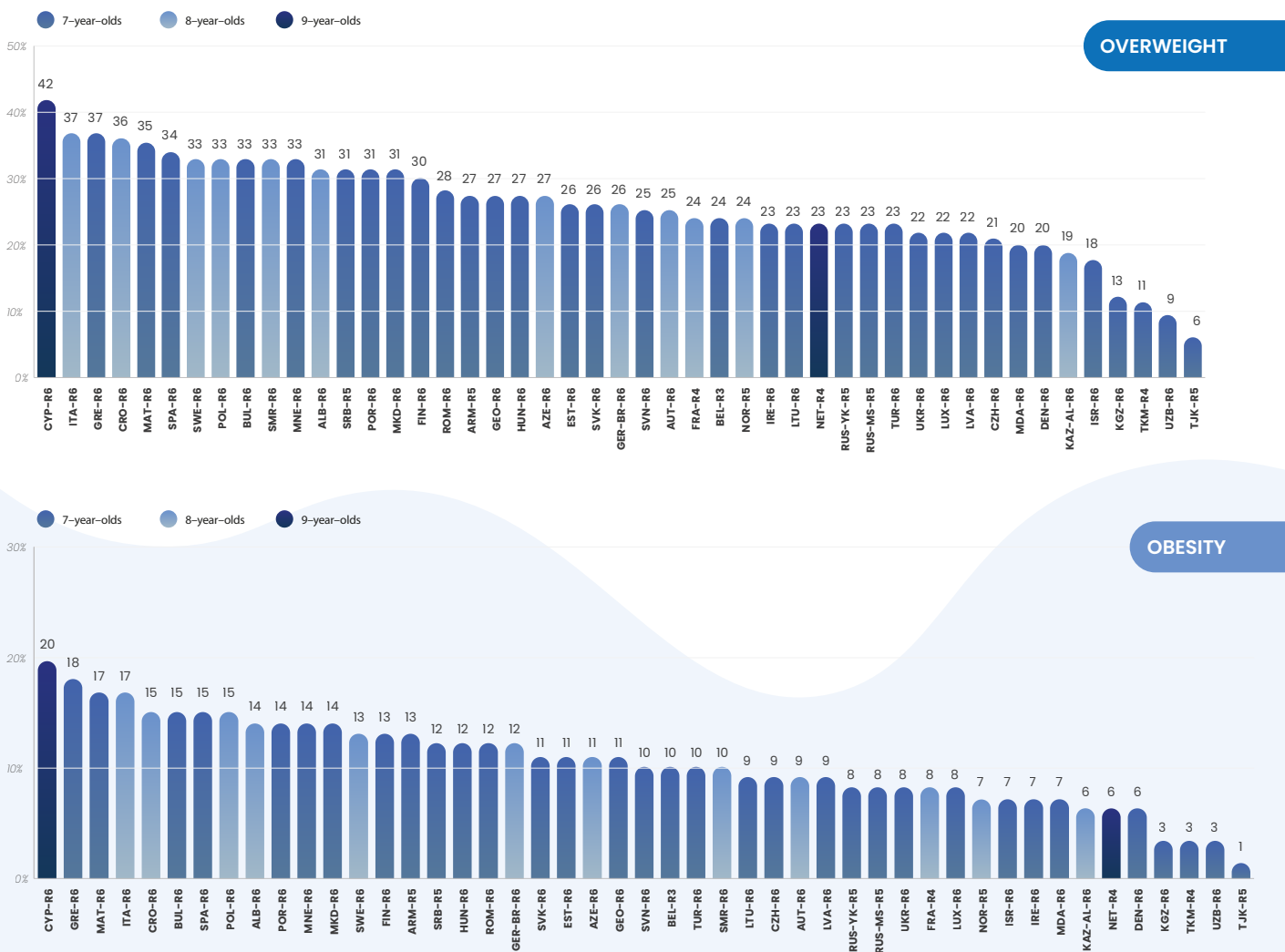
Since the first round of COSI data collection in 2007, 46 countries have collected data at least once. When examining the most recent data from all countries, including previous rounds for those that did not participate in the sixth round, the highest prevalence of overweight and obesity in boys and girls were found in southern European countries, such as Cyprus, Greece and Italy (Fig.2).

