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Dietary Patterns and Oncological Morbidity in European and Mediterranean Countries

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Abstract

Purpose of the study is an analysis of the impact of per capita income, latitude and nutrition structure on the cancer incidence in European (Euro) and Mediterranean (Med) countries.

Materials and Methods: Study design is observational. Nutrition structures for countries are presented as a general level of food consumption (g/person/day) and as the percentage contribution of 4 blocks: animal products; grains and vegetables; fruit and drinks; alcoholic beverages.

Results: In European countries, compared with the Med countries, the incidence of 7 cancer types in Euro countries depend on per capita income and latitude. In Euro countries, the incidence of 5 cancer types depends on "clean" per capita income. The incidence of 5 cancer types depends on "clean" latitude. The incidence of 7 cancer types in Euro and Mediterranean countries does not depend on per capita income, nor on latitude.

The nutrition structure in Euro and Med countries depends on per capita income. The higher is per capita income in Euro countries, the higher is a share of animal products and alcoholic beverages in the nutrition structure. ($p = 0.004$). The level of macronutrients of animal in Euro countries is 1.5, 2.3 and 3.0 times higher than in Med countries and depends on per capita income ($p = 0.001$).

Conclusions: The nutrition structure as a risk factor for cancer in the Euro and Med countries depends on per capita income. The composition and sources of macronutrients play an important role in the nutrition structure.

Keywords: Dietarypatterns; Cancer; European; Mediterranean countries

Reductions

NCD: Chronic Noncommunicable Diseases; Euro: European countries; Med: Mediterranean Countries; BMI: Body Mass Index; BH: Blood Cholesterol Level; BG: Blood Glucose; BP: Blood Pressure; GDP: Per Capita Income; EEI: Ecological Efficiency Index; HDI: Human Development Index; QR: Interquartile Range; FAO: Food and Agriculture Organization of the United Nations.

Introduction

Each year, 15 million people die from a Chronic Noncommunicable Diseases (NCD) between the ages of 30 and 69 years; over 59% of these followed by cancers (8.8 million), which pose a threat to human longevity [1]. Cancer is the main cause of morbidity and mortality in developed countries [2].

It is shown that in the Mediterranean countries the incidence of breast cancer and Alzheimer's disease are lower [3-9]. The authors point out the protective effect of the Mediterranean diet, with low share of animal protein containing products and high share of unsaturated fatty acids [3-9]. It is shown that eating disorders in prenatal period can contribute to predisposition to non-infectious chronic diseases (NCD) at an older age [10]. Diets with high share of fats and calories are risk factors for cancer [11,12]. There is little information about the risk of high-calorie diets with different sources of calories (fats, proteins, carbohydrates) [13,14]. We have shown that a risk factor for breast cancer may be a Western diet that contains the same level of total energy as the Mediterranean diet, but a different source of Proteins and Fats [6,7]. It is shown that food behavior, the regulation of which is complicated, may be a risk factor for obesity and breast cancer, as well as other cancer types [15,16]. But food is a modifiable factor. Therefore, the negative impact of nutrition on NCD can be reduced by developing safe, low-immune diets.

A number of authors believe that observational studies can be used to study nutrition as a risk of NCD, since they operate with large data sources [17-19]. However, observational analyzes based on correlation methods are considered weakly evidence-based. This is due to the possible influence of hidden variables [8]. At the same time, case-control studies on the effect of animal fats on the risk of breast cancer have not been repeated [9]. Objective: comparative analysis of oncological morbidity in European and Mediterranean countries. The study of the influence of GDP (per capita income) and latitude on the incidence of cancer of different locations and the nutrition structure, including macronutrients, in the European and Mediterranean countries.

Materials and Methods

Studies design is observational. Incidence rates in 160 countries standardized by age per 100,000 of population was selected from the

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Table 1: Analysis of the nutrition structure and cancer incidence in European and Mediterranean countries with a 2 times difference in per capita income (Mann-Whitney *U*-test).

Indicator	U n-16/16	Z	p-value	Median 1	Quartile 1	Median 2	Quartile 2
Total morbidity							
Male - general morbidity (DALY - person/100 thousand) standardized by age	77	-1,90	0,0570	11573,8	1624,40	17060,8	6899,03
Female - general morbidity (DALY - person/100 thousand) standardized by age	83	-1,68	0,0935	9970,0	780,97	14739,8	6872,95
Humandevelopmentindex	32	3,60	0,0003	0,957	0,017	0,833	0,177
HealthRating	21	-4,01	0,0001	12,5	13,50	58,0	45,50
HappinessIndex 2016	18	4,13	0,0000	7,057	0,658	5,468	1,319
Ecologicalefficiencyindex	14	4,17	0,0000	77,8	4,04	57,0	14,34
Average life expectancy							
Male life expectancy	90	1,41	0,1576	75,9	1,40	74,8	6,15
Female life expectancy	82	1,73	0,0830	82,2	1,95	79,9	7,35
Economic and geographical factors							
Of GDP($) 2008 - per capita income	18	4,15	0,0000	38,7	6,65	13,9	23,35
lat°-geographical latitude	4	4,65	0,0000	51,6	8,45	36,2	6,95
Frequency of cancer diseases - person/100 thousand age-standardized population							
Blader	109	0,72	0,4739	17,0	6,95	15,6	9,15
Brain	51	2,90	0,0037	6,6	0,70	5,6	2,40
Breast	47	3,05	0,0023	84,5	16,20	46,6	40,45
Cervix	62	2,47	0,0136	7,6	4,65	5,2	3,10
Colorect	38	3,37	0,0007	42,3	9,65	13,6	23,05
Corpusut	32	3,62	0,0003	12,8	3,55	8,1	7,70
Gollblad	87	1,55	0,1223	1,6	1,05	1,4	0,80
Hodgkin l	117	-0,40	0,6923	2,4	0,75	2,5	1,15
Kaposi s	128	0,02	0,9850	0,0	0,00	0,0	0,00
Kidney	40	3,30	0,0010	10,1	4,80	4,2	6,75
Laryngx	78	-1,87	0,0621	4,3	2,65	5,4	1,60
Leukaemia	75	2,00	0,0458	8,5	1,25	7,3	4,25
Liporal	58	2,62	0,0088	5,8	2,65	3,4	4,30
Liver	113	0,57	0,5718	4,7	2,80	3,7	5,40
Lung	87	1,53	0,1269	42,0	11,40	33,0	22,75
Melanoma	12	4,35	0,0000	11,4	4,35	2,4	5,25
Nasophar	15	-4,24	0,0000	0,4	0,20	1,1	1,70
Oesophar	24	3,90	0,0001	6,1	2,95	1,8	2,35
Ovary	29	3,73	0,0002	10,3	3,40	6,6	3,65
Pancreas	64	2,41	0,0159	8,1	2,80	4,5	4,50
Prostate	20	4,05	0,0001	82,9	29,30	19,1	43,15
Stomach	94	1,26	0,2067	9,1	2,65	7,3	6,75
Testis	11	4,39	0,0000	8,3	2,10	2,5	3,55
Thyroid	87	1,53	0,1269	2,2	1,10	1,2	2,15
Allcancer	28	3,75	0,0002	319,3	33,45	184,8	148,95
Metabolic Syndrome							
Male BMI>25 (kg/m^2) - body mass index	77	1,92	0,0546	64,6	7,10		
Female BMI>25 (kg/m^2) - body mass index	86	-1,56	0,1178	52,3	6,80	60,1	7,10
Male ch> 5.0 (mmol/L) - blood cholesterol level	30	3,67	0,0002	64,8	9,40	57,3	12,85

Female ch>5.0 (mmol/L) - blood cholesterol level	33	3,56	0,0004	62,8	7,45	43,8	22,75
Male glu>7.0 (mmol/L) - blood glucose level	123	0,17	0,8653	10,8	2,50	45,9	17,00
Female glu>7.0 (mmol/L) - blood glucose level	82	-1,71	0,0864	8,1	2,60	10,7	2,20
Male AD>140/90 (mmHg) - level of arterial blood pressure	45	3,11	0,0019	47,3	4,65	9,8	2,60
Female AD >140/90 (mmHg) - level of arterial blood pressure	84	1,64	0,1011	41,1	8,20	43,4	7,95
Male insact<60 minutes/day walking - low physical activity	62	-0,79	0,4273	39,6	16,30	38,3	6,00
Female insact<60 minutes / day walking - low physical activity	47	-1,61	0,1063	39,4	17,00	47,7	21,00
Dietary patterns						53,6	22,70
The general level of consumption (g/person/day)	97	1,17	0,2427	2192,0	206,00	2155,0	560,50
Animal products (%)	47	3,03	0,0024	35,9	7,46	25,0	10,17
Grain-vegetables (%)	6	-4,58	0,0000	35,9	5,18	58,4	16,80
Fruitdrinks (%)	56	2,71	0,0067	13,7	3,80	11,6	2,60
Alcoholicbeverages (%)	9	4,47	0,0000	14,7	4,80	1,9	6,81
Macro nutrients							
Nutrients Animal products							
Energy %	22	4,00	0,0001	31,5	5,50	19,0	17,00
Protein %	37	3,43	0,0006	61,0	5,50	45,5	28,00
Fat %	37	3,43	0,0006	59,0	5,00	33,5	19,00
Percentage composition of Energy							
Carboh %	69	-2,22	0,0262	51,0	2,00	59,0	12,50
Proteins %	118	0,36	0,7203	12,0	2,00	12,0	2,00
Fats %	71	2,15	0,0317	36,0	3,00	29,5	11,00
Total Energy 100%							
Energy (kcal / person / day)2003-05	100	1,06	0,2913	3400,0	350,00	3300,0	435,00
Proteins (g/person / day) 2003-05	101	1,00	0,3179	104,0	10,00	96,5	27,50
Fats (g/person / day) 2003-05	72	2,09	0,0365	136,5	20,50	105,5	56,00
Proteins/Fats 2003-05 %	78	-1,87	0,0621	77,0	13,00	83,0	33,00
Micro nutrients							
Animal origin2003-05	93	1,30	0,1935	3,5	0,80	2,8	2,75
Vit. A 2003-05	59	2,60	0,0093	6,5	1,00	6,0	1,00
Vegetal origin 2003-05	52	-2,86	0,0042	9,5	2,60	13,3	3,00
Diversification of nutrition							
Energy % 2003-05	39	3,34	0,0009	71,0	7,00	58,0	18,50
Proteins % 2003-05	48	3,00	0,0027	72,0	6,50	62,0	24,00
Fats % 2003-05 Fats %	65	2,36	0,0185	97,0	1,00	94,0	4,50

GLOBOCAN database for 2008; WHO 2004 [20,21].

