



CyDA Epidemiological Study to Determine the Percentage of Obesity and Overweight in Cyprus.

Dietary/Nutritional Habits of the Cypriot Population



Aims and Objectives



- Determine the percentage of obesity in Cyprus
- Determine the percentage of overweight in Cyprus
- Collect information on the nutritional habits of Cypriots
- Collect information on level of physical activity of Cypriots
- Obtain information on biochemical indicators
- Investigate correlations between nutritional habits, level of physical activity and biochemical indicators

Prepare a Set of Nutritional Guidelines for the Cypriot Population



The Research Team



- Eleni Andreou, LD, RD – **Project Director**
 - Cyprus Dietetic Association
- Photos Hajigeorgiou, Ph.D. – **Scientific Coordinator**
 - Department of Life and Health Sciences, Intercollege
- Katia Kyriacou, MS, RD – **Assistant Scientific Coordinator**
 - Cyprus Dietetic Association
- Christos Diogenous
 - Clinical laboratory analysis
- Dr. Stavros Pouloukas and Dr. Christoforos Christoforou
 - Statistical analysis
- Dr. Savvas Savva
 - Advisor
- Dr. Antonis Zampellas and Dr. Antonis Kafatos
 - Collaborators / External advisors



The Research Team



Researchers

- Thalia Koutsioupi
- Procopis Kalli
- Chrystalleni Lazarou
- Georgia Chappa
- Christiana Philippou

Volunteer Researchers

- | | |
|------------------------|----------------------|
| ■ Jean-Philippe Riceau | Alexia Panayidou |
| ■ Anastasia Stavrou | Nikoleta Michaelidou |
| ■ Aristos Erodou | Costas Andreou |
| ■ Katerina Christofi | Klairia Milidoni |
| ■ Maria Yiannaki | Martha Gabrielidou |
| ■ Olga Nicola | Polly Michaelidou |
| ■ Stalo Kountouri | Xenia Averkiou |
| ■ Evi Kyriakidou | Pantelitsa Koullapi |



Research Days



- Personal data and blood pressure measurement
- Blood collection (fasting)
- Height, waist circumference measurements
- Weight, electrical impedance fat % measurement

- Breakfast

- Questionnaire (physical activity, health condition, medical history, nutritional habits)



The Sample



- 185 in total analyzed to date
- 73 (39.5%) men, 112 (60.5%) women
- All from District of Nicosia
- Selection random (telephone directory)
- Participation on voluntary basis

- Desired sample = 1000



The Perceptions



Selection	%
Under normal weight	5.4
Normal weight	31.9
Over normal weight	61.9
I don't know	1.2



The Truth



Selection	%
Under normal weight	8.7 (5.4)
Normal weight	30.8 (31.9)
Over normal weight	60.5 (61.9)

