

COMPLIANCE WITH DIETARY RECOMMENDATIONS IN THE POPULATION OF GENEVA, SWITZERLAND: A TEN-YEAR TREND STUDY (1999-2009)

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Aim

To assess the trends in compliance with dietary recommendations in the Geneva population for period 1999-2009.

Conclusion

Few improvements were noted in adherence to dietary recommendations in the Geneva population between 1999 and 2009. The low and decreasing prevalence of adequate calcium and iron intake are of concern. Hence, nutritional information campaigns need to focus on the recommendations that are poorly implemented.

Methods

Sampling: The sampling methodology of the Bus Santé Geneva study was used.

Dietary intake and dietary recommendations: Dietary intake was assessed using the Food Frequency Questionnaire (FFQ). Dietary recommendations by the Swiss Society of Nutrition for nutrient intake were used to assess compliance.

Data collection: Educational level was divided into primary school and higher than primary school. Nationalities were divided into Swiss and not Swiss. Height and weight were measured and body mass index (BMI) calculated in kg/m². Overweight was defined if BMI ≥ 25 and < 30 kg/m²; obesity was defined as BMI ≥ 30 kg/m².

Statistical analysis: two steps: 1) using the whole sample and 2) excluding participants with values below the 5th or above the 95th percentile of energy intake. Bivariate analyses were conducted using chi-square or analysis of variance. Trends in compliance for dietary intake recommendations were assessed separately for each gender by logistic regression adjusting for age, smoking status, education and nationality, using survey year as the independent variable

Results

9320 participants aged 35 to 75 years (50% women)

No significant changes were found for carbohydrate, fat and protein consumption during the 1999-2009 study period, albeit a significant decrease was found in compliance regarding MUFA intake for men. The percentage of participants with a cholesterol consumption < 300 mg/day increased in both genders. Consumption of calcium > 1 g/day and of iron > 15 mg/day for women and 10 mg/day for men decreased in both genders. No significant changes were found for vitamin A and D intake, while adequate beta-carotene intake increased in both genders.

	Men (n=4661)		p-value ^a	Women (n=4659)		p-value ^a
	1999 %	2009 %		1999 %	2009 %	
Total energy 1800-2500 kcal/day	39.4	38.7	0.62	28.5	27.8	0.02
Macronutrients						
Carbohydrates $> 50\%$ TEI	25.1	28.9	0.11	32.1	35.7	0.07
Protein $< 20\%$ TEI	93	91.2	0.12	90.5	90.5	0.84
Total fat $< 30\%$ TEI	27.6	28.7	0.6	23.1	25.6	0.12
SFA $< 10\%$ TEI	18.4	22	0.34	23.2	26	0.04
MUFA $> 10\%$ TEI	85.7	85.4	0.46	90.1	88.6	0.4
PUFA $> 10\%$ TEI	2.3	1.4	0.1	2.2	1.5	0.48
Other nutrients						
Cholesterol < 300 mg/day	39.7	43.1	0.01	59.6	64.1	0.02
Fibre > 30 g/day	10	9.4	0.35	10.8	7.1	0.17
Calcium > 1 g/day	55	48.1	< 0.001	46	38.5	< 0.001
Iron > 15 or 10 mg/day	68.3	65.3	< 0.001	13.3	8.4	0
Vitamin D > 5 μ g/day	11.5	12.4	0.39	11	11.2	0.86
Vitamin A > 800 or 1000 μ g/day	31.7	30.1	0.44	37.7	40.1	0.56
Carotene > 2 mg/day	72.6	74.2	0.38	75.7	81.5	0.03