TABLE 3. Associations between breakfast consumption and childhood obesity.

Source	Type of Study	Study Sample	Study Results	Conclusions
Koca T, el al, 2017[30]	Cross-sectional study	7,116 children and adolescents 6-18 years old (*n*=3,671 boys)	• 25% of OW/O participants reported never eating breakfast • OW/O participants had a higher possibility on skipping breakfast in comparison to normal weight participants	Skipping breakfast was positively associated with OW/O ($p<0.05$)
Sandercock GRH, et al, 2010[14]	Cross-sectional study	4,326 schoolchildren 10-16 years old (*n*=2,336 boys)	Children who didn't eat breakfast were more likely to become obese than tose eating breakfast every day	Skipping breakfast was associated with an increased risk of obesity ($p<0.05$)
Fayet-Moore F, et al, 2016[31]	Cross-sectional study (ANCNPAS)	4,487 children and adolescents 2-16 years old (*n*=2,249 boys)	• Among breakfast consumers 16.5% were obese • Among breakfast skippers 23.2% were obese	Breakfast consumers were more likely to be normal weight than breakfast skippers ($p<0.001$)
Smetanina N, et al, 2015[32]	Cross-sectional study	3,990 children and adolescents 7-17 years old (*n*=1,920 boys)	Skipping breakfast: -9.6% of OW/O participants. -6.5% of normal weight participants	Skipping breakfast was associated with increased levels of obesity ($p<0.05$)
Veltsista A, et al, 2010[33]	Cross-national study	6,468 adolescents 16 years old (n=3,110 boys) + 2,842 adolescents 17- and 18- years old (*n*=1,291 boys)	Finnish and Greek boys who did not consume breakfast every day had 40% and 30% higher risk of being OW/O respectively in comparison to daily consumers	Not consuming breakfast every day was associated with higher levels of OW/O both for Finnish and Greek boys ($p<0.001$ and $p=0.001$ respectively)
Moschonis G, et al, 2014[34]	Cross-sectional study (the Healthy Growth Study)	2,073 children 9-13 years old (*n*=1,032 boys)	Identification of a lifestyle component characterised by higher daily consumption and breakfast including fruit, cereals or dairy products → associated with lower levels of BMI, WC, sum of skinfold thicknesses and % fat mass	The component including breakfast consumption was associated with a lower risk of childhood OW/O (OR=0.64, 95% CI: 0.46, 0.79) and lower BMI and % fat mass ($p=0.07$ and $p=0.029$ respectively)
Kontogianni MD, et al, 2010[35]	Cross-sectional study	1,305 children and adolescents 3-18 years old (*n*=627 boys)	Identification of a lifestyle component characterised by higher eating frequency, breakfast consumption and higher KIDMED score → associated with lower BMI	Breakfast consumers were less likely to be OW/O than skippers ($p<0.001$)
Nagel G, et al, 2009[36]	Cross-sectional study	1,079 children 6-9 years old (*n*=577 boys)	Skipping breakfast before school was related to obesity	Breakfast skippers had increased risk for obesity (OR 2.50, 95% CI 1.19, 5.29)
Kyriazis I, et al, 2012[37]	Cross-sectional study	2,374 children 6-12 years old (*n*=1,206 boys)	Habits found to be associated with obesity: • skipping breakfast • not consuming fruits and vegetables • consuming bread • consuming refreshments	Skipping breakfast was positively associated with obesity ($p<0.05$)
Mushtaq MU, et al, 2011[38]	Cross-sectional study	1,860 children 5-12 years old (*n*=977 boys)	Skipping breakfast: • 15.4% of OW/O participants. • 6.6% of normal weight participants	Skipping breakfast was an independent predictor of being OW/O (OR 1.82, 95% CI 1.22-2.71)

Abbreviations: OW/O: Overweight/Obese, BMI: Body Mass Index, WC: Waist Circumference, KIDMED: Mediterranean Diet Quality Index, OR: Odds Ratio, CI: Confidence Interval