

## Supplementary Online Content

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This supplementary material has been provided by the authors to give readers additional information about their work.

**eTable 1.** Prevalence Trend of Overweight/Obesity and Obesity by Sex, Age Category, and Urban/Rural Residence, 2006-2016

		Overweight/obesity				Obesity			
	Urban/ rural residence	Prevalence ratio 2006 (95% CI) <sup>a</sup>	Prevalence ratio 2016 (95% CI) <sup>a</sup>	Change from 2006 to 2016 (%) <sup>b</sup>	p-trend <sup>c</sup>	Prevalence ratio 2006 (95% CI) <sup>a</sup>	Prevalence ratio 2016 (95% CI) <sup>a</sup>	Change from 2006 to 2016 (%) <sup>b</sup>	p-trend <sup>c</sup>
Boys, age									
2-5 y	Rural	ref	ref	-26.27	<0.01	ref	ref	-28.95	<0.01
	Urban	1.16 (1.09-1.23)	1.22 (1.14-1.32)	-21.96	<0.01	1.21 (1.08-1.36)	1.40 (1.21-1.61)	-18.03	<0.01
6-11 y	Rural	ref	ref	-8.54	<0.01	ref	ref	-7.28	<0.01
	Urban	1.09 (1.05-1.12)	1.14 (1.10-1.17)	-4.52	<0.01	1.17 (1.12-1.23)	1.23 (1.18-1.28)	-2.76	<0.01
12-17 y	Rural	ref	ref	-9.07	<0.01	ref	ref	-8.39	<0.01
	Urban	1.10 (1.04-1.15)	1.16 (1.11-1.21)	-3.86	<0.01	1.15 (1.06-1.25)	1.16 (1.09-1.24)	-7.51	<0.01
Girls, age									
2-5 y	Rural	ref	ref	-30.25	<0.01	ref	ref	-24.22	<0.01
	Urban	1.12 (1.05-1.19)	1.25 (1.16-1.36)	-21.70	<0.01	1.23 (1.08-1.40)	1.29 (1.11-1.51)	-20.62	<0.01
6-11 y	Rural	ref	ref	-6.18	<0.01	ref	ref	-5.10	<0.01
	Urban	1.12 (1.08-1.16)	1.12 (1.09-1.16)	-5.62	<0.01	1.18 (1.11-1.25)	1.19 (1.13-1.25)	-4.61	0.05
12-17 y	Rural	ref	ref	-3.49	<0.01	ref	ref	-7.60	0.11
	Urban	1.08 (1.02-1.14)	1.11 (1.07-1.17)	-0.61	<0.01	1.03 (0.94-1.14)	1.14 (1.05-1.24)	1.79	<0.01

<sup>a</sup> Prevalence ratios were calculated using a Poisson regression with robust variance.

<sup>b</sup> Change from 2006 to 2016 (%): (prevalence 2016 – prevalence 2006) / prevalence 2006 \* 100.

<sup>c</sup> Logistic regression models were applied to test the p-trend using the study year as a continuous variable