Conversely, the lowest prevalence estimates of overweight and obesity among children (both genders combined) were observed in Central Asian countries, namely Kyrgyzstan, Tajikistan, Turkmenistan

and Uzbekistan. In the majority of countries (27 of 46), at least one in ten children was living with obesity, while only six countries reported that less than one in five children is affected by overweight or obesity.

The prevalence estimates shown in Fig.2 were calculated by including only one targeted age group per country as described in the footnote below. Differences in prevalence estimates among countries may be partially explained by variations in the targeted age group.

Fig.2. Overweight and obesity prevalence estimates in boys and girls aged 7–9 years according to the most recent available source of COSI.



The graphs in Fig.2 show the latest available data in each country, including data from previous COSI rounds for countries that did not participate in the sixth round. Data relate to: (i) 7-year-olds in Armenia, Belgium (Flanders only), Bulgaria, Czechia, Denmark, Estonia, Finland, Georgia, Greece, Hungary, Ireland, Israel, Kyrgyzstan, Latvia, Lithuania, Luxembourg, Malta, Montenegro, North Macedonia, Portugal, Republic of Moldova, Romania, Russian Federation (Moscow and Yekaterinburg), Serbia, Slovakia, Slovenia, Spain, Tajikistan, Türkiye, Turkmenistan, Ukraine and Uzbekistan; (ii) 8-year-olds in Albania, Austria, Azerbaijan, Croatia, France, Germany (Bremen federal state only), Italy, Kazakhstan (Almaty only), Norway, Poland, San Marino and Sweden; and (iii) 9-year-olds in Cyprus and Netherlands (Kingdom of the). Prevalence was calculated based on WHO definitions. R3 – round 3; R4 – round 4; R5 – round 5; R6 – round 6. To improve readability, the prevalence estimates are presented as whole numbers, rounded to the nearest integer.



OVERWEIGHT among children aged 7–9 years

in the WHO European Region – COSI round 6 (2022–2024)

Overall in this population, 25% of children aged 7–9 years were living with overweight (including obesity) in 2022–2024 according to WHO definitions (Fig.3). Data confirmed important between-country differences, with country-specific prevalence of overweight (including obesity) ranging from 9% in Uzbekistan to 42% in Cyprus. In 11 of the 37 countries that participated in round 6, one third or more of children were living with overweight or obesity.

Results by sex showed a higher prevalence of overweight among boys (26%, overall estimate) compared to girls (23%) (Fig.4). The

country-specific prevalence ranged from 11% to 48% among boys and from 8% to 36% among girls. In most countries, the prevalence of overweight (including obesity) was higher among boys than girls, with a difference of five percentage points or more in 11 countries.

The prevalence estimates shown in Fig.3 and 4 were calculated by including only one targeted age group per country as described in the footnote below. Differences in prevalence estimates between countries may be partially explained by variations in the targeted age group.

Fig.3. Prevalence of overweight (including obesity) in children aged 7–9 years (%); COSI round 6 (2022–2024)

