

**FINAL PROGRAMME &  
BOOK OF ABSTRACTS**

**BalNeSO**  
Balkan Network for the Study of Obesity

HELLENIC  
MEDICAL  
ASSOCIATION  
FOR OBESITY



ΕΛΛΗΝΙΚΗ  
ΙΑΤΡΙΚΗ  
ΕΤΑΙΡΕΙΑ  
ΠΑΧΥΣΑΡΚΙΑΣ



THESSALONIKI GREECE

8<sup>th</sup>

**MACEDONIAN CONGRESS  
ON NUTRITION  
AND DIETETICS**

16-17 October '08

3<sup>rd</sup>

**BALKAN CONGRESS  
ON OBESITY**

17-19 October '08

# Discover ACOMPLIA®

New ACOMPLIA®, the first selective CB<sub>1</sub> blocker to reduce over-activity of the endocannabinoid system.

## A NEW WAY TO LOOK AT CARDIOMETABOLIC RISK FACTORS

ACOMPLIA® is indicated as an adjunct to diet and exercise for the treatment of obese patients (BMI  $\geq 30$  kg/m<sup>2</sup>), or overweight patients (BMI  $> 27$  kg/m<sup>2</sup>) with associated risk factors, such as type 2 diabetes or dyslipidaemia.

ACOMPLIA®, a comprehensive approach to improving multiple cardiometabolic risk factors.

- ↓ Reduce **weight and waist circumference**
- ↓ Improve **HbA1c in diabetic patients**
- ↑ Raise **HDL**
- ↓ Lower **triglycerides**

Before prescribing please refer to locally approved SmPC characteristics  
Further information is available in medical information.greece@sanofi-aventis.com

 **ACOMPLIA®**  
rimonabant

**It's not what you lose. It's what you gain.**

Sanofi-Aventis S.A.  
348 Syggrou avenue, Building A, 17674 Kallithea, Athens  
tel: 210 90 01 600, [www.sanofi-aventis](http://www.sanofi-aventis)

  
**sanofi aventis**  
Because health matters



## CONTENTS

	Page
Word of Welcome. . . . .	.5
About BalNeSO . . . . .	.6
About HMAO . . . . .	.7
Committees . . . . .	.8
HMAO Awards . . . . .	.9
Invited Speakers and Chairpersons . . . . .	10
Programme at-a-glance . . . . .	12
Scientific Programme. . . . .	14
Registration . . . . .	21
General Information. . . . .	22
General Information about Greece. . . . .	24
General Information about Thessaloniki. . . . .	25
Abstract Book. . . . .	29
Acknowledgements	
Exhibition Plan	





## WORD OF WELCOME

Dear colleagues,

It is with great pleasure and honour that we welcome you to the 3rd Balkan Congress on Obesity which is taking place on October 17-19, 2008, at the Porto Palace Hotel, in Thessaloniki, Greece. The congress is being organised by the Balkan Network for the Study of Obesity (BalNeSO) and the Hellenic Medical Association for Obesity (HMAO).

Due to HMAO's long history of well organised and successful scientific events, both locally and internationally, we believe that the 3rd BCO will be a unique experience. The congress addresses all the important topics in the field of obesity, aiming to focus primarily on the region of the Balkan Peninsula. We feel honoured that eminent scientists from all over Europe are going to contribute to a scientific programme of high level.

The 3rd BCO is being preceded by the 8th Macedonian Congress on Nutrition and Dietetics, which is being organised by the Technological Educational Institution of Thessaloniki and is taking place on October 16-17, 2008. Although its official language is Greek, specific topics will be presented in English.

We hope that you will enjoy this interesting scientific and social journey in the city of Thessaloniki, where the heart of Macedonia beats.

Welcome in Greece!

I. Kaklamanos, MD  
President  
3rd Balkan Congress on Obesity

Prof. M. Hassapidou  
President  
8th Macedonian Congress  
on Nutrition and Dietetics

Th. Tzotzas, PhD  
Executive Director  
3rd Balkan Congress on Obesity

## ABOUT BalNeSO

The Balkan Network for the Study of Obesity (BalNeSO) is a non-governmental, non-profit scientific association founded in 2005, in Athens, by the representatives of seven national associations for obesity from Bulgaria, Greece, Israel, Romania, Serbia, Turkey and Cyprus. The initiative for the formation of such a Network had been taken by the Hellenic Medical Association for Obesity in 2002 and, in 2005, the expansion of the Network and the enlargement of its goals and perspectives were decided.

### The aims of BalNeSO are:

- To encourage and support activities related to research on the prevention and treatment of obesity.
- To facilitate communication between members of the Balkan countries on related issues.
- To organise the Balkan Congress on Obesity.
- To promote the study of obesity in the interbalkan field through the scientific cooperation of scientific associations, institutions, universities and other bodies.
- To promote research and teaching in all levels of education in the area of obesity.
- To promote the establishment of related Institutes and Research Scientific Centres.
- To contribute to the general scientific knowledge, education and progress in the area of obesity of the member Balkan countries.
- To promote peace and friendship among the people of the Balkan countries.

Up to now, BalNeSO have organised two congresses: the 1st Balkan Congress on Obesity (BCO) was held in Athens, Greece in 2003, in collaboration with the Hellenic Medical Association for Obesity and the 2nd BCO was held in Albena, Bulgaria, in May 2006, in collaboration with the Bulgarian Association for the Study of Obesity.

The Administrative Committee of the Balkan Network for the Study of Obesity for the triennium 2006-2008 stand as follows:

President:	Ioannis Kaklamanos, MD - <i>Greece</i>
Secretary:	Volkan Yumuk, MD - <i>Turkey</i>
Treasurers:	Efthymios Kapantais, MD - <i>Greece</i> Svetoslav Handjiev, MD - <i>Bulgaria</i>



## ABOUT HMAO

The Hellenic Medical Association for Obesity (HMAO) is a non-governmental scientific association, operating on a non-profit basis in Athens, Greece. Founded in 1990, it ranks up to 1.070 active members from various areas of professional expertise, such as physicians, dietitians and other health professionals. HMAO is a member of the European Association for the Study of Obesity (EASO) and of the International Association for the Study of Obesity (IASO), as well as one of the founding members of the Balkan Network for the Study of Obesity (BaNeSO).

According to its Memorandum, HMAO aims to promote “the scientific research and study of obesity and the metabolic diseases in Greece” as well as “the scientific research in the field of healthy nutrition of the contemporary individual”.

During the last eighteen years, HMAO has organised numerous scientific and non-scientific events, which were crowned with great scientific and organisational success. The most important events are listed below:

- Seven Pan-Hellenic Medical Congresses on Obesity organised every other year
- Five Scientific two-day Symposia organised every other year
- Four Scientific one-day Symposia in major cities of the Greek province with broad participation, organised during autumn 2003

Aiming to provide knowledge on all basic issues regarding physical examination, assessment, management (diet-drugs-physical activity) and monitoring of obese and overweight patients, HMAO organises yearly a series of educating workshops.

Up to now four Educational Workshops on Obesity have been organised:

- 1st Educational Workshop on Obesity titled “Assessment and Management of Obese Patients” (2004)
- 2nd Educational Workshop on Obesity titled “Assessment and Management of Obese Patients” – A SCOPE course accredited by EASO (2005)
- 3rd Educational Workshop on Obesity titled “Obesity: contributing factors and multifactorial management” – A SCOPE course accredited by EASO (2006)
- 4th Educational Workshop on Obesity titled “The pathogenesis, diagnosis and current and future treatment options of obesity and its complications” – A SCOPE course accredited by IASO (2007)

Further to HMAO’s activities nationwide, a strong presence has been accomplished in Europe and in the Balkan Peninsula through the organisation of several events:

- The 14th European Congress on Obesity (ECO 2005) took place in Athens, Greece, on 1-4 June 2005, at the International Conference Centre of Megaron – the Athens Concert Hall and it has been crowned with great success.
- The 17th Annual Meeting of the European Childhood Obesity Group (ECOG) was held in Athens, Greece, on 5-7 July, 2007.
- The 3rd Balkan Congress on Obesity takes place in Thessaloniki, Greece, on 17-19 October, 2008.

The Hellenic Medical Association for Obesity has carried out the “First National Epidemiological Large-scale Survey on the Prevalence of Obesity in the Greek Population” based on a nationwide population sample of 35.386 individuals (17.341 adults and 18.045 children and adolescents). The results and the conclusions of the survey were announced during the 13th European Congress on Obesity (Prague 26-29/5/2004) and the 14th European Congress on Obesity (Athens 1-4/6/2005). The full paper concerning the adults’ results of the survey has been published in the “Annals of Nutrition & Metabolism”, while the full paper on the adolescents’ results of the survey has been published in the “Obesity”, the official journal of “The Obesity Society”.



## COMMITTEES

### ORGANISING COMMITTEE

President: I. Kaklamanos  
 Members: S. Handjiev  
 M. Hassapidou  
 E. Kapantais  
 M. Maislos  
 D. Micic  
 Z. Mouslech  
 G. Roman  
 S. Stavrou  
 Th. Tzotzas  
 V. Yumuk

### 3RD BCO EXECUTIVE COMMITTEE

Executive Director: Th. Tzotzas  
 General Secretary: M. Hassapidou  
 Member: Z. Mouslech

### 3RD BCO COORDINATION

A. Gerodemou  
 K. Gerodemou

### BALNESO EXECUTIVE COMMITTEE

President: I. Kaklamanos  
 Secretary: V. Yumuk  
 Treasurers: E. Kapantais  
 S. Handjiev

### SCIENTIFIC COMMITTEE

A. Astrup  
 A. Avramidis  
 M. Caroli  
 G. Chroussos  
 Ch. Dimosthenopoulos  
 V. Hainer  
 I. Ioannidis  
 A. Kafatos  
 N. Katsilambros  
 D. Kiortsis  
 A. Kokkinos  
 P. Kopelman  
 G. Krassas  
 I. Kyriazis  
 E. Maglara-Katsilambrou  
 Ch. Manes  
 A. Margioris  
 J.-M. Oppert  
 K. Paletas  
 A. Rissanen  
 M. Somali  
 A. Trichopoulou  
 I. Yovos

**BalNeSO**  
 Balkan Network for the Study of Obesity

46, Kifissias Ave.  
 115 26 Athens, Greece  
 T. +30210 698 5987-8  
 F. +30210 698 5986  
 info@balneso.com  
 www.balneso.com





## HMAO AWARDS

The Council of the Hellenic Medical Association for Obesity has unanimously decided to present with an award two abstracts, from those submitted to the 3rd Balkan Congress on Obesity. These awards aim to support the efforts of scientists and students from all over the world towards the scientific research in the field of obesity.

### Winner Authors

#### Basic Science

Angeliki Karamitri, Michael Lomax

*University of Nottingham, Division of Nutritional Sciences, Nottingham, UK*

**Combinatorial transcription factor regulation of the cAMP response element of the PGC-1 $\alpha$  promoter in white and brown preadipocyte cell lines**

#### Clinical Research

Mirjana Sumarac-Dumanovic, Dragan Micic, Jagoda Jorga, Danica Stamenkovic-Pejkovic, Goran Cvijovic, Aleksandra Kendereski, Svetlana Zoric

*Institute for Endocrinology, Diabetes and Diseases of Metabolism, Department for Metabolic Disorders, Belgrade, Serbia*

**Visfatin levels during euglycemic hyperinsulinemic clamp study in obese women**

The prizes will be awarded during the Opening Ceremony of the 3rd Balkan Congress on Obesity.

## INVITED SPEAKERS AND CHAIRPERSONS

- **Agirbasli Mehmet**  
*Professor, Department of Cardiology, Medical Faculty, Marmara University, Turkey*
- **Athyros Vassilios**  
*Internist, Assistant Director, 2nd University Department of Medical Medicine "Ippokratio" Hospital, Thessaloniki, Greece*
- **Babatzimopoulou Maria**  
*Professor, Department of Nutrition and Dietetics, Technological Educational Institute of Thessaloniki, Greece*
- **Blair N. Steven**  
*Professor, Arnold School of Public Health, University of Carolina, USA*
- **Caroli Margherita**  
*Head of Nutrition Unit of the Department of Prevention, Italy*
- **Chrousos P. George**  
*MD, MACP, MACE, FRCP (London)  
 Professor and Chairman, 1st Dept of Paediatrics, University of Athens Medical School  
 Children's Hospital Aghia Sophia, Athens, Greece*
- **Coppack Simon**  
*Centre of Diabetes and Metabolic Medicine, Barts & The London School of Medicine, UK*
- **Dedoussis George**  
*Adjunct Professor of Biology, Department of Nutrition & Dietetics, Harokopio University, Athens, Greece*
- **Dicker Dror**  
*Head of Internal Medicine and Obesity Clinic, Rabin Medical Center - Golda Campus, Israel*
- **Didaggelos Triantafyllos**  
*Lecturer of Internal Medicine, Aristotle University of Thessaloniki, Greece*
- **Dimitrov Dimiter**  
*Nutrigenomics Center Varna, Medical University of Varna, Bulgaria*
- **Galli-Tsinopoulou Assimina**  
*Lecturer in Paediatric Endocrinology, 4th Department of Paediatrics, Aristotle University of Thessaloniki, Papageorgiou Hospital, Thessaloniki, Greece*
- **Gonidakis Frangiskos**  
*Psychiatrist, Eating Disorders Unit, Athens University Medical School, 1st Psychiatric Department, "Aiginiteio" Hospital, Athens, Greece*
- **Grammatikaki Eva**  
*Dietician-Public Health Nutritionist, Department of Nutrition & Dietetics, Harokopio University, Athens, Greece*
- **Handjiev Svetoslav**  
*Professor, Department of Nutrition Dietetics and Metabolic Diseases, Bulgaria*
- **Hassapidou Maria**  
*Professor of Nutrition, Department of Nutrition and Dietetics, Technological Educational Institution of Thessaloniki, Greece*
- **Ioannidis Ioannis**  
*Internist-Diabetologist, 2nd Department of Internal Medicine, "Konstantopoulou" Hospital of Athens, Greece*
- **Kafatos Anthony**  
*Emeritus Professor of Preventive Medicine and Nutrition, School of Medicine, University of Crete, Greece*
- **Kaklamanos Ioannis**  
*Endocrinologist-Diabetologist, Athens, Greece*
- **Kapantais Efthymios**  
*Internist, Diabetologist, Head of Diabetes, Obesity & Metabolism Department, Metropolitan Hospital, Piraeus, Greece*
- **Karagiozoglou-Lampoudi Thomais**  
*Nutrition and Dietetics, School of Food Technology and Nutrition, Thessaloniki, Greece*
- **Karamitsos Dimitrios**  
*Professor Internal Medicine – Diabetology, Aristotle University of Thessaloniki, Greece*
- **Katsilambros Nicholas**  
*Professor of Internal Medicine, Medical School, University of Athens, Greece*
- **Kiortsis Dimitrios**  
*Associate Professor, Endocrinologist, Medical School, University of Ioannina, Greece*
- **Kokkinos Alexander**  
*MD, PhD, Lecturer in Internal Medicine, Athens University Medical School, "Laiko" General Hospital, Greece*
- **Komninou Despoina**  
*Mezitis Education and Research Institute, USA*
- **Kouidi Evaggelia**  
*Cardiologist, Associate Professor of Sports Medicine, Aristotle University of Thessaloniki, Greece*
- **Krassas Gerasimos**  
*Chairman, Department of Endocrinology, Diabetes and Metabolism, "Panagia" General Hospital, Thessaloniki, Greece*
- **Lenart Elisabeth**  
*Phd, Harvard, USA*
- **Lindberg Fedon Alexander**  
*Medical Director, Specialist in Internal Medicine, Dr. Lindberg's Klinik, Norway*
- **Linos Dimitrios**  
*Associate Professor in Surgery, Athens University Medical School, Greece*



- **Lobstein Tim**  
*Director, Childhood Obesity Programme, International Association for the Study of Obesity, UK*
- **Maislos Maximo**  
*Head of Atherosclerosis and Metabolism Unit, Soroka UMC Department of Medicine, Israel*
- **Manes Christos**  
*MD, PhD, Consultant Physician – Diabetologist, Thessaloniki, Greece*
- **Manios Ioannis**  
*Department of Nutrition & Clinical Dietetics, Harokopio University, Athens, Greece*
- **Marcos Ascensión**  
*Professor, Head of Immunonutrition Research Group, Department of Metabolism and Nutrition - Institute Frio, Spain*
- **Margioris Andrew**  
*Clinical Chemistry, Endocrinologist, School of Medicine, University of Crete, Greece*
- **Micic Dragan**  
*Professor, Institute of Endocrinology, Diabetes and Diseases of Metabolism, Department for Metabolic Disorders, Belgrade, Serbia*
- **Molnár Dénes**  
*University Medical. School of Pecs, Department of Paediatrics, Hungary*
- **Mortoglou Anastasios**  
*Endocrinologist, Director, Endocrine Department, Athens Medical Centre Hospital, Greece*
- **Mouslech Zadalla**  
*Endocrinologist, Greece*
- **Oppert Jean-Michel**  
*Department of Nutrition, Pitié-Salpêtrière Hospital (AP-HP), France*
- **Paletas Konstantinos**  
*Associate Professor of Internal Medicine, Medical School, Aristotle University of Thessaloniki, Greece*
- **Papadimitriou Vassiliki**  
*Institute of Biological Research and Biotechnology National Hellenic Research Foundation, Greece*
- **Papazoglou Dimitrios**  
*Assistant Professor of Internal Medicine, Medical School, Democritus University of Thrace, Greece*
- **Pervanidou Nena**  
*1st Department of Paediatrics, University of Athens, "Agia Sofia" Children's Hospital, Greece*
- **Pietrobelli Angelo**  
*Paediatric Endocrinologist, Newborn Intensive Unit Care, Verona Paediatric Clinic, Verona University, Italy*
- **Rayner Geof**  
*Associate Professor in Public Health - Brunel University Visiting Research Fellow- City University London, UK*
- **Roman Gabriela**  
*Associate Professor "Iuliu Hatieganu" University, Clinical Center of Diabetes, Nutrition, Metabolic Diseases, Romania*
- **Somali Maria**  
*Endocrinologist, Greece*
- **Spiliotis Bessie**  
*Associate Professor, University Hospital of Patras, Greece*
- **Theodorakis Michael**  
*Lecturer in Internal Medicine and Therapeutics University of Athens Medical School Department of Clinical Therapeutics Alexandra Hospital Athens, Greece*
- **Tourkantonis Achilleas**  
*Emeritus Professor of Internal Medicine, Medical School, Aristotle University of Thessaloniki, Greece*
- **Trichopoulou Antonia**  
*Department of Hygiene and Epidemiology, University of Athens, Medical School, Greece*
- **Tzotzas Themostoklis**  
*PhD, Endocrinologist, Department of Endocrinology, Diabetes & Metabolism, "Panagia" General Hospital, Thessaloniki, Greece*
- **Van Gaal Luc**  
*Department of Diabetology, Metabolism and Clinical Nutrition, Antwerp University, Belgium*
- **Vazeou - Gerasimidi Andriani**  
*Assistant Director, Scientific Director, 1st Department of Paediatrics, Diabetes Centre, "P. & A. Kyriakou", Greece*
- **Vlachos Dionysios**  
*General Physician, President of NGO Nutrition & Life*
- **Yiannakouris Nikolaos**  
*Assistant Professor in Biology-Physiology, Harokopio University of Athens, Greece*
- **Yovos Ioannis**  
*Endocrinologist, Professor, Aristotle University of Thessaloniki, Greece*
- **Yumuk Volkan**  
*Professor of Medicine, Istanbul University, Cerrahpasa Medical Faculty, Division of Endocrinology, Turkey*