**eTable 2.** Prevalence Trend of Overweight/Obesity and Obesity by Sex, Age Category, and Nationality, 2006-2016

		Overweight/obesity				Obesity			
	Nationality	Prevalence ratio 2006 (95% CI) <sup>a</sup>	Prevalence ratio 2016 (95% CI) <sup>a</sup>	Change from 2006 to 2016 (%) <sup>b</sup>	p-trend <sup>c</sup>	Prevalence ratio 2006 (95% CI) <sup>a</sup>	Prevalence ratio 2016 (95% CI) <sup>a</sup>	Change from 2006 to 2016 (%) <sup>b</sup>	p-trend <sup>c</sup>
Boys, age									
2-5 y	Spanish	ref	ref	-25.95	<0.01	ref	ref	-25.51	<0.01
	African	0.81 (0.69-0.96)	1.17 (1.06-1.30)	7.43	0.85	0.60 (0.42-0.86)	1.20 (1.01-1.44)	49.31	0.02
	North/Central/South American	1.32 (1.08-1.61)	2.03 (1.72-2.39)	13.80	0.41	1.18 (0.80-1.74)	2.47 (1.87-3.25)	55.71	0.28
	Asian	0.89 (0.64-1.23)	1.39 (1.19-1.61)	15.26	0.45	0.89 (0.49-1.62)	1.80 (1.41-2.30)	50.28	0.78
	European	0.84 (0.68-1.03)	1.07 (0.90-1.27)	-5.54	0.14	0.70 (0.46-1.06)	1.17 (0.86-1.57)	24.54	0.72
6-11 y	Spanish	ref	ref	-6.05	<0.01	ref	ref	-4.46	<0.01
	African	0.48 (0.42-0.54)	0.79 (0.75-0.84)	55.22	<0.01	0.37 (0.30-0.46)	0.77 (0.71-0.83)	97.39	<0.01
	North/Central/South American	1.20 (1.11-1.30)	1.31 (1.21-1.41)	1.94	0.73	1.30 (1.16-1.45)	1.44 (1.29-1.59)	5.78	0.54
	Asian	0.62 (0.50-0.75)	1.15 (1.07-1.23)	75.47	<0.01	0.78 (0.60-1.01)	1.27 (1.15-1.39)	55.40	<0.01
	European	0.79 (0.71-0.88)	0.94 (0.88-1.01)	12.06	<0.01	0.70 (0.59-0.83)	0.85 (0.76-0.95)	16.51	0.02
12-17 y	Spanish	ref	ref	-5.29	<0.01	ref	ref	-8.41	<0.01
	African	0.45 (0.38-0.55)	0.58 (0.52-0.64)	20.32	<0.01	0.38 (0.27-0.53)	0.49 (0.41-0.60)	18.91	0.03
	North/Central/South American	1.14 (1.02-1.28)	1.17 (1.08-1.27)	-2.73	0.72	1.20 (1.00-1.43)	1.24 (1.09-1.42)	-4.96	0.13
	Asian	0.64 (0.50-0.82)	0.99 (0.88-1.10)	46.84	<0.01	0.61 (0.40-0.91)	1.07 (0.90-1.28)	62.55	<0.01
	European	0.88 (0.75-1.03)	1.02 (0.92-1.13)	9.69	0.66	0.86 (0.67-1.12)	1.08 (0.91-1.27)	14.06	0.92
Girls, age									
2-5 y	Spanish	ref	ref	-24.89	<0.01	ref	ref	-25.04	<0.01
	African	0.93 (0.79-1.09)	1.16 (1.05-1.29)	-6.09	0.03	1.01 (0.74-1.37)	1.25 (1.03-1.52)	-7.22	0.49
	North/Central/South American	1.69 (1.40-2.04)	1.84 (1.53-2.21)	-18.26	<0.01	1.98 (1.40-2.79)	2.53 (1.86-3.45)	-3.90	0.03
	Asian	0.79 (0.54-1.14)	0.94 (0.78-1.14)	-10.29	0.13	0.65 (0.29-1.45)	1.18 (0.84-1.65)	35.67	0.65
	European	0.86 (0.69-1.08)	1.04 (0.86-1.25)	-9.59	0.74	0.72 (0.44-1.15)	1.38 (1.01-1.90)	44.87	0.10
6-11 y	Spanish	ref	ref	-5.88	<0.01	ref	ref	-5.07	<0.01
	African	0.61 (0.54-0.69)	0.87 (0.83-0.92)	33.97	<0.01	0.56 (0.46-0.69)	0.85 (0.78-0.93)	43.60	<0.01
	North/Central/South American	1.15 (1.06-1.25)	1.26 (1.17-1.37)	3.43	0.95	1.22 (1.07-1.40)	1.41 (1.25-1.60)	9.69	0.29
	Asian	0.62 (0.50-0.79)	0.87 (0.80-0.95)	31.64	<0.01	0.39 (0.24-0.62)	0.80 (0.69-0.93)	95.76	<0.01
	European	0.79 (0.70-0.90)	0.90 (0.84-0.98)	7.06	<0.01	0.70 (0.56-0.86)	0.92 (0.81-1.04)	24.43	<0.01
12-17 y	Spanish	ref	ref	-2.42	<0.01	ref	ref	-2.31	<0.01
	African	0.85 (0.73-0.99)	1.05 (0.96-1.16)	20.50	0.05	0.66 (0.48-0.90)	1.15 (0.97-1.35)	70.78	0.02
	North/Central/South American	1.26 (1.12-1.41)	1.37 (1.26-1.49)	6.25	<0.01	1.29 (1.05-1.58)	1.44 (1.25-1.67)	9.37	0.02
	Asian	0.63 (0.46-0.87)	0.99 (0.86-1.13)	51.95	<0.01	0.49 (0.25-0.94)	1.13 (0.90-1.43)	125.76	<0.01
	European	0.99 (0.84-1.17)	0.99 (0.89-1.11)	-2.37	0.36	1.21 (0.92-1.58)	1.08 (0.88-1.31)	-12.94	0.42

<sup>a</sup> Prevalence ratios were calculated using a Poisson regression with robust variance.

<sup>b</sup> Change from 2006 to 2016 (%): (prevalence 2016 – prevalence 2006) / prevalence 2006 \* 100.