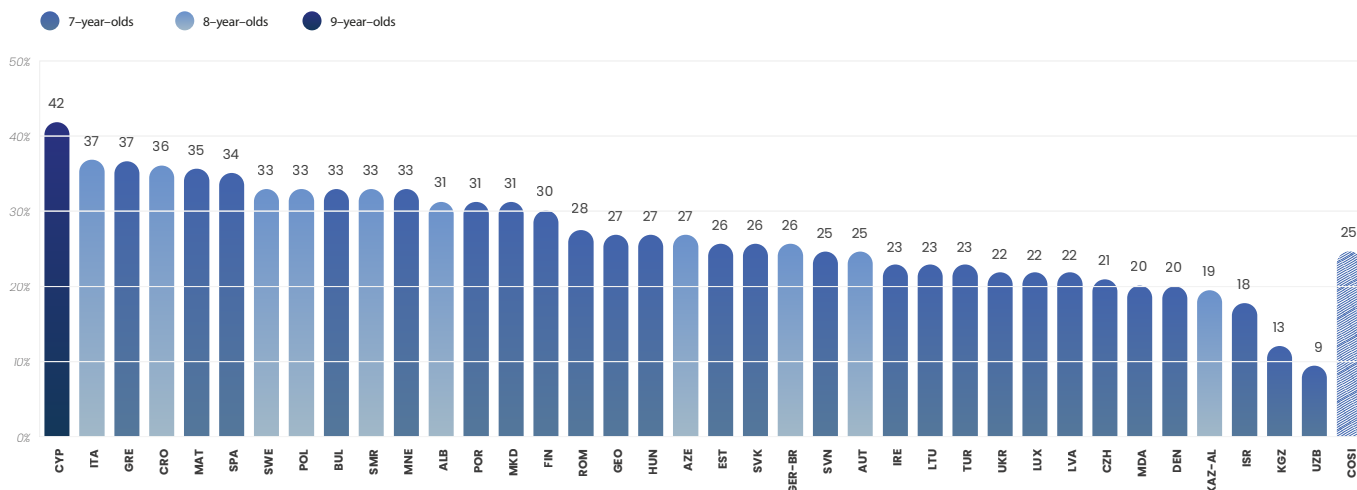


Fig.4. Prevalence of overweight (including obesity) in boys and girls aged 7–9 years (%) and difference between genders (boys minus girls, percentage points on horizontal axis); COSI round 6 (2022–2024)



In Fig.3 and 4, data relate to: (i) 7-year-olds in Bulgaria, Czechia, Denmark, Estonia, Finland, Georgia, Greece, Hungary, Ireland, Israel, Kyrgyzstan, Latvia, Lithuania, Luxembourg, Malta, Montenegro, North Macedonia, Portugal, Republic of Moldova, Romania, Slovakia, Slovenia, Spain, Türkiye, Ukraine and Uzbekistan; (ii) 8-year-olds in Albania, Austria, Azerbaijan, Croatia, Germany (Bremen federal state only), Italy, Kazakhstan (Almaty only), Poland, San Marino and Sweden; and (iii) 9-year-olds in Cyprus. To improve readability, the prevalence estimates are presented as whole numbers, rounded to the nearest integer. Gender differences, measured in percentage points, were calculated by subtracting the estimates for girls from those for boys, without rounding to the nearest whole number. The asterisk indicates a significant difference ($P < 0.05$). The study population in round 6 of COSI differs from that in round 5, as different groups of countries participated in each round. Therefore, the overall estimates for round 6 are not directly comparable with those from the previous round, which have been published elsewhere.



OVERWEIGHT among children aged 6–9 years

in the WHO European Region – comparison between COSI round 6 (2022–2024) and COSI round 5 (2018–2020)

Twenty-eight of the 37 countries that participated in round 6 also collected data in round 5. Fig.5 and 6 show the difference in the prevalence of overweight in boys and girls, respectively, between the two rounds of data collection. The difference was calculated by subtracting the estimates for round 5 from the estimates for round 6.

A statistically significant increase in the prevalence of overweight among boys was observed in three countries (indicated with * in Fig.5), namely Malta, Slovenia and Sweden, with the difference between the two rounds of data collection ranging from +1.1 to +2.7 percentage points. Conversely, a statistically significant decrease emerged in two

countries (Israel and Italy – 1.8 and 2.6 percentage points less, respectively).

The increase in the prevalence of overweight was slightly more frequent among girls, with four countries recording a higher prevalence in round 6 compared to the previous round of data collection – Bulgaria, Malta, Slovenia and Sweden. The difference between the two rounds tended to be more pronounced and ranged from +2.2 to +4.1 percentage points. On the other hand, a statistically significant decline was observed in three countries, namely Greece, Israel and Spain (6.0, 1.5 and 5.2 percentage points less, respectively).

