



PRESS RELEASE

29th October 2003

CATALANS REMAIN FAITHFUL TO THE MEDITERRANEAN DIET

- *The consumption of olive oil, dairy products, nuts and dried fruit, and bakery products have all increased.*
 - *The consumption of meat, fruit and vegetables, and fish have decreased.*
 - *Eating out has increased.*
 - *22% of the population has been on a diet in the last twelve months.*
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According to results of the Survey of food and nutrition 2003-2003, carried out by the Department of Health and Social Security of the Catalan regional government, the population of Catalonia maintains a pattern of consumption characteristic of Mediterranean countries. However, it also noted a reduction in the consumption of fruit, vegetables and fish, along with an increase in the consumption of bakery products, with respect to the previous survey of 1992-1993.

63% of Catalans claim to regularly follow a Mediterranean diet (21% follow it very regularly). The population declares itself aware of the essential components of a Mediterranean diet: Olive oil, fruit, vegetables, lettuce and fish. A lower proportion consider that pulses, nuts, dried fruit, wine, pasta, cheese and yoghurt are fundamental, while considering that some non-typical ingredients – such as milk, potatoes and meat – also form part of a Mediterranean diet.

Olive oil continues to be the principal oil used in Catalan homes for frying (82%), cooking (92%) and dressing (99%). The consumption of olive oil has increased significantly in Catalonia, by about 20%, particularly that of virgin olive oil. This is a particularly positive figure, which demonstrates the interest of the population in the Mediterranean diet.

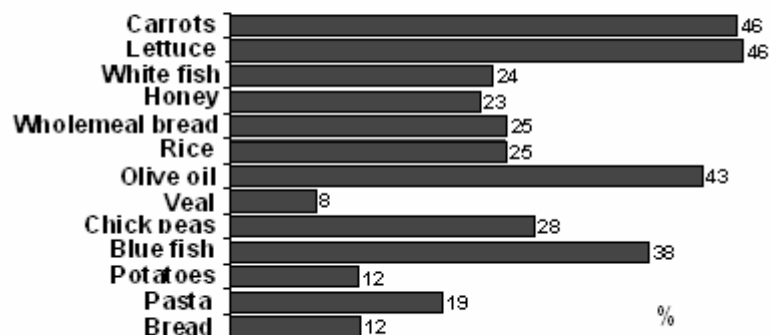


Despite the fact that the consumption of fruit and vegetables has decreased by nearly 10% in recent years in Catalonia, only a third of Catalans consider their diet to be poor in fruit and vegetables. The fact is that only 14% consume the 700 grams or more per day recommended by the Sociedad Española de Nutrición Comunitaria, SENC, (Spanish Society of Community Nutrition). 32% consume more than the 500 grams per day recommended by the WHO-EU and between 60 and 70% are prepared to increase their consumption.

48% of the population consider their diet to be more balanced than 10 years ago. On the one hand, there has been a reduction in the consumption of fruit, vegetables and fish along with an increase in that of bakery products. On the other hand, while dairy products and olive oil consumption have increased, the consumption of meat and offal has decreased.

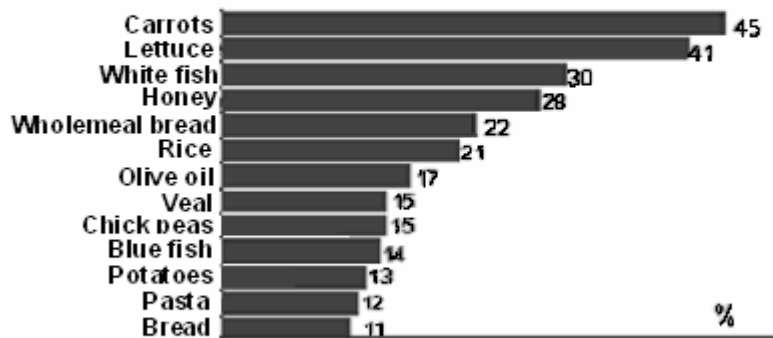
Olive oil, vegetables, pulses, milk and wholemeal bread are considered the healthiest foodstuffs by the population of Catalonia.