Data on and life expectancy were selected from the database of the Internet resource [22]. The level of food consumption for each country was selected from the FAO for 2005 [23]. The countries' dietary patterns were presented as a general level of food consumption (g / person / day), and also in the form of 4 blocks as a percentage of the total consumption level: 1 - animal products; 2 - cereals and vegetables; 3 - fruit and drinks; 4 - alcoholic beverages (6).

In order to characterize the social conditions in countries, the following indicators were used: GDP (Per Capita Income), (Human development index) 2008 and 2016 ($/person/day) [24]; Health care Indices [25], Environmental Performance Index [26] and Happiness Index 2016 [27]. The geographical position of each country was judged by the latitude [28]. As predictors of the Metabolic Syndrome [29].

The statistical analysis of the comparative country samples was carried out using the nonparametric Mann-Whitney-Wilcoxon U-test for independent samples, since some of the country sample indicators were not normally distributed. The central trend in the distribution of data in the sample was represented by the Median. The variance of the data in the samples was estimated using the Interquartile range (QR) between the first and third quartiles, that is, between the 25th and 75th percentiles (StatSoft 13) [30].

Table 2: Analysis of the nutrition structure and cancer incidence in European and Mediterranean countries with a 4 times difference in per capita income (Mann-Whitney *U-test*).

Indicator	U m- 8/8	Z	p-value	Median 1	Quartile 1	Median 2	Quartile 2
Totalmorbidity							
Male - general morbidity (DALY - person/100 thousand) standardized by age	-	-3,31	0,0009	10790,6	1521,19	17689,7	2,159,544
Female - general morbidity (DALY - person/100 thousand) standardized by age	-	-3,31	0,0009	9344,3	1532,85	16217,2	2,762,776
Human development index	-	3,31	0,0009	0,939	0,045	0,762	0,082
Health Rating	-	-3,31	0,0009	27,0	10,50	69,0	21,000
Happiness Index 2016	8	2,47	0,0136	6,169	0,966	5,087	0,762
Ecological efficiency index	5	2,78	0,0054	66,8	9,82	54,6	5,930
Average life expectancy							
Male life expectancy	3	2,99	0,0028	77	1	71	4
Female life expectancy	2	3,15	0,0016	83	2	75	3
Economic and geographical factors							
Of GDP ($)2008 - per capita income	-	3,31	0,0009	30,1	6,20	6,8	4,350
lat° - geographical latitude	20	1,21	0,2271	39,2	9,75	35,9	5,000
Frequency of cancer diseases - person/100 thousand age-standardized population							
Blader	21	1,10	0,2701	17,0	8,80	15,6	10,200
Brain	10	2,26	0,0239	6,1	1,75	3,7	2,450
Breast	2	3,10	0,0019	69,9	32,65	33,4	14,300
Cervix	31	0,11	0,9164	6,0	2,75	5,3	5,850
Colorect	-	3,31	0,0009	37,9	17,70	10,9	5,150
Corpusut	-	3,31	0,0009	10,9	2,80	3,2	3,050
Gollblad	18	1,47	0,1415	1,7	0,95	1,2	1,250
Hodgkin l	17	1,52	0,1278	2,8	0,75	2,1	1,250
Kaposi s	32	-0,05	0,9581	0,0	0,00	0,0	0,000
Kidney	5	2,78	0,0054	9,4	5,50	2,6	1,750
Laryngx	29	0,32	0,7527	5,5	3,65	5,7	1,650
Leukaemia	4	2,89	0,0039	9,850	2,25	5,000	2,250
Liporal	13	2,00	0,0460	6,2	5,40	2,8	2,100
Liver	15	1,73	0,0831	6,5	6,95	2,3	3,350
Lung	13	1,94	0,0520	46,6	20,10	26,5	24,100
Melanoma	3	2,99	0,0028	6,8	5,05	0,5	1,350
Nasophar	15	-1,79	0,0742	0,9	0,60	1,6	3,000
Oesophar	20	1,26	0,2076	2,9	3,45	1,3	2,000
Ovary	5	2,84	0,0046	8,4	2,80	5,0	2,500
Pancreas	8	2,47	0,0136	7,2	1,75	2,7	1,750
Prostate	2	3,10	0,0019	53,2	12,30	10,7	10,800
Stomach	18	1,42	0,1563	10,0	5,75	5,9	9,500
Testis	2	3,10	0,0019	5,4	3,45	0,7	1,700
Thyroid	18	1,47	0,1415	3,2	2,50	1,2	0,550
Allcancer	2	3,10	0,0019	306,8	107,20	130,7	75,950
Metabolic Syndrome							
Male BMI>25 (kg/m^2) - body mass index	13	2,00	0,0460	63,3	6,10	59,2	17,200
Female BMI>25 (kg/m^2) - body mass index	17	-1,52	0,1278	52,0	10,50	60,1	12,100
Male ch> 5.0 (mmol/L) - blood cholesterol level	-	3,31	0,0009	59,4	11,10	36,7	3,450

Female ch>5.0 (mmol/L) - blood cholesterol level	-	3,31	0,0009	56,9	8,45	41,4	5,650
Male glu>7.0 (mmol/L) - blood glucose level	18	1,47	0,1415	11,2	1,20	10,2	2,400
Female glu>7.0 (mmol/L) - blood glucose level	29	-0,26	0,7929	10,0	2,85	9,7	1,950
Male AD>140/90 (mmHg) - level of arterial blood pressure	11	2,21	0,0274	45,9	3,55	38,7	6,250
Female AD>140/90 (mmHg) - level of arterial blood pressure	18	1,42	0,1563	39,9	5,60	36,6	6,150
Male insact<60 minutes/day walking - low physical activity	12	-0,28	0,7768	47,7	23,20	39,5	19,850
Female insact<60 minutes/day walking - low physical activity	13	0,09	0,9247	56,3	38,20	44,8	13,850
Dietary patterns							
The general level of consumption (g/person/day)	3	2,99	0,0028	2283,5	234,50	1770,0	380,000
Animal products (%)	8	2,47	0,0136	30,2	5,61	22,1	6,440
Grain-vegetables (%)	4	-2,89	0,0039	45,7	11,17	65,5	8,340
Fruit drinks (%)	23	0,89	0,3720	11,9	1,55	10,6	3,900
Alcoholic beverages (%)	1	3,20	0,0014	8,8	5,15	1,0	0,895
Macro nutrients							
Nutrients Animal products							
Energy %	7	2,57	0,0101	26,5	6,50	10,5	6,500
Protein %	1	3,20	0,0014	54,5	10,00	26,5	12,500
Fat %	11	2,15	0,0313	44,5	14,00	31,0	7,500
Percentage composition of Energy							
Carboh %	5	-2,78	0,0054	50,5	8,00	63,0	11,500
Proteins %	16	1,68	0,0929	13,0	1,00	11,0	0,500
Fats %	4	2,89	0,0039	37,0	7,00	26,0	10,500
Total Energy 100%							
Energy (kcal/person/day)2003-05	12	2,10	0,0357	3565,0	385,00	3175,0	250,000
Proteins (g/person/day) 2003-05	8	2,47	0,0136	114,50	12,00	89,00	9,000
Fats (g/person/day) 2003-05	3	2,99	0,0028	146,0	33,00	90,0	35,000
Proteins/Fats 2003-05 %	9	-2,42	0,0157	75,5	11,00	106,0	51,000
Micro nutrients							
animal origin2003-05	2	3,10	0,0019	4,4	1,20	1,7	0,800
vit. A 2003-05	24	0,79	0,4309	6,0	1,00	5,5	2,000
vegetal origin2003-05	32	0,00	10,000	12,9	5,80	13,3	2,400
Diversification of nutrition							
Energy% 2003-05	-	3,31	0,0009	67,0	7,50	48,5	16,000
Proteins% 2003-05	1	3,20	0,0014	68,5	8,50	44,5	16,000
Fats% 2003-05 Fats%	5	2,78	0,0054	97,0	2,00	92,5	6,500

Study Results

Analysis of the nutrition structure and cancer incidence in European and Mediterranean countries with a 2 times difference in per capita income

For the study were used 16 European countries, in which the average per capita income was 2 times higher than in 16 Mediterranean countries (Table 1). The per capita income of Euro countries was $39 (QR-6.7), in 16 Med countries it was $14 (QR-23.4), (p=0.001). Euro countries are located in high latitudes - 52°(QR-8.5), Med countries are located in mid-latitudes - 36°(QR-7.0) (p=0.001) (Table1).

In Euro and Med countries, the total morbidity and life expectancy were statistically the same (p=0.1). But in Med countries, the Health Care Index, the Happiness Index and the Eco-Efficiency Index were lower than in Euro countries (p=0.001).