Fig.5. Changes in prevalence of overweight (including obesity) in boys aged 6–9 years between COSI round 5 (2018–2020) and round 6 (2022–2024)

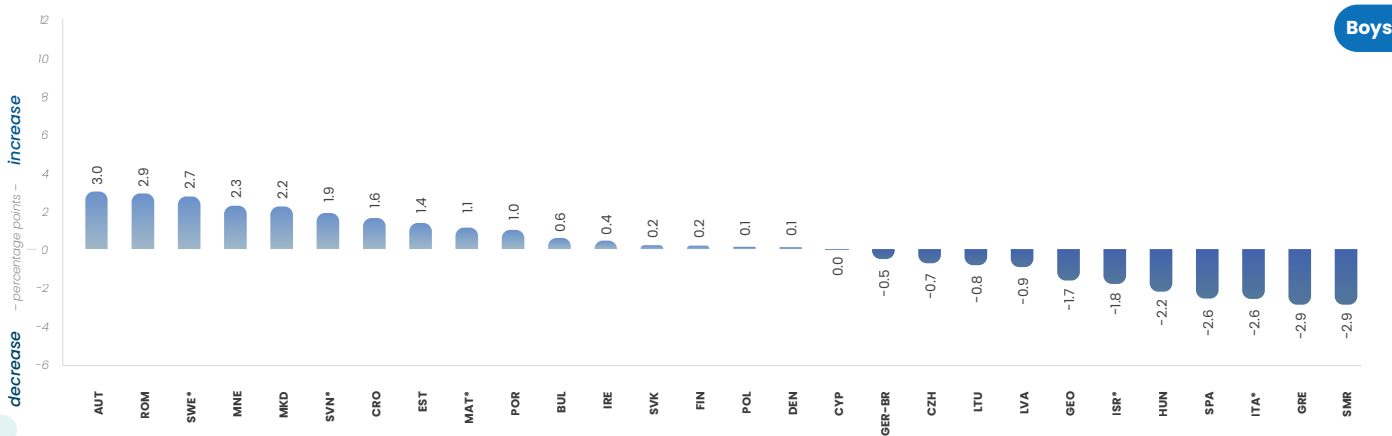
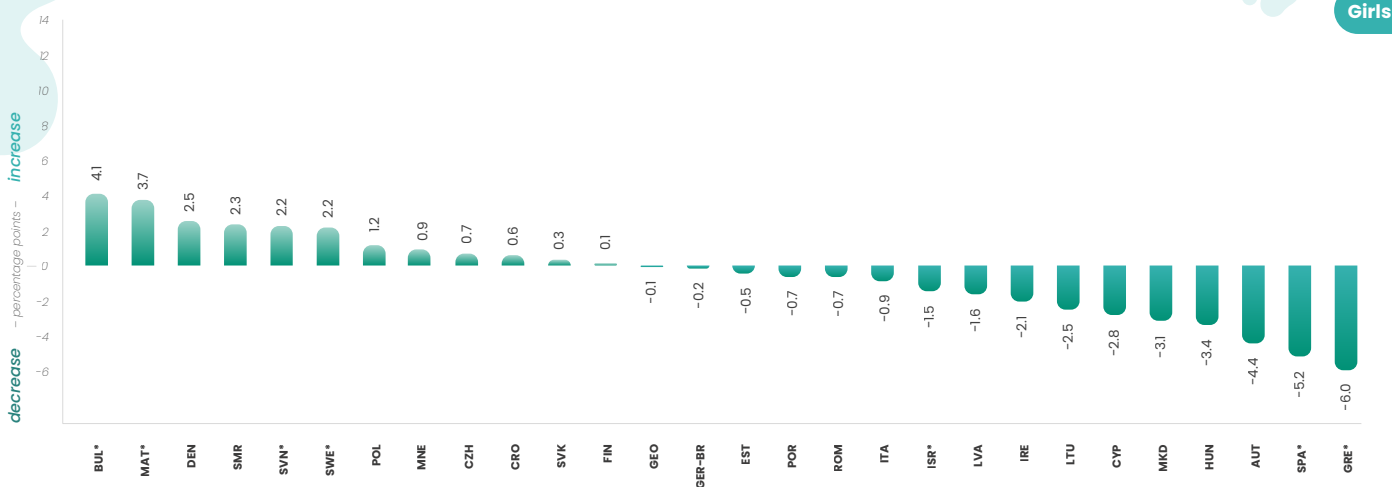