## PROGRAMME AT-A-GLANCE

	Friday 17 October 2008	Saturday 18 October 2008	Sunday 19 October 2008	
	Crystal Hall	Crystal Hall	Crystal Hall	Dock Six Hall
0900				
0930		ORAL PRESENTATIONS Adipocyte products and diseases	LECTURE	ORAL PRESENTATIONS Childhood and adolescent obesity
1000		Obesity, diabetes and other related diseases	LECTURE	
1030			ROUND TABLE Obesity and cardiometabolic risk factors	LECTURE
1100		ROUND TABLE Obesity epidemic worldwide and in the Balkan Peninsula		CLINICAL WORKSHOP
1200		COFFEE BREAK	COFFEE BREAK	
1230			ROUND TABLE Physical activity - genes: correlations and interactions with obesity and health	
1400		SPONSORED SYMPOSIUM SANOFI AVENTIS	LECTURE	CLINICAL WORKSHOP Practical issues on clinical investigation and treatment of childhood obesity
1430		LECTURE	POSTER SESSION (Grand Pietra Hall)	
1530	ORAL PRESENTATIONS Intervention and public health programmes Nutrition and physical activity Obesity epidemic worldwide and in the Balkan countries	POSTER SESSION (Grand Pietra Hall)	LECTURE	
1600		LECTURE	CLOSURE	
1630	ROUND TABLE Public health policies	ROUND TABLE Global therapeutic approach		
1700				
1730	COFFEE BREAK	COFFEE BREAK		
1800				
1900	OPENING CEREMONY	ROUND TABLE New concepts in the metabolic syndrome (MS): a treatable disease		
1930	OPENING LECTURE	LECTURE		
2000	LECTURE			
2030	LECTURE			
2100	LECTURE	SPONSORED SYMPOSIUM ABBOTT LABORATORIES (HELLAS)		
2130	WELCOME RECEPTION (Grand Pietra Hall)			

# SCIENTIFIC PROGRAMME



## FRIDAY OCTOBER 17 2008

Crystal Hall

1430 - 1600

**ORAL PRESENTATIONS** - Chairpersons: M. Hassapidou - Ch. Manes**Intervention and public health programmes****Nutrition and physical activity****Obesity epidemic worldwide and in the Balkan countries****OP01****INCREASING PREVALENCE OF OBESITY, DIABETES, AND PREDIABETES (IFG & IGT) IN A SCREENING PROGRAM IN TIRANA - THE CAPITAL OF ALBANIA**Florian Toti<sup>1</sup>, Agron Ylli<sup>1</sup>, Thanas Furerraj<sup>1</sup>, Gazmend Bejtja<sup>2</sup>, Gerond Husi<sup>1</sup>, Odeta Lena<sup>3</sup>*1 University Hospital Centre Service of Endocrinology & Metabolic Diseases, Tirana, Albania**2 Institute of Public Health, Tirana, Albania**3 INSTAT, Tirana, Albania***OP02****FOOD CONSUMPTION PATTERNS AND WEIGHT GAIN IN UNDERWEIGHT, NORMALWEIGHT, OVERWEIGHT, AND OBESE PREGNANT WOMEN OF TEHRAN**Maryam Mohammadi<sup>1</sup>, Ghasem Fadavi<sup>2</sup>, Fatemeh Mohammadi<sup>3</sup>*1 Faculty of Nursing and Midwifery, Shaheed Beheshti University, MS, Tehran, Iran,**2 Standard and Industrial Research Institute, Karaj, Iran,**3 National Nutrition and Food Technology Research Institute (NNFTRI), Tehran, Iran***OP03****THE IMPACT OF LIFESTYLE PARAMETERS ON OBESITY STATUS**Maria Hassapidou<sup>1</sup>, Myrto Kaklamanou<sup>2</sup>, George Vlahavas<sup>1</sup>, Ioannis Kaklamanos<sup>2</sup>, Efthymios Kapantais<sup>2</sup>, Sousana Papadopoulou<sup>1</sup>*1 Department of Nutrition and Dietetics, Technological Educational Institution of Thessaloniki, Thessaloniki, Greece**2 Hellenic Medical Association of Obesity, Athens, Greece***OP04****A DIETARY INTERVENTION PROGRAM FOR PSYCHIATRIC PATIENTS BASED ON THE MEDITERRANEAN DIET**

Maria Hassapidou, Konstantina Papadimitriou, Niki Athanasiadou

*Department of Nutrition and Dietetics, Technological Educational Institution of Thessaloniki, Thessaloniki, Greece***OP05****PREDICTORS OF ATTRITION IN A WEIGHT LOSS CONTINUOUS CARE PROGRAMME IN GREECE**

Daphne Kaklamanou, Chris J. Armitage, Myrto Kaklamanou

*University of Sheffield, United Kingdom***OP06****EFFECT OF A HIGH DAIRY CALCIUM DIET ON BODY WEIGHT AND COMPOSITION OF POSTMENOPAUSAL WOMEN - LESSONS FROM A 1 - YEAR STUDY**

George Moschonis, Evangelia Grammatikaki, Anastasia Vandorou, Aikaterini-Eustathia Kyriakou, Vasiliki Dede, Anthi Naoumi, Sofia Kostea, Sofia Tanagra, Yannis Manios

*Harokopio University of Athens, Department of Nutrition and Dietetics, Athens, Greece*

1600 - 1730

**ROUND TABLE** - Chairpersons: I. Kaklamanos - A. Tourkantonis**Public health policies**

Childhood obesity prevention (T. Lobstein)

Directions and actions for the prevention and treatment of childhood obesity in US and EU (I. Manios)

Initiatives by WHO (A. Trichopoulou)

Community-based approaches (G. Rayner)

1730 - 1800

**COFFEE BREAK**



**1800 - 1900**    **OPENING CEREMONY**

**1900 - 1930**    **OPENING LECTURE** - Chairperson: N. Katsilambros

Physical activity in the prevention and management of obesity (J.-M. Oppert)

**1930 - 2000**    **LECTURE** - Chairperson: E. Kapantais

"Oh that this too too solid flesh would melt": excess fluid in obesity (S. Coppack)

**2000 - 2030**    **LECTURE** - Chairperson: D. Karamitsos

Non-exercise activity thermogenesis (NEAT) as a causative factor for weight gain. Practical issues for the treatment of obesity, as well as for primary and secondary prevention (A. Mortoglou)

**2030 - 2100**    **LECTURE** - Chairperson: I. Kaklamanos

Weight loss: benefits beyond the loss (I. Yovos)

**2100**    **WELCOME RECEPTION**

*(will take place at the Grand Pietra Hall of the congress hotel)*



## SATURDAY OCTOBER 18 2008

Crystal Hall

0900 - 1030

**ORAL PRESENTATIONS** - Chairpersons: S. Handjiev - Z. Mouslech**Adipocyte products and diseases****Obesity, diabetes and other related diseases****OP07****VISFATIN AND EOTAXIN LEVELS IN STATES OF THYROID DYSFUNCTION: RELATIONSHIP WITH BODY WEIGHT AND COMPOSITION ALTERATIONS AFTER ACHIEVEMENT OF EUTHYROIDISM**Nikolaos Pontikides<sup>1</sup>, Foteini Papadopoulou<sup>1</sup>, Argyrios Dumas<sup>2</sup>, Maria Bougoulia<sup>1</sup>, Kostas Tziomalos<sup>1</sup>, Gerasimos E. Krassas<sup>1</sup>*1 Department of Endocrinology, Diabetes and Metabolism, Pananagia General Hospital,**2 3rd Department of Nuclear Medicine, Aristotle University, Papageorgiou Hospital, Thessaloniki, Greece***OP08****VISFATIN LEVELS DURING EUGLYCEMIC HYPERINSULINEMIC CLAMP STUDY IN OBESE WOMEN**Mirjana Sumarac-Dumanovic<sup>1</sup>, Dragan Micic<sup>1</sup>, Jagoda Jorga<sup>2</sup>, Danica Stamenkovic-Pejkovic<sup>1</sup>, Goran Cvijovic<sup>1</sup>, Aleksandra Kendereski<sup>1</sup>, Svetlana Zoric<sup>1</sup>*1 Institute for Endocrinology, Diabetes and Diseases of Metabolism, Belgrade, Serbia**2 Institute for Hygiene, Belgrade, Serbia***OP09****ADIPONECTIN SIGNAL TRANSDUCTION LEADING TO MACROPHAGE TOLERANCE TO PRO-INFLAMMATORY STIMULI VIA INDUCTION OF IRAK-M**

Vassiliki Zacharioudaki, Ariadni Androulidaki, Christos Tsatsanis, Andrew Margioris

*School of Medicine, University of Crete, Heraklion, Greece***OP10****ADIPOCYTOKINES AND GHRELIN LEVELS OF TEEN-AGE ARAB GIRLS AS INFLUENCED BY DIET AND SLEEPING PATTERN**

Dara Al-Disi, Abdul-Aziz Al-Othman, Lateefa Khanam, Nasser Al-Daghri, Moammad Al-Saif, Shaun Sabico

*King Saud University, Riyadh, Kingdom of Saudi Arabia***OP11****COMBINATORIAL TRANSCRIPTION FACTOR REGULATION OF THE CAMP RESPONSE ELEMENT OF THE PGC-1A PROMOTER IN WHITE AND BROWN PREADIPOCYTE CELL LINES**

Angeliki Karimitri, Michael Lomax

*Nutritional Sciences, School of Biosciences, University Of Nottingham, Leicester, United Kingdom***OP12****EFFECT OF CHOLESTEROL REDUCTION ON BAROREFLEX SENSITIVITY IN OBESE AND NONOBESE PATIENTS WITH TYPE 2 DIABETES**

Pinelopi Grigoropoulou, Nicholas Tentolouris, Despoina Perrea, Evanthia Diakoumopoulou, Stavros Liatis, Ioanna Eleftheriadou, Kleopatra Alexiadou, Konstantinos Kyriakopoulos, George Panagoulas, Ioanna Balla, Nicholas Katsilambros

*Laiko General Hospital, Athens University Medical School, Athens, Greece*

1030 - 1200

**ROUND TABLE** - Chairperson: A. Kafatos**Obesity epidemic worldwide and in the Balkan Peninsula**

Greek epidemic obesity. Relations to nutrition and physical activity (A. Kafatos)

Obesity and its implications in Romania (G. Roman)

Obesity in Turkey (V. Yumuk)

Current trends of obesity in Bulgaria (S. Handjiev)

Obesity in Serbia (D. Micic)

Obesity in Greece (Th. Tzotzas)

1200 - 1230

**COFFEE BREAK**



- 1230 - 1400** **SPONSORED SYMPOSIUM SANOFI AVENTIS** - Chairperson: D. Kiortsis  
**Is diabetes the storm of our century?**  
 Introduction (D. Kiortsis)  
 Greek epidemiological data (V. Athyros)  
 Is diabetes the vehicle to re-think about treatment? (L. van Gaal)  
 Questions - Conclusion (D. Kiortsis)
- 1400 - 1430** **LECTURE** - Chairperson: N. Yiannakouris  
 Nutrigenomics and personalised medicine in obesity (D. Dimitrov)
- 1430 - 1530** **POSTER SESSION** - Chairpersons: D. Dimitrov - M. Somali  
**PP001 - PP054**
- 1530 - 1600** **LECTURE** - Chairperson: D. Kiortsis  
 New therapeutic approach of the metabolic syndrome (L. van Gaal)
- 1600 - 1730** **ROUND TABLE** - Chairpersons: G. Roman - Th. Tzotzas  
**Global therapeutic approach**  
 How diets influence somatic consequences (D. Komninou)  
 Cognitive-behavioural approach for weight maintenance (F. Gonidakis)  
 Surgery: which technique, when and for whom (D. Linos)
- 1730 - 1800** **COFFEE BREAK**
- 1800 - 1930** **ROUND TABLE** - Chairpersons: G. Krassas - A. Margioris  
**New concepts in the metabolic syndrome (MS): a treatable disease**  
 New concepts in the aetiology of MS: MS as an inflammatory disease. Chronic and postprandial (PPD) inflammatory reaction. Food ingredients and PPD (A. Margioris)  
 New concepts in the pathophysiology of MS: new roles of adipokines and gastroenteric hormones in MS (M. Theodorakis)  
 New concepts in the treatment of MS: dietary intervention, life style modifications, drugs (D. Kiortsis)
- 1930 - 2000** **LECTURE** - Chairperson: D. Micic  
 Thyroid dysfunction and morbid obesity: classical and new concepts (G. Krassas)
- 2000 - 2130** **SPONSORED SYMPOSIUM ABBOTT LABORATORIES (HELLAS)** - Chairperson: A. Mortoglou  
**6 year presence of sibutramine - the Greek experience**  
 Open discussion  
 Guests: I. Ioannidis, D. Kiortsis, Th. Tzotzas

## SUNDAY OCTOBER 19 2008

Crystal Hall

0930 - 1000

**LECTURE** - Chairperson: T. Didagelos

Metabolic syndrome and atherogenesis during schizophrenia and antipsychotic therapies (V. Athyros)

1000 - 1030

**LECTURE** - Chairperson: M. Babatzimopoulou

Antioxidants and free radicals. Evaluation of the antioxidant properties of commercial fruit &amp; vegetable shots and juices (V. Papadimitriou)

1030 - 1200

**ROUND TABLE** - Chairpersons: I. Ioannidis - M. Maislos**Obesity and cardiometabolic risk factors**

Inflammation and obesity (A. Marcos)

Obesity and emerging cardiovascular risk factors (M. Agirbasli)

Normometabolic obesity: myth or reality? (D. Dicker)

1200 - 1230

**COFFEE BREAK**

1230 - 1400

**ROUND TABLE** - Chairpersons: A. Galli-Tsinopoulou - Th. Tzotzas**Physical activity - genes: correlations and interactions with obesity and health**

Fitness or fatness: which is the more important determinant of health? (S. N. Blair)

Impact of physical activity on children's body weight and other health indices (E. Grammatikaki)

Gene interactions and physical activity in childhood obesity (G. Dedoussis)

The role of exercise in disease and quality of life (E. Kouidi)

1400 - 1430

**LECTURE** - Chairperson: A. Vlachos

The role of protein sparing modified fast and low carbohydrate VLCD in the treatment of obesity, diabetes and metabolic syndrome (F. A. Lindberg)

1430 - 1530

**POSTER SESSION** - Chairpersons: D. Dicker - A. Kokkinos**PP055 - PP102**

1530 - 1600

**LECTURE** - Chairperson: I. Yovos

Drugs of everyday use and obesity (M. Maislos)

1600 - 1630

**CLOSURE**



## Dock Six Hall

0900 - 1030

**ORAL PRESENTATIONS** - Chairpersons: K. Paletas - V. Yumuk  
**Childhood and adolescent obesity**
**OP13**  
**PSYCHOLOGICAL ASPECTS OF OBESITY IN CHILDHOOD**

Oana-Maria Udrea

*"Grigore Alexandrescu" Clinical Emergency Hospital for Children, Bucharest, Romania*
**OP14**  
**THE INDEX WAIST-TO-HEIGHT RATIO (WHTR) IN ADOLESCENT OBESITY: RESULTS FROM THE PANHELLENIC SURVEY**
Themistoklis Tzotzas, Efthymios Kapantais, Myrto Kaklamanou, Konstantinos Tziomalos, Maria Hassapidou, Ioannis Kaklamanos  
*Hellenic Medical Association for Obesity, Athens, Greece*
**OP15**  
**COMPARISON OF PERCENT BODY FAT ESTIMATIONS IN ADOLESCENTS USING FOUR DIFFERENT FIELD METHODS**

Vassilis Zafiropulos, Zacharias G. Fthenakis, Dimitra Balaska, Athanassia Markaki, Petros Dimitropoulakis, George A Fragkiadakis, Eli Andrioti, Irii Giakoumaki

*Laboratory of Applied Physics & Measurement of Human Body Composition, Technological Educational Institute of Crete & Center for Technological Research – Crete, Greece*
**OP16**  
**PRE- AND POSTNATAL PREDICTORS OF CHILDHOOD OBESITY. THE PROGRESS STUDY**

Paraskevi-Eirini Siatitsa, George Moschonis, Alexandra Koumpitski, Aikaterini Siopi, Aliko-Eleni Farmaki, Maria Kantilafti, Anthi Naoumi, Sofia Tanagra, Aikaterini Kondaki, Yannis Manios.