Cancer incidence: in Euro countries, the incidence of 13 out of the 25 cancer types (Brain, Breast, Cervix, Colorect, Corpus ut, Kidney, Lip oral, Melanoma, Oesophar, Ovary, Pancreas, Prostate, Testis) was 1.7 times higher (p=0.01). In Med countries, the incidence of Nasophar cancer was 2.5 times higher (p=0.0001). The incidence of 10 cancer types (Blader, Gollblad, Hodgkin, Kaposi s, Liver, Laryngx, Leukaemia, Lung, Stomach, Thyroid) had no statistical differences between Euro and Med countries (p=0.9).

Table 3: Analysis of the nutrition structure and cancer incidence in European and Mediterranean countries with 6 times difference in per capita income (Mann-Whitney *U-test*).

Indicator	U n-8/8	Z	p-value	Median 1	Quartile 1	Median 2	Quartile 2
Totalmorbidity							
Male - general morbidity (DALY - person/100 thousand) standardized by age	-	-3,31	0,0009	11167,2	1487,77	17689,7	2159,54
Female - general morbidity (DALY - person/100 thousand) standardized by age	-	-3,31	0,0009	9512,7	707,08	16217,2	2762,78
Human development index	-	3,31	0,0009	0,962	0,007	0,762	0,08
Health Rating	-	-3,31	0,0009	7,0	10,50	69,0	21,00
Happiness Index 2016	-	3,31	0,0009	7,315	0,491	5,087	0,76
Ecological efficiency index	-	3,31	0,0009	78,1	3,47	54,6	5,93
Average life expectancy							
Male life expectancy	-	3,31	0,0009	76	2	71	3,60
Female life expectancy	1,0	3,20	0,0014	82	2	75	2,55
Economic and geographical factors							
Of GDP ($)2008 - per capita income	-	3,31	0,0009	41,1	13,05	6,8	4,35
lat° - geographical latitude	-	3,31	0,0009	52,0	9,10	35,9	5,00
Frequency of cancer diseases - person/100 thousand age-standardized population							
Blader	19,0	1,31	0,1893	18,1	8,70	15,6	10,20
Brain	8,5	2,42	0,0157	6,6	1,30	3,7	2,45
Breast	-	3,31	0,0009	85,9	12,40	33,4	14,30
Cervix	20,5	1,16	0,2480	7,6	4,25	5,3	5,85
Colorect	-	3,31	0,0009	41,1	9,70	10,9	5,15
Corpusut	-	3,31	0,0009	12,6	2,00	3,2	3,05
Gollblad	28,5	0,32	0,7527	1,5	0,30	1,2	1,25
Hodgkin l	27,0	0,47	0,6365	2,5	0,55	2,1	1,25
Kaposi s	32,0	-0,05	0,9581	0,0	0,00	0,0	0,00
Kidney	7,0	2,57	0,0101	9,250	1,75	2,600	1,75
Laryngx	11,0	-2,15	0,0313	4,0	1,65	5,7	1,65
Leukaemia	5,0	2,78	0,0054	8,7	1,25	5,0	2,25
Liporal	7,0	2,57	0,0101	5,6	0,95	2,8	2,10
Liver	21,0	1,10	0,2701	3,7	5,75	2,3	3,35
Lung	17,5	1,47	0,1415	38,2	8,35	26,5	24,10
Melanoma	-	3,31	0,0009	14,3	5,10	0,5	1,35
Nasophar	-	-3,31	0,0009	0,4	0,20	1,6	3,00
Oesophar	3,5	2,94	0,0033	6,1	3,45	1,3	2,00
Ovary	1,5	3,15	0,0016	10,2	2,95	5,0	2,50
Pancreas	8,0	2,47	0,0136	7,7	2,20	2,7	1,75
Prostate	-	3,31	0,0009	87,2	40,80	10,7	10,80
Stomach	19,0	1,31	0,1893	8,1	2,10	5,9	9,50
Testis	-	3,31	0,0009	8,5	2,70	0,7	1,70
Thyroid	11,0	2,15	0,0313	1,8	1,60	1,2	0,55
Allcancer	-	3,31	0,0009	321,2	35,90	130,7	75,95
Metabolic Syndrome							
Male BMI>25 (kg/m^2) - body mass index	21,0	1,10	0,2701	60,2	7,00	59,2	17,20
Female BMI>25 (kg/m^2) - body mass index	8,5	-2,42	0,0157	48,6	6,50	60,1	12,10
Male ch> 5.0 (mmol/L) - blood cholesterol level	-	3,31	0,0009	64,8	5,45	36,7	3,45

Female ch>5.0 (mmol/L) - blood cholesterol level	-	3,31	0,0009	62,3	4,15	41,4	5,65
Male glu>7.0 (mmol/L) - blood glucose level	30,5	-0,11	0,9164	10,0	2,40	10,2	2,40
Female glu>7.0 (mmol/L) - blood glucose level	7,5	-2,52	0,0117	7,2	1,90	9,7	1,95
Male AD>140/90 (mmHg) - level of arterial blood pressure	6,5	2,63	0,0087	46,5	2,85	38,7	6,25
Female AD>140/90 (mmHg) - level of arterial blood pressure	22,5	0,95	0,3446	37,7	5,25	36,6	6,15
Male insact<60 minutes/day walking - low physical activity	14,0	-0,09	0,9247	45,1	16,20	39,5	19,85
Female insact<60 minutes/day walking - low physical activity	11,0	-0,47	0,6366	44,3	10,80	44,8	13,85
Dietary patterns							
The general level of consumption (g/person/day)	7,0	2,57	0,0101	2228,0	416,00	1770,0	380,00
Animal products (%)	7,0	2,57	0,0101	36,6	7,33	22,1	6,44
Grain-vegetables (%)	-	-3,31	0,0009	34,5	4,86	65,5	8,34
Fruit drinks (%)	6,0	2,68	0,0074	15,9	2,70	10,6	3,90
Alcoholic beverages (%)	-	3,31	0,0009	14,4	7,00	1,0	0,90
Macro nutrients							
Nutrients Animal products							
Energy %	-	3,31	0,0009	33,0	5,00	10,5	6,50
Protein %	-	3,31	0,0009	64,0	4,50	26,5	12,50
Fat %	7,0	2,57	0,0101	60,5	3,00	31,0	7,50
Percentage composition of Energy							
Carboh %	-	-3,31	0,0009	51,0	1,50	63,0	11,50
Proteins %	13,0	1,94	0,0520	12,5	1,0	11,0	0,50
Fats %	-	3,31	0,0009	37,0	3,00	26,0	10,50
Total Energy 100%							
Energy (kcal/person/day)2003-05	8,5	2,42	0,0157	3420,0	370,00	3175,0	250,00
Proteins (g/person/day) 2003-05	3,0	2,99	0,0028	107,0	8,00	89,0	9,00
Fats (g/person/day) 2003-05	-	3,31	0,0009	139,5	23,00	90,0	35,00
Proteins/Fats 2003-05 %	8,5	-2,42	0,0157	78,5	12,50	106,0	51,00
Micro nutrients							
animal origin2003-05	-	3,31	0,0009	3,8	1,30	1,7	0,80
vit. A 2003-05	16,0	1,63	0,1036	6,5	1,00	5,5	2,00
vegetal origin2003-05	14,0	-1,84	0,0661	10,3	2,90	13,3	2,40
Diversification of nutrition							
Energy% 2003-05	-	3,31	0,0009	72,0	5,50	48,5	16,00
Proteins% 2003-05	-	3,31	0,0009	74,0	4,50	44,5	16,00
Fats% 2003-05 Fats%	1,5	3,15	0,0016	98,0	1,00	92,5	6,50

In Euro and Med countries, the number of men and women (% of the population) with a BMI> 25kg/m^2 was not statistically different (p=0.1), but was higher than 50%. In Euro countries, there were 1.7 times more men and women with a blood cholesterol level> 7mmol/L (p=0.001) and men with arterial pressure> 140/90mmHg (p=0.001). In Euro and Med countries, there were 45-50% of men and women with low physical activity.

Nutrition structure: In Euro countries, the nutrition structure was statistically different from that of Med countries. A share of animal products in Euro countries was 35.9%, in Med countries it was 25.0% (p=0.002). A share of grain and vegetables in Euro countries was 36.0%, in Med countries it was 58.4% (p=0.001). A share of alcoholic beverages in Euro countries was 14.7%, in the Med countries it was 1.9% (p=0.001). A share of fruits and drinks in Euro countries was 13.7%, in Med countries it was 11.6% (p=0.06). The level of total Energy in Euro and Med countries did not differ (p=0.4) and amounted to 3390 and 3300kcal /person/day, respectively. The general level of food consumption in Euro and Med countries did not differ and was 2185 and 2155 (g/person/day) (p=0.5). The composition of macronutrients in the total Energy (Carbohydrates, Proteins, Fats) did not differ (p=0.5) in Euro and Med countries. Macronutrient levels of animal products (Energy, Proteins and Fats) were 1.5-2 times higher in Euro countries than in Med countries (p=0.001). Diversification of nutrition in Euro countries was higher than in Med countries (p=0.001).

Table 3a: Analysis of the nutrition structure and cancer incidence in European and Mediterranean countries with 6 times difference in per capita income (Mann-Whitney *U-test*) (chronic infectious diseases and levels of consumption).