Figure 1. Population considering the following foodstuffs very healthy. ENCAT 2002-03





**Figure 2. Population considering the following
foodstuffs very healthy. ENCAT 1992-93**



Olive oil, blue fish and chick peas are considered more healthy this year than 10 years ago.

Geographical differences

Comparing consumption patterns over the 10 year period in the different health regions we find:

- ❖ **Lleida** is the region which has changed most and which has the highest consumption of milk, dairy products and fruit.
- ❖ The highest consumption of cereals is in **Lleida** (157,4 grams per person per day) and in the **Barcelonès Nord y Maresme** area(156,2 grams per person per day), and the lowest is in the **Tortosa** region (124,7 grams per person per day).
- ❖ **Tarragona** is the region which consumes most bakery products (49,3 grams per person per day) while **Girona** consumes least (31,1 grams per person per day).



- ❖ The maximum consumption of red meat is in the **Costa de Ponent** region (86,6 grams per person per day), while least is consumed in **Tarragona** (57,6 grams per person per day).
- ❖ The **Centro** region has the highest level of consumption of poultry (51,7 grams per person per day) and **Girona** has the lowest (35,6 grams per person per day).
- ❖ **Lleida** and **Centro** are the regions which consume most sausage (36,1 grams per person per day and 36,2 grams per person per day respectively) and **Tortosa** consumes least (23,6 grams per person per day).
- ❖ The maximum consumption of eggs and fish is in **Lleida** and the minimum is in **Tarragona** and **Girona**.
- ❖ The consumption of olive oil is highest in **Tortosa**.
- ❖ The consumption of vegetables is highest in **Lleida**.
- ❖ **Lleida** has changed from being the region with the lowest consumption of fruit in 1992 to that with the highest.

Energy and nutrition intake

From a nutritional point of view, the average intake of energy, macro nutrients, vitamins and minerals can be considered adequate. Although since 1992, the intake of cholesterol, animal proteins, alcohol, iron, vitamin A, niacin and vitamin B12 has decreased, that of calcium and vitamin D has increased.

The daily consumption of cholesterol has decreased from 391 mg in 1992 to 354 mg in 2003. This clearly reflects the reduction in consumption of offal, meat and eggs over recent years.



In general, knowledge of those foodstuffs whose consumption should be moderated or reduced in order to reduce cholesterol levels in the blood has improved in recent years in Catalonia.

Figure 1. Population knowledge regarding which foodstuffs to reduce in order to prevent high cholesterol levels in the blood. ENCAT 2002-03

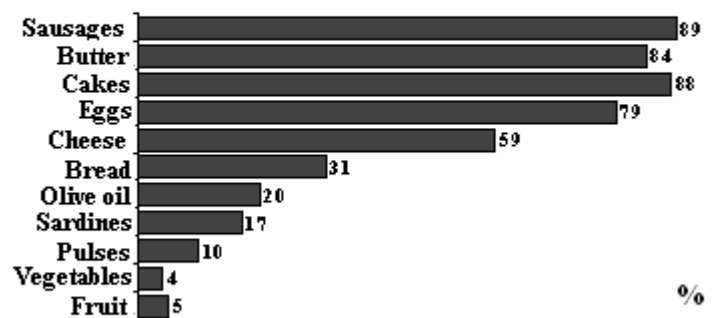
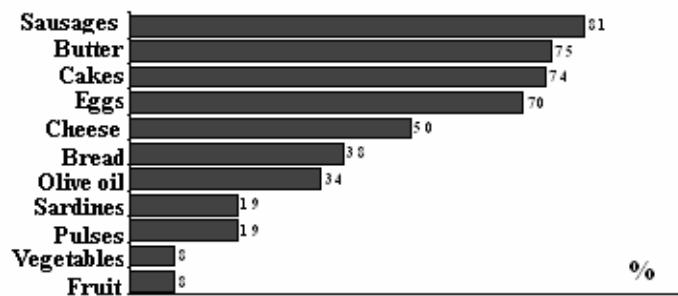


Figure 2. Population knowledge regarding which foodstuffs to reduce in order to prevent high cholesterol levels in the blood. ENCAT 1992-93



What are Catalan meals like?