*Department of Nutrition and Dietetics, Harokopio University of Athens, Athens, Greece.*
**OP17**  
**THE INFLUENCE OF "BEHAVIOR MODIFICATION" INTERVENTIONAL PROGRAM ON BMI IN THE OBESE STUDENTS OF THE PUBLIC HIGH SCHOOLS OF KHORRAMABAD, IRAN**

Toulabi Tahereh, Khosh Niyyat Mohsen, Amini Fariba, Nazari Hedayat, Mardani Mahnaz

*1 Lorestan University of Medical Sciences, Khorram, Abad, Iran**2 Tehran University of Medical Sciences, Tehran, Iran**3 Lorestan University of Medical Sciences, Khorram, Abad, Iran**4 Lorestan University of Medical Sciences, Khorram, Abad, Iran**5 Lorestan University of Medical Sciences, Khorram, Abad, Iran*
**OP18**  
**DRAFT FOR REDUCING CHILDHOOD OBESITY - NOT STRETCH OR BUSHING**
Ana Paula Alves <sup>1</sup>, Susana Cunha <sup>1</sup>, Jacinta Ribeiro <sup>1</sup>, Carlos Valente <sup>1</sup>, Liliana Carola <sup>2</sup>, Manuela Barros <sup>2</sup>*1. Unidade De Saúde De Valongo E Ermesinde**2. Estagárias da Faculdade de Ciências de Alimentação e Nutrição da Universidade do Porto*

1030 - 1100

**LECTURE** - Chairperson: D. Papazoglou  
 Childhood obesity and depression (N. Pervanidou)

## SUNDAY OCTOBER 19 2008

Dock Six Hall

## CLINICAL WORKSHOP

## Practical issues on clinical investigation and treatment of childhood obesity

1100 - 1115

## WELCOME REMARKS

M. Caroli - G. Chrousos - I. Kaklamanos

1115 - 1200

## OPENING LECTURE

Growth, development and childhood obesity (G. Chrousos)

1200 - 1230

## COFFEE BREAK

1230 - 1630

## LECTURES

## A

1230 - 1250

How can we investigate an obese child? (A. Gerasimidi-Vazeou)

1250 - 1310

Body composition. Do we need to evaluate it? Which are the best methods? (A. Pietrobelli)

1310 - 1320

Discussion

## B

1320 - 1340

Which is the ideal diet for an obese child or adolescent? (M. Hassapidou)

1340 - 1400

Physical activity. What kind and how often? (E. Lenart)

1400 - 1410

Discussion

## C

1410 - 1430

Individual, family or community approach? (M. Caroli)

1430 - 1450

Defining and labelling "healthy" and "unhealthy" food (T. Lobstein)

1450 - 1500

Discussion

## D

1500 - 1530

Acute and chronic complications; how to follow up and how to treat (B. Spiliotis)

1530 - 1545

Discussion

## E

1545 - 1600

Are drugs suitable for morbidly obese children? (D. Molnar)

1600 - 1615

Is bariatric surgery suitable for morbidly obese children? (T. Karagiozoglou-Lampoudi)

1615 - 1630

Discussion

This workshop is dedicated to the memory of Vassos Haralambides, a dear friend and colleague, who is no longer with us.

Hellenic Medical Association for Obesity



## REGISTRATION

### ON-SITE REGISTRATION

You may register on site at the Congress Secretariat, which will be operating at the congress venue at the following hours and days:

Friday,	17th October 2008,	08:00 - 20:30
Saturday,	18th October 2008,	08:00 - 21:30
Sunday,	19th October 2008,	08:00 - 17:30

### CONGRESS REGISTRATION FEES (ON-SITE)

CATEGORY OF REGISTRATION	8th Macedonian Congress on Nutrition & Dietetics	3rd Balkan Congress on Obesity	Participation in both Congresses
Nutrition Professionals - Members of BalNeSO	€ 100	€ 100	€ 150
Nutrition Professionals - <b>Non</b> members of BalNeSO	€ 120	€ 120	€ 180
Physicians / Other Scientists - Members of BalNeSO	€ 120	€ 120	€ 180
Physicians / Other Scientists - <b>Non</b> Members of BalNeSO	€ 140	€ 140	€ 200
Students	€ 30	€ 30	€ 40
Accompanying persons	€ 50	€ 50	€ 60

**Notes:**

- Students entitled to reduced registration fees are kindly requested to provide the PCO with the relevant documentation (valid student pass or official document from the institution they attend) upon registration.
- The registration fees do not include insurance of participants against accidents, sickness, cancellation, theft, property loss or damage. Participants are advised to take out adequate personal insurance.

The delegate's registration fee includes:

- ▷ Admission to all scientific sessions
- ▷ Admission to the opening ceremony
- ▷ Admission to the exhibition
- ▷ All congress material, i.e. congress satchel, final programme - book of abstracts
- ▷ Certificate of attendance
- ▷ Coffee breaks
- ▷ Welcome reception

The accompanying person's registration fee includes:

- ▷ Admission to the opening ceremony
- ▷ Welcome reception

## GENERAL INFORMATION

### CONGRESS VENUE

The 3rd Balkan Congress on Obesity takes place at Porto Palace hotel in Thessaloniki, from October 17th to October 19th, 2008. The scientific sessions take place at the Crystal Hall and Dock Six Hall. The poster sessions take place at the Grand Pietra Hall.

### LANGUAGE

The official language of the 3rd Balkan Congress on Obesity is English with simultaneous translation in Greek.

### EXHIBITION

A commercial exhibition of pharmaceutical companies, medical equipment companies, food industries, etc. will be held in the Grand Pietra Hall during congress days. The exhibition will be open during congress days, from 08:00 to 20:00.

### BADGES

Delegates' badges are available at the Congress Secretariat in the congress venue throughout the duration of the congress. Please keep in mind that it is necessary for all participants to wear their badges both in the congress and the in the exhibition area.

<b>Committee members</b>	Blue
<b>Speakers, chairpersons</b>	Red
<b>Participants</b>	Orange
<b>Students</b>	Yellow
<b>Exhibitors / AC&amp;C Staff</b>	Light Blue
<b>Accompanying persons</b>	Pink

### AUDIOVISUAL EQUIPMENT

A Speaker Ready Room operates throughout the duration of the congress. Speakers are kindly requested to hand in all material of their presentation (slides, USB-key, CD-Rom, DVD) at least one hour before their scheduled presentation time. If the presentation is scheduled early in the morning, speakers are kindly requested to check their presentation at the Speaker Ready Room the day before.

Please note that slides should be 5cm x 5cm each. All versions of MS power point are accepted excluding Mac.

The following equipment are available:

- Laptop
- Data video projector
- Double slides projector
- Overhead projector
- Laser pointer





## EUROPEAN CME CREDITS (UEMS - EACCME)

The 8th Macedonian Congress on Nutrition and Dietetics and 3rd Balkan Congress on Obesity is accredited by the European Accreditation Council for Continuing Medical Education (EACCME) to provide 22 European CME credits to medical specialists. The EACCME is an institution of the European Union of Medical Specialists (UEMS).

A certificate of attendance will be provided to all delegates on Sunday, October 19th from 10:00 until congress closure.

## POSTER PRESENTATION

For posters to be exhibited, please note:

- The necessary material for displaying the posters will be distributed by the Congress Secretariat, operating in the congress venue.
- Poster panel numbers will be displayed at the top of the panels.
- The corresponding poster panel number for each poster presented has been provided by the PCO.
- Mounting and unmounting of posters will be done as specified in the information already sent to poster presenters by the PCO.
- As a courtesy to other presenters, participants are kindly requested not to move or remove poster numbers or change the order of the assigned poster boards.
- It is essential that presenters clear their poster board promptly and within the schedule. Material left on a poster board after the removal deadline will be discarded.
- The PCO is not responsible for material left behind, lost, stolen or damaged.

## SOCIAL EVENTS

### Opening Ceremony

The Opening Ceremony of the 3rd Balkan Congress on Obesity will be held on Friday, 17th 2008, at 18:00 in the Crystal Hall at Porto Palace Hotel.

### Welcome Reception

The Welcome Reception of the 3rd Balkan Congress on Obesity will be held on Friday, 17th 2008, at 21:00 in the Grand Pietra Hall at Porto Palace Hotel.

### Closing Ceremony

The Closing Ceremony of the 3rd Balkan Congress on Obesity will be held on Sunday, 19th 2008, at 16:30 in the Crystal Hall at Porto Palace Hotel.

## GENERAL INFORMATION ABOUT GREECE

### LANGUAGE

Greek is the official language. Most Greeks speak English as a foreign language.

### TELECOMMUNICATIONS

The international access code for Greece is +30. The outgoing code is 00 followed by the relevant country code (e.g. 001 for the USA or Canada, 0044 for the United Kingdom). Public payphones are available all over Greece and use phone cards, which can be purchased from kiosks. For information concerning mobile phone use in Greece (telephone transmissions are based on GSM technology), please ask your provider.

### TIME

Greece is GMT+2. Greece 12:00 - London 10:00

### ATMS

They are widely available in Greece for Master or Visa cardholders.

### BANKS

Banks are open from Monday to Thursday 08:00-14:30 and on Friday 08:00-14:00.

### CLIMATE

The climate in Greece is mostly dry and temperate. At the middle of October, temperatures usually range from 15° to 27° Celsius with frequent rainfalls. In Thessaloniki, the temperature is commonly 2 to 5 degrees lower than in the rest of the country.

### CREDIT CARDS

All major credit cards are accepted in almost all hotels, shops and restaurants. Stickers in the front windows will advise you as to which cards are accepted.

### CURRENCY

EURO is the official currency. Information about exchange rates can be found at hotel lobbies and banks.

### EMERGENCY PHONE NUMBERS

Ambulance .....	166
Emergency Fire Brigade .....	199
Emergency Hospitals .....	1434
English-Greek medical information .....	210 8983146
Forest Service .....	191
Athens International Airport .....	210 3530000
Thessaloniki International Airport .....	2310 473212
Pharmacies on duty .....	1434
Poisoning Treatment Centre .....	210 7793777
Police .....	112
SOS Doctors .....	1016
Telephone Directory Service .....	11888
Tourist Police .....	171



### HEALTHCARE

Emergency treatment is free to all, in public hospitals. Public and private hospitals can be found in big cities. Small and large islands usually have hospitals and health centres.

### POPULATION

Greece has 11,000,000 inhabitants, the majority of whom live in the big cities.

### RELIGION

The majority of Greeks (95%) are Christian Orthodox.

### RESTAURANTS

Restaurants and taverns are normally open for lunch from 12:30 to 16:00 and for dinner from 19:00 to midnight. Fast food and souvlaki shops usually serve food all day long, and some of them stay open till late at night. Cafes and bars are open all day from about 08:00 until late in the night.

### SHOPPING HOURS

Varying; downtown Monday - Friday 09:00-20:00 non-stop, Saturday 09:00-15:00; Suburbs Monday - Wednesday 09:00-14:30, Tuesday - Thursday - Friday 09:00-14:00 and 15:30-20:30, Saturday 09:00-15:00; Supermarkets: Monday - Friday 09:00-21:00, Saturday 09:00-20:00; On Sundays all shops are closed, except tourist shops.

### TIPPING

Tipping is not compulsory but is quite usual in Greece.

### WATER

Tap water is drinkable in Thessaloniki. For places outside Thessaloniki water quality varies, so please ask at your hotel reception.

## GENERAL INFORMATION ABOUT THESSALONIKI

The Metropolitan area of Thessaloniki and its neighbouring municipalities has a population of about 745,000 and it hosts numerous of administrative and public services, as well as numerous of socio-economic organisations, industries, manufactures and department stores. It is the home of the Ministry of Macedonia & Thrace, the Region of Central Macedonia and the Prefecture of Thessaloniki. The BALCINET (Balkan Cities Network) has its headquarters in Thessaloniki and it is the network of thirty-two major cities located in eight different Balkan countries ([www.balcinet.org](http://www.balcinet.org)).

Every year, Thessaloniki becomes the world's focal point due to its International Trade Fair, a commercial, economic, political and social event which takes places in September and is a great promotion and celebration for the city.

Thessaloniki's location is very significant not only for the Pan-European transportation network, including road, air, railway and marine transport, but also internationally.

In Thessaloniki are also situated:

- ♦ The country's second largest International Port
- ♦ The city's Railway Station, with domestic and international destinations
- ♦ The city's Bus Terminal (KTEL), only to domestic destinations

## Περισσότερες Επιλογές... Χωρίς Ζάχαρη

Ανταποκρινόμενοι στις σύγχρονες τάσεις αλλά και τις διαφορετικές ανάγκες των καταναλωτών μας, διευρύνουμε τη μεγάλη γκάμα των προϊόντων μας και με αναψυκτικά χωρίς ζάχαρη, δίνοντας έτσι, τη δυνατότητα στους καταναλωτές να απολαμβάνουν άφοβα τα αγαπημένα τους προϊόντα.


Επιπλέον, με την εισαγωγή του νέου Οδηγού Διατροφής «Μάθε τι Τρως» στις ετικέτες των προϊόντων μας, δίνουμε τη δυνατότητα στους καταναλωτές να κάνουν συνειδητοποιημένες επιλογές, με βάση αυτό που ταιριάζει περισσότερο στις διατροφικές τους ανάγκες. Αφού θα μπορούν να δουν πόσες θερμίδες, αλάτι, σάκχαρα και λιπαρά περιέχει η κάθε μερίδα του αγαπημένου τους αναψυκτικού, σε σχέση με την Ενδεικτική Ημερήσια Πρόσληψη.

Μπορείτε ήδη να βρείτε τον πίνακα με τις διατροφικές πληροφορίες στις ετικέτες των περισσότερων προϊόντων μας

Ένα ποτήρι Coca-Cola Zero 250ml περιέχει:

Θερμίδες	Σάκχαρα	Λιπαρά	Κορεσμένα	Νάτριο
0,7	0g	0g	0g	0g
0%	0%	0%	0%	0%

% της Ενδεικτικής Ημερήσιας Πρόσληψης (GDA)  
με βάση δίαιτα 2000 θερμίδων

Κάθε συσκευασία 1.5LT = 6  των 250ml

Μάθε τι Τρως με μια ματιά!



*The Coca-Cola Company*®

# BOOK OF ABSTRACTS









## ORAL PRESENTATIONS

OP01

### INCREASING PREVALENCE OF OBESITY, DIABETES, AND PREDIABETES (IFG & IGT) IN A SCREENING PROGRAM IN TIRANA - THE CAPITAL OF ALBANIA

Florian Toti<sup>1</sup>, Agron Ylli<sup>1</sup>, Thanas Furerraj<sup>1</sup>, Gazmend Bejtja<sup>2</sup>, Gerond Husi<sup>1</sup>, Odeta Lena<sup>3</sup>

1) Service of Endocrinology & Metabolic diseases University Hospital center "Mother Theresa" Tirana, Albania

2) Institute of Public Health Tirana, Albania

3) INSTAT – Tirana, Albania

**Introduction:** Diabetes and obesity are becoming increasingly important as causes of morbidity and mortality in developing countries.

**Aims:** To evaluate the prevalence of undiagnosed diabetes and weight patterns in adults living in Tirana district.

**Methods:** Measurement of capillary blood glucose and anthropometric measures for healthy people not diagnosed with diabetes. Diabetes is defined according to ADA criteria; fasting glycaemia  $\geq 126$  mg/dl or casual glycaemia  $\geq 200$  mg/dl, IFG  $\geq 110$  and  $< 126$  mg/dl, and IGT 120-200 mg/dl.

**Results:** 2450 participants in the study, but all the data collected for 2211 of them. M/F 1190/1021, mean age  $50.8 \pm 14.02$  yrs, mean BMI  $26.3 \pm 1.6$  kg/m<sup>2</sup>. Prevalence of obesity was 21.4%, equally present in both sexes, overweight 44.61% (M/F 48.19/40.45%) ( $p < 0.05$ ). The obesity was more frequent in the group 40-60 yrs old 25%, but 14.8% in the group 30-40 yrs old. Prevalence of Diabetes 4.07%, IFG 2.8% of the total, but 17.03% for persons with fasting glycaemia, IGT 16.01%. The overweight and obese persons had the tendency to be more frequently diagnosed with diabetes, 4.88% ( $p = 0.07$ ) and 13% ( $p < 0.03$ ), more anamnesis for diabetes ( $p < 0.02$ ) and suffer from HTA ( $p < 0.05$ ). In the multivariate analysis the obesity and familiar anamnesis were risk factor for Diabetes or IFG, whilst HTA, sex and age were not.

**Conclusions:** The prevalence of Obesity, Diabetes and prediabetes is increasing rapidly in Albania and especially in the younger age group. It is important to raise the awareness of younger population about creating healthy eating habits, physical activity, as well as the frequency of controlling blood glucose level.

### FOOD CONSUMPTION PATTERNS AND WEIGHT GAIN IN UNDERWEIGHT, NORMALWEIGHT, OVERWEIGHT, AND OBESE PREGNANT WOMEN OF TEHRAN

Maryam Mohammadi<sup>1</sup>, Ghasem Fadavi<sup>2</sup>, Fatemeh Mohammadi<sup>3</sup>

1. Faculty of Nursing and Midwifery, Shaheed Beheshti University, MS, Tehran, Iran

2. Standard and Industrial Research Institute, Karaj, Iran

3. National Nutrition and Food Technology Research Institute (NNFTRI), Tehran, Iran

**INTRODUCTION:** With respect to importance role of nutrition in pregnancy outcome and weight gain during pregnancy in overweight/obesity in later life, this study was conducted.

**AIM:** Assessing the food consumption patterns and weight gain in pregnant women which could contribute to the prevention of overweight and obesity as major risk factors of non-communicable disease.

**Materials:** This study was a descriptive-analytical study with quota sampling based on the aim. The sample size were determined 265 pregnant women as clients of prenatal care clinics of Shaheed Beheshti University of Medical Sciences based on number of daily clients of each hospital. Instrument for data gathering was a questionnaire divided into two sections: 1) demographic, personal, socio-economic data and pregnancy history and 2) 24 hour dietary recall which was completed by expert interviewers through structured interviews. Consumption of food groups were compared with Food Guide Pyramid (FGP) recommendations. Mothers' height and weight were measured and BMI (Body mass index) were computed. Pre-pregnancy weight was obtained from the historical files. Statistical analysis was done by using SPSS, Chi-squared, student and paired t-test, pearson correlation and logistic regression.