<sup>c</sup> Logistic regression models were applied to test the p-trend using the study year as a continuous variable

**eTable 3.** Incidence rate (No. of New Cases per 100 Person-Years) of Overweight/Obesity and Obesity by Sex and Age, 2006-2016

		Incidence overweight/obesity		Incidence obesity	
		Cases	N° new cases / 100 person-year (95% CI)	Cases	Incidence N° new cases / 100 person-year (95% CI)
Boys, age					
	2-3 y	6356	1.78 (1.74-1.83)	2043	0.54 (0.52-0.57)
	4-5 y	19442	4.49 (4.42-4.55)	8463	1.78 (1.74-1.81)
	6-7 y	40030	11.87 (11.75-11.99)	20800	4.86 (4.80-4.93)
	8-9 y	20699	7.86 (7.75-7.97)	14073	3.88 (3.82-3.95)
	10-11 y	10465	4.91 (4.81-5.00)	5913	1.89 (1.84-1.94)
	12-13 y	5480	3.10 (3.02-3.19)	2717	1.00 (0.97-1.04)
	14-15 y	2193	1.58 (1.51-1.64)	1083	0.50 (0.47-0.53)
	16-17 y	543	0.55 (0.50-0.60)	424	0.28 (0.25-0.31)
Girls, age					
	2-3 y	5584	1.67 (1.62-1.71)	1705	0.48 (0.46-0.50)
	4-5 y	16131	3.91 (3.85-3.97)	6578	1.45 (1.42-1.49)
	6-7 y	36729	11.23 (11.11-11.34)	15992	3.85 (3.79-3.91)
	8-9 y	18953	7.33 (7.23-7.44)	9637	2.65 (2.60-2.71)
	10-11 y	7698	3.54 (3.46-3.62)	3612	1.12 (1.08-1.15)
	12-13 y	4464	2.39 (2.32-2.46)	2011	0.71 (0.68-0.74)
	14-15 y	2316	1.52 (1.46-1.58)	955	0.41 (0.38-0.44)
	16-17 y	968	0.85 (0.80-0.91)	554	0.32 (0.30-0.35)

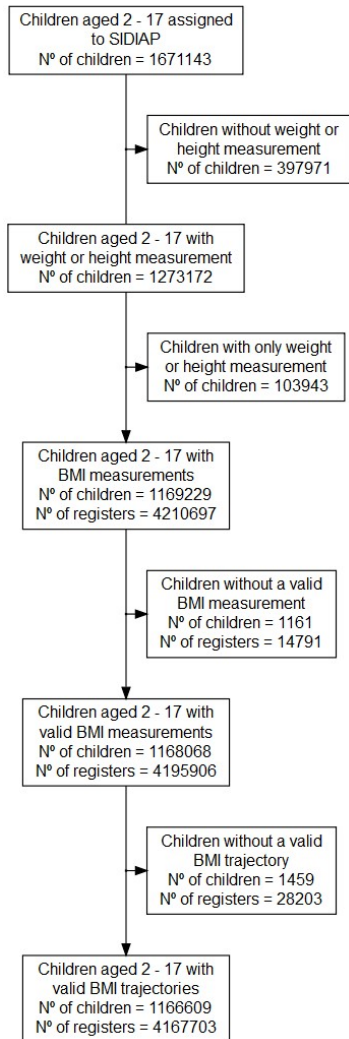
**eTable 4.** Incidence Rate Ratios of Overweight/Obesity by Sex, Age, Deprivation Index, Urban/Rural Residence, Nationality, and Period, 2006-2016