According to the Survey results, only 16% of Catalans have an adequate breakfast (of dairy products, cereals and fruit). Although the majority consume



milk products and cereals, only 26% have fruit or fruit juice and a third eat bakery products.

Regarding the time taken to have breakfast, 28% have it in less than 10 minutes, while 50% spend between 10 and 20 minutes.

A habitual workday lunch consists of two courses, with dessert (62%) or without (11%), for 73% of Catalans. This reflects the persistence of the traditional midday lunch and the typical Mediterranean habit of a prolonged pause at lunch time (more than two-thirds of the population spend more than half an hour). 25% have a single-course lunch and two percent have only a sandwich or fruit for lunch.

For dinner, 41% of those questioned have two courses and dessert, 47% have only a single course and 10% have a sandwich or fruit. This shows a reduction in the quantity of food consumed for dinner in recent years, without a reduction in the time spent having this meal (two thirds of those questioned spend more than thirty minutes).

Eating out

Eating outside the home has increased over the last ten years. Presently, 72% of the population of Catalonia have lunch at home every working day, compared with 83% ten years ago. The figures for breakfast (76%) and dinner (92%) have not changed.

Eating in fast-food establishments has increased, particularly in the 18 to 24 age group, where those who eat here most frequently (more than once a week) have increased from 3 to 9 %.

The habit of eating between meals has increased in Catalonia. The proportion of people who do this has increased to 36%, compared to 9% ten years ago. The increase in this behaviour involves a greater intake of fats and sugars, which should be the object of special concern.



Diets, slimming and supplements in Catalonia

22% of the population has followed a diet in the last twelve months and 17% were following, one at the moment of the Survey, a slimming diet (39%), a diabetic diet (17%), a cholesterol-reducing diet (14%), a high-blood-pressure diet (10%) or other diets.

In 1992, 14% of the population were following a diet at the moment of the Survey.

51% of diets are followed as a result of a doctor's prescription, 22% as a result of the decision of the individual concerned, 12% because of advice from dieticians, nurses or chemists, 8% from friends and family and 6% from other, non-health professionals.

Most diets (49%) are prescribed by Doctors employed by the Catalan health service, the Servicio Catalán de la Salud.

33% of the population of Catalonia consider themselves to be overweight or obese but, in spite of this, only half of these are concerned or very concerned about the health effects of excess weight.

62% consider their weight to be normal and 5% feel that their weight is insufficient.

The majority of the population weigh themselves at home (46%). 15% weigh themselves at the chemist's, 12% at their local surgery and 20% never weigh themselves.

More people are following the dissociated diet: 10% of diets followed in recent years were of this type. However, a large majority feel confident about hypo-



caloric and balanced diets, which are the only ones to guarantee a scaled and sustained loss of weight over time.

Amongst those who have dieted in the last four years, 29% used herbs or infusions, 28% used creams and lotions, 13% took medicines or pills, 9% used mesotherapy, 3% have undergone liposuction and 1% have resorted to surgery.

45% consider that the best way to lose weight is to eat less and 43% believe that the best way is to do more physical exercise. In 1992 these figures were 55% and 34% respectively. 9% believe that the best method is not either of these.

10% of the population of Catalonia take dietary supplements, 21% consume enriched food products (principally cereals, milk, drinks, biscuits or yoghurts) and 8% consume vitamin and mineral supplements.

In 1992, 9% of the population consumed vitamin and mineral supplements, demonstrating that this habit has declined slightly over the last ten years.

Conclusions and Recommendations

□ Positive aspects:

- 1) Consumption of olive oil has increased
- 2) Consumption of dairy products has increased
- 3) Consumption of nuts and dried fruit has increased
- 4) Consumption of meat has decreased

□ Negative aspects:

- 1) Consumption of fruit and vegetables has decreased
- 2) Consumption of fish has decreased
- 3) Consumption of bakery products has increased

Lleida and ***Tortosa*** are the regions where the changes in food consumption have been most marked.