**Results:** In comparison with FGP recommendations for pregnant women, they consumed less bread/cereals ( $7.9 \pm 3.7$  servings), and milk/dairy products ( $2.0 \pm 1.3$  servings), but more meat/their alternatives ( $3.1 \pm 3.4$  servings), vegetables ( $5.6 \pm 3.3$  servings), fruits ( $5.5 \pm 4.0$  servings), and sweets/fats. More than half of the population studied was normal weight, 17% were underweight, 17% were overweight, and 12.8% were obese. Mean of weight gain based on gestational age was not different from recommended level. However, mean of weight gain in overweight ( $9.9 \pm 6.1$  vs.  $6.6 \pm 1.5$  kg,  $p < 0.001$ ) and obese ( $9.6 \pm 6.3$  vs.  $6.0$  kg,  $p < 0.01$ ) groups was significantly higher than recommended level. Weight gain in pregnant women was correlated with extent of house ( $r = 0.13$ ,  $p < 0.05$ ) and monthly income ( $r = 0.18$ ,  $p < 0.01$ ). Logistic regression showed that overweight/obesity decreased 0.14 times with employment of mother (CI: 0.05-0.36,  $p < 0.001$ ) and increased 1.29 times with age (CI: 1.14-1.47,  $p < 0.001$ ).

**Conclusions:** Healthy eating recommendations, monitoring weight gain during pregnancy and informing about the proper weight gain are the main strategies for preventing post partum overweight/obesity especially in obese and older women.

**Key words:** Pregnant women, Food Guide Pyramid (FGP), Weight gain, Overweight, Obesity

OP02



OP03

**THE IMPACT OF LIFESTYLE PARAMETERS ON OBESITY STATUS**Maria Hassapidou<sup>1</sup>, Myrto Kaklamanou<sup>2</sup>, George Vlahavas<sup>1</sup>, Ioannis Kaklamanos<sup>2</sup>, Efthymios Kapantais<sup>2</sup>, Sousana Papadopoulou<sup>1</sup><sup>1</sup> Department of Nutrition and Dietetics, Technological Educational Institution of Thessaloniki, Thessaloniki, Greece<sup>2</sup> Hellenic Medical Association for Obesity, Athens, Greece**Introduction** The aim of this study was to estimate the effect of lifestyle parameters on anthropometric characteristics.**Methodology** The subjects were 17920 adult Greeks (8423 men and 9464 women). All subjects completed a questionnaire regarding lifestyle parameters. Anthropometric measurements were also recorded.**Results** Results for BMI and waist circumference indicated that proportionally fewer young subjects were overweight or obese compared to middle aged and elderly. As the level of education increases, obesity decreases with differences being more pronounced for BMI and waist circumference. Unmarried and married subjects had approximately the same distribution with respect to BMI. More divorced were overweight but fewer were obese compared to others. There were more overweight (BMI>25) subjects among heavy smokers than others. Women tried more often to lose weight than men and they have also lost 10% of their body weight more times than men. Women exercised less than men. Those who had increased BMI, exercised less than others. Women devoted less time for recreational activities compared to men, while those with lower BMI values spent more time outside home than those with increased BMI..**Conclusion** In conclusion, this study showed that overweight and obesity was influenced by lifestyle habits and physical activity.

OP04

**A DIETARY INTERVENTION PROGRAM FOR PSYCHIATRIC PATIENTS BASED ON THE MEDITERRANEAN DIET**

Maria Hassapidou, Konstantina Papadimitriou, Niki Athanasiadou

Department of Nutrition and Dietetics, Technological Educational Institution of Thessaloniki, Thessaloniki, Greece

**Introduction** Psychotropic drugs are frequently associated with weight gain. Typical antipsychotics that have been recently released have better results when treating the disease, but the problem of weight increase still remains. The results of a long term dietary intervention program in psychiatric patients are presented in this study.**Methodology** 365 psychiatric patients (mean age 39,3±11,2 years) participated in the study (290 women and 75 men). Anthropometric measurements, measurement of Basal Metabolic Rate (BMR), dietary intake, clinical and biochemical data (cholesterol, LDL, triglycerides, etc.) were collected. A personalised diet, based on the Mediterranean diet, was given for weight control in each patient by a dietician. The patients were visiting the dietician every two weeks. Results were analysed after three and six months of intervention. The statistical analysis was processed with SPSS.**Results** According to the results, mean BMI of the participants was 34,6±6,7 and mean %body fat was 38,8±7,7. The mean body weight decrease was 5,7±4,5Kg after three months and 9,1±6,2Kg after six months. The mean % body fat decrease was 2,63Kg, after three months and 4,4±3,8 Kg after six months. Mean waist circumference, total cholesterol, and LDL and triglycerides mean values also decreased.**Conclusion** The dietary intervention program for psychiatric patients has been very successful in reducing body weight, body fat and improves specific biochemical parameters.



### PREDICTORS OF ATTRITION IN A WEIGHT LOSS CONTINUOUS CARE PROGRAMME IN GREECE

**Daphne Kaklamanou**, Chris J. Armitage, Myrto Kaklamanou  
*University of Sheffield, Sheffield, United Kingdom*

**Introduction:** Attrition from weight management programmes varies between 10% and 80%, and so an understanding of the factors that might ameliorate attrition is vital to promoting long-term weight loss. Previous studies have mainly focused on non-continuous care models of treatment, and have used primarily psychosocial variables as predictors.

**Aim:** Establish predictors of attrition in a Greek adult population attempting to lose weight in a continuous care clinical treatment programme.

**Method:** Secondary data were taken from a private clinic in Greece, in which a continuous care approach to weight loss was being employed. Data from a total of 2928 non-active patients recorded over a period of 19 years were included in the analysis. Of these patients, 2377 were women and 551 were men.

**Results:** Logistic regression was used to predict attrition. Gender, age, free fat mass, fat mass and BMI were discovered to be significant predictors. The independent variables included in the analysis were a mix of demographic, psychological, medical history and anthropometric measures. In addition, survival analyses (Kaplan-Meier and Cox regression) revealed that the mean survival time of patients attending treatment before dropping out was 132.51 days and that age and gender were significant predictors of attrition.

**Conclusion:** The study supports findings of previous studies, which cite gender, age and BMI as significant predictors of attrition. The findings also strengthen the case for the use of further anthropometric measures, other than weight and BMI, as predictors of attrition (e.g. fat mass).

### EFFECT OF A HIGH DAIRY CALCIUM DIET ON BODY WEIGHT AND COMPOSITION OF POSTMENOPAUSAL WOMEN - LESSONS FROM A 1-YEAR STUDY

**George Moschonis**, Evangelia Grammatikaki, Anastasia Vandorou, Aikaterini-Eustathia Kyriakou, Vasiliki Dede, Anthi Naoumi, Sofia Kostea, Sofia Tanagra, Yannis Manios  
*Department of Nutrition and Dietetics, Harokopio University of Athens, Athens, Greece*

**Introduction** Several previous studies have reported inverse associations between calcium intake and adiposity indices.

**Aim:** To examine whether supplementation of calcium or dairy products enriched with calcium and vitamin D3 in postmenopausal women for 12 months could induce favourable changes in several anthropometric and body composition indices.

**Materials and methods:** A sample of 101 postmenopausal women were randomized to a dairy intervention group (DG: n=39), receiving approximately 1200 mg of calcium and 7.5 µg of vitamin D3 per day via fortified dairy products and attending biweekly nutrition education sessions; a calcium supplemented group (CaG: n=26) receiving a total of 1200 mg calcium per day; and a control group who continued with their usual diet (CG: n=36).

**Results:** No significant differences were observed in the mean 12-month changes in body weight, BMI, total body fat and lean mass between groups. However, subjects in the DG were found to have a lower decrease in mid-arm muscle circumference ( $P < 0.001$ ) and a lower increase in the sum of skinfolds' thickness ( $P = 0.042$ ) compared with the CaG and the CG. Furthermore the DG was also found to have a greater decrease in the percentage of legs' fat mass ( $P = 0.025$ ) and a higher increase in legs' lean mass ( $P = 0.012$ ) compared with the two other groups.

**Conclusions:** The application of a holistic intervention approach combining nutrition education and consumption of fortified dairy products for 12 months can induce more favorable changes in certain anthropometric and body composition indices than calcium supplementation alone and the usual diet.

OP07

**VISFATIN AND EOTAXIN LEVELS IN STATES OF THYROID DYSFUNCTION: RELATIONSHIP WITH BODY WEIGHT AND COMPOSITION ALTERATIONS AFTER ACHIEVEMENT OF EUTHYROIDISM**Nikolaos Pontikides<sup>1</sup>, Foteini Papadopoulou<sup>1</sup>, Argyrios Dumas<sup>2</sup>, Maria Bougoulia<sup>1</sup>, Kostas Tziomalos<sup>1</sup>, Gerasimos E. Krassas<sup>1</sup><sup>1</sup> Department of Endocrinology, Diabetes and Metabolism, Pananagia General Hospital, Thessaloniki, Greece<sup>2</sup> 3rd Department of Nuclear Medicine, Aristotle University, Papageorgiou Hospital, Thessaloniki, Greece

**Background:** Visfatin, is a novel adipocytokine, which is associated with obesity and has insulin-mimetic effects. Eotaxin is an important chemokine in extrinsic or allergic asthma and has recently reported to be increased in obesity in mice and humans. Thyroid disorders, both hyper- and hypothyroidism are associated with rapid alterations in body composition, which are restored mostly after achievement of euthyroidism.

**Objective:** The aim of our prospective-interventional study was to examine the relation between eotaxin and visfatin levels and somatometric parameters as well as changes in thyroid hormone and TSH levels in hyper- and hypothyroid patients. To our knowledge, there are no similar data in the literature so far.

**Design:** Eighty-six, 34 hyper-, 52 hypothyroid patients with Graves' and Hashimoto's disease respectively examined. The two groups did not differ regarding age (47 vs 50 yrs), gender (70.6 vs 84.6% females) and smoking habits (29 vs 25%). In all patients thyroid function indexes [free T4 (fT4) Total T3 (tT3) and (tT4) TSH, AB-TPO and AB-HTG], somatometric parameters [body weight (BW), waist circumference (WC), BMI, and percentage of body fat (BF)], as well as eotaxin and visfatin levels were measured before and about 3-4 months after medical restoration of thyroid dysfunction (titrated doses of antithyroid drugs or L-thyroxine therapy).

**Results:** Hyperthyroid patients had higher eotaxin median levels before (90.1, 28.3-214.0) vs after treatment (71.4, 23.2-130.9 pg/ml, p=0.025), while visfatin levels did not change. In hypothyroid patients, no difference was found in the above hormones before vs after treatment. At baseline also, no difference was found between hyper- and hypothyroid groups. However, post-treatment median visfatin levels were higher in hyperthyroid patients (7.3, 4.7-31.0) vs (6.1, 3.9-25.9 ng/ml, p=0.049).

There were also some significant correlations between: eotaxin vs BF (r=-0.356/p=0.039), vs TSH (r=0.364/p=0.035) in hyper- before, eotaxin vs BMI (r=-0.282/p=0.043), vs WC (r=-0.297/p=0.032) in hypothyroid patients before treatment, as well as between the percentage changes in eotaxin vs WC (r=0.393/p=0.021) vs tT3 (r=0.450/p=0.008) in hyper-, and eotaxin vs BF (r=-0.420/p=0.002) vs BW (r=-0.292/p=0.036), vs tT4 (r=0.301/p=0.030), vs fT4 (r=0.325/p=0.019) in hypothyroid patients after treatment.

**Conclusions:** a) eotaxin baseline levels are higher in hyperthyroid patients in comparison with post-treatment levels, b) visfatin levels do not change in states of thyroid dysfunction, c) both eotaxin and visfatin baseline levels do not differ between hyper- and hypothyroid patients, while, in the euthyroid state, hyperthyroid have marginally statistically significant visfatin levels, d) eotaxin is negatively related with BF in hyper-, and BMI and WC in hypothyroidism at baseline, and finally, e) the percentage changes in eotaxin after treatment positively related with WC and tT3 in hyper-, and BF and BW (negatively) and thyroxine levels changes (positively) in hypothyroid patients.

OP08

**VISFATIN LEVELS DURING EUGLYCEMIC HYPERINSULINEMIC CLAMP STUDY IN OBESE WOMEN**Mirjana Sumarac-Dumanovic<sup>1</sup>, Dragan Micic<sup>1</sup>, Jagoda Jorga<sup>2</sup>, Danica Stamenkovic-Pejkovic<sup>1</sup>, Goran Cvijovic<sup>1</sup>, Aleksandra Kendereski<sup>1</sup>, Svetlana Zoric<sup>1</sup><sup>1</sup> Institute for Endocrinology, Diabetes and Diseases of Metabolism, Belgrade, Serbia<sup>2</sup> Institute for Hygiene, Belgrade, Serbia

**Introduction** Visfatin was recently reported to be expressed in human adipose tissue and to exert insulin-mimicking effects. Despite some recent studies on this topic, the proposed role of visfatin in metabolism remains largely unknown.

**Aim** The aim of this study was to investigate possible role of hyperinsulinemia (endogenous or exogenous) in condition of hyperglycemia and in euglycemic state.

**Materials** Eight obese women (age: 34.87 yrs, BMI: 38.73kg/m<sup>2</sup>) were included in study. All women had normal fasting plasma glucose (4.72 mmol/l) as well as normal glucose tolerance during oral glucose tolerance test (OGTT). Euglycemic hyperinsulinemic clamp were performed in all subjects (plasma insulin and visfatin were measured at 0, 30, 60, 90, 100, 110 and 120 min of the clamp study).

**Results** During clamp studies there were no significant changes in visfatin levels (0 min 6.40±1.84, 30min 7.65±2.32, 60 min 8.30±1.78, 90 min 6.10±0.847, 100min 4.7±1.02, 110min, 6.00±1.49 and 120min 5.8±1.69 ng/ml, p>0.05 respectively. Mean insulin levels during clamp study were: 0min 18.62±2.08, 30min 106.7±29.2, 60min 123.77±26.64, 90 min 135.97±33.51, 100min 133.55±33.60, 110min 124.04±34.92 and 120min 134.93±37.68 ng/ml.

**Conclusions:** Our data could not confirm direct effect of hyperinsulinemia on visfatin levels in obese women.



OP09

### ADIPONECTIN SIGNAL TRANSDUCTION LEADING TO MACROPHAGE TOLERANCE TO PRO-INFLAMMATORY STIMULI VIA INDUCTION OF IRAK-M

**Vassiliki Zacharioudaki**, Ariadne Androulidaki, Christos Tsatsanis, Andrew N. Margioris  
*Department of Clinical Chemistry-Biochemistry, Faculty of Medicine, University of Crete, Heraklion, Greece*

**Introduction:** Adiponectin is the most abundant gene product in adipose tissue and circulates at high concentrations in the blood. It is believed that adiponectin has protective actions in the initiation and progression of atherosclerosis through anti-inflammatory effects which are exerted via macrophages, through suppression of the production of pro-inflammatory cytokines in response to LPS. We and others (Tsatsanis et al. BBRC 2005; 335 (4) 1254-63, Park et al. JBC 2007; 282 (30) 21695-703) have shown that the potential anti-inflammatory effect of adiponectin is due to the induction of macrophage tolerance.

**Aim:** Here, we investigate the molecular mechanisms initiated by adiponectin that render macrophages tolerant to pro-inflammatory stimuli.

**Materials:** Thioglycollate-elicited peritoneal macrophages from TPL2<sup>-/-</sup>, AKT1<sup>-/-</sup> and IRAK-M<sup>-/-</sup> mice were treated with adiponectin and LPS and molecular mechanisms of tolerance were studied with Western blotting, Real time RT PCR and ELISA.

**Results:** In this study we show that adiponectin controls macrophage tolerance by inducing IRAK-M expression via ERK/Tpl2 and PI3K/AKT dependant mechanisms. IRAK-M expression is induced in mouse peritoneal macrophages upon gAd stimulation, leading to the suppression of the induction of pro-inflammatory cytokines by LPS. The tolerogenic properties of adiponectin were abrogated in IRAK-M deficient mice further supporting the involvement of IRAK-M in adiponectin induced macrophage tolerance.

**Conclusions:** Adiponectin is an important regulator of macrophage activation, by lowering the magnitude of the inflammatory response via induction of IRAK-M, which is one of the major negative feedback mechanisms in TLR4 signaling.

### ADIPOCYTOKINES AND GHRELIN LEVELS OF TEEN-AGE ARAB GIRLS AS INFLUENCED BY DIET AND SLEEPING PATTERN

**Dara Al-Disi**<sup>1</sup>, Abdul-Aziz Al-Othman<sup>1</sup>, Lateefa Khanam<sup>1</sup>, Nasser Al-Daghri<sup>1</sup>, Moammad Al-Saif<sup>1</sup>, Shaun Sabico<sup>1</sup>  
*King Saud University, Riyadh, Kingdom of Saudi Arabia*

**INTRODUCTION :** There is an epidemic of childhood obesity in the developing world and hence of great concern. It's associated with adipocytokines and ghrelin. Understanding their interplay in diet and sleeping pattern may help design effective intervention strategies for obesity.

**AIMS :** To study the association between serum levels of these hormones with sleeping pattern and diet in obese and normal teen-aged Saudi girls.

**MATERIALS :** In this cross-sectional study, all subjects underwent anthropometric measurements; filled a questionnaire which included dietary recall, and information regarding sleeping. Fasting blood samples were collected and analyzed for serum levels of leptin, adiponectin, resistin & ghrelin using ELISA.

**RESULTS :** 126 girls (62 normal and 64 obese) aged 14-18 years ( $16.5 \pm 1.5$ ) participated. Subjects with sleeping hours of < 5 hours/day showed higher percent of carbohydrate intake ( $p=0.04$ ) and lower percent of fat intake ( $p=0.03$ ) as compared to those who sleep >7 hours/day. Ghrelin showed inverse associations to hours of sleep ( $r=-0.18$ ;  $p=0.04$ ). Resistin levels showed a sharp increase that was directly proportional to the hours of sleep. Adiponectin levels increased in proportion to hours of sleep, and more pronounced in the normal group.

**CONCLUSION :** Adipocytokines and ghrelin are modestly influenced by the pattern and the duration of sleep among Arab adolescent girls. Further studies in a bigger population using a prospective approach in a more controlled experimental environment are needed to confirm these findings.