Overweight/obesity			Incidence Rate Ratio (CI 95%) for each age categories									
			2-3 y	4-5 y	6-7 y	8-9 y	10-11 y	12-13 y	14-15 y	16-17 y		
<b>Boys</b>												
Deprivation index	Least deprived		ref	ref	ref	ref	ref	ref	ref	ref	ref	ref
	Most deprived		1.35 (1.23-1.48)	1.18 (1.12-1.24)	1.21 (1.17-1.26)	1.21 (1.15-1.27)	1.20 (1.11-1.28)	1.09 (0.99-1.21)	1.11 (0.95-1.30)	0.77 (0.57-1.04)		
Urban/rural residence	Rural		ref	ref	ref	ref	ref	ref	ref	ref	ref	ref
	Urban		1.07 (1.01-1.14)	1.10 (1.06-1.14)	1.13 (1.10-1.15)	1.14 (1.10-1.18)	1.07 (1.02-1.12)	1.08 (1.01-1.15)	1.02 (0.92-1.14)	0.93 (0.76-1.14)		
Nationality	Spanish		ref	ref	ref	ref	ref	ref	ref	ref	ref	ref
	African		0.88 (0.79-0.99)	0.86 (0.80-0.91)	0.75 (0.72-0.79)	0.57 (0.52-0.61)	0.56 (0.50-0.63)	0.70 (0.60-0.81)	0.84 (0.68-1.05)	0.69 (0.42-1.13)		
	American		1.98 (1.66-2.36)	1.45 (1.30-1.62)	1.23 (1.14-1.33)	1.17 (1.06-1.30)	1.16 (1.01-1.32)	1.17 (0.99-1.38)	1.01 (0.78-1.31)	1.60 (1.04-2.45)		
	Asian		1.02 (0.84-1.23)	1.06 (0.95-1.17)	0.98 (0.91-1.05)	1.15 (1.04-1.27)	1.07 (0.92-1.24)	1.04 (0.85-1.27)	1.21 (0.91-1.61)	1.68 (1.02-2.75)		
	European		0.88 (0.74-1.05)	0.79 (0.71-0.87)	0.78 (0.73-0.84)	0.81 (0.74-0.89)	0.88 (0.77-0.99)	1.07 (0.91-1.25)	1.08 (0.84-1.40)	2.26 (1.53-3.32)		
Time periods	Period 1: (01/01/2006-30/06/2011)		ref	ref	ref	ref	ref	ref	ref	ref	ref	ref
	Period 2: (01/07/2011-31/12/2016)		0.80 (0.78-0.82)	0.94 (0.92-0.96)	0.95 (0.92-0.97)	0.95 (0.91-0.99)	1.05 (0.99-1.12)	0.92 (0.85-1.01)	1.33 (1.10-1.60)	0.80 (0.78-0.82)		
<b>Girls</b>												
Deprivation index	Least deprived		ref	ref	ref	ref	ref	ref	ref	ref	ref	ref
	Most deprived		1.38 (1.25-1.53)	1.25 (1.18-1.33)	1.25 (1.20-1.30)	1.30 (1.23-1.37)	1.35 (1.24-1.47)	1.53 (1.37-1.71)	1.68 (1.44-1.95)	2.20 (1.75-2.78)		
Urban/rural residence	Rural		ref	ref	ref	ref	ref	ref	ref	ref	ref	ref
	Urban		1.12 (1.05-1.20)	1.07 (1.03-1.11)	1.12 (1.10-1.15)	1.14 (1.10-1.18)	1.08 (1.03-1.15)	1.13 (1.05-1.21)	1.03 (0.93-1.14)	1.25 (1.06-1.48)		
Nationality	Spanish		ref	ref	ref	ref	ref	ref	ref	ref	ref	ref
	African		0.89 (0.79-0.99)	0.78 (0.73-0.84)	0.81 (0.77-0.85)	0.78 (0.72-0.84)	0.94 (0.84-1.05)	1.57 (1.38-1.77)	2.13 (1.82-2.49)	2.35 (1.84-3.00)		
	American		1.53 (1.24-1.89)	1.45 (1.29-1.63)	1.24 (1.14-1.33)	1.12 (1.01-1.24)	1.28 (1.12-1.48)	1.82 (1.58-2.10)	1.87 (1.56-2.26)	3.02 (2.41-3.79)		
	Asian		0.98 (0.79-1.22)	0.71 (0.61-0.81)	0.73 (0.67-0.80)	0.83 (0.73-0.94)	1.20 (1.01-1.42)	1.40 (1.13-1.73)	1.53 (1.14-2.05)	1.63 (1.02-2.59)		
	European		0.66 (0.54-0.82)	0.78 (0.70-0.87)	0.71 (0.66-0.77)	0.75 (0.68-0.83)	1.03 (0.90-1.18)	1.28 (1.08-1.51)	1.46 (1.17-1.83)	1.77 (1.27-2.46)		
Time periods	Period 1: (01/01/2006-30/06/2011)		ref	ref	ref	ref	ref	ref	ref	ref	ref	ref
	Period 2: (01/07/2011-31/12/2016)		0.79 (0.76-0.81)	0.94 (0.92-0.96)	1.00 (0.97-1.03)	1.00 (0.95-1.05)	1.00 (0.93-1.07)	0.94 (0.86-1.03)	0.89 (0.78-1.02)	0.79 (0.76-0.81)		

