

# Reduction of the prevalence of obesity in Portugal: mirage or reality?

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## Introduction and Aim

The influence of lifestyles on the incidence and prevalence of non-transmissible chronic diseases justifies the importance of studying these factors and their distribution in the population. Overweight/obesity is nowadays a major public health problem worldwide.

Our **aim** was to evaluate the evolution of the prevalence of overweight/obesity and of cardiovascular risk (assessed by waist circumference) in the Portuguese adult population in the last years.

## Participants and Methods

Data from the study “Portuguese Population’s Food Habits and Lifestyles” (2009) were compared with data from 2003-05 (Carmo et al. 2008).

A national representative sample of 3529 Portuguese adults was interviewed at home between February and April 2009. Body measurements (weight, height and waist circumference) were assessed according to international procedures. BMI categories were used according to WHO (1998). Fifty-five subjects refused to be weighted and/or to have their height measured and 47 refused to have their waist circumference measured.

## Results

Between 2003-05 and 2009 the prevalence of obesity (BMI  $\geq 30.00$  kg/m<sup>2</sup>) in the Portuguese adult population reduced from 14.2 to 10.8% (Table 1). This reduction was observed both for women (13.4 to 10.4%) and men (15.0 to 11.2%). However, while in women the global prevalence of overweight (BMI  $\geq 25.00$  kg/m<sup>2</sup>) decreased from 47.8 to 38.2%. in men it increased from 60.2 to 64.5%.

Data are presented and compared by age and education level (Tables 2 and 3). The proportion of women and men with waist circumference indicating cardiovascular risk (Lean et al. 1995) has fallen from 47.8 to 31.3% and from 52.1 to 28.1%, respectively (Table 4).

## Discussion

Although the prevalence of obesity and cardiovascular risk seem to be decreasing, overweight is still observed in about half of the Portuguese adults. Furthermore, it’s proportion may even be increasing in men.

## References

- Carmo et al. Overweight and obesity in Portugal: national prevalence in 2003-2005. *Obesity Res* 2008; 9:11-19.  
Lean MEJ, Han TS, Morrison CE. Waist circumference indicates the need for weight management. *BMJ* 1995; 311:158–61.  
WHO. Obesity: preventing and managing the global epidemic. Report of a WHO consultation on obesity. Geneva: World Health Organisation; 1998.

**Table 1.** BMI categories' prevalence from 2003-05 to 2009.

	Women (%)		Men (%)		Total (%)	
	2003-05	2009	2003-05	2009	2003-05	2009
<b>Underweight (&lt; 18.50)</b>	3.4	2.6	0.9	0.3	2.2	1.5
<b>Normal (18.50-24.99)</b>	48.9	59.2	38.9	35.2	44.2	47.7
<b>Pre-obesity (25.00-29.99)</b>	34.4	27.8	45.2	53.3	39.4	40.0
<b>Obesity class I (30.00-34.99)</b>	10.2	7.8	13.2	10.3	11.6	9.0
<b>Obesity class II (35.00-39.99)</b>	2.4	1.7	1.6	0.6	2.0	1.2
<b>Obesity class III (<math>\geq 40.00</math>)</b>	0.8	0.9	0.2	0.3	0.6	0.6

**Table 2.** Evolution of BMI categories' prevalence by age.

	Underweight		Normal		Pre-obesity		Obesity	
	2003-05	2009	2003-05	2009	2003-05	2009	2003-05	2009
<b>WOMEN (%)</b>								
18-19 years	10.0	2.8	69.2	86.2	15.1	11.0	5.7	0.0
20-29 years	5.3	9.3	67.4	74.3	21.8	14.7	5.5	1.6
30-39 years	2.8	1.3	47.1	67.8	36.8	24.6	13.3	6.4
40-49 years	1.2	2.3	35.4	61.2	46.1	29.5	17.2	7.0
50-59 years	0.5	0.5	28.6	52.7	46.7	30.7	24.2	16.1
60-64 years	0.7	0.0	29.4	32.5	45.7	46.0	24.2	21.5
$\geq 65$ years	-	0.0	-	44.0	-	37.0	-	19.0
<b>MEN (%)</b>								
18-19 years	4.5	1.7	66.8	75.7	26.2	20.4	2.5	2.2
20-29 years	2.0	0.8	55.1	55.4	34.5	40.2	8.5	3.7
30-39 years	0.3	0.1	36.4	30.1	45.8	61.1	17.4	8.7
40-49 years	0.4	0.1	31.5	29.7	51.3	58.5	16.8	11.7
50-59 years	0.3	0.0	26.7	24.3	51.0	55.4	22.0	20.3
60-64 years	0.6	0.0	29.8	19.0	54.8	62.7	14.9	18.3
$\geq 65$ years	-	0.0	-	19.9	-	64.9	-	15.2

**Table 3.** Evolution of BMI categories' prevalence by education level.

	Underweight		Normal		Pre-obesity		Obesity	
	2003-05	2009	2003-05	2009	2003-05	2009	2003-05	2009
<b>WOMEN (%)</b>								
$\leq 6$ th grade	1.6	0.0	29.0	33.0	45.1	43.7	24.3	23.3
7th-9th grade	3.0	0.2	44.7	53.0	37.9	35.1	14.4	11.6
10th-12th grade	4.2	3.8	54.2	75.1	31.1	17.8	10.5	3.3
> 12th grade	4.2	5.3	63.8	74.8	25.9	17.1	6.1	2.7
<b>MEN (%)</b>								
$\leq 6$ th grade	1.0	0.0	28.5	18.5	47.9	62.0	22.6	19.5
7th-9th grade	0.4	0.1	36.2	22.9	47.4	61.6	16.0	15.4
10th-12th grade	1.2	0.9	40.2	48.2	45.7	44.2	12.9	6.7
> 12th grade	1.1	0.0	47.8	45.3	40.4	50.5	10.7	4.2

**Table 4.** Cardiovascular risk from 2003-05 to 2009.

WAIST CIRCUMFERENCE	Women (%)		Men (%)	
	2003-05	2009	2003-05	2009
<b>Moderate risk (*)</b>	23.2	14.1	26.8	17.6
<b>High risk (**)</b>	24.6	17.2	25.3	10.5
(*) 80 cm < WC $\leq$ 88 cm (women) and 94 cm < PC $\leq$ 102 cm (men). (**) > 88 cm (women) and > 102 cm (men).				

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