Energy and nutrition consumption has varied little; The intake of vitamin A, cholesterol, niacin, vitamin B12 and iron have decreased while the intake of calcium and vitamins D and C have increased.

Nutritional policy for Catalonia must include, as priorities, promoting the traditional Mediterranean diet and encouraging the consumption of fruit and vegetables.

Dietary recommendations to be made should be especially directed towards conserving and recovering those aspects of the Mediterranean diet which are tending to disappear:

- ❖ Maintain and increase fruit and vegetable consumption, as a positive aspect of the Catalan diet, which should be particularly encouraged amongst the younger members of society.
 - ❖ Continue to use olive oil as the first choice for both uncooked and cooked dishes.
 - ❖ Maintain traditional characteristics, recuperating dishes, recipes and customs.
 - ❖ Decrease meat consumption, particularly that of red meat and sausages.
 - ❖ Maintain and increase fish consumption
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- ❖ Partially substitute full milk and full-dairy products by skimmed milk and skimmed-dairy products, encouraging the consumption of these in adults and the elderly.



Study data

The 2003 nutrition Survey is a wide-ranging study carried out in the context of a health programme within the **General Directorate of Public Health's Food and Nutrition Programme**. The Survey was coordinated by the **Centro de Investigación en Nutrición Comunitaria** (Community Nutrition Research Centre) of **Barcelona University**, attached to the **Centro Catalán de la Nutrición** (Catalan Nutrition Centre) of the **Instituto de Estudios Catalanes** (Catalan Studies Institute), with the collaboration of other Catalan scientific and health institutions.

The survey scope consisted of all inhabitants of Catalonia aged between 10 and 80 and the survey population were all residents in Catalan municipalities between these ages on the population census.

The Survey, carried out between the 21st of March 2002 and the 30th of June 2003, gathered data from 3,300 people.



Table 1. Food consumption tendencies in Catalonia (1992-2003)

	1992 Average	2003 Average	Increase %
CEREALS	138,5	142,6	2,9
Men	169,2	168,9	-0,2
Women	108,8	116,6	7,1
BAKERY PRODUCTS	33,9	40,7	20,0
MILK	191,2	207,0	8,3
DAIRY PRODUCTS	63,5	103,9	63,7
MEAT	82,6	73,7	-10,8
POULTRY AND GAME	53,8	43,6	-18,9
Men	53,4	47,3	-11,3
Women	54,2	39,9	-26,4
OFFAL	2,9	1,5	-50,4
Men	3,5	2,1	-41,1
Women	2,4	0,8	-64,5
SAUSAGES	33,5	33,2	-0,9
EGGS	25,7	24,8	-3,4
FISH AND SEA-FOOD	72,6	62,0	-14,7
Men	79,8	63,7	-20,2
Women	65,8	60,3	-8,3
OLIVE OIL	19,5	23,2	19,0
TOTAL OILS AND FATS	40,3	37,8	-6,2
VEGETABLES	200,4	183,9	-8,2
PULSES	14,6	14,6	-0,5
Men	16,4	15,4	-5,9
Women	12,9	13,7	5,9
POTATOES	75,5	62,7	-17,0
FRUIT	251,0	224,8	-10,4
Men	237,4	218,5	-12,5
Women	264,0	231,0	-8,0
DRIED FRUIT AND NUTS	3,4	4,1	19,1
SUGARS AND DERIVATIVES	17,6	16,8	-4,3
COMMERCIAL JUICES AND NECTARS	17,7	34,0	92,6
NON-ALCOHOLIC DRINKS	785,7	1.014,2	29,1
ALCOHOLIC DRINKS	105,9	91,3	-13,8
Men	175,3	136,2	-22,3
Women	39,1	46,9	20,1

*Consumption in grams or millilitres per person per day. Population aged 10 to 75
Data adjusted for seasonal variations*



Table 2. Food consumption in Catalonia by health region (2002-2003)