OP10

OP11

**COMBINATORIAL TRANSCRIPTION FACTOR REGULATION OF THE cAMP RESPONSE ELEMENT OF THE PGC-1A PROMOTER IN WHITE AND BROWN PREADIPOCYTE CELL LINES**

Angeliki Karamitri and Michael Lomax

*University of Nottingham, Division of Nutritional Sciences, Nottingham, United Kingdom*

Brown adipose tissue (BAT) thermogenesis represents a strategy for anti-obesity therapies because fat is oxidised in BAT mitochondria due to the action of uncoupling protein 1 (UCP1). PGC-1alpha, a co-activator of UCP1 and a mitochondrial regulator is involved in the expression of the BAT phenotype responding to cAMP signals [Puigserver, 1998]. We have previously demonstrated that forskolin-sensitive PGC-1alpha expression, normally observed in brown, HIB-1B cells can be induced in white, 3T3-L1 cells by overexpression of C/EBPbeta acting through the CRE element of the PGC-1alpha proximal promoter [Karamanlidis, 2007]. Here we report that C/EBPbeta overexpression in 3T3-L1 cells induces PGC-1alpha expression by altering the combination of bZIP transcription factors acting on the PGC-1alpha-CRE.

3T3-L1 cells were co-transfected with a PGC-1alpha promoter-reporter construct and expression plasmids for C/EBPbeta, CREB, ATF-2 and CHOP-10. Chromatin immunoprecipitation (ChIP) assays were performed using anti-C/EBPbeta, anti-CREB, anti-ATF-2 and anti-CHOP10 in cAMP-stimulated 3T3-L1 preadipocytes transfected with C/EBPbeta. Knock-down of C/EBPbeta in HIB-1B cells was achieved by RNAi.

Overexpression of C/EBPbeta and CREB significantly upregulated, while overexpression of ATF-2 and CHOP10 significantly decreased PGC-1alpha transcription in forskolin-treated 3T3-L1 cells. ChIP assays demonstrated that overexpression of C/EBPbeta results in strong binding of CREB and C/EBPbeta, while diminishing ATF-2 and CHOP10 binding on the PGC-1alpha-CRE in cAMP-treated 3T3-L1 cells. Knockdown of C/EBPbeta in HIB-1B cells decreased expression of PGC-1alpha and UCP1 to cAMP.

Our results suggest that overexpression of C/EBPbeta induces PGC-1alpha expression in 3T3-L1 preadipocytes by displacing the repressive CHOP10 and ATF2 from bZIP heterodimers bound to the PGC-1alpha-CRE.

1. Puigserver P, Wy Z, Park CW, Graves R, Wright M and Spiegelman BM. A cold-inducible coactivator of nuclear receptors linked to adaptive thermogenesis. *Cell* 1998; 92: 829-39.
2. Karamanlidis G, Karamitri A, Docherty K, Hazlerigg DG, Lomax MA. C/EBPbeta reprograms white 3T3-L1 preadipocytes to a brown adipocyte pattern of gene expression. *J Biol Chem.* 2007; 282:24660-9.

OP12

**EFFECT OF CHOLESTEROL REDUCTION ON BAROREFLEX SENSITIVITY IN OBESE AND NONOBESE PATIENTS WITH TYPE 2 DIABETES**

Pinelopi Grigoropoulou, Nicholas Tentolouris, Despoina Perrea, Evanthia Diakoumopoulou, Stavros Liatis, Ioanna Eleftheriadou, Kleopatra Alexiadou, Konstantinos Kyriakopoulos, George Panagoulas, Ioanna Balla, Nicholas Katsilambros

*First Department of Propaedeutic Medicine, Athens University Medical School, Laiko General Hospital, Athens, Greece*

**Introduction :** Impaired baroreflex sensitivity (BRS) is a negative prognostic factor for cardiovascular disease. BRS is inversely correlated to BMI and significantly reduced in patients with diabetes. However, little is known about the effect of dyslipidemia on BRS.

**Aim :** To evaluate the effect of atorvastatin administration for 6 months on BRS in patients with type 2 diabetes and hypercholesterolemia.

**Materials :** Thirty patients with type 2 diabetes were recruited (11 male and 19 female). All had LDL-C concentrations  $\geq 100$  mg/dl. They were classified as obese or nonobese (14 obese and 16 nonobese patients: BMI=  $34.2 \pm 4.1$  Kg/m<sup>2</sup> vs  $27.2 \pm 3.6$  Kg/m<sup>2</sup> respectively,  $P < 0.001$ ). All patients received atorvastatin (10 mg daily) for 6 months, as well as a low-fat diet. Age, total cholesterol, LDL-C, and HbA1C were comparable between the two groups at baseline. BRS was assessed using the BaroCor® device, which records spontaneous changes in heart rate and blood pressure. Plasma lipids, HbA1C, and BRS were evaluated at baseline, at 3 and 6 months.

**Results :** Total cholesterol and LDL-C levels were significantly reduced in both groups after 6 months (all  $p < 0.001$ ). BRS was significantly increased (26.8%,  $p = 0.004$ ) after 6 months' treatment in all patients. Subanalysis according to obesity status showed that the obese subjects displayed a non-significant increase in BRS. In the nonobese group, BRS was already improved after 3 months (28.2%,  $p = 0.056$ ), and significantly increased after 6 months' treatment (43.3%,  $p = 0.006$ ).

**Conclusions :** Intensive cholesterol reduction with atorvastatin significantly improves BRS in nonobese patients with type 2 diabetes.



## PSYCHOLOGICAL ASPECTS OF OBESITY IN CHILDHOOD

**Oana-Maria Udrea**

*"Grigore Alexandrescu" Clinical Emergency Hospital for Children, Bucharest, Romania*

The overweight and obese children are at risk for a wide range of difficulties in psychological functioning, psychological well being status, both as children and as developing adults.

The study aims on the psychological implications of child obesity focusing on self esteem, body image, perception of weight bias, indicators of psychopathology from the perspective of how do the child in the years of preadolescence experience the overweight condition.

73 obese and overweight children (40 girls) aged 9 to 14, BMI  $\geq$  95th percentile participated in the study in the Children's Hospital Clinical Ambulatory.

The psychological assessment included: structured interviews conducted with the child (KID-SCID) ; a clinical interview with the participant parent including indicators of emotional distress, anxiety, depression, ADHD; Children's Eating Behavior Questionnaire; Self esteem assessment (Harter);Body image pictorial scale for children. The results show a negative body perception for most obese children (54,7%), moderate negative self-esteem – general self worth, especially for the girls (32,9% of obese children). Overweight and obese children who are victimized because of their weight are more vulnerable to depression, anxiety, lower self-esteem, poor body image. For the obese children depression tendencies had a significant correlation with negative self worth ( $r = .541$ ,  $p < .01$ ). Clinical obesity, emotional eating and negative body image were found as predictors of negative self esteem. Even a causality relation can not be estimated, significant negative scores for self-esteem and body image are a relevant aspect of child obesity with an impact on the psychological wellbeing and mental health of the children.

## THE INDEX WAIST-TO-HEIGHT RATIO (WHtR) IN ADOLESCENT OBESITY: RESULTS FROM THE PANHELLENIC SURVEY

Themistoklis Tzotzas, Efthymios Kapantais, **Myrto Kaklamanou**, Konstantinos Tziomalos, Maria Hassapidou, Ioannis Kaklamanos

*Hellenic Medical Association for Obesity, Athens, Greece*

**Introduction:** Waist-to-height ratio (WHtR) has been recently proposed as a clinically helpful index to identify adolescents with abdominal obesity (AO) and high cardiometabolic risk. It does not require percentile tables and may be applied to both sexes of all ages and in different populations.

**Aim:** To examine correlations of WHtR with anthropometric and sociodemographic parameters and to estimate prevalence of abdominal obesity in Greek adolescents.

**Material:** 14,456 adolescents (6,677m, 7,779f), 13-19 y, had direct measurements (BMI, WC, WHtR) taken at school throughout the whole of Greece in 2003. Sociodemographic factors (ethnicity and residence) were also examined. Obesity(OB) prevalence was calculated according to IOTF. AO was calculated using waist circumference (WC) according to curves provided for Cypriot children(Sava,ObesRes2001) and also using WHtR with a cut-off of 0.5(Maffeis,JPediatr2008).

**Results:** OB prevalence was 6.1% in boys and 2.7% in girls. WHtR was higher in adolescent boys than in girls ( $0.46 \pm 0.07$  vs  $0.44 \pm 0.06$ ,  $p < 0.0001$ ) and, in both genders, it correlated strongly with BMI ( $r = 0.65$ ) and WC ( $r = 0.90$ ). Prevalence of WHtR  $> 0.5$  was much higher in boys than in girls (23.9% vs 14.5%,  $p < 0.0001$ ) while prevalence of high WC was 13.5% in boys vs 21.7% in girls ( $p < 0.001$ ). Only in boys, WHtR was higher in Greeks compared with foreigners ( $0.46 \pm 0.07$  vs  $0.45 \pm 0.07$ ,  $p = 0.02$ ).

**Conclusions:** In Greek adolescents, Waist-to-Height ratio identified almost  $\frac{1}{4}$  of boys with abdominal obesity and high cardiometabolic risk. This index is simple and useful, however, further validation is needed.



OP15

**COMPARISON OF PERCENT BODY FAT ESTIMATIONS IN ADOLESCENTS USING FOUR DIFFERENT FIELD METHODS**

**Vassilis Zafirooulos**, Zacharias G. Fthenakis, Dimitra Balaska, Athanassia Markaki, Petros Dimitropoulakis, George A. Fragkiadakis Eli Andrioti, Irini Giakoumaki

*Laboratory of Applied Physics & Measurement of Human Body Composition Department of Human Nutrition & Dietetics Technological Educational Institute of Crete & Center for Technological Research – Crete Sitia, Crete, Greece*

**Introduction:** There are many different methods for measuring body composition, a few of them are accurate but time-consuming and difficult to perform, while the so called “field methods” are simple and quick but lack in accuracy. What method to use in estimating the percent body fat (%BF) in children and adolescents? This is always a timely question.

**Aim:** The aim of this study was to compare the four different easy to apply field-methods: whole-body and lower-body Bioelectrical Impedance Analysis (BIA), Near-Infrared Interactance (NIR) and Skinfold (SKF) methods. In addition, we aimed in finding the deviations in the predictions of these methods and how they could lead to possible errors in individuals.

**Material:** A dietary intervention study was performed in 55 volunteers from selected High-Schools in Lassithi prefecture. We measured the percent body fat (%BF) of 55 adolescents, ages 15-17, twice in a period of three months. In all subjects we used the four well-known field-methods mentioned above. Body mass index (BMI) values were measured as well.

**Results:** For NIR and lower-body BIA the %BF values were obtained from the instruments' software, while for whole-body BIA and SKF all known prediction equations were applied. The %BF predictions from all methods were compared to each other using regression analysis. Correlation coefficients as high as  $R=0.96$  were found when comparing BIA with NIR, while  $R=0.6$  for BIA-SKF and NIR-SKF correlations. The BMI values were better correlated with the NIR method ( $R=0.77$ ), then with BIA ( $0.75$ ) and last with SKF ( $R=0.52$ ). It was also found that inaccuracies in individual subjects were huge, especially when comparing SKF with the other methods.

**Conclusions:** NIR and BIA correlate very well when using certain BIA prediction equations. There are specific suggestions on how to avoid errors originating from the inaccuracy of certain measurements.

OP16

**PRE- AND POSTNATAL PREDICTORS OF CHILDHOOD OBESITY. THE PROGRESS STUDY**

**Paraskevi-Eirini Siatitsa**, George Moschonis, Alexandra Koumpitski, Aikaterini Siopi, Aliko-Eleni Farmaki, Maria Kantilafiti, Anthi Naoumi, Sofia Tanagra, Aikaterini Kondaki, Yannis Manios

*Department of Nutrition and Dietetics, Harokopio University of Athens, Athens, Greece*

**Introduction:** In many developed countries childhood overweight and obesity has reached epidemic proportions, as these have been doubled in the last 20 years

**Aim:** To identify those perinatal parameters predisposing prepubertal children to an increased risk of obesity.

**Materials and methods:** We examined a representative sample of 870 primary schoolchildren aged 9-13 years old participating in the “Prediabetes, Obesity and Growth Epidemiological Study in Schoolchildren” (The PROGRESS study). Body weight and standing height were obtained by using standard procedures and measuring equipment. Structured interviews were conducted with parents to collect information on anthropometric, demographic, medical and behavioural data. Finally, children's anthropometric data at birth were recorded from their birth certificates and medical records.

**Results:** Children born to mothers that were overweight before pregnancy were more likely ( $OR=2.24$ ;  $P=0.023$ ) of being obese than children born to normal-weight mothers. Furthermore, the likelihood of obesity was significantly higher for children born to mothers that were smoking during pregnancy ( $OR=8.10$ ;  $P=0.001$ ) and children that were born large-for-gestational age ( $5.81$ ;  $P=0.009$ ), respectively. On the other hand the likelihood of being overweight was lower for children that were exclusively breast fed for 6 months after birth ( $OR=0.227$ ;  $P=0.019$ ).

**Conclusions:** Our findings showed that some of the perinatal factors examined in the current study were associated to childhood obesity. Priority should be given to size at birth, breastfeeding, maternal smoking during pregnancy and maternal overweight before pregnancy, when developing public health strategies to reduce the prevalence of childhood overweight and related chronic disease later in life.





### THE INFLUENCE OF "BEHAVIOR MODIFICATION" INTERVENTIONAL PROGRAM ON BMI IN THE OBESE STUDENTS OF THE PUBLIC HIGH SCHOOLS OF KHORRAMABAD, IRAN

**Toulabi, Tahereh**<sup>1</sup>, Khosh Niyyat, Mohsen<sup>2</sup>, Amini, Fariba<sup>3</sup>, Nazari, Hedayat<sup>4</sup>, Mardani, Mahnaz<sup>5</sup>

*1 Lorestan University Of Medical Sciences, Khorram, Abad, Iran*

*2 Tehran University Of Medical Sciences, Tehran, Iran*

*3 Lorestan University Of Medical Sciences, Khorram, Abad, Iran*

*4 Lorestan University Of Medical Sciences, Khorram, Abad, Iran*

*5 Lorestan University Of Medical Sciences, Khorram, Abad, Iran*

The influence of "behavior modification" interventional program on BMI in the obese students of the public high schools of Khorram Abad, Iran

**Introduction:** The prevalence of obesity and overweight among children and adolescents is increasing rapidly, and has been doubled in the last three decades. Specifically, the 13-19 years age group is at higher risk for obesity and the related physiologic complications. Therefore, the present research was performed to determine the influence of "behavior modification" interventional program on BMI in the obese students of the public high schools of Khorram Abad, Iran.

**Materials & Methods:** In the present interventional research, 152 students and parents meeting the inclusion criteria were selected from 12 high schools of Khorram Abad between 2004 and 2006, and then were randomly assigned to either the case or the control groups. The "behavior modification" interventional program consisted of nutritional education, modifying & changing dietary habits, teaching exercise programs and their benefits to the students, teaching nutritional facts to the parents, and performing exercises 3 days a week. The subjects' height, body weight, BMI, waist and hip circumferences, WHR, wrist circumference, and blood pressure were measured before and after implementing the interventional program; a questionnaire for evaluating students' and parents' awareness level regarding nutrition and also the Beck's Depression Questionnaire (for screening the signs & symptoms of depression) were completed for both groups. The collected data were analyzed by descriptive and inferential statistical tests (t-student and Chi Square) and by using the SPSS (version 11) software.

**Results:** The mean and standard deviation for variables such as body weight, BMI, and waist and hip circumferences indicated a statistically significant difference before and after implementing the interventional program, revealing a significant decrease in these variables in the case group after implementing the interventional program. The research hypothesis (i.e. "behavior modification" interventional program affects BMI in the obese students of the public high schools) was supported ( $p \leq 0.001$ ); in addition, the students' and parents' awareness level was evaluated in the case group after implementing the interventional program ( $p < 0.046$ ). The signs & symptoms of mild & moderate depression were decreased in the case group, but the frequency of students without signs & symptoms of depression was increased, which didn't reveal a statistically significant difference between the two groups.

**Conclusion:** The "behavior modification" interventional program (including nutritional education, modifying & changing dietary habits, teaching exercise programs and their benefits to the students, teaching nutritional facts to the parents, and performing exercises 3 days a week) is effective in reducing BMI in obese students, and therefore, school principals and planners can play an important role in preventing obesity and its numerous potential complications by implementing this program via the students, their parents, and the school staff.

**Key Words:** "behavior modification" interventional program; BMI; depression; modifying dietary habits; exercise.

### DRAFT FOR REDUCING CHILDHOOD OBESITY - NOT STRETCH OR BUSHING

**Ana Paula Alves**<sup>1</sup>, Susana Cunha<sup>1</sup>, Jacinta Ribeiro<sup>1</sup>, Carlos Valente<sup>1</sup>, Liliana Carola<sup>2</sup>, Manuela Barros<sup>2</sup>

*1. Unidade De Saúde De Valongo E Ermesinde*

*2. Estagiárias da Faculdade de Ciências de Alimentação e Nutrição da Universidade do Porto*

Portugal is one of the European countries that has higher rates of childhood obesity. According to Padez (2004) the incidence of overweight and obesity reaches the 31.5%, and recent studies point to similar values in Porto district and, particularly, in Ermesinde. Given the overall situation and the associated morbidities, it is crucial to intervene and change this reality.

School-based intervention is the most efficient and successful way to intervene given its continuous and extended contact with children during their youth.

This project aims to reduce the overweight and obesity prevalence to half of their values, in 2009, within a sample comprising children aged 6 to 9 from five Primary schools in Ermesinde. We also intend with this four year project to inculcate healthy eating habits in 60% of 4th grade children enclosed by the project.

Information is collected through direct inquiry and every group of children had personalized alimentary education sessions, regarding their age and teaching program. Children with overweight or obesity disorders were supervised by a nutritionist.

The initial sample included 116 children. Several parameters were evaluated, such as parent's age and level of studies, number of brother(s)/sister(s), number of hours of sleep per night and number of hours in the TV/computer/video-games per day. A statistically significant decrease ( $p < 0.001$ ) at the IMC level was observed when comparing the values from 2005/2006 and 2006/2007.

These results suggest that this kind of intervention is becoming effective in the reduction of overweight and obesity in this children sample.