Indicators	U n-8/8	Z	p-value	Median 1	Quartile1	Median2	Quartile2
Totalmorbidity							
M DALY	-	-3,31	0,0009	11167,2	1487,77	17689,7	2,159,544
M Death	-	-3,31	0,0009	591,1	94,86	951,0	119,126
F DALY	-	-3,31	0,0009	9512,7	707,08	16217,2	2,762,776
F Death	-	-3,31	0,0009	379,6	55,41	704,2	95,837
Health Rating	-	-3,31	0,0009	7,0	10,50	69,0	21,000
Access to improved medicine1990	4,0	2,72	0,0065	100,0	0,00	86,0	12,000
Access to clean water 1990	-	3,18	0,0015	100,0	0,00	79,0	13,000
air pollution Short-circuit protection of children under 5 years of age 2004	-	-3,31	0,0009	0,0	0,00	38,5	40,500
Ecological efficiency index	-	3,31	0,0009	78,1	3,47	54,6	5,930
Место 2016	-	-3,31	0,0009	8,5	12,50	95,5	30,500
Happiness Index 2016	-	3,31	0,0009	7,315	0,491	5,087	0,762
Human development index	-	3,31	0,0009	0,962	0,007	0,762	0,082
Average life expectancy							
Male life expectancy	-	3,31	0,0009	76	2	71	4
Female life expectancy	1,0	3,20	0,0014	82	2	75	3
Economic and geographical factors				6		4	
Of GDP ($)2008	-	3,31	0,0009	41,1	13,05	6,8	4,350
Of GDP ($) 2016	-	3,31	0,0009	147,4	71,13	11,0	14,548
lat°	-	3,31	0,0009	52,0	9,10	35,9	5,000
UV rad J/m2 2004	-	-3,31	0,0009	1674,5	241,50	3257,5	596,000
lon°	15,0	-1,73	0,0831	7,8	7,17	25,2	24,925
Frequency of diseases-person/100 thousand age-standardized population							
Bladerinc	19,0	1,31	0,1893	18,1	8,70	15,6	10,200
Braininc	8,5	2,42	0,0157	6,6	1,30	3,7	2,450
Breastinc	-	3,31	0,0009	85,9	12,40	33,4	14,300
Cervixinc	20,5	1,16	0,2480	7,6	4,25	5,3	5,850
Colorect	-	3,31	0,0009	41,1	9,70	10,9	5,150
Corpusut	-	3,31	0,0009	12,6	2,00	3,2	3,050
Gollblad	28,5	0,32	0,7527	1,5	0,30	1,2	1,250
Hodgkin	27,0	0,47	0,6365	2,5	0,55	2,1	1,250
Kaposi s	32,0	-0,05	0,9581	0,0	0,00	0,0	0,000
Kidney	7,0	2,57	0,0101	9,250	1,75	2,600	1,750
Laryngx	11,0	-2,15	0,0313	4,0	1,65	5,7	1,650
Leukaemia	5,0	2,78	0,0054	8,7	1,25	5,0	2,250
Liporal	7,0	2,57	0,0101	5,6	0,95	2,8	2,100
Liver	21,0	1,10	0,2701	3,7	5,75	2,3	3,350
Lung	17,5	1,47	0,1415	38,2	8,35	26,5	24,100
Melanoma	-	3,31	0,0009	14,3	5,10	0,5	1,350
Nasophar	-	-3,31	0,0009	0,4	0,20	1,6	3,000
Oesophar	3,5	2,94	0,0033	6,1	3,45	1,3	2,000
Ovary	1,5	3,15	0,0016	10,2	2,95	5,0	2,500
Pancreas	8,0	2,47	0,0136	7,7	2,20	2,7	1,750

Prostate	-	3,31	0,0009	87,2	40,80	10,7	10,800
Stomach	19,0	1,31	0,1893	8,1	2,10	5,9	9,500
Testis	-	3,31	0,0009	8,5	2,70	0,7	1,700
Thyroid	11,0	2,15	0,0313	1,8	1,60	1,2	0,550
Allcancer	-	3,31	0,0009	321,2	35,90	130,7	75,950
Males ischaemic heart disease	5,0	-2,78	0,0054	736,5	119,51	1864,2	627,223
Females ischaemic heart disease	-	-3,31	0,0009	318,8	79,11	1034,5	525,059
Males Hypertensive heart disease	-	-3,31	0,0009	33,6	14,07	271,8	176,194
Females Hypertensive heart disease	-	-3,31	0,0009	25,0	11,05	221,1	97,197
Males Cerebrovascular disease	-	-3,31	0,0009	308,0	67,54	780,8	496,050
Females Cerebrovascular disease	-	-3,31	0,0009	259,1	57,60	741,4	414,278
Rheumatic heart dalyrates	-	-3,31	0,0009	5,5	4,50	74,5	120,000
Inflam heart dalyrates	14,5	-1,79	0,0742	63,5	22,50	87,5	40,000
Males COPD	17,0	-1,52	0,1278	314,6	112,83	417,1	246,440
Females COPD	5,0	2,78	0,0054	326,8	101,80	168,7	108,878
Asthma Daly	17,0	-1,52	0,1278	173,0	49,50	212,0	78,500
Tuberculosis Daly	-	-3,31	0,0009	6,5	2,50	69,5	53,500
HIV/AIDS Daly	30,5	0,11	0,9164	22,5	11,50	29,5	64,500
MALES Alzheimer	-	3,31	0,0009	220,7	15,39	116,5	48,768
FEM Alzheimer	-	3,31	0,0009	282,8	22,07	128,4	56,286
MALES Parkinson disease	16,0	1,63	0,1036	54,1	7,20	22,7	34,801
FEMALES Parkinson disease	8,0	2,47	0,0136	37,5	8,10	17,1	15,475
MALES Multiple sclerosis	8,0	2,47	0,0136	32,0	4,44	19,9	4,418
FEMALES Multiple sclerosis	1,0	3,20	0,0014				
Unip Dalyrates	12,5	2,00	0,0460	1036,0	130,50	917,5	135,000
MALES Bipolar disorder	-	-3,31	0,0009	187,3	0,87	215,7	8,058
FEMALES Bipolar disorder	-	-3,31	0,0009	181,2	0,41	219,7	9,985
MALES Schizophrenia	-	-3,31	0,0009	191,4	2,89	269,7	29,488
FEMALES Schizophrenia	-	-3,31	0,0009	180,6	1,25	277,0	32,028
MALES Alcohol use disorders	-	3,31	0,0009	795,9	271,78	149,0	116,816
FEMALES Alcohol use disorders	-	3,31	0,0009	190,2	140,20	3,5	43,093
Epilepsdaly rates	4,0	-2,89	0,0039	61,5	8,00	82,0	49,500
Osteoarth Daly	17,0	1,52	0,1278	275,5	18,50	185,0	149,500
MAL Diabetes m	13,0	-1,94	0,0520	192,2	55,07	314,6	174,608
FEM Diabetes m	11,0	-2,15	0,0313	184,4	37,47	417,7	259,324
Endocrine dis Daly	29,0	0,26	0,7929	169,5	65,50	161,0	148,000
Cirrhosis of the liver Daly	27,0	0,47	0,6365	100,4	164,80	112,6	145,975
Poisonings Daly	28,0	-0,37	0,7132	39,5	74,11	45,1	26,719
Falls Daly	14,0	-1,84	0,0661	145,3	48,66	211,8	85,984
Respiratory infections	-	-3,31	0,0009	107,1	68,76	538,3	389,370
Drag daly rates	26,0	0,58	0,5635	157,0	105,65	112,5	145,149
Suiside death rates	-	3,31	0,0009	14,0	4,23	3,4	2,844
Suiside daly rates	1,0	3,20	0,0014	261,9	56,05	80,9	83,748
Metabolic Syndrome							
Male BMI? 25 crude	21,0	1,10	0,2701	60,2	7,00	59,2	17,200
Female BMI ? 25 crude	8,5	-2,42	0,0157	48,6	6,50	60,1	12,100

Male ch ? 5.0 crude	-	3,31	0,0009	64,8	5,45	36,7	3,450
Female ch ? 5.0 crude	-	3,31	0,0009	62,3	4,15	41,4	5,650
Male glu ? 7.0 crude	30,5	-0,11	0,9164	10,0	2,40	10,2	2,400
Female glu ? 7.0 crude	7,5	-2,52	0,0117	7,2	1,90	9,7	1,950
Male AD 2 crude	6,5	2,63	0,0087	46,5	2,85	38,7	6,250
Female AD 2 crude	22,5	0,95	0,3446	37,7	5,25	36,6	6,150
Male insactcrude	14,0	-0,09	0,9247	45,1	16,20	39,5	19,850
Female insactcrude	11,0	-0,47	0,6366	44,3	10,80	44,8	13,850
CCR5 rs333+	-	-2,76	0,0058	0,890	0,032	0,979	0,047
CCR5 rs333-	-	2,85	0,0043	0,1100	0,033	0,018	0,033
%NAT2	-	0,00	10,000	43,0	13,00	39,0	0,000
level of consumption (g/person/day)							
Meat, Other 2003-05	1,0	3,20	0,0014	53,0	4,00	21,5	11,500
Bovine Meat 2003-05	9	2,36	0,0181	61,00	18,50	17,00	21,000
Poultry Meat 2003-05	9,0	2,36	0,0181	48,0	25,50	30,0	9,000
Mutton&Goat Meat 2003-05	14,0	-1,84	0,0661	3,5	7,00	14,0	7,500
Pig meat 2003-05	-	3,31	0,0009	107,5	54,00	3,5	14,500
Milk, Whole 2003-05	25,0	0,68	0,4948	244,0	301,50	201,5	159,500
Milk, Skimmed 2003-05	19,0	1,31	0,1893	43,5	106,50	29,5	42,500
Eggs 2003-05	6,5	2,63	0,0087	29,0	16,00	17,5	8,000
Cheese 2003-05	1,0	3,20	0,0014	49,5	19,50	9,5	17,500
Butter, Ghee 2003-05	10,0	2,26	0,0239	8,5	6,50	4,5	3,000
Offals, Edible 2003-05	22,5	0,95	0,3446	5,5	7,00	4,5	4,000
Fats, Animals, Raw 2003-05	1,0	3,20	0,0014	12,5	9,00	1,5	2,500
Freshwater Fish 2003-05	7,0	2,57	0,0101	10,0	8,50	2,0	2,500
Demersal Fish 2003-05	5,0	2,78	0,0054	15,5	11,00	2,0	6,500
Molluscs, Other 2003-05	-	3,18	0,0015	8,00	10,00	0,00	1,000
Marine Fish, Other 2003-05	23,5	0,84	0,4008	4,0	5,50	2,0	4,000
Pelagic Fish 2003-05	16,5	1,58	0,1152	13,0	11,50	10,0	7,000
Animal products	5,0	2,78	0,0054	801,5	293,50	409,5	162,500
Fish	3,5	2,94	0,0033	62,0	23,00	21,0	18,000
% Fish	6,0	2,68	0,0074	2,5	1,01	1,0	1,070
% Animal products	7,0	2,57	0,0101	36,6	7,33	22,1	6,440
Wheat 2003-05	-	-3,31	0,0009	241,5	52,50	458,0	136,500
Rice 2003-05	24,0	-0,79	0,4309	12,0	4,50	21,5	24,000
Maize 2003-05	10,0	-1,74	0,0814	8,0	27,00	40,0	81,000
Potatoes 2003-05	11,0	2,15	0,0313	186,5	78,50	97,5	70,500
Tomatoes 2003-05	-	-3,31	0,0009	44,0	18,50	146,5	143,500
Vegetables, Other 2003-05	5,0	-2,78	0,0054	180,0	37,50	260,0	105,000
Onions 2003-05	10,0	-2,26	0,0239	18,5	18,00	44,5	30,000
Barley 2003-05	28,0	0,37	0,7132	4,0	2,50	1,5	29,500
Beans 2003-05	18,5	-1,37	0,1722	1,0	1,00	2,5	5,000
Rye 2003-05	4,0	2,27	0,0233	17,5	30,50	0,0	2,000
Nuts 2003-05	31,5	0,00	10,000	11,5	12,50	11,0	17,500
Soyabean Oil 2003-05	27,0	-0,47	0,6365	6,0	7,00	8,0	16,500
Sunflowerseed Oil 2003-05	21,5	-1,05	0,2936	3,5	5,50	6,0	9,500