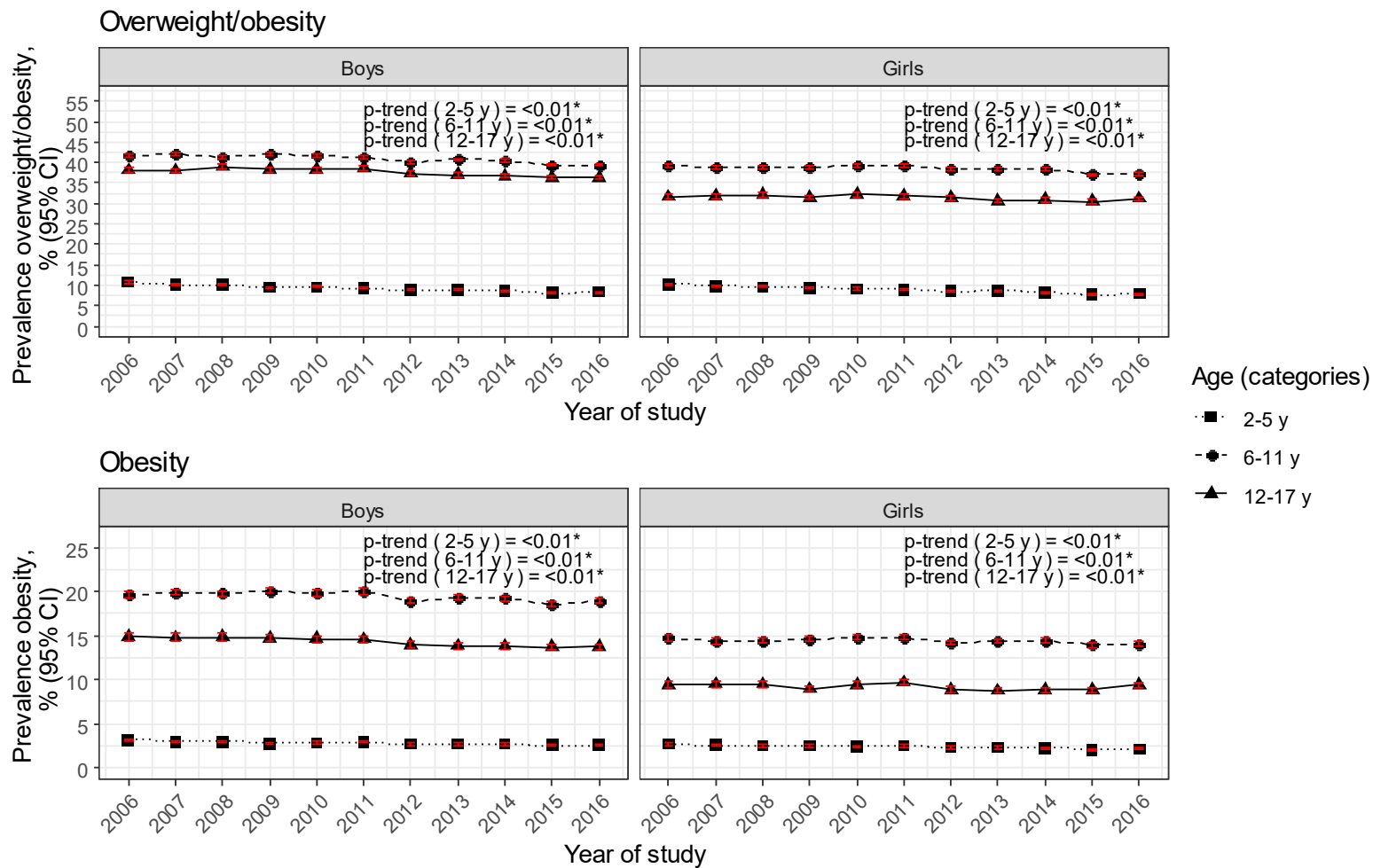
**eTable 5.** Incidence Rate Ratios of Obesity by Sex, Age, Deprivation Index, Urban/Rural Residence, Nationality, and Period, 2006-2016