## POSTER PRESENTATIONS

PP001

**EFFECT OF SOY LECITHIN ON SERUM LIPID PARAMETERS OF HYPERLIPIDEMIC POSTMENOPAUSAL WOMEN REFERRING TO DR. SHAHID FAGHIEE HOSPITAL OF SHIRAZ UNIVERSITY OF MEDICAL SCIENCES, IRAN**Shahryar Egtesadi<sup>1</sup>, Mohammed Ali Kooshesh<sup>1</sup>, Mohammed Hassan Efhtekhari<sup>2</sup>, Zahra Saraf<sup>2</sup>, Hamid Haghani<sup>1</sup><sup>1</sup>-Iran University of Medical Sciences, School of Public Health, Tehran, Iran<sup>2</sup>-Shiraz University of Medical Sciences, School of Health and Nutrition & Shahid Faghihee Hospital, Shiraz, Iran

**Introduction:** Cardiovascular disease (CVD) is the leading cause of morbidity and mortality in Iran and throughout the world, a major cause of which is hyperlipidemia to which one third of Iranian middle aged women are susceptible and for that appropriate nutritional intervention and administration of certain food items are known to be important among them the soy lecithin may be the one for attention and subject to certain claims and public interest and demand.

**Aims:** The aim of this double blind clinical trial was to examine the effect of soy lecithin on serum lipid parameters of hyperlipidemic postmenopausal women referring to Dr. Shahid Faghihee Hospital of Shiraz University of Medical Sciences.

**Materials and Methods:** Following approval by Iran University of Medical Sciences' Ethics Committee for Human Studies, Sixty free living, 50-60 years old postmenopausal women with mild to moderate hyperlipidemia were recruited and assigned to one of the three treatments: A-Yoghurt (control group I), B-Yoghurt+16g soy lecithin granules (intervention group), C-Yoghurt+10g sunflower oil, containing the same amount of linoleic acid as of the administered lecithin (control group II). Strawberry syrup was added to ensure blindness. To assess the effects of confounding factors, BMI and waist circumference were measured. 24-hour dietary recall and 3 days food record questionnaires were completed. Changes in physical activity level was assessed by seven day physical activity recall questionnaire. Serum lipid parameters were measured twice at baseline and 4 weeks of treatment.

**Results:** While there were no any significant between treatment groups effects, nonetheless, in the intervention group (soy lecithin), significant within group decrease was found in the average level of TC (252.33±24.02 vs 255.22±24.82 mg/dl and P=0.02), LDL.C/HDL.C (3.99±0.50 vs 4.17±0.56 and P=0.001) and Non-HDL.C (211.94±23.94 vs 216.00±23.73 mg/dl and P=0.005) and accompanying significant increase in serum HDL.C level (40.39±5.21 vs 39.22±5.58 mg/dl and P=0.04).

**Conclusions:** In present study soy lecithin treatment had no significant hypocholesterolemic effect on serum lipid profile, in a way that we can not claim any independent effect for soy lecithin linoleic acid content.

**Key Words:** Soy Lecithin, Hyperlipidemia, Menopause, Linoleic acid, Lipid Profile

PP002

**THE BENEFITING EFFECT OF MEDITERRANEAN DIET AND PHYSICAL EXERCISE IN HYPERTRIGLYCERIDAEMIA IN OBESE PATIENTS WITH DEPRESSION SYNDROME**Alexandra Sianni<sup>1</sup>, Asimina Ganotopoulou<sup>2</sup>, Aikaterini Kosma<sup>1</sup>, Neratzoula Karagianni<sup>1</sup>, Eustathios Laskos<sup>1</sup>, Konstantinos Liatsos<sup>3</sup>, Dimitrios Vassilopoulos<sup>1</sup><sup>1</sup> «Dromokaitio» Psychiatric Hospital of Athens, Athens, Greece<sup>2</sup> «Izania», General Hospital of Piraeus, Athens, Greece<sup>3</sup> «Mitera» Maternity Hospital of Athens, Athens, Greece

**Introduction:** Triglycerides (tg) are the organic chemical substances comprising of one glycerol molecule and three molecules of superior fatty acids and consist the 86%, 55%, 23% of chylomicron, VLDL and LDL respectively. Hypertriglyceridaemia (Htg) especially in obese patients is a cardiovascular disease factor and is related to high cardiovascular morbidity and mortality. It is accepted that many patients with depression are obese, either because they receive new antidepressant drugs which are known for this disorder or due to their mal nutrition habits and the lack of physical exercise.

**Aim:** To highlight the unique benefits of mediterranean diet and physical exercise together with drug treatment in Htg in obese depressed patients.

**Material:** 108 patients were included in the study, 63 men (56%) and 45 women (44%) with long suffering depression (>5 years) and body mass index BMI>25kg/m<sup>2</sup> and average age 46±12 years. All patients had tg>200mg/dl.

**Method:** Over a period of 6 months factors like the body weight and the number of post-absorbing (fasting) and postprandial tg were studied on all patients. The patients were split up in two groups. Group A had 38 patients with tg between 200-400mg/dl, who received medication treatment (fibrates with or without ω3 fatty acids). Group B had 70 patients with tg>400mg/dl who followed additionally to the above described medication a physical exercise program of long duration and low intensity (150-250kcal per session, 2-3 times a week) as well as low-caloring mediterranean diet (Lyon Study, limited in fat <15% of total calories and mainly in saturated carbohydrates <7%).

**Results:** After the 6 months period, a reduction of body weight was observed: in Group A 1-2kg and 5-9kg in Group B. Women showed marginally higher weight loss in comparison with men. Fasting tg (before breakfast) and postprandial tg (3 hours after lunch) were measured on the 1st, 3rd and 6th month on both groups.

Value of fasting tg (mg/dl)			
	1st month	3rd month	6th month
Group A	350±35	300±44	280±68
Group B	480±58	440±72	380±126

Value of postprandial tg (mg/dl)			
	1st month	3rd month	6th month
Group A	420±40	370±58	300±80
Group B	580±82	460±125	350±180

**Conclusion:** The negative energy equilibrium whether it originates from higher calories expense due to physical exercise or caused by reduced calorie intake due to a low calorie diet or a combination of both, together with medication treatment significantly reduces the Htg as well as the cardiovascular risk of obese depressed patients and improves their organic and mental health.



### COMPARISON OF DIETARY HABITS BETWEEN PREGNANT VERSUS NON-PREGNANT WOMEN IN GREECE

Alexandra - Aikaterini Koulouri, **Eirini Tzeranaki**, Vasiliki Chystouli

*Department of nutrition and dietetics, Technological Institution of Thessaloniki, Thessaloniki, Greece*

Dietary changes are very important during pregnancy. The aim of this project is to investigate how dietary habits differ between pregnant and non pregnant women who leave in Greece. The research, whose tool was a voluntary self-administered questionnaire was undertaken in 2007, among a group of 100 randomly chosen pregnant and 100 non-pregnant, ranging in age from 20 to 40.

Pregnant women report higher consumption of vegetables, which results in a better score for fibre intake ( $p=0.009$ ). They also report an increase in the consumption of fruits and dairy products which is not statistical significant ( $p=0.046$ ,  $p=0.029$  respectively) and is still lower than recommended. The fat consumption is higher in pregnant women. No difference in fish consumption between pregnant and non-pregnant women is observed, which results to no statistical difference in  $\omega$ -3 and  $\omega$ -6 intakes between the two groups. Pregnant women increase the number of meals they consume per day and most of them entered breakfast to their diet ( $p=0.003$ ). Over half of the pregnant women (57%) enrich there diet by vitamin and mineral supplements recommended by there doctor versus 14% of non-pregnant who use such supplements without any prescription.

Pregnant women also report a lower frequency of moderate physical activity and they stated that they had limited coffee and alcohol intake. There was no significant interaction effect between pregnancy and presence of children nor the socioeconomical status of women which indicates that the observed differences in dietary behaviour can be attributed to the state of being pregnant.

### EVOLUTION OF CENTRAL ADIPOSITY TO CARDIO-VASCULAR COMPLICATIONS – IS THAT A MATTER OF TIME?

**Adorata Elena Coman**<sup>1</sup>, Cynthia Petrovanu<sup>1</sup>, Gabriel Murariu<sup>2</sup>, Rodica Petrovanu<sup>1</sup>

*1 Family Medicine Department, University of Medicine, Iasi, Romania*

*2 Family Medicine Practice, Iasi, Romania*

**Introduction:** Cardio-metabolic risk meets together in a pathological way cardiovascular disease and diabetes with its complications.

**Cases and methods:** We studied a sample of population, 459 cases, transversal, randomized, 2002-2005, selected from 1500 patients consulted. We were looking for metabolic syndrome (MetS) elements, especially central adiposity, and its correlation wits CV diseases already installed, following the decades of age. The same correlation was made with diabetes.

**Results:** Prevalence of diabetes was correlated with central adiposity (32%,  $p<0,001$ ) and dyslipidemias (27%,  $p<0,03$ ). The decadal evolution curves of prevalence's point a divergent shape for diabetes and cardiovascular diseases, after 40-49 years, curves are ascendant with aging for abdominal obesity (maximum 58%), obesity – BMI (maximum 72%) și CVD (38 - 55%).

**Conclusions:** The metabolic syndrome finds out keeps its value on general analysis and quantification of risk factors for CVD and the individual risk. Central adiposity is the starting elements and diabetes, Glico regulation disturbances and cardiovascular disease are the end point of MetS diagnosis. There are a lot of limits in general practice linked of costs and organizing structures. We need better instruments for early diagnosis of metabolic syndrome in primary practice.

**Key words:** MetS, early diagnosis, prevalence of risk factors.

PP005

**REGIONAL DIFFERENCES IN THE PREVALENCE OF UNDERWEIGHT, OVERWEIGHT, AND OBESITY IN 9-Y-OLD CHILDREN, IN GREECE: EVIDENCE FROM 2007**Konstantinos Tambalis<sup>1</sup>, Demosthenes Panagiotakos<sup>1</sup>, Moraiti Ioanna<sup>2</sup>, Stavros Douvis<sup>2</sup>, Lambros Sidossis<sup>1</sup><sup>1</sup> Department of Nutrition and Dietetics, Harokopio University, Athens, Greece<sup>2</sup> Secretariat General of Sport of Greece, Athens, Greece**Introduction:** The last two decades childhood obesity has been recognized as an epidemic in most developed and developing countries. Few studies in Greece have estimated the prevalence of childhood obesity; most of them have drawn conclusions from selected areas.**Objective:** The aim of our study was to present the current evidence (from 2007) of the prevalence of thinness, overweight and obese, by area and geographical region in a representative sample including almost all of the 9 yr olds children. **Sample:** 36396 (51.1%) boys and 34831 (48.9%) girls' 9-y-old. **Methods:** Epidemiology study. The study was conducted in association with Secretariat General of Sports of Greece. The distribution on rural (9%) vs. urban (91%) areas and geographic regions was based on the National Statistic Service of Greece criteria (census 2001). **Results:** The prevalence of underweight is similar in rural vs. urban areas. However, the prevalence of overweight is higher in urban areas ( $p < 0.001$ ), whereas it appears that obesity is higher in rural areas ( $p < 0.001$ ) (Fig 1). Furthermore, it appears that the Aegean islands, Crete and Sterea Ellada are the regions with the highest obesity prevalence in Greece ( $p < 0.001$ ) (Fig. 2). **Conclusions:** Body composition of 9 yr olds is significantly influenced by the area they reside. The factors responsible for these differences need to be elucidated in order to create appropriate programs for childhood obesity prevention and treatment.

Fig.1 Prevalence of BMIgroup in 2007 by area.

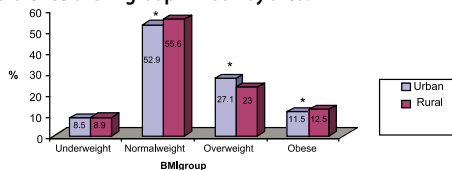
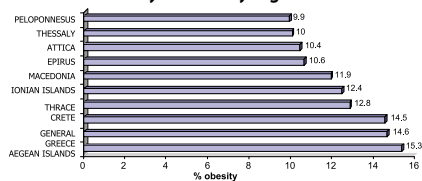
\*  $P < 0.001$  from differences between rural and urban areas

Fig. 2 Prevalence of obesity in 2007 by region

 $P < 0.001$  from differences between geographical regions

PP006

**IODINE CONSUMPTION BY THE POPULATION OF UKRAINE AND IODINE DEFICIENCY PREVENTION**Viktor Kravchenko<sup>1</sup>, Nataly Tananakina<sup>1</sup>, Lubov Tkachuk<sup>1</sup><sup>1</sup> State Institution "V.P. Komisarenko Institute of Endocrinology And Metabolism, AMS Of Ukraine", Kyiv, Ukraine**Introduction:** One of the main tasks in Ukraine today is to conduct prophylactic measures to eliminate the negative influence of iodine deficit on population health and children's intellectual maturation.**Aim:** To evaluate the situation with iodine supplementation in Ukraine.**Material:** We investigated children and young women from 12 Ukrainian regions using randomized method and divided population into 4 clusters - 60 children and 30 young women in each. Iodine salt consumption, thyroid status, iodine deficit level based on urine excretion data were evaluated.**Results:** Iodine deficiency has been established among the population of Ukraine. A mild iodine deficit (median iodine deficiency - 60-90 mcg/l) was reported in each of study regions. According to our investigations, a sufficient iodine level (median  $\geq 100$  mcg/l) was noted among the population of Kyiv, Lviv, Zakarpattje and Kirovograd regions. An excessive iodine consumption level was found in Crimea ( $\geq 400$  mcg/l).

The great frequency of goiter diagnosis in study subjects does not correlate with the level of iodine deficit. Less than 30% of the population use iodized salt, but most of population answered in the questionnaire about episodic use of iodized salt.

**Conclusions:** To eliminate iodine-deficient diseases in Ukraine, it is imperative to adopt State and Regional Legislation concerning the wide use of iodized salt.



**THE BENEFITING EFFECT OF AEROBIC PHYSICAL EXERCISE IN THE OBESE PATIENTS WITH DEPRESSION SYNDROME**

Alexandra Sianni <sup>1</sup>, Asimina Ganotopoulou <sup>2</sup>, Katerina Kosma <sup>1</sup>, Neratzoula Karagianni <sup>1</sup>, Eustathios Laskos <sup>1</sup>, Konstantinos Liatsos<sup>3</sup>, Vasilopoulos Dimitrios<sup>1</sup>

- 1. Dromokaiteio Hospital of Athens, Athens, Greece
- 2. General Hospital Piraeus Izaneio, Athens, Greece
- 3. Mitera Maternity Hospital of Athens, Athens, Greece

**INTRODUCTION:** The obesity is a cardiovascular risk factor for coronary heart diseases, Diabetes Mellitus type2, arterial hypertension, dyslipidemia, gallbladder disease. It is a fact that a lot of patients with depression are obese, either because they take antidepressive medicines which could be responsible for that, or either because due to their disease they have mainly bad nutritional conditions and sitting way life.

**AIM:** To indicate the special benefits of the physical exercise in obese depressive patients and to determine the type of the exercise which these specific patients need.

**MATERIAL-METHOD:** 72 patients were examined, out of them 42 were men (58%) and 30 women (42%) with long duration depression (>5years) and their body mass index BMI>25kg/m2 with mean age 48±13 years. For 6 months was applied a programme of aerobic exercise of long duration and low intensity. All the patients followed a speedy walking 40-60 minutes 3-5 times/week, where 700-1800kcal/week were consumed (almost 150-230kcal/training).

**RESULTS:** A total body weight loss of 4.5-7.5kg was observed in the duration of 6 months (almost 0.25kg/day) without any caloric limitation. In the women was observed lightly a greater body weight loss than in the men. It is important to mention that the physical exercise decreased the depression and the anxiety and improved the feelings of self-sufficiency, self-respect and the picture of the body of obese patients.

**CONCLUSIONS:** It is certain the positive effect which has the bodily exercise in the improvement of the physical condition, the health and the quality of life. The exercise therapy has double effects in the obese patients with depression syndrome and is recommended for the improvement of functional and mental health of these patients.

**THE BENEFICIAL IMPACT OF MEDITERRANEAN DIET AND PHYSICAL EXERCISE ON THE INFLAMMATION AND COAGULABILITY FACTORS FOR PATIENTS WITH METABOLIC SYNDROME**

Alexandra Sianni <sup>1</sup>, Asimina Ganotopoulou <sup>2</sup>, Neratzoula Karagianni <sup>1</sup>, Katerina Kosma <sup>1</sup>, Konstantinos Liatsos <sup>3</sup>, Dimitrios Vasilopoulos <sup>1</sup>

- 1 Dromokaiteio Hospital Of Athens, Athens, Greece
- 2 General Hospital Of Piraeus Izaneio, Athens, Greece
- 3 Maternity Hospital Of Athens Mitera, Athens, Greece

**Objective:** To study the impact of the Mediterranean diet and physical exercise on the inflammation and coagulability factors for patients with metabolic syndrome.

**Material – Method :** A total of 465 subjects were examined, out of which 335 (72%) did not suffer from metabolic syndrome (MS) and belong to Group A, and 130 (28%) suffered from MS (they met at least 3 of the NCEP- ATP III criteria) and belong to Group B. The subjects were monitored for 12 months. They followed the Mediterranean diet, i.e. they reduced the amount of saturated fats and increased the consumption of fibre-rich food (fruit, herbs, vegetables) and hydrocarbon-rich food (fish, legumes). In addition, they followed a light physical exercise schedule daily. Their weight and levels of inflammation and coagulability factors were recorded every 3, 6, 12 months.

**Results:** Group A: Subjects without MS

	3months	6months	12months
Weight loss	1.5±1	2±1.5	2.5±1.8
WBC(X1000)	7.8±1,2	6.3±1.5	5.8±1.5
CRP(mg/dl)	0.6±0,13	0.48±0.15	0.4±0.18
IL-6(pg/dl)	1.2±0,4	1±0.6	0.9±0.6
Fibrinogen(mg/dl)	380±40	300±55	280±60

Group B: Subjects with MS

	3months	6months	12months
Weight loss	2.5±1.5	4±1.8	5.5±2.5
WBC(X1000)	9.8±1.5	7.6±1.8	6.5±2
CRP(mg/dl)	1.8±0.15	1.3±0.23	1.2±0.15
IL-6(pg/dl)	1.8±0.6	1.6±0.8	1.3±0.8
Fibrinogen(mg/dl)	500±180	450±120	420±90

**Conclusion:** Mediterranean Diet and light physical exercise can be beneficial for the reduction of weight and inflammation/coagulability factors, particularly for patients with MS, and are potential factors that contribute significantly to the reduction of morbidity and mortality of patients with MS.