Olive Oil 2003-05	23,5	-0,84	0,4008	2,0	1,50	3,5	7,000
Grain-vegetables	-	-3,31	0,0009	756,0	108,00	1221,0	153,000
Oil	10,0	-2,26	0,0239	15,0	9,00	25,5	13,000
% Oil	8,0	-2,47	0,0136	0,6	0,52	1,5	0,985
% Grain-vegetables	-	-3,31	0,0009	34,5	4,86	65,5	8,340
Oranges 2003-05	12,0	2,05	0,0406	132,0	103,00	58,5	33,500
Apples 2003-05	10,0	2,26	0,0239	79,0	72,00	35,0	16,000
Coffee 2003-05	2,0	3,10	0,0019	24,0	9,50	3,0	4,500
Honey 2003-05	11,0	2,15	0,0313	2,0	1,50	0,5	1,000
Sugar (RawEquivalent) 2003-05	8,0	2,47	0,0136	115,5	6,50	87,0	26,000
Lemons, Limes 2003-05	23,0	-0,89	0,3720	5,0	2,50	8,5	9,500
Tea 2003-05	23,5	-0,84	0,4008	1,0	2,50	2,5	4,000
Fruit drinks	1,0	3,20	0,0014	370,0	64,50	206,0	55,000
% Fruit drinks	6,0	2,68	0,0074	15,9	2,70	10,6	3,900
Beverages, Alcoholic 2003-05	1,0	3,20	0,0014	12,0	9,50	1,0	3,000
Wine 2003-05	-	3,31	0,0009	67,5	52,50	1,5	6,000
Beer 2003-05	-	3,31	0,0009	236,5	153,50	13,0	16,000
Alcoholic beverages	-	3,31	0,0009	316,5	209,00	17,5	20,500
% Alcoholic beverages	-	3,31	0,0009	14,4	7,00	1,0	0,895
Dietary patterns							
The general level of consumption (g/person/day)	7,0	2,57	0,0101	2228,0	416,00	1770,0	380,000
Animal products (%)	7,0	2,57	0,0101	36,6	7,33	22,1	6,440
Grain-vegetables (%)	-	-3,31	0,0009	34,5	4,86	65,5	8,340
Fruit drinks (%)	6,0	2,68	0,0074	15,9	2,70	10,6	3,900
Alcoholic beverages (%)	-	3,31	0,0009	14,4	7,00	1,0	0,895
Nutrients AP							
Energy %	-	3,31	0,0009	33,0	5,00	10,5	6,500
Protein %	-	3,31	0,0009	64,0	4,50	26,5	12,500
Fat %	7,0	2,57	0,0101	60,5	3,00	31,0	7,500
Percentage composition of Energy				1,06		0,86	
Carboh %	-	-3,31	0,0009	51,0	1,50	63,0	11,500
Proteins %	13,0	1,94	0,0520	12,5	1,0	11,0	0,500
Fats %	-	3,31	0,0009	37,0	3,00	26,0	10,500
Total Energy 100%							
Энергия (ккал/чел/день) 1990-92	11,5	1,85	0,0641	3310,0	330,00	3000,0	330,000
Energy (kcal/person/day) 2003-05	8,5	2,42	0,0157	3420,0	370,00	3175,0	250,000
Proteins (g/person/day) 2003-05	3,0	2,99	0,0028	107,0	8,00	89,0	9,000
Fats (g/person/day) 2003-05	-	3,31	0,0009	139,5	23,00	90,0	35,000
Proteins/Fats 2003-05 %	8,5	-2,42	0,0157	78,5	12,50	106,0	51,000
Micro nutrients							
Animal origin 2003-05	-	3,31	0,0009	3,8	1,30	1,7	0,800
Vit. A 2003-05	16,0	1,63	0,1036	6,5	1,00	5,5	2,000
Vegetal origin 2003-05	14,0	-1,84	0,0661	10,3	2,90	13,3	2,400
Diversification of nutrition							
Energy% 2003-05	-	3,31	0,0009	72,0	5,50	48,5	16,000
Proteins% 2003-05	-	3,31	0,0009	74,0	4,50	44,5	16,000

Fats% 2003-05 Fats%	1,5	3,15	0,0016	98,0	1,00	92,5	6,500
Smoking							
M Daily Age	22,0	-1,00	0,3184	27,3	11,10	32,4	17,900
F Daily Age	-	3,18	0,0015	23,9	9,20	1,0	6,800

Table 4: Analysis of the nutrition structure and cancer incidence in European and Mediterranean countries with the same income, but located in different latitudes (Mann-Whitney *U-test*).

Indicator	U n-22/22	Z	p-value	Median 1	Quartile 1	Median 2	Quartile2
Totalmorbidity							
Male - general morbidity (DALY - person/100 thousand) standardized by age	186	1,30	0,1927	15065,6	9327,84	12520,8	6470,05
Female - general morbidity (DALY - person/100 thousand) standardized by age	209	0,76	0,4455	10933,2	3000,70	10055,6	5497,18
Human development index	235	0,15	0,8787	0,9	0,13	0,9	0,15
Health Rating	217	- 0,58	0,5652	35,5	28,00	31,5	47,00
Happiness Index 2016	200	0,97	0,3300	5,8	1,51	5,7	1,75
Ecological efficiency index	216	0,35	0,7246	69,1	14,69	66,8	21,52
Average life expectancy							
Male life expectancy	191	- 1,20	0,2313	72,8	6,30	75,0	6,10
Female life expectancy	211	- 0,72	0,4740	79,6	3,40	80,6	6,90
Economic and geographical factors							
Of GDP ($)2008 - per capita income	242	0,01	0,9906	20,2	21,60	26,6	21,60
lat° - geographical latitude	69	4,05	0,0001	52,3	7,30	39,8	10,80
Frequency of cancer diseases - person/100 thousand age-standardized population							
Blader	190	1,21	0,2267	16,4	3,70	15,6	5,10
Brain	178	1,49	0,1361	6,6	3,00	6,5	2,30
Breast	206	0,85	0,3981	56,8	38,00	60,5	39,70
Cervix	154	2,05	0,0400	10,3	6,70	6,3	6,70
Colorect	187	1,29	0,1967	33,4	14,50	31,5	28,00
Corpusut	134	2,52	0,0116	13,2	4,40	10,9	6,90
Gollblad	190	1,21	0,2267	1,6	0,80	1,5	0,70
Hodgkin l	236	0,14	0,8880	2,3	0,90	2,3	0,80
Kaposi s	242	- 0,01	0,9906	0,0	0,00	0,0	0,00
Kidney	88	3,60	0,0003	11,6	6,20	6,2	6,00
Laryngx	196	1,08	0,2803	6,7	4,10	5,3	2,90
Leukaemia	134	2,52	0,0116	8,4	1,90	7,3	4,00
Liporal	139	2,42	0,0156	7,2	3,10	4,9	4,00
Liver	231	- 0,25	0,8053	4,1	2,60	3,9	5,80
Lung	115	2,97	0,0030	52,2	16,90	36,4	23,20
Melanoma	157	1,98	0,0473	8,2	6,80	3,5	9,90
Nasophar	144	- 2,30	0,0214	0,5	0,20	1,0	0,90
Oesophar	115	2,98	0,0029	5,4	2,60	2,9	3,80
Ovary	118	2,91	0,0036	11,2	3,60	8,3	5,30
Pancreas	137	2,45	0,0142	8,7	3,10	7,0	4,50
Prostate	178	1,49	0,1361	53,7	53,60	48,5	50,00
Stomach	142	2,35	0,0189	12,5	13,40	8,9	9,00
Testis	185	1,34	0,1809	5,4	5,10	3,4	6,00
Thyroid	192	1,16	0,2453	1,9	1,20	1,3	2,40