	Lleida	Tarragona	Tortosa	Girona	Costa de Ponent	Barcelonès Nord y Maresme	Centro	Barcelona ciudad
Cereals	157,4	128,0	124,7	144,2	139,2	156,2	142.0	139.9
Bakery products	37,5	49,3	39,6	31,1	34,6	40,1	39.0	44.1
Milk	233,0	197,4	201,5	209,7	195,3	213,7	205.2	201.4
Dairy products	112,8	109,9	77,9	100,5	100,7	101,2	109.3	104.3
Meat	73,5	57,6	76,7	76,3	86,6	68,3	82.3	65.7
Poultry and game	36,4	35,7	45,9	35,6	41,9	42,9	51.7	46.1
Offal	0,0	1,0	2,9	1,4	1,6	1,3	2.9	0.9
Sausages	36,1	33,1	23,6	32,4	32,5	34,2	36.2	31.9
Eggs	37,4	16,1	25,8	24,4	19,9	23,9	27.7	25.0
Fish and sea-food	84,3	56,3	61,4	56,1	56,7	59,7	62.7	63.7
Olive oil	30,6	14,9	36,1	19,1	28,4	22,0	23.3	20.3
Total oils and fats	44,0	26,1	48,5	35,1	45,1	36,3	37.9	35.1
Vegetables	208,9	157,1	174,3	161,8	195,3	159,6	193.6	196.8
Pulses	9,3	11,1	20,5	17,8	12,7	15,6	17.0	13.4
Potatoes	70,1	52,0	70,5	64,7	79,4	60,6	58.0	56.3
Fruit	263,3	252,9	205,5	231,2	227,1	180,3	223.1	241.2
Dried fruit and nuts	3,2	5,2	4,4	4,9	4,1	3,2	3.7	4.6
Sugar and derivatives	17,3	13,1	16,2	18,5	16,8	16,2	15.1	18.6
Commercial Juices and nectars	23,7	40,9	27,1	25,4	36,6	41,9	34.1	31.6
Non-alcoholic drinks	1.177,8	817,1	980,6	906,7	1.165,5	1.066,8	957.0	1.002.4
Alcoholic drinks	108,9	118,6	58,6	100,8	89,2	94,1	76.4	103.4

Data adjusted for age and sex. Average.

Consumption in grams or millilitres per person per day.

Catalonia 2002-2003



Table 3. Food consumption in Catalonia by health region (1992-1993)

	Lleida	Tarragona	Tortosa	Girona	Costa de Ponent	Barcelonès Nord y Maresme	Centro	Barcelona ciudad
Cereals	113,8	165,5	104,7	161,8	135,2	129,1	146,8	137,3
Bakery products	17,6	42,4	21,2	31,6	35,5	37,9	34,3	34,0
Milk	144,4	213,8	153,4	220,7	183,8	203,6	177,5	199,2
Dairy products	47,8	52,6	43,7	62,0	72,7	78,3	57,8	65,8
Meat	104,8	88,1	74,1	81,0	89,7	81,5	85,1	76,5
Poultry and game	51,9	52,1	56,8	76,3	53,1	60,1	47,1	51,3
Offal	4,8	3,2	1,2	4,7	1,4	2,5	2,5	3,3
Sausages	29,4	31,3	28,1	42,4	37,1	33,2	35,1	32,8
Eggs	37,0	25,2	26,3	30,1	24,6	24,6	25,7	23,9
Fish and sea-food	50,0	68,4	88,1	63,9	81,7	87,7	61,2	80,5
Olive oil	30,3	16,1	16,7	18,0	18,1	16,9	18,6	21,5
Total oils and fats	55,4	39,4	37,1	40,8	38,9	38,9	35,9	42,8
Vegetables	219,2	191,8	259,2	240,8	196,6	186,4	176,4	201,5
Pulses	17,1	10,7	12,6	18,6	14,1	9,9	16,2	16,0
Potatoes	87,5	73,8	67,6	88,0	83,4	88,4	62,6	70,2
Fruit	163,3	245,7	270,4	264,9	253,2	278,2	225,0	268,2
Dried fruit and nuts	1,5	3,9	1,5	2,4	6,4	3,7	3,5	3,1
Sugar and derivatives	11,4	17,0	8,0	19,6	17,7	21,2	17,3	19,3
Commercial Juices and nectars	8,1	11,2	11,0	12,8	21,2	23,1	18,9	19,5
Non-alcoholic drinks	511,4	853,7	688,3	769,2	994,8	795,5	738,4	791,1
Alcoholic drinks	78,1	118,3	120,5	125,2	123,4	125,7	103,2	111,3

Data adjusted for age and sex. Average.