PP009

**DIETARY HABITS OF SCHOOLCHILDREN AGED 8-9 YEARS OLD BEFORE AND AFTER A 12 WEEKS NUTRITIONAL INTERVENTION**Dimitra Kakouraki, **Markaki Anastasia***Technological Education Institute of Crete, Department of Nutrition and Dietetics, Siteia, Greece*

**Introduction:** Specific education programs and nutritional interventions are considered as activities enhancing the children's knowledge and improving health within the school life.

**Aim:** To evaluate changes in dietary habits of 8-9 years old children, 3 months after a nutritional intervention through courses that lasted 12 weeks.

**Method:** The dietary habits of 85 schoolchildren, aged 8-9 years old (30 boys and 55 girls), were recorded before and after the nutritional intervention using a dietary history and a nutritional-knowledge questionnaire.

**Results:** We observed reduction in the percentage of schoolchildren: a) Consuming sweets daily, from 36.7% to 23.3% for boys and 23.6% to 14.5% for girls. b) Consuming soft drinks daily, from 23.3% to 16.7% for boys and 9.1% to 1.8% for girls. c). Consuming fast-food snacks daily, from 36.7% to 23.3% for boys and 32.7% to 25.5% for girls. On the other hand we observed an increase in the percentage of schoolchildren: i) Consuming vegetables daily, from 46.7% to 60% for boys and 60% to 70.9% for girls. ii) Consuming fruits daily; with the results impressive concerning boys, an increase from 56.7% to 73.3%. iii) Consuming two glasses of milk daily, from 30% to 43.3% for boys and 43.3% to 50.9% for girls. A better knowledge regarding nutrition (an improvement in the percentage of correct questionnaire-answers) was recorded also.

**Conclusion:** A 12 weeks intervention was capable to improve the dietary habits and the nutritional related knowledge of schoolchildren, although a longer intervention involving the teachers and families could probably produce better results.

PP010

**MEAL DURATION AFFECTS THE POSTPRANDIAL SUBJECTIVE PERCEPTION OF HUNGER AND SATIETY IN A VARIABLE MANNER**

Kleopatra Alexiadou, Alexander Kokkinos, Georgia Argyrakopoulou, Pinelopi Grigoropoulou, Nicholas Tentolouris, Konstantinos Makrilakis, Eftychios Konstantoudakis, Ioanna Eleftheriadou, Ioanna Kolovou, Nicholas Katsilambros

*First Department of Propaedeutic Medicine, Athens University Medical School, Laiko General Hospital, Athens, Greece*

**Background:** The possibility that meal duration may affect the regulation of hunger and satiety has not been adequately addressed.

**Aim:** To evaluate possible differences in the subjective perception of hunger and satiety when healthy males consume the same meal at different rates.

**Methods** Seventeen healthy male volunteers (BMI =26.09±3.53 Kg/m<sup>2</sup>, age =29.7 ±4.8) consumed the same meal (300 ml ice-cream, 675 Kcal) in three sessions of different duration, in random order: In session A the meal was divided and consumed in 5 minutes and in sessions B and C in 30 and 60 minutes respectively. Visual analogue scales (VAS) for assessment of the subjective feelings of fullness and hunger were filled out before, during the meal, and every 30 minutes for 2.5 hours postprandially. The subjective feelings of fullness and hunger for each session were expressed as area under the curve of postprandial VAS measurements adjusted for time (AUC-A, AUC-B and AUC-C).

**Results:** AUC values for the fullness and hunger VAS were not different between the three sessions. Fullness tended to be higher in session B compared to session A immediately after the end of the meal (p=0.09), while 2.5 hours after the end of the meal the subjects tended to feel more full in session A compared to B (p=0.08). Hunger tended to be higher thirty minutes after the end of the meal in session C compared to session A (p=0.06).

**Conclusion:** Meal duration seems to affect the postprandial subjective perception of hunger and satiety in healthy male subjects.





### REDUCTION OF BLOOD PRESSURE BY MODIFICATION OF DIET AND LIFESTYLE IN CHD PATIENTS

Jafar Shahamfar<sup>1</sup>, Mohamadreza Shahamfar<sup>2</sup>

*1 Department of community medicine, school of medicine Tabriz University of medical sciences, Tabriz, Iran*

*2. Tabriz University of medical sciences, Tabriz, Iran*

**Background:** Epidemiological survey indicate that the risk of CHD increase continuously with increasing blood pressure. Several factors have been identified, not as independent cardiovascular risk factors, but as factors, which have been shown to increase blood pressure. These include excess weight, alcohol and sodium intake and smoking.

**Materials:** The aim of current study was to assess effectiveness of educational intervention on reducing of blood pressure in CHD patients. A total of 100 patients (randomly 50 interventions; 50 controls) aged less than 65 years who were hospitalized in the CCU ward of a large medical setting (Tabriz) was incorporated for this study. Lifestyle modification education on case group included exercises, weight reduction, dietary modification alcohol consumption, Quit of smoking and stress management. Antioxidants and fish oil supplements were also reviewed. Control group participants were asked to follow their physician's instructions.

Data was entered in SPSS.12 software to get significant relationships at 95% confidence interval of the difference and paired t-test.

**Results:** Patients in lifestyle intervention group reduced the intake of saturated fat, sugar and cholesterol ( $p < 0.001$ ), increased their exercises level ( $p < 0.01$ ) and stopped smoking ( $p < 0.05$ ) when compared with the usual care group. Blood pressure levels decreased significantly ( $p < 0.05$ ) in intervention when compared with control group.

**Conclusion:** In this study we found that modification of lifestyle in CHD patients can reduce risk factors of CHD and blood pressure, and prevent second attack.

**Key wards:** Lifestyle, coronary heart disease, modification

### ANTHROPOMETRIC PARAMETERS AND GENE FOR PERILIPIN IN THE CZECH POPULATION

Vera Adamkova<sup>1,2</sup>, Jaroslav A Hubacek<sup>1,2</sup>, Ivana KralovaLesna<sup>2</sup>, Pavel Suchanek<sup>2</sup>, Milos Veleminsky<sup>1</sup>, Petra Zimmelova<sup>1</sup>, Vera Lanska<sup>2</sup>

*1 Souh Bohemia University, Prague, Czech Republic*

*2 Institute for Clinical and Experimental Medicine, Prague, Czech Republic*

**Introduction:** The obesity is a major healthy problem in industrialised countries. Also low birth weight and short birth height are discussed like possible risk factors for obesity development, but the definitive conclusion can not be drawn yet. Also the possible effect of the perilipin (major protein of the lipid vacuoles in adipocytes) variants on obesity development is not clear.

**Aim:** To analyse the possible association between perilipin SNPs and anthropometric parameters and gene for perilipin in the Czech population

**Methods:** We have analysed 1473 individuals from two Czech districts (540 males and 933 females, aged 18-45 years). Birth weight, birth length, body weight, height, waist, hip and BMI were correlated with two perilipin variants (A13041G -rs2 304795 a A14995T -rs1052700). ANOVA, Levenes, Brown-Forsyth and Welch tests were used for statistical evaluation.

**Results:** Birth length is significantly higher in individuals with AA genotype of the rs1052700 variant in both districts ( $p < 0,05$ ). Other parameters were not significantly influenced by perilipin variants.

Individuals with genotypes GG (rs2304795) and AA (rs1052700) have (borderline nonsignificant) higher BMI than others.

**Conclusions:** TT carriers of the rs1052700 variant in perilipin gene have lover birth length, but the adult height was the same like in others. Other anthropometric parameters are not associated with the perilipin variants.

Supported by grant project No. 8895-4, IGA MH CR.



PP013

**ASSESSMENT OF MAJOR DIETARY PATTERNS AND THEIR RELATION WITH SOCIOECONOMIC AND DEMOGRAPHIC FACTORS IN 20-50 YEARS OLD WOMEN LIVING IN NORTH OF TEHRAN, IRAN****Arezoo Rezazdeh Sarabi**<sup>1</sup>, Bahram Rashidkhani<sup>2</sup>, Nasrin Omidvar<sup>2</sup><sup>1</sup> Faculty of Nutrition and Food Technology, Shahid Beheshti University of Medical Sciences, Tehran, Iran<sup>2</sup> Department of Community Nutrition, Faculty of Nutrition and Food Technology, Shahid Beheshti University of Medical sciences, Tehran, Iran**Introduction:** Few studies have investigated the association between dietary patterns extracted by factor analysis and socioeconomic and demographic factors.**Aim:** To assess the relation between major dietary patterns and socioeconomic and demographic factors among 20 -50 years old women living in north of Tehran city, Iran.**Materials:** In this cross-sectional study 460 women aged 20-50years old living in north of Tehran, were sampled with stratified random sampling method. Dietary information was collected by a semi -quantitative food frequency questionnaire. Socioeconomic and demographic factors were obtained by interview. Factor analysis was used for identifying major dietary patterns. Then, the association between major dietary patterns and socioeconomic and demographic factors was assessed by covariance analysis .**Results:** Two major dietary patterns were extracted: Healthy (high in othervegetables, fruits, yellow vegetables, cruciferous vegetables,tomato,yogurt drink, low fat dairy products, poultry, olive, nuts, fruit juice, potato, garlic, coffee, dried fruits and legumes) and unhealthy dietary pattern (high in processed meat, mayonnaise, soft drinks, sweets, refined grains, snacks, industrial juice, red meat,nuts, French fries, hydrogenated fats, egg, butter, high fat dairy products, sugars and organ meats) . After adjustment for confounders, Azari ethnicity in comparison with Fars ethnicity and habitancy in district 7 in comparison with district 3 hadpositive and age, university education and total family income per month hadnegative associations with unhealthy pattern. In the other hand, age, housing square meters per head had positive and duration of residence in Tehran had negative associations with healthy pattern.**Conclusions:** Ourfindings support the effect of socioeconomic and demographic factors on dietary patterns of the studied women. So it's suggested these factors should be considered in later assessment of association between dietary patterns and disease.**Key words:** Dietary patterns, socioeconomic -demographic factors, women, factor analysis.

PP014

**USING VISUAL ANALOGUE SCALES AS SATISFACTION CRITERIA IN MULTI-CRITERIA DECISION ANALYSIS (MCDA) TO IMPROVE DIETETIC SERVICES****Nikos Matsatsinis**<sup>1</sup>, Aggeliki Apostolou<sup>2</sup>, Afroditi Savvidou, Th. Karagiozoglou- Lampoudi<sup>2</sup><sup>1</sup>. Decision Support Systems Lab, Technical University of Crete, Greece<sup>2</sup>. Clinical Nutrition Lab, Nutrition/Dietetics Dept, School of Food Technology and Nutrition, Technological Education Institution, Thessaloniki, Greece**Introduction:** Patient's satisfaction (PS) is a prerequisite in dietetic practice, directly influencing compliance to the dietetic advice and therefore its effectiveness.**Aim:** The aim of the study was to suggest appropriate improvements in order to make dietetic intervention satisfactory for the customer.**Material:** 600 persons assigned in two groups were studied. Group A(n=300): people not following any expert's advice and group B(n=300) following dietetic advice. They were assessed using visual analogue scales to measure subjective appetite sensations. The multicriteria methodology used for the analysis of the data, estimated PS based on their own system of values and preferences. The factors-criteria determining PS were assessed and the critical points to which the caregiver must pay attention were identified. In the action map, suggestions for improvement are made on the basis of criteria hierarchy.**Results:** The total satisfaction level reached 86 in group A and 88,7% in group B. Analyzing the satisfaction criteria into a weighted multiple choice criteria hierarchy, different criteria were found to affect satisfaction in the two groups. The most important criterion in group A was preoccupation with thoughts for food, while in group B was the feeling of hunger. The 2 groups displayed different patterns of hierarchy of satisfaction criteria. Group A: i)preoccupation with thoughts for food, ii)desire, iii)Quantity, iv)hunger, v)urge, vi)fullness. Group B: i)Quantity, ii)desire, iii)urge iv)preoccupation with thoughts for food, v) fullness and vi)hunger.**Conclusions:** Dietetic advice could be more satisfactory by considering improvements in patient's feeling of hunger and allowing a feeling of larger quantity of food. Dieticians' training must stress upon the importance of techniques which would help improvements towards PS.



**REVIEW OF INTERNET-BASED INTERVENTIONAL STUDIES FOR WEIGHT LOSS MAINTENANCE**

**Sofia Komninou**, Vasiliki Iatrudi, Eleni Karfopoulou, Xristina Katsarou, Xristina Mavrogianni, Yannis Manios  
 Department of Dietetics and Nutrition, Harokopio University, Athens, Greece

**Introduction:** The maintenance of body weight (BW) loss represents one of the greatest challenges in obesity management. Health scientists continue to search for time and cost effective interventional strategies to reach out to large populations.

**Aim:** This review is a comparative analysis of interventional studies which examine the effects of internet support programs on BW loss maintenance versus the classic "face to face" interventions.

**Materials and Methods:** The analysis includes three randomized controlled interventional studies which were conducted in the USA (Svetkey, LP et al. 2008, Wing, RR et al. 2006, Harvey-Berino, J et al. 2004) and were primarily based on cognitive behavioral methods of self-monitoring. The internet-based interventions were performed either as sessions in a chat room, or via an interactive webpage. These studies were analyzed and compared in respect to their design, content, implementation and results.

**Results:** In the chat room-used intervention, the BW loss maintenance was not significantly different between internet-based and face to face intervention. However, the face to face intervention was more effective compared to the interactive webpage (+4 ± 0.3 vs. +5.2 ± 0.3 kg, P=0.008).

**Conclusions:** The internet appears to be an interesting alternative approach to BW loss maintenance, particularly when considering the low cost and the compelling urgency for the management of obesity, still the long-term efficacy of such methods and their applications in different ages, races and socioeconomic groups require further investigation.

**FAMILY INTERVENTIONS ON CHILDHOOD OBESITY IN THE ISLAND OF SYROS**

**Sofia Bacharaki**<sup>1</sup>, Zoe Ousounidou<sup>2</sup>, Maria Varthalitou<sup>3</sup>, Anna Delasouda<sup>2</sup>, Michalis Gedeon<sup>1</sup>  
 1 National General Hospital of Syros, Kyklades, Greece,  
 2 National Directory of Health and Provision, Kyklades, Greece,  
 3 Center for People with Disabilities, Kyklades, Greece

**Introduction** Children at first school years are more subjectible to familial influences and at risk to develop obesity (adiposity rebound).

**Aim** To control excessive weight gain of overweight/obese children via family interventions

**Material** Based on Body Mass Index (BMI) from all 189 3rd grade children in Syros, 63 were found above normal (33,3%). 28 families agreed to participate, and were allocated in a target group with monthly family interventions from health visitors for a whole school year and a control group. **Methodology** Family: demographic questionnaires, parents' BMI, physical activity (METS table) and nutrition questionnaires. Children: BMI and waist measures (May 2007, September 2008, May 2008), blood tests (September 2008, May 2008) pedometers (September 2008, May 2008). Comparison of final count of pedometers and family members' METS table with 10 peers of normal BMI.

**Results**

	A	B	C	D	E
	Child's BMI May 2007	Child's BMI September 2008	Child's BMI May 2008	Mother BMI September 2008	Father BMI September 2008
N	28	22	24	25	23
Mean	21,29	22,10	20,48	25,43	26,88
SD	2,29	2,55	3,43	4,8	3,38

A-B p< .01/A-C p< .05/B-D p< .05/B-E p< .01

The use of pedometers in all groups were diminished during weekends though not statistically significant. Parents of children with normal weight exercised more (p< .01) as well as their children (p< .05). 4 children had at least one metabolic risk factor: abnormal waist measure + 3 with systolic blood pressure above the 95 percentile + 1 with insuline > 17 µIU/mol. In the second blood test the target group showed a higher HDL (52,3 + 4,52/54 + 12,03 mgr/dL p< .05)

**Conclusion** Family's way of life and current weight interconnects closely with children's status. Such interventions could help this age group.

PP017

**EVALUATION OF ENERGY INTAKE DATA OF YOUNG WOMEN, AGED 19-24 YEARS****Donka Baikova<sup>1</sup>, Vesselka Duleva<sup>1</sup>, Peter Markov<sup>2</sup>***1. National Center of Public Health Protection, Sofia, Bulgaria**2. University Hospital "Maitchin dom" Sofia, Bulgaria*

**Introduction:** The collected data from 24 h Recall for nutrition intake of young women usually is not correct due to the underreporting of consumed food. The nutritional study is depended on reliable estimates of food consumption and need validation.

**Aim:** To assess the reliability and precision of data collected by questionnaires about energy and nutritional intake.

**Material:** The data for nutritional and energy intake were collected from 200 women from Sofia by using the method 24 h Recall of food consumed during the previous day and the data were processed by software. Goldberg's criterion (EI/BMR, 1991) was used to determine the degree of underestimation of energy intake.

**Results:** Young women are tended to underreport the data for their nutritional intake. The mean energy intake is under the recommended value and is  $1728.5 \pm 564.2$  kcal ( $7.6 \pm 2.5$  MJ). For the studied group the ratio EI/BMR is 1.2 at cut off point of 1.35.

**Conclusion:** These data indicate that the survey for dietary assessment conducted with young women underestimate habitual energy intake. In order to confirm the precision of the collected data, it is necessary to include a sufficient number of investigated persons, the number of days for reporting nutritional information has to be specified according to the purpose and it is necessary to include adequate biomarkers.

PP018

**MEDICAL NUTRITIVE THERAPY AND RISK FACTORS FOR T2DM IN OBESE SUBJECTS WITH IGT****Snezana Polovina<sup>1</sup>, Klara Tucic<sup>2</sup>, Koviljka Milenkovic<sup>3</sup>, Mile Novkovic<sup>4</sup>***1 General Hospital Subotica, Subotica, Serbia**2 General Hospital Subotica, Subotica, Serbia**3 General Hospital Cacak, Cacak, Serbia**4 General Hospital Vrbas, Vrbas, Serbia*

**Introduction:** Obesity with impaired glucose toleration, consecutive metabolic abnormalities and hypertension are the important risk factors for type 2 diabetes.

**Aim:** examine the influence of medical nutritive therapy on risk factor for T2DM in obese subjects with impaired glucose toleration.

**Material:** we have analyzed the changes in some of risk factors for T2DM, like blood glucose during OGTT, insulin resistance, hypertension, BMI and fibrinogen in obese people with and without IGT, after 12 weeks of low calorie (1500kcal/day), high fibers diet (20-40g/day). The other nutritive elements were 55-60% carbohydrates, 15-18% proteins and 22-23% predominantly unsaturated fats. 50 subjects were divided in two groups, examined group with IGT (N=25) and control group with normal glucose regulation (N=25). Both groups were taken the same diet.