Allcancer	143	2,31	0,0208	301,2	56,20	243,1	166,90
Metabolic Syndrome							
Male BMI>25 (kg/m^2) - body mass index	213	0,67	0,5035	63,4	6,10	61,1	7,30
Female BMI>25 (kg/m^2) - body mass index	205	- 0,86	0,3916	53,7	7,60	55,4	9,30
Male ch> 5.0 (mmol/L) - blood cholesterol level	199	1,00	0,3185	55,7	13,80	54,7	25,80
Female ch>5.0 (mmol/L) - blood cholesterol level	176	1,54	0,1242	56,9	10,40	55,8	18,70
Male glu>7.0 (mmol/L) - blood glucose level	206	0,85	0,3981	10,9	1,50	10,7	2,50
Female glu>7.0 (mmol/L) - blood glucose level	207	0,81	0,4181	9,7	2,90	9,8	3,00
Male AD>140/90 (mmHg) - level of arterial blood pressure	105	3,22	0,0013	50,5	7,20	45,5	8,90
Female AD>140/90 (mmHg) - level of arterial blood pressure	123	2,79	0,0052	46,8	11,40	39,1	7,20
Male insact<60 minutes/day walking - low physical activity	102	- 1,87	0,0615	29,2	20,50	45,1	18,50
Female insact<60 minutes/day walking - low physical activity	77	- 2,66	0,0078	31,1	19,60	47,9	19,60
Dietary patterns							
The general level of consumption (g/person/day)	238	0,09	0,9252	2176,0	152,00	2143,5	654,00
Animal products (%)	168	1,73	0,0845	33,9	9,06	30,2	11,82
Grain-vegetables (%)	172	- 1,63	0,1028	41,3	14,44	49,7	28,79
Fruit drinks (%)	210	- 0,74	0,4597	11,2	4,50	11,6	3,60
Alcoholic beverages (%)	155	2,03	0,0423	11,9	6,25	8,5	12,31
Macro nutrients							
Nutrients Animal products							
Energy %	162	1,88	0,0604	28,0	8,00	25,0	18,00
Protein %	194	1,13	0,2599	57,0	12,00	53,5	32,00
Fat %	108	3,13	0,0017	58,0	8,00	43,5	26,00
Percentage composition of Energy							
Carboh %	241	0,02	0,9813	56,0	8,00	54,0	11,00
Proteins %	228	- 0,33	0,7424	12,0	2,00	12,0	2,00
Fats %	239	- 0,06	0,9532	33,5	6,00	33,5	10,00
Total Energy 100%							
Energy (kcal/person/day)2003-05	134	- 2,52	0,0116	3140,0	450,00	3370,0	410,00
Proteins (g/person/day) 2003-05	172	- 1,64	0,1004	96,0	18,00	103,0	24,00
Fats (g/person/day) 2003-05	203	- 0,92	0,3600	115,0	30,00	131,5	48,00
Proteins/Fats 2003-05 %	234	- 0,18	0,8603	81,5	15,00	79,0	26,00
Micro nutrients							
animal origin2003-05	227	- 0,35	0,7248	3,1	0,80	3,5	2,60
vit. A 2003-05	163	1,85	0,0637	6,5	1,00	6,0	2,00
vegetal origin2003-05	80	- 3,79	0,0002	9,4	1,30	12,3	2,60
Diversification of nutrition							
Energy% 2003-05	196	1,08	0,2803	66,0	13,00	64,0	16,00
Proteins% 2003-05	209	0,77	0,4386	66,5	11,00	67,5	24,00
Fats% 2003-05 Fats%	200	0,97	0,3300	96,0	3,00	95,0	4,00

Thus, in Euro countries, despite the high standard of living, the incidence of 13 cancer types out of 24 was higher than in Med countries. The incidence of 10 cancer types did not differ from those of Med countries. It is logical to assume that in Euro countries with a higher per capita income, the number of the cancer types with a changed incidence will increase.

Analysis of the nutrition structure and cancer incidence in European and Mediterranean countries with a 4 times difference in per capita income

Euro2 included countries with the per capita income of $30 (QR-6.2), four times higher than the per capita income of Med2, $7 (QR-4.3) (p = 0.001) (Table 2). Latitude of Euro2 and Med2 countries was

the same (p=0.7), which allowed to assess the "clear" impact of per capita income on the countries characteristics, that is without the influence of latitude.

In Euro2 countries with high per capita incomes, overall morbidity was lower (p=0.001), life expectancy (p=0.002), Happiness Index, Eco-efficiency Index and Health Care Index (p=0.02) were higher.

Cancer incidence: In Euro2 countries with a high per capita income, the incidence of 12 cancer types out of 24 (Brain, Breast, Colorect, Corpus ut, Kidney, Leukaemia, Lip oral, Melanoma, Ovary, Pancreas, Prostate, Testis) was 2-5 times higher than (p=0.01). The incidence of the other 12 cancer types out of 24 again did not differ between countries (Blader, Cervix, Gollblad, Hodgkin L, Kaposi s, Laryngx, Liver, Lung, Nasophar, Oesophar, Stomach, Thyroid) (p=0.5) .

In countries with a high per capita income, there were 1.1 times more men with a BMI> 25 (p=0.04), 1.5 times more men and women with cholesterol level> 5.0 (p=0.001), 1.3 times more men with high blood pressure> 140/90mmHg (p=0.02).

The nutrition structure: The nutrition structure of Euro2 countries contained 30.2% and 22.1% of animal products compared to the Med2 countries (p=0.01); 45.7% and 65.5% of grain and vegetables (p=0.003); 8.8% and 1.0% (p=0.001) of alcoholic beverages; 11.9% and 10,6% (p=0.4) of fruit and drinks. In Euro2 countries, the food consumption level was 1.5 times higher (p=0.002). In Euro2 countries, the level of Energy was 1.05 times higher than in Med2 (p=0.03), Proteins and Fats were 1.8 times higher in Euro2 than in the Med2 countries (p=0.01). The level of macronutrients of animal products (Energy, Proteins and Fats) was 2 times higher in Euro2 countries than in Med2 countries (p=0.01). Diversification of nutrition in Euro2 countries was 1.5 times higher than in Med2 countries (p=0.005).

Thus, in Euro2 countries with 4 times higher per capita income than in Med2 countries, the incidence of the same 12 cancer types out of 24 was higher than in Med2 countries. The incidence of the remaining 12 cancer types did not differ between countries. To find out the reasons for the increase in incidence only for certain cancer types in response to the increase of per capita income, we undertook one more study. We have chosen 8 European countries, in which a per capita income was 6 times higher than in Med2 countries.

Analysis of the nutrition structure and cancer incidence in European and Mediterranean countries with 6 times difference in per capita income

For the analysis, 8 European countries with a per capita income of $41 and 8 Mediterranean countries with a per capita income of $7 (p=0.001) were selected (Table 3). Euro3 countries are located in higher latitudes (52°) compared to Med3 countries (36°) (p=0.001). Social characteristics in Euro3 countries were 3-10 times higher than in Med3 countries (p=0.001).

Cancer incidence: In Euro3 countries, the overall incidence was 1.5 times lower than in Med3 countries (p=0.001). In Euro3 countries, life expectancy was 6 years higher than in Med3 countries (p=0.001). In Euro3 countries, the incidence of 14 cancer types out of 24 was 2.7 times higher than in Med3 countries (Brain, Breast, Colorect, Corpus ut, Kidney, Leukaemia, Lip oral, Melanoma, Oesophar, Ovary, Pancreas, Prostate, Testis, Thyroid) (p=0.001). The incidence of 2 cancer types out of 24 was twice higher in Med3 countries (Laryngx, Nasophar) (p=0.03). The incidence of 8 cancer types out of 24 do not differ between countries (Blader, Cervix, Gollblad, Hodgkin l, Kaposi s, Liver, Lung, Stomach) (p=0.9).

In Euro3 countries, the proportion of men and women with a blood cholesterol level> 5.0 (p=0.001) was 1.5 times higher. In Euro3 and Med3 countries, more than 60% of the population had BMI> 25. More than 40% had arterial pressure> 140/90mmHg; and there were more than 40% of the population in Euro3 and Med3 countries with low physical activity.

The nutrition structure: The nutrition structure of Euro3 countries with high per capita income had 36.6% and 22.1% of animal products (p=0.01) compared to Med3 countries with low per capita income; 34.5% and 65.5% of grain and vegetables (p=0.001); 14.4% and 1.0% (p=0.001) of alcoholic beverages; 15.9% and 10.6% (p=0.007) of fruit and drinks. The food consumption level in Euro3 countries was 1.4 times higher than in Med3 countries (p=0.01). The level of Energy in Euro3 countries was 1.07 times higher than in Med3 countries (p=0.01), Proteins was 1.2 times and Fats was 2.6 times higher than in Med3 countries (p=0.01). The level of macronutrients of animal products: Energy and Proteins were 3 times higher (p = 0.001), Fats was 2 times higher (p=0.01) in Euro3. Diversification of the nutrition structure in Euro3 countries was 1.7 times higher than the Med3 countries (p=0.001).

Thus, one can conclude with a reasonable certainty that in 3 groups of Euro countries with a 2, 4 and 6 times higher per capita income than that of Med countries, incidence of 12-14 almost the same cancer types increases almost dose-dependent in 1.7, 2.3 and 2.5 times. The incidence of 12-10 cancer types does not change in response to an increase in per capita income. We hypothesized that these 12-10 cancer types may depend on the latitude and the factors associated with it. To test this hypothesis, we selected from European and Mediterranean countries 44 countries with the same per capita income as in 22 European and Mediterranean(EM1) and 22 (EM2) countries.

However, the latitude of EM1 and EM2 countries differs statistically significant (p=0.001). We assumed that the influence of per capita income was fixed.