Data adjusted for seasonal variations

Consumption in grams or millilitres per person per day

Catalonia 1992-1993



Table 4. Energy and nutrient intake tendencies in Catalonia (1992-2003)

	1992 Media	2002 Media	Increase %
Energy (kcal)	1.941,5	1.981,0	2,0
Water (g)	1.872,5	2.037,5	8,8
Total protein(g)	95,2	90,4	-5,1
Vegetable protein(g)	24,0	24,4	1,8
Animal protein(g)	71,2	66,0	-7,4
Total fats (g)	84,1	87,9	4,5
Saturated fatty acids (g)	27,3	27,8	1,9
Mono-unsaturated fatty acids (g)	37,3	38,8	3,9
Poly-unsaturated fatty acids (g)	13,6	14,1	3,6
Cholesterol (mg)	391,3	353,8	-9,6
Total Carbohydrates (g)	193,7	197,2	1,8
Sugar (g)	82,6	85,4	3,3
Polysaccharides (g)	105,1	110,7	5,3
Total dietary fibre (g)	19,7	18,8	-4,6
Ethanol (g)	7,6	6,3	-16,4
Sodium (mg)	2.584,4	2.722,1	5,3
Potassium (mg)	3.069,7	2.890,6	-5,8
Calcium(mg)	769,4	836,9	8,8
Magnesium (mg)	291,2	296,6	1,8
Phosphorous (mg)	1.315,1	1.324,4	0,7
Iron (mg)	13,4	12,2	-8,2
Zinc (mg)	9,1	9,1	-0,6
Total Vitamin A(mcg E.R.)	815,6	709,9	-13,0
Total retinoids (mcg)	373,3	328,1	-12,1
Total Carotenoids (mcg)	2.643,4	2.280,1	-13,7
Vitamin D (mcg)	2,9	3,5	20,0
Vitamin E (mg e.t.)	9,7	10,0	3,2
Vitamin B1 (thiamine) (mg)	1,3	1,3	0,9
Vitamin B2 (riboflavin) (mg)	1,6	1,6	-3,0
Niacin (mg)	22,1	19,9	-10,0
Vitamin B6 (mg)	1,9	1,9	0,6
Folic acid (mcg)	245,5	252,1	2,7
Vitamin B12 (mcg)	7,6	6,1	-20,1
Vitamin C (mg)	110,9	116,2	4,7
% Proteins	20,8	19,2	-7,7
% fats	39,3	40,2	2,2
% Saturated Fatty Acids	12,7	12,6	-0,5
% Mono-unsaturated fatty acids	17,6	17,9	1,7
% Poly-unsaturated fatty acids	6,3	6,4	2,3
% Carbohydrates	38,6	38,3	-0,7
% Sugar	17,0	17,0	0,3
% Polysaccharides	20,5	21,1	3,1

Table 5. Energy and nutrient intake in Catalonia by health region (2002-2003)