Cypriots have a good perception of their weight



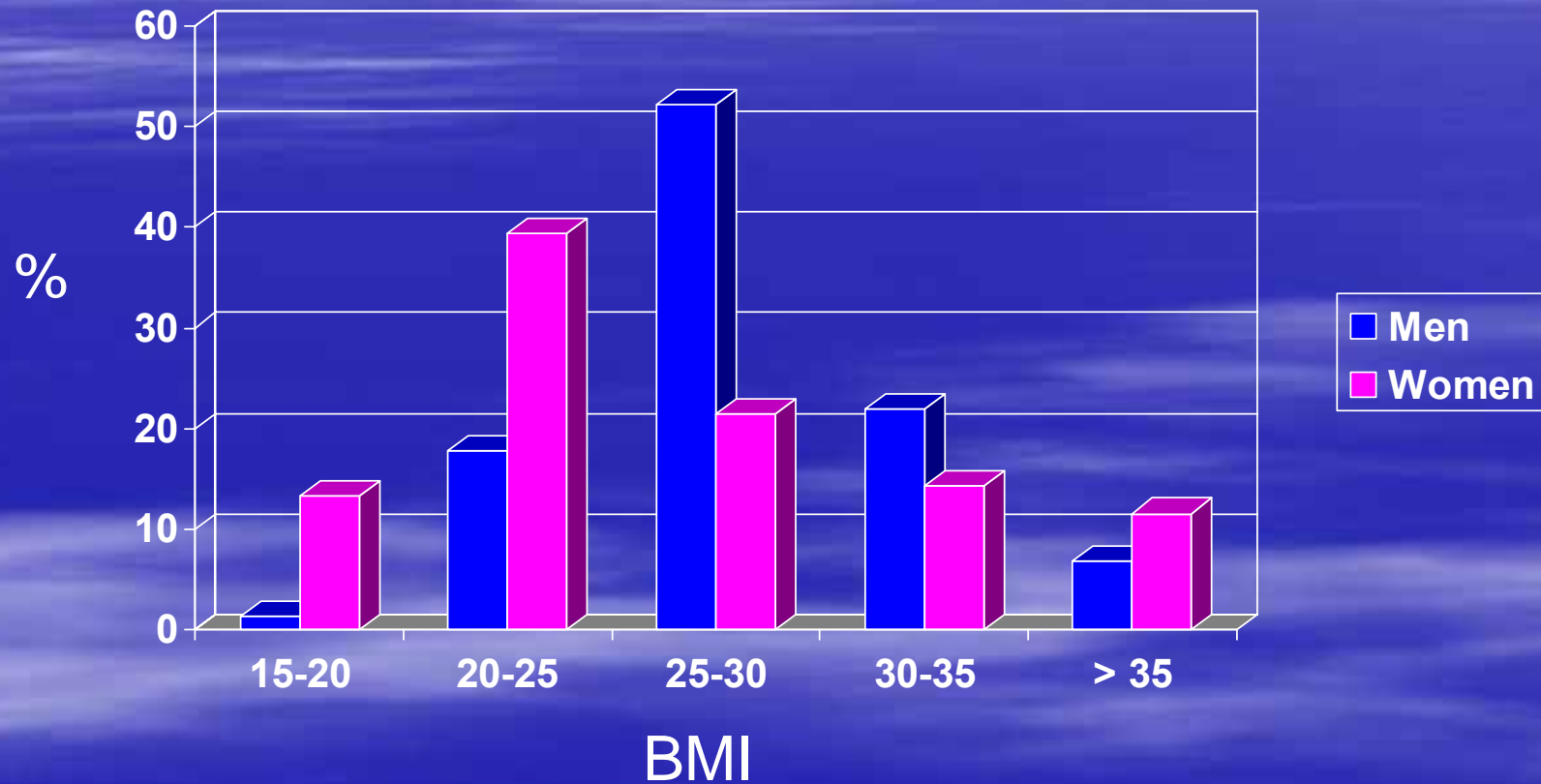
Percentage of Obesity in Cypriots

Class	BMI	% Men	% Women
Underweight	15-20	1.4	13.4
Normal	20-25	17.8	39.3
Overweight	25-30	52.1	21.4
Obese	> 30	28.7	25.9

Men: 80.8% Women: 47.3% are Overweight or Obese



BMI Distributions





Percentage of Obesity in Cypriots

Item	Men	Women
Average BMI	28.3	26.6
Average Waist Circumference	96.6 cm	86.2 cm
Average % Fat	25.2	33.0



Health Condition



Q: Have you been diagnosed with a condition that affects your nutritional habits?

YES: 43.9% NO: 56.1%

- 38.8% Hyperlipidemia
- 26.3% Obesity
- 24.7% Hypertension
- 17.7% Food allergy/sensitivity
- 16.3% Condition affecting level of physical activity
- 15.6% Gastroenterological conditions
- 15.1% Dental problems



Health Condition



Q: What is your own estimation of the condition of your health?

- | | |
|------------------------|-------|
| ■ Very good | 23.2% |
| ■ Good | 52.4% |
| ■ Neither good nor bad | 20.0% |
| ■ Bad | 4.3% |
| ■ Very bad | 0.0% |



Medical History



Q: Do you suffer from health problems of chronic nature?

YES: 39.3% NO: 60.7%

Q: Are you currently on medication?

YES: 38.7% NO: 61.3%

Q: Are you currently on a diet designed by a dietician?

YES: 17.5% NO: 82.5%

Q: Do you take nutritional supplements?

YES: 25.0% NO: 75.0%



Medical History



Conditions suffered from in the last 12 months

- 25.6% **Dyslipidemia**
- 21.3% **Lower back pain**
- 15.2% **Menopause**
- 14.4% **Hypertension**
- 10.5% **Diabetes**

Symptoms experienced in the last 12 months

- 45.7% **Lower back pain**
- 41.3% **Headache/Migraine**
- 41.2% **Neck/Shoulder pain**
- 35.1% **Joint pain**
- 21.0% **Insomnia**



Medical History



Medication/supplements taken during the last week

- 25.9% For headache
- 25.4% Vitamins/minerals
- 15.3% For hypertension
- 11.1% For high cholesterol
- 10.6% For other pain



Smoking



Q: How many cigarettes do you smoke per day?

- 65.8% I don't smoke
- 5.6% Casually
- 11.3% 1-10 cigarettes
- 10.0% 11-20 cigarettes
- 7.5% 1-2 packs
- 0.0% 3 or more packs



Clinical Lab Results



Average values by sex

	Men	Women	Reference values
Glucose (fasting)	96.5	88.1	60-110 mg/dL
Cholesterol (total)	209	208	< 210 mg/dL
LDL	138	140	< 130 mg/dL
HDL	44.8	54.9	> 40 mg/dL
Triglycerides	129	87	< 200 mg/dL
Iron	99.1	87.9	53-167 mg/mL
CRP	0.429	0.359	< 6 mg/L



Nutritional Habits



Breakfast

Q: Do you eat breakfast and/or a mid-morning snack?