Obesity			Incidence Rate Ratio (CI 95%) for each age categories							
			2-3 y	4-5 y	6-7 y	8-9 y	10-11 y	12-13 y	14-15 y	16-17 y
<b>Boys</b>										
Deprivation index	Least deprived		ref	ref	ref	ref	ref	ref	ref	ref
	Most deprived		2.11 (1.77-2.51)	1.59 (1.46-1.72)	1.54 (1.46-1.62)	1.52 (1.42-1.62)	1.51 (1.37-1.67)	1.63 (1.41-1.88)	1.64 (1.30-2.08)	1.47 (1.03-2.09)
Urban/rural residence	Rural		ref	ref	ref	ref	ref	ref	ref	ref
	Urban		1.22 (1.09-1.36)	1.20 (1.14-1.27)	1.20 (1.16-1.24)	1.23 (1.18-1.28)	1.14 (1.07-1.21)	1.20 (1.09-1.32)	1.22 (1.05-1.43)	1.17 (0.91-1.50)
Nationality	Spanish		ref	ref	ref	ref	ref	ref	ref	ref
	African		0.99 (0.82-1.19)	0.80 (0.72-0.88)	0.75 (0.70-0.81)	0.55 (0.49-0.61)	0.57 (0.48-0.67)	0.63 (0.49-0.81)	0.69 (0.48-1.01)	1.00 (0.59-1.71)
	American		2.55 (1.93-3.36)	1.63 (1.39-1.91)	1.27 (1.15-1.41)	1.27 (1.13-1.43)	1.35 (1.16-1.59)	1.63 (1.34-1.98)	1.61 (1.20-2.15)	1.49 (0.90-2.45)
	Asian		1.88 (1.45-2.43)	1.42 (1.24-1.63)	1.12 (1.02-1.24)	1.22 (1.08-1.38)	1.13 (0.93-1.39)	1.43 (1.10-1.86)	1.21 (0.78-1.88)	2.64 (1.60-4.34)
	European		0.91 (0.67-1.24)	0.78 (0.66-0.91)	0.83 (0.76-0.92)	0.79 (0.70-0.89)	0.93 (0.79-1.11)	1.18 (0.94-1.48)	1.03 (0.69-1.53)	2.98 (1.99-4.47)
Time periods	Period 1: (01/01/2006-30/06/2011)		ref	ref	ref	ref	ref	ref	ref	ref
	Period 2: (01/07/2011-31/12/2016)		0.86 (0.82-0.90)	0.92 (0.89-0.95)	0.94 (0.91-0.98)	0.99 (0.93-1.05)	1.06 (0.97-1.16)	1.03 (0.91-1.16)	0.94 (0.77-1.15)	0.86 (0.82-0.90)
<b>Girls</b>										