Fig.6. Changes in prevalence of overweight (including obesity) in girls aged 6–9 years between COSI round 5 (2018–2020) and round 6 (2022–2024)



In Fig.5 and 6, data relate to children aged 6–9 years who have available information on body weight, height, and sex, and who belong to the age group(s) that were targeted in each participating country. The following countries targeted more than one age group in both rounds (all age groups included in the analysis): Estonia, Finland, Greece, Latvia, Israel, Italy, Romania, Slovakia, Slovenia, Spain and Sweden. Differences between rounds, expressed as percentage points, were calculated by subtracting the estimates for round 5 from those for round 6. An asterisk indicates a statistically significant difference between the two rounds of data collection ($P < 0.05$).



OBESITY

among children aged 7–9 years

in the WHO European Region – COSI round 6 (2022–2024)

Overall in this population, one in ten children aged 7–9 years was living with obesity (Fig.7). Data show high heterogeneity among countries, with the prevalence of obesity ranging from 3% to 20%. The highest prevalence of obesity among children (both genders combined) was observed in Cyprus, Greece, Italy and Malta, while the prevalence was lowest in Denmark, Kazakhstan (Almaty), Kyrgyzstan and Uzbekistan. These results align with findings from previous rounds of data collection, which reported a north–south gradient in the prevalence of obesity, with the highest values for height in northern Europe, the highest values for weight in southern Europe, and the lowest values for both weight and height in Central Asia.

Overall, the prevalence of obesity among boys was 12%, compared to 8% among girls (Fig.8). At the country level, obesity prevalence ranged from 4% to 25% among boys and from 2% to 15% among girls. Similar to the findings for overweight, boys were living more frequently with obesity compared to girls in most of the countries that collected data in round 6.

The prevalence estimates shown in Fig.7 and 8 were calculated by including only one targeted age group per country described in the footnote below. Differences in prevalence estimates between countries may be partially explained by variations in the targeted age group.

Fig.7. Prevalence of obesity in children aged 7–9 years (%); COSI round 6 (2022–2024)