- **19.5% Breakfast only**
- **13.5% Mid-morning snack only**
- **62.7% Both**
- **4.3% Neither breakfast nor mid-morning snack**



Nutritional Habits



Most popular foods for breakfast

- 93.5% **Milk**
- 93.0% Cereal with **milk**
- 88.9% Bread with butter/margarine and honey/jam
- 75.0% Egg, **milk** and bread
- 72.8% Coffee with **milk**

Most popular foods for mid-morning snack

- 88.1% **Fresh fruit**
- 76.9% Bakery goods
- 76.4% Sandwich
- 59.3% Other
- 54.1% Coffee



Nutritional Habits



Q: How many meals do you eat per day?

- **2.7 ± 0.9**

Q: How many intermediate (small) meals do you eat per day?

- **1.9 ± 1.0**

Q: Do you have your meals at regular times every day?

- **Breakfast** 78.0% YES
- **Lunch** 79.5% YES
- **Dinner** 61.1% YES
- **Intermediate meals** 41.7% YES



Nutritional Habits



Q: How often do you **prepare food at home**?

- Never 4.3%
- Few times a year 2.2%
- 2-3 times a month 2.2%
- Once a week 2.2%
- 2-3 times a week 17.3%
- Every day 71.9%



Nutritional Habits



Q: How often do you **eat outside the home**, or **buy take-away**?

- Never 1.1%
- Few times a year 14.6%
- 2-3 times a month 27.6%
- Once a week 34.6%
- 2-3 times a week 17.8%
- Every day 4.3%



Nutritional Habits



Oils/Fats

Q: What type of oil/fat do you use at home for cooking?

- Olive Oil 59.4%
- Other vegetable oil 35.0%
- I don't use oil 2.2%
- I don't know 1.7%
- I don't cook at home 1.1%
- Butter 0.6%

Q: What type of oil do you use in salads or in pulses/beans?

- Olive Oil 99.4%
- Vegetable seed oil 0.6%



Nutritional Habits



Water

Q: How many glasses of water do you drink per day?

- 0 glasses 1.6%
- 1 - 4 glasses 36.8%
- 5 - 8 glasses 35.7%
- > 8 glasses 25.9%



Nutritional Habits



Salt

Q: The amount of salt I use is

- Whatever is used when cooking 54.8%
- I add on top of that used for cooking 35.3%
- I use lo-salt 3.3%
- I don't use any salt 4.3%
- I don't use salt but I use flavoring cubes 2.2%



Nutritional Habits



Meat

Q: During the last 7 days.....

- 77.5% consumed chicken
- 68.6% consumed lamb
- 22.4% consumed pork
- 11.1% consumed beef



Nutritional Habits



Food Ingredient Labels

Q: Do you read food ingredient labels?

- 80.3% YES
- 19.7% YES

Q: What type of information on food labels do you look at?

- Food additives 58.9%
- Fat percentage 45.9%
- Calorie content 37.2%
- Other 14.6%
- For calcium content 12.4%
- For trans fats content 11.3%



Nutritional Habits



Alcoholic Drinks

Q: Did you consume alcoholic drinks during the past 12 months?

- 88.0% YES
- 12.0% YES

Q: How much did you drink during the past 7 days?

- | | |
|--------------------------------|-----------|
| ■ Beer (cans or small bottles) | 0.9 ± 1.4 |
| ■ Wine (glasses) | 0.7 ± 1.5 |
| ■ Whisky | 0.4 ± 1.8 |
| ■ Zivania | 0.1 ± 0.7 |



Physical Activity



Q: On an average day, how many hours do you spend sitting down?

- **9.8 ± 5.0 hours**

Q: How physically demanding is your job?

- | | |
|----------------------------|--------------|
| ■ Very little | 53.0% |
| ■ A little bit | 31.4% |
| ■ Fairly demanding | 10.8% |
| ■ Heavily demanding | 4.9% |



Physical Activity



Q: During the last 7 days, I spent _____:

- **0.6 ± 1.3 days engaged in intense physical activity**
- **1.3 ± 2.3 days engaged in medium intensity physical activity**
- **1.8 ± 2.4 days engaged in low-level intensity physical activity**



Perceptions



Q: In your opinion, what are the three most important reasons for the high rate of mortality in our country?

- **Poor nutritional habits** 67.5%
- **Smoking** 55.5%
- **Stress/Anxiety** 51.8%
- **Lack of vitamins/minerals** 34.2%
- **Lack of exercise** 33.2%



Conclusions



1. Cypriots are generally overweight
2. Cypriot men are in worse shape than Cypriot women
3. Cypriot women care more about their weight than men
4. Cypriots generally avoid physical exercise
5. Cypriots undervalue the importance of regular exercise
6. Cypriots are well-informed about nutritional issues
7. Obesity and overweight contribute to health problems such as lower back pain and joint pain
8. Heart disease and cancer are likely to increase in frequency, particularly in men



Acknowledgements



- Cyprus Research Promotion Foundation
 - **Primary funding source**
- External Sponsors
 - **Flora Pro-Active**
 - **ZORΠΑΣ Bakeries**
 - **Lanitis Ltd**
 - **Costas Papaellinas (sphygmomanometers)**
 - **Nestle**
- All the volunteer researchers for their efforts.
Without you this would not be possible.