Analysis of the nutrition structure and cancer incidence in European and Mediterranean countries with the same income, but located in different latitudes

Per capita income in EM1 and EM12 countries was statistically the same (p=0.64) and amount $20 (QR 24.6) in Euro4 and $27 (QR 26.2) in Med4 countries. The latitudes of EM1 countries were statistically different from those of EM2 countries (p = 0.001)/ In EM1 it was 52° (QR 7.0°), in EM2 it was 40° (QR 11.0°) (Table 4).

Social characteristics: the social indicators of EM1 and EM2 countries did not differ (p=0.9). The total incidence, life expectancy (p=0.9) did not differ between countries.

Cancer incidence: In EM1 countries with the same per capita

Table 5: The impact of per capita income and geographical latitude on the frequency of 24 types of cancer in Euro and Med countries (summary table) (Mann-Whitney *U-test*).

24 types of cancer per capita income - 3.2. stage geographical latitude - 3.4. stage	percapitaincome - 3.2. stage		geographicallatitude - 3.4. stage	
Corpusut	3,31	0,0009	2,52	0,011626
Kidney	2,78	0,0054	3,60	0,000315
Leukaemia	2,89	0,0039	2,52	0,011626
Liporal	2,00	0,0460	2,42	0,015620
Melanoma	2,99	0,0028	1,98	0,047319
Ovary	2,84	0,0046	2,91	0,003608
Pancreas 7	2,47	0,0136	2,45	0,014172
Brain	2,26	0,0239	1,49	0,136091
Breast	3,10	0,0019	0,85	0,398103
Colorect	3,31	0,0009	1,29	0,196707
Prostate	3,10	0,0019	1,49	0,136091
Testis 5	3,10	0,0019	1,34	0,180917
Cervix	0,11	0,9164	2,05	0,039991
Lung	1,94	0,0520	2,97	0,002985
Nasophar	-1,79	0,0742	- 2,30	0,021431
Oesophar	1,26	0,2076	2,98	0,002873
Stomach 5	1,42	0,1563	2,35	0,018913
Blader	1,10	0,2701	1,21	0,226725
Gollblad	1,47	0,1415	1,21	0,226725
Hodgkin l	1,52	0,1278	0,14	0,888000
Kaposi s	-0,05	0,9581	- 0,01	0,990636
Laryngx	0,32	0,7527	1,08	0,280258
Liver	1,73	0,0831	- 0,25	0,805324
Thyroid 7	1,47	0,1415	1,16	0,245279
Allcancer	3,10	0,0019	2,31	0,020775

income but located in different latitudes, the incidence of 12 cancer types out of 24 was 1.5 times higher than in Med4 countries (p=0.001) (Cervix, Corpus ut, Kidney, Lung, Leukaemia, Lip oral, Melanoma, Oesophar, Ovary, Pancreas, Stomach, Nasophar). The incidence of 12 cancer types out of 24 in EM1 countries did not differ from the incidence of these cancers in EM2 countries (p=0.4) (Blader, Brain, Breast, Colorect, Gollblad, Hodgkin L, Kaposi s, Laryngx, Liver, Prostate, Testis, Thyroid) (Table 4).

Comparing the results of stages 2 and 4, it was noted that incidence of 7 cancer types in EM1 countries (Corpus ut, Kidney, Leukaemia, Lip oral, Melanoma, Ovary, Pancreas) depends on per capita income and latitude. In EM1 countries, incidence of 5 cancer types depends on "clear" per capita income (Brain, Breast, Colorect, Prostate, Testis). The incidence of 5 cancer types depends on the "clear" latitude (Cervix, Lung, Nasophar, Oesophar, Stomach). Incidence of 7 cancer types in EM1 and EM2 countries does not depend on per capita income and latitude (Blader, Hodgkin L, Kaposi s, Gollblad, Laryngx, Liver, Thyroid) (Table 5).

In EM1 countries, there are 1.5 times more men and women (>50%) with arterial pressure >140/90 (p = 0.001). In Med4 countries, there are 1.5 times (>50%) more women with low physical activity (p=0.02).

The nutrition structure: The nutrition structure differed little between EM1 and EM2 countries. The shares of animal products, grains and vegetables, fruit and drinks were not statistically different in EM1 and EM2 countries (p=0.1). The share of alcoholic beverages was 2 times higher in EM1 countries than in EM2 countries (p=0.005).

Levels of total macronutrients: Energy, Proteins and Fats did not have statistical differences in EM1 and EM2 countries (p=0.9). However, the level of fat of animal products macronutrients was 1.5 times higher in EM1 countries (p=0.005).

Discussion of the Results

We estimated the impact of per capita income and latitude on social characteristics, the incidence of 24 cancer types, predictors of the Metabolic Syndrome and the nutrition structure, including macronutrients, in the Euro and Med countries. It was done in order to answer the question: what is the advantage of Mediterranean diet, thanks to which the incidence of breast cancer in Mediterranean countries is lower than in other countries?

In Euro countries, at 3 stages of research, per capita income was 2, 4 and 6 times higher than in Med countries. Latitude at the 2nd stage

of the study did not differ between Euro and Med countries (Table 2). Therefore, we could compare oncological morbidity in Euro and Med countries under the influence of the gradient of per capita income, regardless of the influence of latitude. At 4th stage, Euro and Med countries had the same per capita income, but differed in latitude. In this case, we could evaluate the effect of "clear" latitude, i.e. regardless of per capita income. Earlier it was shown that per capita income, food consumption levels and cancer incidence in different countries are positively correlated with latitude (r=0.8) [4,5,11,12]. In [12] Grant W.B. noted that some cancer types are more correlated with food than with latitude.

In addition, it was found that per capita income is a factor of racial-ethnic inequality in access to monitoring, diagnosis, prevention and treatment of cancer. The authors show that in countries with low per capita incomes, the actual cancer incidence can be higher [31-35]. At the same time, positive association of oncological morbidity and certain cancer types with the Human Development Index has been established [36]. It is well known that per capita income is included in the evaluation system of the Human Development Index, the higher is the per capita income the higher is the Human Development Index. Therefore, stages 2 and 4 of our study were conducted to assess the contribution of the "clear" per capita income factors and latitude to the differences in cancer incidence and nutrition structures in Euro and Med countries.

Influence of per capita income and latitude on the cancer incidence in Euro and Med countries

In Euro countries, social characteristics and living standards are higher, the higher per capita income in these countries is. In Euro countries with high per capita income, the overall incidence is lower than in Med countries. Life expectancy in Euro countries is 6 years higher than in Med countries.

The first paradox: In Euro countries in comparison with Med countries, the overall oncological incidence is higher and increases dose-dependent on per capita income at 1.7, 2.2, 2.5 times, respectively, with the growth of per capita income in Euro countries in 2, 4 and 6 times.

The second paradox: In Euro countries, the dose-related growth of oncological morbidity affects 12 cancer types (Tables 1-3). The incidence of the other 12 cancer types does not depend on the growth of per capita income in Euro countries (Tables 1-3). We hypothesized that this cancer group depends on the latitude gradient between Euro and Mediterranean countries. To this end in view, the 2nd and 4th stages of research were carried out. As a result of the 2nd stage, in Euro countries with 4 times higher per capita income than in Med countries, there were 2-5 times higher incidence of 12 cancer types out of 24 (Brain, Breast, Colorect, Corpus ut, Kidney, Leukaemia, Lip oral, Melanoma, Ovary, Pancreas, Prostate, Testis) (p=0.01). The incidence of the remaining 12 cancer types did not differ between countries (Blader, Cervix, Gollblad, Hodgkin L, Kaposi s, Laryngx, Liver, Lung, Nasophar, Oesophar, Stomach, Thyroid) (p=0.5).

At the 4th stage, the EM1 and EM2 countries were compared, in which per capita income was the same ($23) (p=0.7), and the latitude differed by 12° (p=0.001) (Table 4). As a result, it was found that the incidence of the 12 cancer types in EM1 countries differed from those of EM2 countries (p=0.001) (Cervix, Corpus ut, Kidney, Lung, Leukaemia, Lip oral, Melanoma, Oesophar, Ovary, Pancreas, Stomach, Nasophar) (Table 4). The incidence of 12 cancer types in EM1 countries did not differ from that in EM2 countries (p=0.5) (Brain, Blader, Breast, Gollblad, Colorect, Laryngx, Liver, Hodgkin L, Kaposi s, Prostate, Testis, Thyroid) (Table 4).

Comparing the results of stages 2 and 4 it was noted that 7 cancer types (Corpus ut, Kidney, Leukaemia, Lip oral, Melanoma, Ovary, Pancreas) in Euro countries depend on per capita income and latitude. In Euro countries, the incidence of 5 cancer types depends on "clean" per capita income (Brain Breast, Colorect, Prostate, Testis). The incidence of 5 cancer types depends on "clean" latitude (Cervix, Lung, Nasophar, Oesophar, Stomach). The incidence of 7 cancer types in Euro and Mediterranean countries does not depend on per capita income, nor on latitude (Blader, Hodgkin l, Kaposi s, Gollblad, Laryngx, Liver, Thyroid), of which 3 types are associated with viral infections (Hodgkin L, Kaposi s, Liver) [4,12].

Anisimov V.N et al [37] using multiple regression analysis and prognosis have shown that the incidence of hormone-dependent tumors in countries depends on per capita income, while tumors of the gastrointestinal tract are associated with latitude. Chetty R et al [38] in studies on US residents have found that a person's life expectancy depends on per capita income that has a threshold, after which the life expectancy does not increase. Our results confirm the data of these authors on the dependence of life expectancy on per capita income.