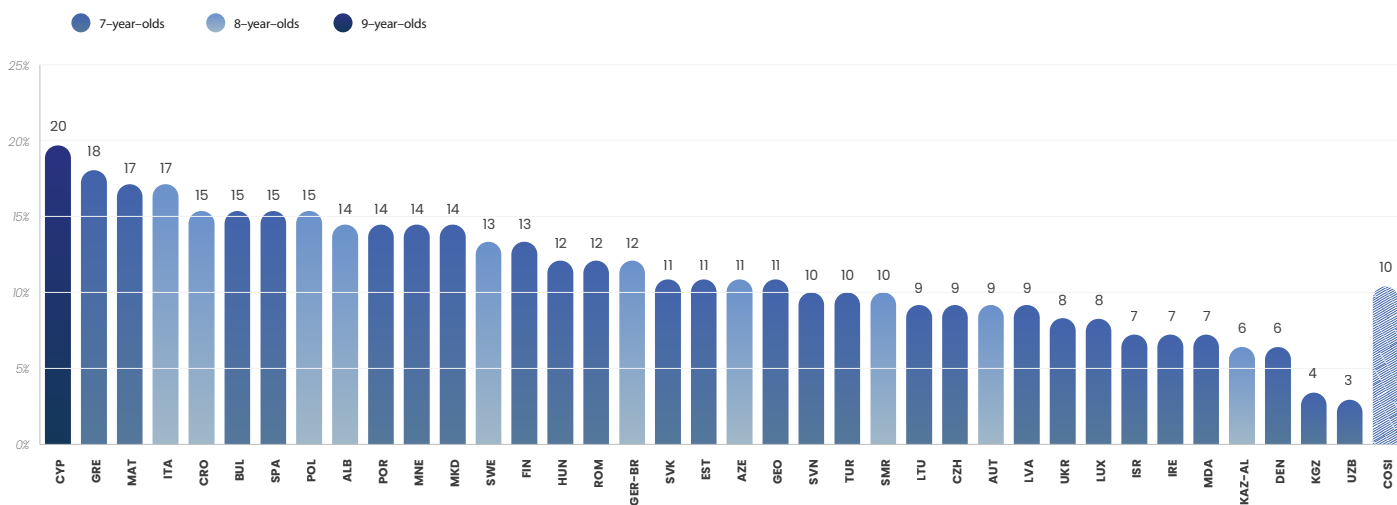
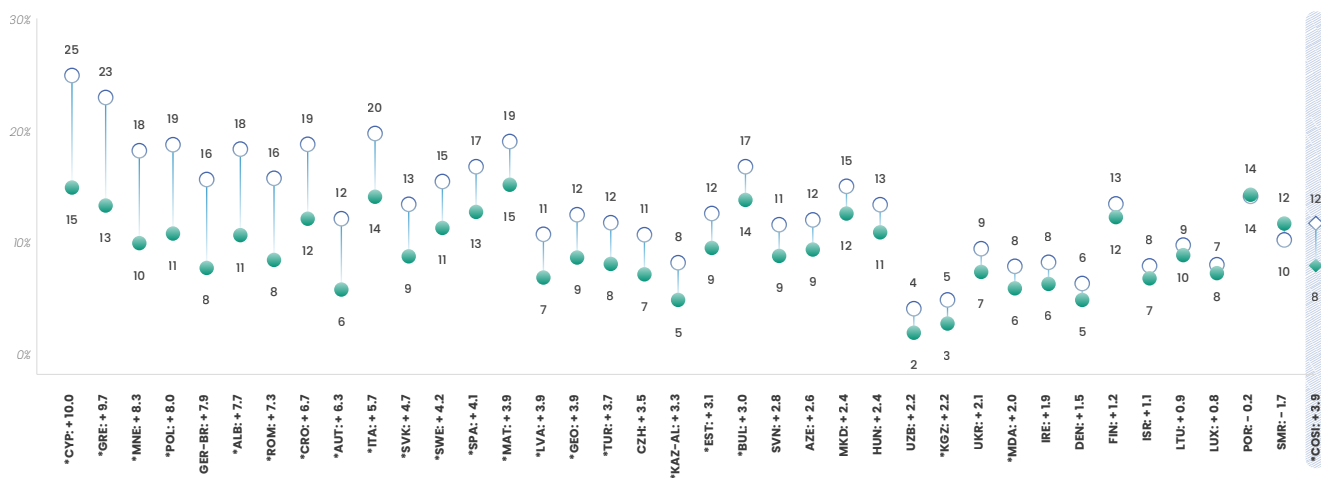


Fig.8. Prevalence of obesity in boys and girls aged 7–9 years (%), and difference between genders (boys minus girls, percentage points on horizontal axis); COSI round 6 (2022–2024)



In Fig.7 and 8, data relate to: (i) 7-year-olds in Bulgaria, Czechia, Denmark, Estonia, Finland, Georgia, Greece, Hungary, Ireland, Israel, Kyrgyzstan, Latvia, Lithuania, Luxembourg, Malta, Montenegro, North Macedonia, Portugal, Republic of Moldova, Romania, Slovakia, Slovenia, Spain, Türkiye, Ukraine and Uzbekistan; (ii) 8-year-olds in Albania, Austria, Azerbaijan, Croatia, Germany (Bremen federal state only), Italy, Kazakhstan (Almaty only), Poland, San Marino and Sweden; and (iii) 9-year-olds in Cyprus. To improve readability, the prevalence estimates are presented as whole numbers, rounded to the nearest integer. Gender differences, measured in percentage points, were calculated by subtracting the estimates for girls from those for boys, without rounding to the nearest whole number. The asterisk indicates a significant difference ($P < 0.05$). The study population in round 6 of COSI differs from that in round 5, as different groups of countries participated in each round. Therefore, the overall estimates for round 6 are not directly comparable with those from the previous round, which have been published elsewhere.