	Lleida	Tarragona	Tortosa	Girona	Costa de Ponent	Barcelonès Nord y Maresme	Centro	BCN Ciudad
Energy (kcal)	2.148,2	1.799,4	1.944,0	1.941,5	2.054,2	1.937,9	1.994,3	1965,2
Water (g)	2.327,2	1.819,0	1.921,3	1.927,3	2.181,7	2.029,0	1.994,7	2055,0
Total protein(g)	98,2	81,8	89,0	86,1	89,1	88,9	95,7	89,5
Vegetable protein(g)	25,0	22,6	23,6	24,9	24,4	24,7	24,8	24,2
Animal protein(g)	73,2	59,3	65,4	61,2	64,7	64,1	70,9	65,2
Total fats (g)	97,0	75,0	93,8	82,7	95,1	83,9	88,8	85,7
Saturated fatty acids (g)	30,4	25,8	27,4	25,5	28,5	27,0	27,5	28,2
Mono-unsaturated fatty acids (g)	44,5	31,1	45,1	35,6	43,1	36,9	39,5	37,0
Poly-unsaturated fatty acids (g)	14,1	12,1	14,1	14,4	15,9	13,4	14,5	13,7
Cholesterol (mg)	425,3	299,9	350,1	327,4	332,3	340,8	378,6	355,4
Total Carbohydrates (g)	206,1	189,0	176,0	201,6	200,5	197,8	194,7	198,0
Sugar (g)	89,6	85,8	74,3	87,5	88,2	82,1	83,3	86,9
Polysaccharides (g)	115,3	100,5	101,7	113,5	111,5	114,4	110,4	109,7
Total dietary fibre (g)	18,7	17,6	19,2	19,0	18,8	18,0	19,5	18,9
Ethanol (g)	9,0	7,4	5,6	7,0	6,1	5,8	5,3	7,0
Sodium (mg)	3.168,1	2.277,0	2.132,0	2.603,8	2.619,0	2.858,6	2.943,7	2698,0
Potassium (mg)	3.173,8	2.733,0	2.741,1	2.861,8	2.981,8	2.732,3	2.965,5	2896,8
Calcium(mg)	933,7	813,7	788,1	782,5	805,6	840,8	842,9	842,5
Magnesium (mg)	323,7	282,7	285,4	298,7	294,8	286,2	302,5	299,0
Phosphorous (mg)	1.457,0	1.231,6	1.254,9	1.273,2	1.301,1	1.285,3	1.371,5	1334,0
Iron (mg)	13,5	11,4	12,5	12,1	12,2	12,0	13,0	11,9
Zinc (mg)	9,8	8,4	9,0	9,1	9,0	8,7	9,5	8,9
Total Vitamin A (mcg e.r.)	717,6	687,6	722,9	661,2	679,2	682,5	735,1	737,8
Total Retinoids (mcg)	320,3	259,9	418,4	290,2	243,9	330,9	362,4	353,1
Total Carotenoids (mcg)	2.372,5	2.553,0	1.813,9	2.210,4	2.602,3	2.098,1	2.226,6	2298,0
Vitamin D (mcg)	4,2	3,0	3,3	3,5	3,5	3,6	3,5	3,5
Vitamin E (mg e.t.)	10,6	8,2	10,4	10,1	11,3	9,4	10,1	9,8
Vitamin B1 (thiamine) (mg)	1,3	1,3	1,2	1,3	1,3	1,3	1,4	1,3
Vitamin B2 (riboflavin) (mg)	1,7	1,5	1,5	1,5	1,5	1,5	1,7	1,6
Niacin (mg)	20,8	18,1	18,2	19,1	20,3	19,5	20,7	20,0
Vitamin B6 (mg)	2,0	1,7	1,8	1,9	2,0	1,8	2,0	1,9
Folic acid (mcg)	264,3	233,4	251,5	245,1	239,3	235,0	262,8	264,8
Vitamin B12 (mcg)	7,3	5,9	5,7	5,5	5,7	5,7	6,8	6,0
Vitamin C (mg)	125,9	112,1	121,2	117,0	114,2	102,1	116,7	123,7
% Proteins	19,4	19,3	18,9	18,7	18,2	19,4	20,1	19,1
% Fats	40,9	38,3	44,0	38,5	41,7	39,4	40,3	39,5
% Saturated fatty acids	12,9	13,1	12,7	11,8	12,5	12,5	12,4	12,8
% Mono-unsaturated fatty acids	18,8	16,0	21,3	16,7	19,1	17,6	18,1	17,3
% Poly-unsaturated fatty acids	5,9	6,1	6,6	6,6	6,8	6,2	6,5	6,3
% Carbohydrates	37,5	40,2	34,7	40,2	37,6	38,9	37,3	39,1
% Sugars	16,7	18,7	15,1	17,7	17,1	16,4	16,3	17,7
% Polysaccharides	20,5	21,0	19,6	22,4	20,4	22,3	20,8	21,1

Data adjusted for age and sex. Average

Catalonia 2002-2003