Deprivation index	Least deprived		ref	ref	ref	ref	ref	ref	ref	ref
	Most deprived		1.90 (1.57-2.30)	1.65 (1.50-1.81)	1.68 (1.58-1.79)	1.88 (1.74-2.04)	1.82 (1.60-2.07)	1.92 (1.62-2.27)	2.32 (1.80-2.99)	3.79 (2.66-5.38)
Urban/rural residence	Rural		ref	ref	ref	ref	ref	ref	ref	ref
	Urban		1.22 (1.07-1.38)	1.14 (1.07-1.21)	1.19 (1.14-1.23)	1.10 (1.04-1.15)	1.11 (1.02-1.20)	1.25 (1.12-1.41)	0.99 (0.85-1.16)	1.19 (0.96-1.49)
Nationality	Spanish		ref	ref	ref	ref	ref	ref	ref	ref
	African		0.96 (0.78-1.17)	0.71 (0.63-0.80)	0.83 (0.77-0.89)	0.77 (0.69-0.87)	1.01 (0.85-1.20)	1.65 (1.36-2.01)	2.43 (1.90-3.10)	2.36 (1.69-3.30)
	American		2.11 (1.52-2.92)	1.78 (1.51-2.10)	1.34 (1.19-1.49)	1.28 (1.12-1.46)	1.42 (1.17-1.71)	2.33 (1.94-2.81)	1.83 (1.38-2.42)	2.69 (1.99-3.63)
	Asian		0.75 (0.48-1.18)	0.81 (0.65-1.00)	0.66 (0.56-0.77)	0.71 (0.58-0.87)	1.26 (0.97-1.64)	2.07 (1.56-2.76)	2.19 (1.45-3.31)	2.48 (1.46-4.21)
	European		1.10 (0.81-1.50)	0.81 (0.68-0.96)	0.82 (0.73-0.91)	0.67 (0.58-0.79)	1.25 (1.03-1.52)	1.30 (1.00-1.70)	1.58 (1.11-2.24)	1.07 (0.60-1.90)
Time periods	Period 1: (01/01/2006-30/06/2011)		ref	ref	ref	ref	ref	ref	ref	ref
	Period 2: (01/07/2011-31/12/2016)		0.86 (0.81-0.90)	0.94 (0.91-0.97)	0.97 (0.93-1.02)	0.95 (0.88-1.02)	1.08 (0.98-1.19)	1.00 (0.88-1.15)	0.95 (0.80-1.14)	0.86 (0.81-0.90)

**eFigure 1.** Flow Chart of Studied Population



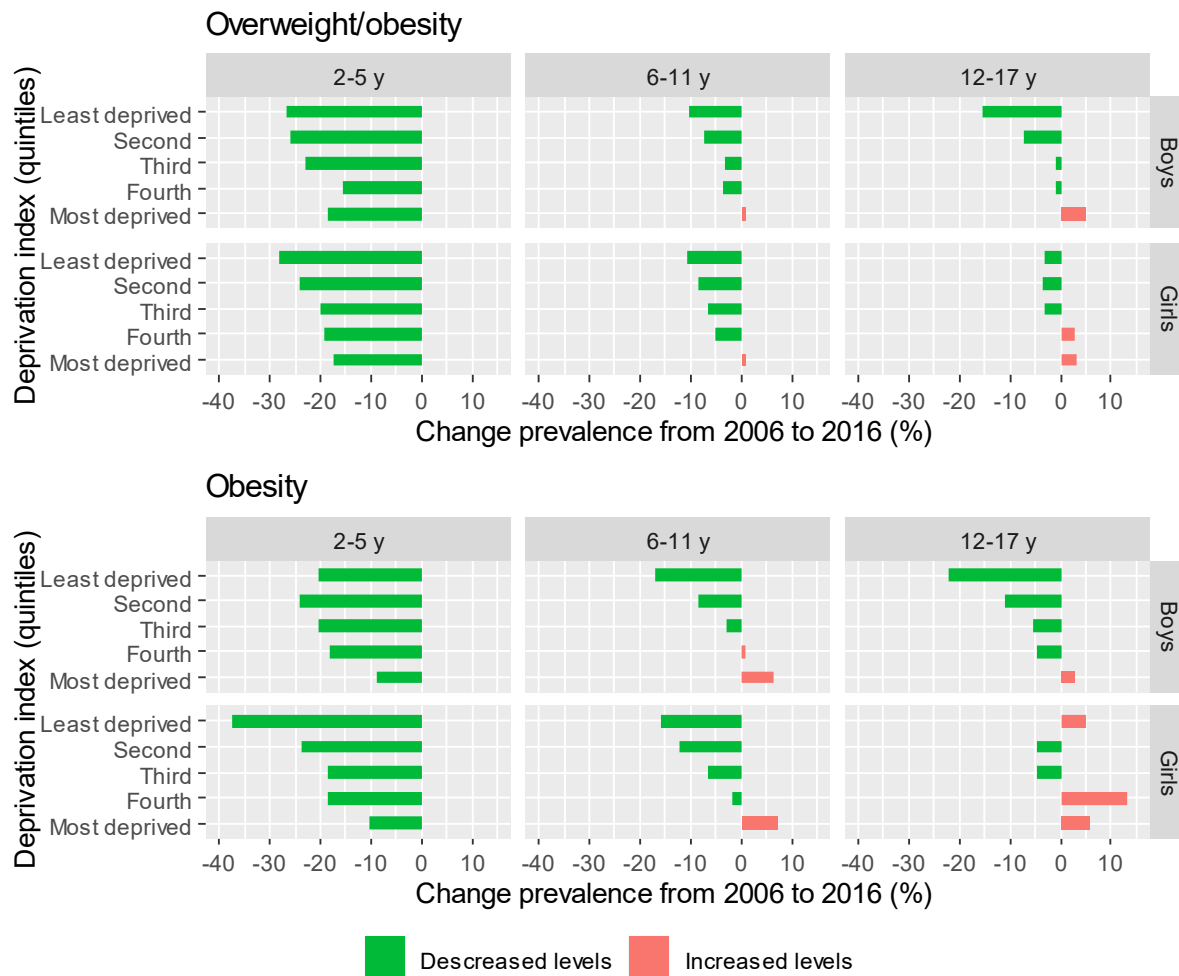
**eFigure 2.** Prevalence Trends of Overweight /Obesity and Obesity by Sex and Age Category, 2006-2016