OBESITY among children aged 6–9 years

in the WHO European Region – comparison between COSI round 6 (2022–2024) and COSI round 5 (2018–2020)

Fig.9 and 10 illustrate the differences in the prevalence of obesity among boys and girls, respectively, between the sixth round of COSI data collection and the fifth round for the 28 countries that participated in both rounds. The difference was calculated by subtracting the estimates for round 5 from the estimates for round 6.

Three countries showed a statistically significant increase in the prevalence of obesity among boys – Malta, Slovenia and Sweden, with differences between the two rounds ranging from +1.4 to +1.9 percentage

points. Only San Marino recorded a statistically significant decrease (4.5 percentage points less).

As with overweight, the rise in the prevalence of obesity was slightly more pronounced among girls compared to boys. In four countries, namely Finland, Malta, Slovenia and Sweden, the round 6 prevalence estimates were significantly higher than those of the previous round of data collection, with differences ranging from 1.4 to 2.8 percentage points, while no country showed a statistically significant decline for girls.

Fig.9. Changes in prevalence of obesity in boys aged 6–9 years between COSI round 5 (2018–2020) and round 6 (2022–2024)

Boys

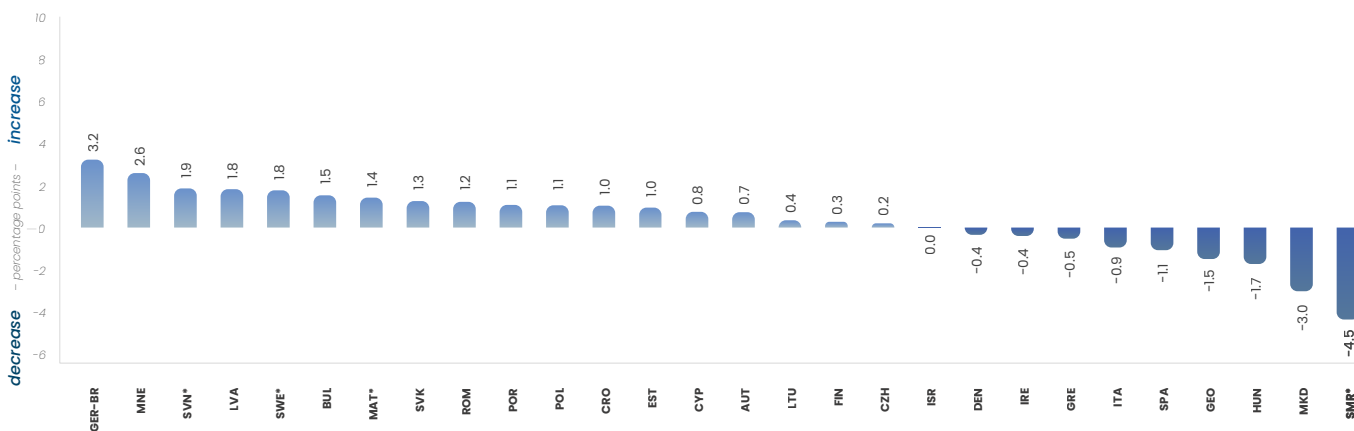
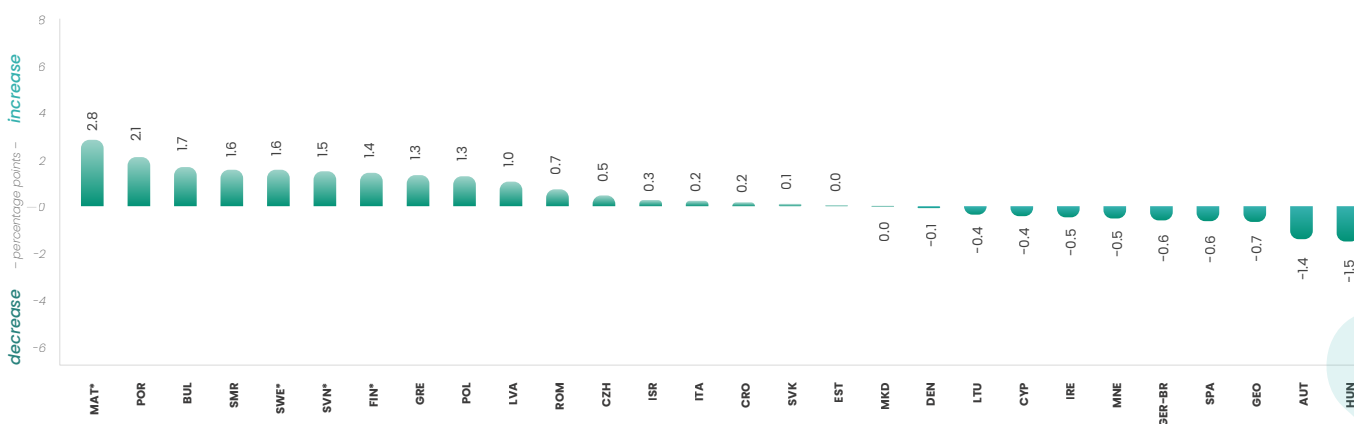