The influence of per capita income and latitude on the Metabolic Syndrome

In studies in Euro and Med countries, a blood cholesterol level >5.0mmol/L (the predictor of the metabolic syndrome) depends on per capita income. The proportion of men with high blood cholesterol levels in Euro countries in comparison with Med countries increased by 1.3-1.8 times, respectively (p=0.001). The proportion of women with cholesterol level >5.0mmol/L in Euro countries was lower than that of men and increased by 1.3-1.5 times, respectively, with per capita income (p=0.001). BMI >25kg/m^2 in populations of Euro and Med countries exceeded 60% of the population, did not differ statistically between Euro and Med countries, and did not depend on per capita income (p=0.1). At the same time, a blood pressure >140/90mmHg was 1.5 times more frequent in the populations of Euro countries in high latitudes than in countries in low latitudes (p=0.001) and accounted for more than 50% of the populations of men and women in Euro countries. In the researchers' opinion, the predictors of metabolic syndrome can serve as reliable diagnostic and prognostic indicators of breast cancer, prostate cancer, colorectal cancer and other cancer types [39-44].

Influence of per capita income and latitude on the nutrition structure

On the basis of the data obtained, it can be assumed that the increase of the incidence of 12 cancer types with an increase of per capita income in Euro countries compared to Med countries is associated with the characteristic differences in the nutrition structure of Euro and Med countries.

With an increase in per capita income by 2, 4 and 6 times, the

level of food consumption in Euro countries grows by 1.01, 1.1, 1.26 times in comparison with Med countries (p=0.001).

In the nutrition structure, with an increase in per capita income in Euro countries, the share of animal products is growing by 1.3, 1.5, 1.7 times (p=0.001); the share of grain and vegetables decreases to 0.7, 0.5, 0.5 (p=0.001); and the share of alcoholic beverages increases dramatically: by 5.2, 8.0, 14.3 times (p=0.001). The share of fruits and drinks is increasing in Euro countries: by 1.1, 1.2, 1.5 times (p=0.01). An increase in the overall level of food consumption, as well as an increase in the share of animal products and alcoholic beverages, as well as a decrease in the share of grain and vegetables in the Nutrition structure, apparently leads to an increase in the incidence of 12-15 cancer types by 1, 7, 2.3, 2.5 times (p=0.001). In this case, the incidence of Breast cancer grows 2.6 times, Colorect, Corpus ut, Kidney - 3.7 times, Oesophar - 4.7 times, Prostate - 8.1 times, Testis - 12.1 times, Melanoma - 28.5 times (p=0.001). But the incidence of 12 cancer types is statistically unchanged (p=0.5) in Euro countries and does not differ from the incidence of these cancer types in Med countries. We assume that the incidence of these cancer types does not depend on the nutrition structure, since these cancer types do not depend on per capita income (Table 2). At the research stage 3.4, we found that in countries with the same per capita income located in high and low latitudes, the nutrition structure does not depend on latitude, except for the share of alcoholic beverages, which is 2.2 times higher in high latitudes (p=0.005). At the same time, the nutrition structure in high and low latitudes contains a significant proportion of animal products - 32% and 29% (p=0.5), and 43% and 53% (p=005) of grain and vegetables. It confirms our data that the cancer incidence that is independent of per capita income, but dependent on latitude, is associated with practically the same diet in high and low latitudes.

Most authors agree on the favorable effect of diets with low share of red meat, well or ultra processed red meat and alcohol, with high share of vegetables, grains, nuts, unsaturated fatty acids, and with a high anti-inflammatory index [45-52]. Loo RL et all believe that the interpersonal variation in the response to a diet is common, but the main mechanism of such a response is not clear [46].

The nutrition structure of Euro countries with 2 times higher per capita income that in Med countries, contains: animal products - 35.7% and 26.7% (p=0.002); grains and vegetables - 36.5% and 56.2% (p=0.001); alcoholic beverages - 13.6% and 2.5% (p=0.001); fruit and drinks - 13.2% and 11.6% (p=0.08).

Influence of per capita income and latitude on the level of macronutrients in Euro and Med countries

With the increase in per capita income in Euro countries in comparison with the Mediterranean countries by 2, 4 and 6 times, the level of common macronutrients changed: the Energy level grew by 1.01-1.08 times and was 3420 (QR=370) - 3170 (QR=250)kcal/person/day (p=0.01); Carbohydrate level decreased by 1.2 times (p=0.001); the level of Proteins was constant; the level of Fats increased by 1.2-1.4 times (p=0.001).

In Euro countries with 2, 4, 6 times higher per capita income than in Med countries, the level of macronutrients of animal products increased: Energy by 1.5-2.9 times (p=0.001); Proteins by 1.2 to 2.4 times (p=0.001); Fats by 1.6-1.9 times (p=0.01).

Thus, the "Energy Cocktail" of Euro countries (3,420kcal) and Med countries (3,170kcal) with a 6-fold difference in per capita income between these countries, contains a different ratio of the calories of animal and vegetable origin, including 14-fold difference in calories from alcoholic beverages in total Energy, Proteins, Fats and Carbohydrates, in Euro countries in comparison with Mediterranean countries. It can be assumed that the specific differences in the nutrition structure, general macronutrients and macronutrients from animal products underlie the high incidence of 12 cancer types in Euro countries. The location of Euro countries in higher latitudes than Med countries, also contributes to the high cancer incidence in Euro countries, partly of these 12 types. Our results on the role of nutrition structures with a high content of animal products and alcoholic beverages as a cancer risk factor support the results of many researchers on the beneficial, anti-inflammatory, immunoprotective effect of the Mediterranean diet [53-57]. A decrease in cognitive functions due to the high proportion of Fats and Proteins in total Energy to the detriment of Carbohydrates is reported [58]. Lane JA et all did not confirm the connection of dietary factors with the risk of prostate cancer, including the stage of the disease [59]. Holmberg L1, et all believe that the strongest known risk factors for many cancers are age and ethnic origin [60].

Conclusions

1. In European countries, compared with the Med countries, the incidence of 7 cancer types (Corpus ut, Kidney, Leukaemia, Lip oral, Melanoma, Ovary, Pancreas) in Euro countries depend on per capita income and latitude. In Euro countries, the incidence of 5 cancer types depends on "clean" per capita income (Brain Breast, Colorect, Prostate, Testis). The incidence of 5 cancer types depends on "clean" latitude (Cervix, Lung, Nasophar, Oesophar, Stomach). The incidence of 7 cancer types in Euro and Mediterranean countries does not depend on per capita income, nor on latitude (Blader, Hodgkin L, Kaposi s, Gollblad, Laryngx, Liver, Thyroid), of which 3 types are associated with viral infections (Hodgkin l, Kaposi s, Liver).

2. In European and Mediterranean countries, the nutrition structure and the composition of macronutrients of animal products depend on per capita income and do not depend on latitude.

3. In European countries, the nutrition structure with a high proportion of animal products (> 30%) and alcoholic beverages (>6%) is a risk factor for 12 cancer types out of 24 (Brain, Colorect, Corpus ut, Kidney, Lip oral, Melanoma, Ovary, Pancreas, Breast, Leukaemia, Prostate, Testis).

Additional Materials

1. Analysis of the daily diet in Euro and Med countries with 6 times difference in per capita income (Table 3a).

In European countries, higher consumption of the following products (g/person/day): total consumption is 1.3 times higher, Bovine Meat- 3.6 times, Poultry Meat - 1.5 times, Pig meat - 40 times, Cheese - 5.1 times, Butter, Ghee -1.9 times, Eggs - 1.7 times, Fats, Animals - 8 times, Freshwater Fish - 5 times, Demersal Fish - 7.7 times, Molluscs- 8 times, Potatoes - 1.9 times, Rye - 1.8 times, Oranges - 2.2 times, Apples - 2.2 times, Coffee - 8 times, Honey - 4 times Sugar -1,3 times, Beverages, Alcoholic -12 times, Wine - 45

times, Beer - 18 times.

In Euro consumption of these food products is lower than in Med countries: Wheat - 2 times, Tomatoes - 3 times, Onions - 1.4 times, Vegetables, Other - 1.3 times.

There are no differences between Euro and Med countries in consumption of: Mutton & Goat Meat, Offals, Edible, Milk, Whole, Milk, Skimmed, Marine Fish, Other, Pelagic Fish, Rice, Maize, Barley, Beans, Nuts, Soyabean Oil, SunflowerseedOil , Olive Oil, Lemons, Lime Tea.

Table 3a provides data on the incidence of 50 types of NCD and 53 types of food.

Country Lists

Stage

Euro: Luxembourg, Norway, Ireland, The Netherlands, Switzerland, Austria, Sweden, Denmark, Finland, Belgium, United Kingdom, Germany, Iceland, Slovenia, Czech Republic, Slovakia.

Med: Albania, Algeria,Cyprus, Egypt, France, Greece, Israel, Italy, Lebanon, Libya, Malta, Morocco, Spain, Syrian Arab Republic, Tunisia, Turkey.

Stage

Euro: Spain, Greece, France, Italy, Cyprus, Israel, Malta, Croatia.

Med: Turkey, Lebanon, Tunisia, Algeria, Albania, Egypt, Syrian Arab Republi, Morocco.

Stage

Euro: Luxembourg, Norway, Ireland, The Netherlands, Switzerland, Austria, Sweden, Denmark.

Med: Turkey, Lebanon, Tunisia, Algeria, Albania, Egypt, Syrian Arab Republic, Morocco.

Stage

EM1: Russian Federation, Belarus, Estonia, Latvia, Lithuania, Lebanon, Ukraine, Albania, Serbia, Finland, Belgium, The Netherlands, Denmark, Czech Republic, Slovakia, Germany, Croatia, Poland, France.

EM2: Slovenia, Malta, Egypt, Morocco, Syrian Arab Republic, Israel, Austria, Switzerland, Norway, Luxembourg, Ireland, Spain, Greece, Romania, Italy, Bulgaria, Portugal, Turkey, Algeria, Tunisia, Libya, Cyprus.

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