

# Behavioral, family and environmental factors associated with increased risk of overweight and obesity in girls

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## INTRODUCTION

Effectiveness of interventions to reduce childhood obesity depend upon an understanding of the multiple factors correlated with obesity.

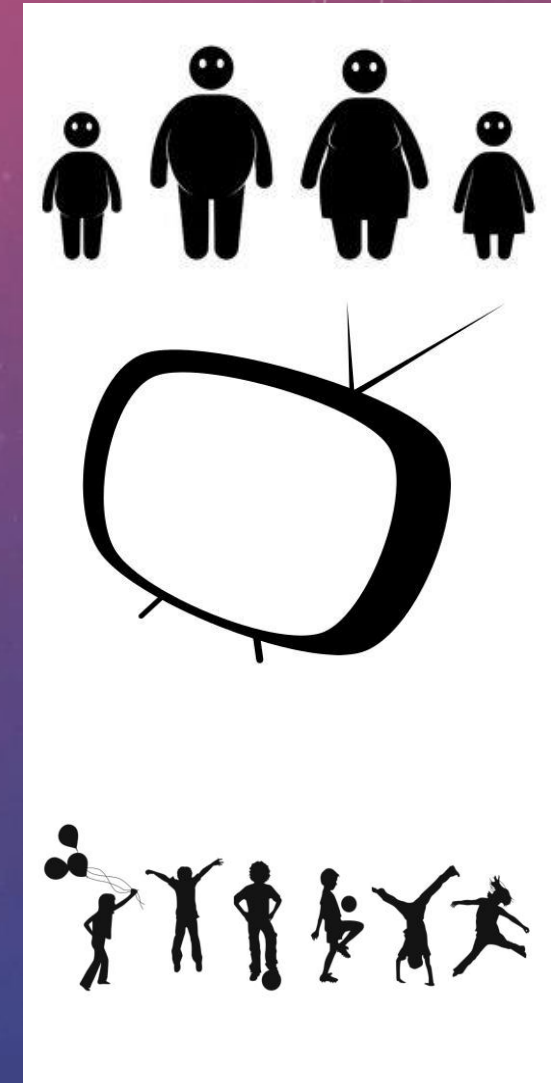


## THIS STUDY AIMS:

Analyze associations between behavioral, family and environmental factors and obesity risk in Portuguese girls.

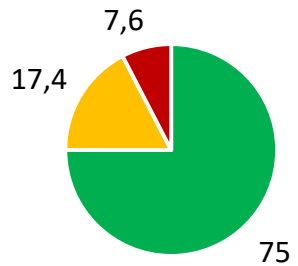
# METHODOLOGY

- A sample of 408 girls aged 6-10 years was used;
- Height and weight were measured, BMI was calculated, and the IOTF cut-off points were used to classify child's nutritional status;
- Physical activity and sedentary behaviors, parents' BMI and environmental factors were assessed by a parental questionnaire;
- The study was approved by the Portuguese Commission for Data Protection and the Direcção Geral de Inovação e Desenvolvimento Curricular;
- Consent was given by all the involved, including parents and children.



# RESULTS

Weight status defined by the IOTF



■ Normal ■ Overweight ■ Obesity

## Logistic Regression (cont.):

Transportation to school, practice an extracurricular sport, engage in physical education classes, father's BMI, and the number of facilities close to home were never statistically related.

Child Weight Status	Factors	Crude			Adjusted		
		OR	95%CI	P-value	OR	95%CI	P-value
	<b>TV Saturday</b>						
OW	<2/d (Ref. ≥2h/d)	0,52	0,27-0,99	<b>0,04</b>	-	-	-
OB	<2/d (Ref. ≥2h/d)	0,37	0,12-1,09	<b>0,07</b>	0,26	1,11-13,45	<b>0,03</b>
	<b>Mother's BMI</b>						
OW	Normal (Ref. OB)	0,48	0,19-1,23	0,13	-	-	-
	OW (Ref. OB)	0,81	0,29-2,50	0,69	-	-	-
OB	Normal (Ref. OB)	0,13	0,04-0,38	<b>&lt;0,001</b>	0,05	0,01-0,27	<b>&lt;0,001</b>
	OW (Ref. OB)	0,38	0,12-1,18	<b>0,09</b>	0,08	0,01-0,46	<b>0,01</b>
	<b>SES</b>						
OW	Low (Ref. High)	2,39	1,29-4,41	<b>0,01</b>	-	-	-
	Medium (Ref. High)	1,38	0,68-2,76	0,38	-	-	-
OB	Low (Ref. High)	2,1	0,82-5,40	0,12	-	-	-
	Medium (Ref. High)	2,41	0,96-6,08	<b>0,06</b>	-	-	-

Reference category: Normal weight; OW=Overweight; OB=Obesity; TV=Television; SES=SocioEconomic Status

## DISCUSSION AND CONCLUSION

- It is worrying that 24% of the girls examined had a weight above the recommended. Nevertheless, the prevalence is similar to the previously reported by other studies in central Portugal which may indicate that the prevalence has stabilized.
- Watching less than 2h/day of television (TV) reduced the odds of both overweight and obesity in girls. TV viewing may lead to obesity by one or a combination of the following mechanisms: (i) decreased physical activity, (ii) increased energy intake, (iii) increased sedentary behavior, (iv) exposure to food advertising and (v) reduced sleep time. Less time in sedentary activities may mean more time in active behaviors.



In conclusion, future interventions to reduce obesity/maintain a healthy weight should focus on the family, not only in the child, and must include education and behavioral counseling related to diet and physical activity.