Prevalence trends over time were evaluated with a logistic regression models using the study year as a continuous variable (independent variable) and overweight and obesity as binary variables (dependent variables).

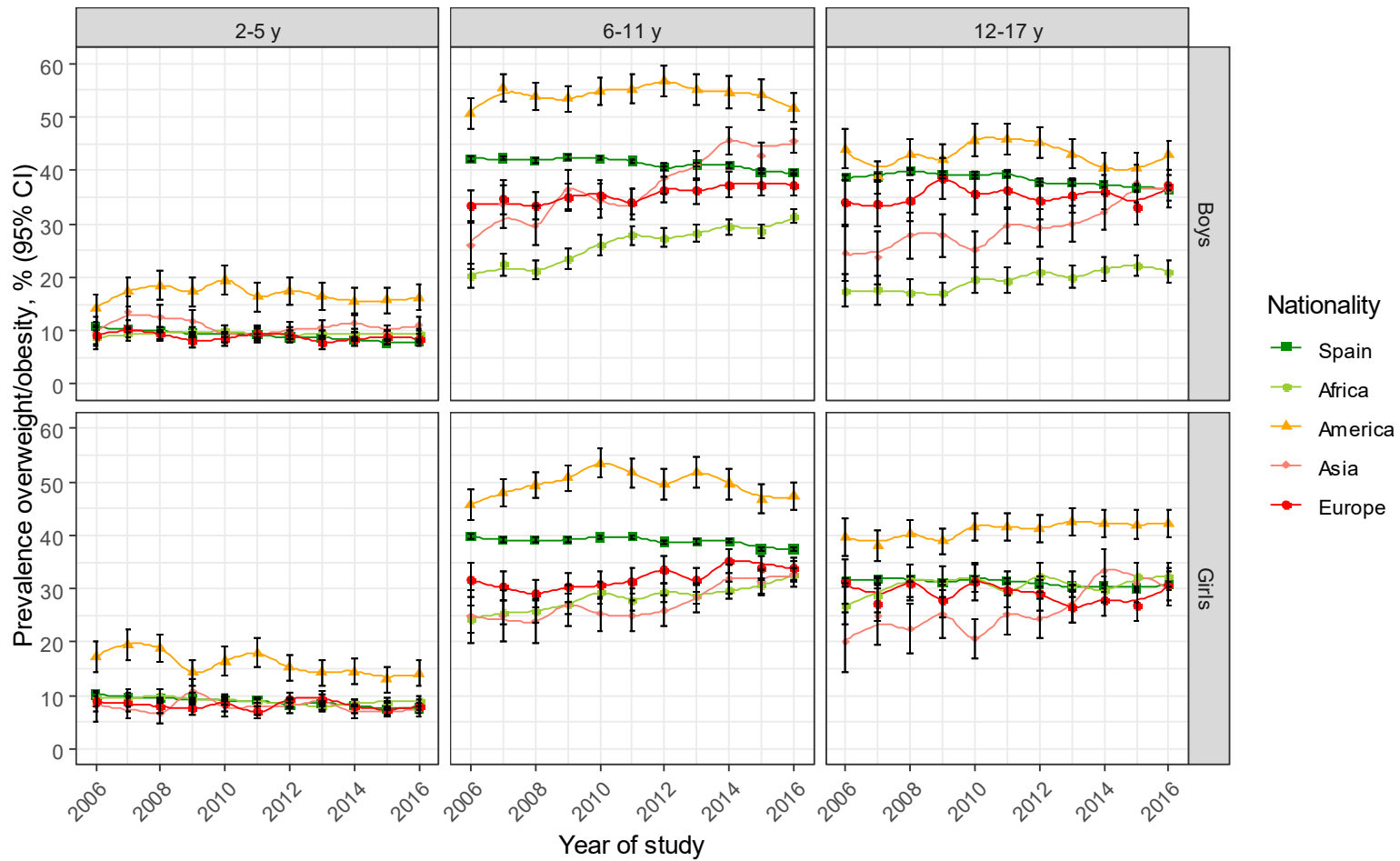


**eFigure 3.** Percentage Change in the Prevalence of Overweight/Obesity and Obesity by Sex, Age Category, and Deprivation Index, 2006-2016



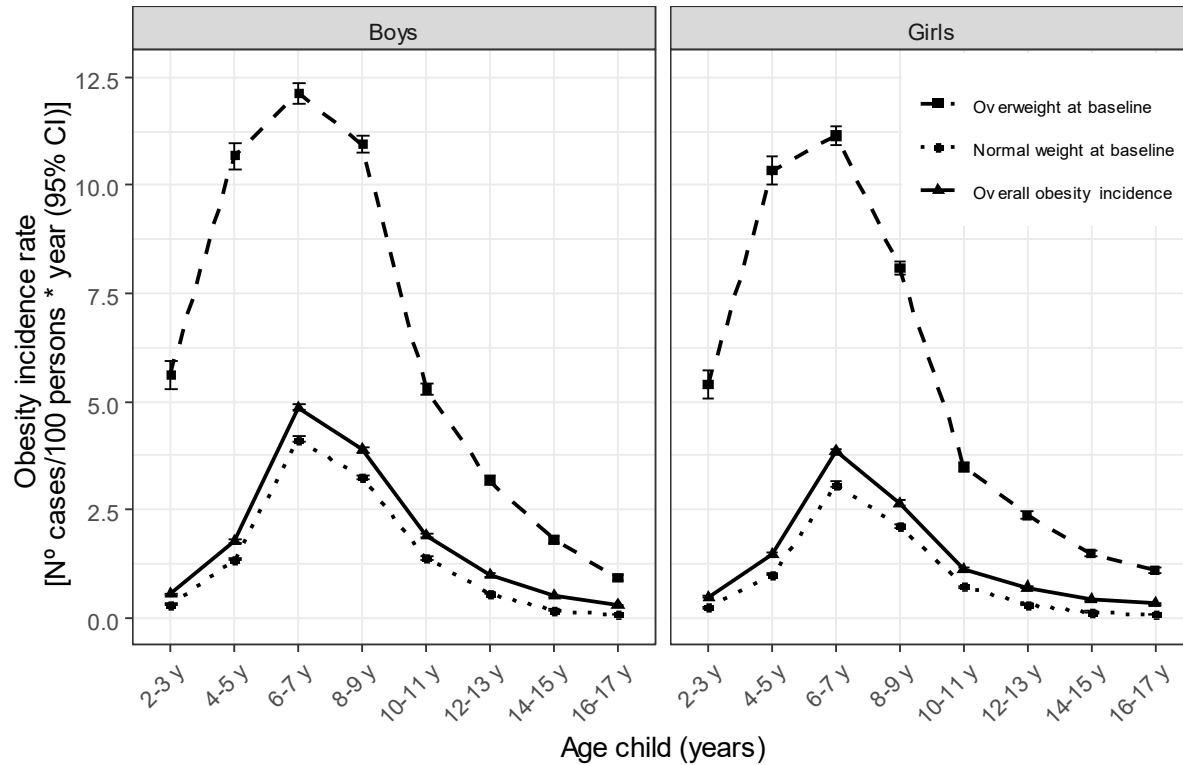
Change from 2006 to 2016 (%) by deprivation index:  $(\text{prevalence 2016} - \text{prevalence 2006}) / \text{prevalence 2006} * 100$ .

**eFigure 4.** Prevalence Trends of Overweight/Obesity and Sex, Age Category, and Nationality, 2006-2016



Note: prevalence trends of overweight/obesity with 95% CIs (black error bars) stratified by sex, age category and nationality

**eFigure 5.** Obesity Incidence by Sex According to Their zBMI Category Classification at Baseline, 2006-2016



Overweight and normal weight at baseline was children who were overweight and normal weight at their first BMI measurement, respectively. Overall obesity incidence is the incidence of both children who were overweight or normal weight at baseline.