Fig.10. Changes in prevalence of obesity in girls aged 6–9 years between COSI round 5 (2018–2020) and round 6 (2022–2024)

Girls



In Fig.9 and 10, data relate to children aged 6–9 years who have available information on body weight, height, and sex, and who belong to the age group(s) that were targeted in each participating country. The following countries targeted more than one age group in both rounds (all age groups included in the analysis): Estonia, Finland, Greece, Latvia, Israel, Italy, Romania, Slovakia, Slovenia, Spain and Sweden. Differences between rounds, expressed as percentage points, were calculated by subtracting the estimates for round 5 from those for round 6. An asterisk indicates a statistically significant difference between the two rounds of data collection ($P < 0.05$).



Conclusions and next steps

Data collected in the sixth round of COSI, conducted between 2022 and 2024 in 37 countries and encompassing around 470 000 children, confirm that childhood overweight and obesity remain a major public health challenge in the Region. Overall, in the participating countries, 25% of children aged 7–9 years were living with overweight (including obesity), and 10% were affected by obesity. Important differences continue between countries, with the overall prevalence of overweight ranging from 9% to 42% and obesity from 3% to 20%.

COSI round 6 figures are the first estimates following the COVID-19 pandemic, providing initial insights into how the burden of overweight and obesity among children has changed in the post-pandemic period in the Region. Comparisons with previous round estimates (2018–2020) show different patterns of change in the 28 countries with available data. Despite stability in both overweight and obesity prevalence in several countries, where changes occurred, they were more likely to be increases rather than decreases, suggesting that the COVID-19 pandemic may have further exacerbated the problem in some countries. Future analyses, including the findings from all COSI rounds of data collection, will provide a more comprehensive picture.

Ending childhood obesity requires a comprehensive strategy that includes creating environments which promote healthy diets and ample physical activity for both young children and school-aged children. It also involves preconception and pregnancy care, breastfeeding support, as well as the provision of access to weight management programmes as part of universal health coverage.

Data from COSI play a crucial role in monitoring progress and informing policy-makers as countries look toward the Fourth High-level Meeting of the United Nations General Assembly on the prevention and control of NCDs (noncommunicable diseases) in 2025, aiming to halt the rise in obesity and achieve Sustainable Development Goal Target 3.4, which seeks to reduce premature mortality from NCDs by one third. These data can help promote the policy actions required today to build a future generation that will be resilient to NCDs.

World Health Organization
Regional Office for Europe
UN City, Marmorvej 51,
DK-2100, Copenhagen Ø, Denmark
Tel.: +45 45 33 70 00
Fax: +45 45 33 70 01
Email: eurocontact@who.int
Website: www.who.int/europe

The WHO Regional Office for Europe

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