**Results:** after 12 weeks fasting glucose was significantly decreased ( $p < 0.001$ ) in both groups, in 120 minute of OGTT glucose in examined group decreased significantly ( $p < 0.05$ ) vs. NS in control group. Insulin resistance, calculated by HOMA IR was significantly lower in examined group ( $p < 0.001$ ) than in control group ( $p = 0.05$ ). Pancreatic insulin reserve, calculated by HOMA  $\beta$  had no statistic significantly changes in both groups. Systolic blood pressure decreased in examined group ( $p < 0.001$ ) but control group had more significant decrease of diastolic blood pressure ( $p < 0.05$ ). BMI was lowering significantly in both groups.

**Conclusion:** these results suggest that high fiber diet with balanced nutritive elements had positive effect on most risk factors for type 2 diabetes, like fasting glucose, glucose during OGTT, insulin resistance, hypertension and high BMI in subjects with impaired glucose toleration.



## INTERVENTION STRATEGIES FOR IMPROVING NUTRITION OF CHILDREN AND ADOLESCENTS FROM SOCIAL ESTABLISHMENTS IN BULGARIA

**Vesselka Duleva**, Donka Baikova, Blagoy Jordanov  
*National Centre of Public Health Protection, Sofia, Bulgaria*

**Introduction:** The National Survey of dietary intake and nutritional status of children and adolescents from social establishment in Bulgaria outline the main problem in nutrition.

**Aim:** To optimize organization, public commitment, infrastructure, knowledge and skills of the staff, children and adolescents, engaged in the improvement of nutrition was the main purpose of the intervention strategy.

**Materials:** The selection of intervention methods was made selectively for the different age groups: 3-6 years, 6-14 years and 14-19 years. The strategy includes active training of pupils, lectures with kitchen staff on the healthy nutrition, workshops and meetings with local representatives of governmental structures, meeting with nongovernmental organization and foundations, mass media. On the basis of specific needs a project for improving the kitchen infrastructure is prepared for each social establishment. Exemplary seasonal menus were presented.

**Results:** With cooperation of Ministry of Health and the Ministry of Education the developed and assessed intervention strategy is multiply in social establishment for children in Bulgaria.

**Conclusion:** Implementation of intervention programme for improving nutrition is effective strategy with public health significance.

## INTERVENTIONAL PROGRAM FOR SUSTAINING THE REDUCED WEIGHT AFTER COMPLEX THERAPY OF OBESITY

**Donka Baikova**  
*National Centre of Public Health Protection, Sofia, Bulgaria*

**Introduction:** The results of the National epidemiologic study, conducted in 2004, by the National Centre of Public Health Protection and Regional Inspectorates for Protection and Control of Public Health, show that 34-41% of adults in Bulgaria are overweighted, and 17-22% are obese. Treatment involves complex programs, but when low weight is finally achieved, not enough respect is paid for its sustaining and for the health risks associated with the so called "yo-yo" effect upon the liver, kidneys and the entire metabolism.

**Aim:** The purpose of this interventional program is to raise the comprehension level in interested people how to sustain the low weight which they have earned with so much effort and metabolic stress after treatment of obesity.

**Material:** The methods of this interventional program included education of the interested people particularly for the food intake regime in the period of sustaining the low weight and for the medical risks derived from high amplitudes of their weight (so called "yo-yo" effect). Mass media means were used – television, radio programs, press releases – newspapers, magazines, as well as various discussion forums – closed groups, happenings, seminars, competition games, on-line forums, etc. Different companies involved in the distribution of obesity related products also took part in this interventional program. Scientific and practical recommendations for the sustaining of the achieved low weight were developed by the experts in Nutrition and Dietetics.

**Results:** The results are socially and health related, and associated with a lasting change of the nutritional habits to a healthier pattern, as well as a graduate transition to normal nutrition, while a periodic control was being performed by a specialist-dietologist, which corrected and broadened the diet in the borders of the family nutrition.

**Conclusion:** The conclusion is made that the sustaining of low weight is an important stage in the treatment of obesity and thus achieving its final goal – improvement of individual's health and efficiency.

PP021

**WEIGHT AND EATING BEHAVIORS CHANGES AFTER A NUTRITION INTERVENTION IN OVERWEIGHT SUBJECTS: RESULTS FROM THE 2-YEAR FOLLOW-UP**Mary Yannakoulia, **Elena Bellou**, Anastasios Papalazarou, Vassiliki Pirogianni, Grigoris Risvas, Paul Farajian*Department of Nutrition and Dietetics, Harokopio University, Athens, Greece*

**Introduction and Aim:** Behavioral lifestyle interventions has been proposed for the management of overweight. However, effective strategies for long-term patients' adherence and weight loss maintenance are under investigation. Aim of the present study was to evaluate the long-term effect (2-year follow-up) of including behavioral techniques in a nutrition intervention programme for overweight subjects.

**Methods:** Eighty-two subjects (BMI>25kg/m<sup>2</sup>) were randomly assigned to either Diet-Behavior-Modification group (DBG) or Diet-only group (DG). At baseline, participants underwent full nutritional assessment, including eating behavior assessment using the Dutch Eating Behavior Questionnaire (DEBQ). All subjects were given hypocaloric diets in order to reduce their body weight by 10% and they were seen by a dietitian on a weekly basis. Intervention in the DBG was enhanced by nutrition education and behavior modification techniques (mainly goal setting, stimulus control, positive feedback and reinforcement). Duration of the intervention depended on subject's baseline BMI.

**Results:** The present analysis was limited to those participants available for measurement at 2-year follow-up period (n = 42). Analysis of covariance revealed that DBG achieved a 16.2±1.1% reduction of their body weight, whereas the corresponding mean reduction for the DG was 1.8±1.3%, after controlling for potential confounders, namely age, sex and duration of intervention (p < 0.001). DBG also experienced beneficial changes in DEBQ scores, contrary to what was observed in the DG. **Conclusion:** These preliminary findings indicate that the inclusion of behavioral techniques in a weight-reduction programme may result in positive weight and eating behavior changes at 2-year post-intervention follow-up.

PP022

**EFFECT OF THE MEDITERRANEAN DIET ON THE LEVELS OF HOMOCYSTEINE IN OVERWEIGHT AND OBESE PATIENTS. (POLYCENTRIC STUDY)**Stefanos Patiakas <sup>1,2,4</sup>, **Charalambos Charalambous** <sup>2</sup>, Helias Giovanopoulos <sup>3</sup>, Sokratis Tsukis <sup>3</sup>, Stamatias Katsaris <sup>3</sup>, Michalis Alexandridis <sup>1</sup>, Dimitris Mitsikaris <sup>4</sup>*1 General Hospital of Goumenissa, Goumenissa, Greece**2 Internal Medicine Clinic of the Psychiatric Hospital of Thessaloniki, Thessaloniki, Greece**3 General Hospital of Rethymnon Rethymnon, Greece**4 Diagnostic Center "Hemotest", Greece*

**Introduction-Aim:** To study the effect of the mediterranean diet (which includes large quantities of fruit, vegetables, pulse and fish) on the hyperhomocysteinemia of the obese and of patients suffering from Metabolic Syndrome (MS).

**Material-Method:** 152 patients were examined (64 men and 88 women), on average 59,6 years old, with BMI>25 kg/m<sup>2</sup>. 84 of them were overweight (BMI 25-29,9 kg/m<sup>2</sup>) and 68 were obese (BMI >30kg/m<sup>2</sup>), whereas 67 developed MS according to the criteria NCEP-ATPIII. All of them made an effort to follow the mediterranean diet, while after three months and six months their body weight was recorded as well as their levels of homocysteine.

**Results:** Initially, 126 patients (82%), developed hyperhomocysteinemia (>15mmol/l). Consequently, we had the following:

	1st trimester	1st semester
Men: loss of weight	3,6kgr	4,9 kgr
reduction of homocysteine	3,7mmol/l	6,2mmol/l
Women: loss of weight	4,1kgr	5,8kgr
reduction of homocysteine	4,8mmol/l	6,8mmol/l

Thus, in the 67 patients with MS (23 men and 32 women) there was a total loss of the average body weight by 5,1 kgr and 5,3 Kgr, respectively, and also, the average rate of homocysteine was reduced by 6,8 and 7,3 mmol/l respectively.

**Conclusions:** It is clear, therefore, that not only does the mediterranean diet have beneficial effect on body weight but also contributes in the reduction of omocystein, for both overweight and obese patients of both sexes. Given the fact that hyperhomocysteinemia is very common (82,9%) amongst the obese patients, and that it constitutes by itself an independent and very important cause of cardiovascular risk, it becomes self-evident that its cut-down can play an important role in decreasing the risks of the cardiovascular disease and the mortality due to it.



### DRUG THERAPY IN PATIENTS WITH METABOLIC SYNDROME (MS): DOES IT COMPLY WITH RECENT ESH/ESC GUIDELINES?

**Niki Katsiki**, Maria Baltatzi, Christos Savopoulos, Helen Karlafti, Dimitris Agapakis, Apostolos Hatzitolios

*1st Propedeutic Department of Internal Medicine, Department of Vascular Diseases, AHEPA University Hospital, Aristotle University of Thessaloniki, Thessaloniki, Greece*

**Introduction-aim:** The aim of our study was to determine the compliance to guidelines concerning the treatment of patients with MS by the use of drugs exerting cardiovascular protective benefit.

**Patients-Methods:** We examined 740 patients attending their first visit in our Department of Vascular Diseases from 1/2006 to 1/2008, 443 of whom (170 men) had MS according to NCEP ATP III and were included in the study (mean age=56,4±12,3 yrs). None of these patients was under antiobesity drug treatment.

**Results:** 96,2% of the patients were dyslipidaemic, 17,2% current smokers, 11,3 % had diabetes and 16,9% a previous cardiovascular event (13,8% CHD and 4,5% stroke). 41,5% were taking ACE inhibitors, 10,2% ARBs, 27,3%  $\beta$ -blockers, 31,8% Ca<sup>++</sup>-blockers, 30,5% diuretics and 6,1% statins. The majority of the patients (37,9%) was under antihypertensive monotherapy (31,6% two antihypertensive drugs). Study population was divided into very high risk (history of CVD or diabetes:25,1%) and high risk (the remaining patients with MS:74,9%). 9,9% of very high risk patients was receiving statins and 59,5% ACE inhibitors or ARBs compared with 4,8% (p=0,05) and 48,5% (p=0,04) of high risk patients, respectively.

**Conclusions:** 51,2% of the study population was taking ACE inhibitors or ARBs and only 6,1% statins. Although the proportion of statin use in very high risk patients was significantly higher than in high risk patients, these proportions were remarkably low for both groups. Similarly, even though proportions of patients from both groups receiving ACE inhibitors or ARBs were higher than those receiving statins, they remained inadequate according to ESH/ESC guidelines.

### THE INFLUENCE DRINKING MINERAL WATER AT THE IRON METABOLISM AND THE RED BLOOD CELLS

**Liana Siradze**, Avtandil Kvezereli-Kopadze

*1 Georgia Development Agency*

*2 Researcher Institute of Kurortology and Balneology, Tbilisi, Georgia*

*3 Researcher Institute of Pediatrician, Tbilisi, Georgia*

**Background:** Nowadays the microelements deficiency are treated frequently with complex of microelements and minerals. The complications of this methods are well-known. The nutrition such as drinking mineral water is known in preventive medicine.

**Aim** of the study is research the influence of drinking mineral water at the red blood cells, predominantly at the iron metabolism with patience iron deficiency.

**Methods:** There were studied the 77 children ages 4-14 age with the gently form of iron deficiency anemia and control group 36 children the same age. Children were drinking mineral water according to the methods of treatment for 3 weeks. We observed the change of the level of ferum conditions in the red blood cells: in plazma and in the iron fund of body's tissue.

**Results:** The level of the ferum in plazma raised significantly from 9.64±0.85mkmol/l to 21.55±0.5mkmol/l (P<0.05); Increased the amount Ferittin from 17.10±2.048 ng/ml to 37.24±2.538ng/ml (P<0.001)

**Conclusion:** Drinking mineral water "Thagveri-10" improve the Ferum conditions in the body of patience with iron deficiency.



PP025

**ACE GENE POLYMORPHISMS, ANTHROPOMETRICAL AND BIOCHEMICAL PARAMETERS IN GROWING-SLIM FEMALES**Pavel Suchanek<sup>1,2</sup>, Jaroslav A Hubacek<sup>1,2</sup>, Ivana Kralova Lesna<sup>1,2</sup>

1. Institute for Clinical and Experimental Medicine, Prague, Czech Republic

2. Cardiovascular Research Centre, Prague, Czech Republic.

**Introduction:** Many genes have been implicated in determination of obesity, but our knowledge's about the genes responsible for individual differences in weight loss after physical intervention are poor. One of the candidate genes is a gene for angiotensin converting enzyme (ACE) and its insertion/deletion (I/D) polymorphism.

**Aim:** The aim of the study was analyze ACE I/D variant in 93 unrelated non-diabetic females. There were 17 II homozygotes and 74 D allele carriers.

**Material and methods:** DNA was isolated from frozen EDTA blood and I/D polymorphism was analyzed using two steps PCR. Before and after 9 weeks of trainings programme, biochemical (plasma lipid levels) and anthropometrical measurements were performed. The participants were advised (and supervised) to sustain a heart rate of 115-145 beats (according to age) per minute within 60 minutes of exercise 3 times per week.

**Results:** The changes between anthropometrical and lipid parameters did not differ between females with different ACE genotypes. Nevertheless, in D allele carriers, plasma levels of TG decreased after 9-weeks physical training, but II homozygotes have higher plasma levels of TG after intervention ( $p=0.02$ ).

**Conclusion:** ACE I/D variant has no effect on anthropometrical and most biochemical parameters changes after physical training. But, in contrast to the D allele carriers, I/I homozygotes have after training higher plasma TG levels and their energy supply for muscle performance could be so improved.

Supported by project No. 9393-3, MH CR.

PP026

**SALT CONSUMPTION IN BULGARIA – RESEARCH BASIS FOR PUBLIC HEALTH INTERVENTIONS**

Krassimira Aleksandrova

Department of Social Medicine and Organization of Health Care, Medical University of Varna, Bulgaria

**Introduction** The excessive salt intake is associated with increased risk for cardio-vascular diseases and is traditionally high in Bulgaria. Quantitative data suggests variations in salt intake but the specifics have not been studied in detail as a basis for planning national public health programs, incl. defining target groups and priority activities.

**Aim** We aimed to study the knowledge, attitudes, beliefs and practices regarding salt consumption and its effect on health in order to develop a public health program for salt reduction in Bulgaria.

**Material** A cross sectional study was conducted In April –June, 2003 including 530 people aged over 40 years (245 men and 285 women).

**Results** The dietary behavior of the studied Bulgarian sample is characterized by negative eating habits predisposing high salt intake, more pronounced in rural people, men, younger age groups and those with lower education. The majority of people are acquainted with the negative effect of excessive salt intake on health, but lack concrete knowledge. The role of processed foods as a main source of sodium is underestimated, the food labels are generally not checked, main source of health education are media. There is a negative correlation between the level of knowledge and existing salt intake habits ( $r=-0.77$ ;  $p=0.000$ ), which confirms the importance of improving the health education initiatives.

**Conclusion** There is an urgent need of planning and implementing an adequate salt reduction public health policy in Bulgaria combining the efforts of the health government, food industry and consumers.





PP027

**INSULIN RESISTANCE, CARDIOVASCULAR RISK FACTORS, DIET AND PHYSICAL ACTIVITY PATTERNS AMONG GREEK PREADOLESCENTS. THE PROGRESS STUDY**

**George Moschonis**, Evangelia Grammatikaki, Konstantina-Eleni Kallianioti, Dionysia Argyropoulou, Aikaterini-Eustathia Kyriakou, Vasiliki Dede, Anastasia Vandorou, Paraskevi-Eirini Siatitsa, Alexandra Koumpitski, Maria Kantilafiti, Aikaterini Siopi, Aikaterini Skenderi, Yannis Manios  
*Department of Nutrition and Dietetics, Harokopio University of Athens, Athens, Greece*

**Introduction:** Recent research suggests that cardiovascular disease (CVD) and type 2 diabetes originate in childhood.

**Aim:** To examine the association between insulin resistance (IR), CVD risk factors, dietary and physical activity indices in Greek prepubertal children.

**Materials and methods:** The "Prediabetes, Obesity and Growth Epidemiological Study in Schoolchildren" (PROGRESS) examined a sample of 870 primary schoolchildren aged 9-13 years old. Data included anthropometric (weight, height, waist circumference), biochemical (fasting plasma glucose, serum lipids and insulin levels), clinical (blood pressure), dietary and physical activity (assessed with pedometers) indices. The IOTF references were used for the definition of overweight and obesity. Insulin and glucose were used estimate IR (HOMA-IR). All analyses were adjusted for gender and Tanner stage.

**Results:** The prevalence of overweight and obesity was 31.3% and 11.4%, respectively. IR was observed in 35.5% and 52.6% of overweight and obese children, respectively, and was associated with elevated triglycerides (>150 mg/dl), low HDL-cholesterol (<40 mg/dl) and increased waist circumference (>90th percentile for age, sex). Dietary energy intake was positively related to IR, while increased dietary intakes of carbohydrates and fiber significantly decreased the likelihood of IR. Similarly physical activity levels were also inversely related to IR.

**Conclusions:** Insulin resistance was very common in overweight and obese children, especially in subjects with central obesity. Children with IR were also found to have unfavorable levels of certain cardiovascular risk factors. Increased dietary fiber intake and physical activity levels seem to have a protective effect on the development of IR.

PP028

**OBESITY AND METABOLIC SYNDROME PREVALENCE AMONG PREPUBERTAL CHILDREN IN GREECE. THE PROGRESS STUDY**

**George Moschonis**, Aikaterini Skenderi, Evangelia Grammatikaki, Konstantina-Eleni Kallianioti, Anastasia Vandorou, Vasiliki Dede, Aikaterini-Eustathia Kyriakou, Maria Kantilafiti, Aiki-Eleni Farmaki, Despoina Gakni, Panagiota Margiola, Yannis Manios  
*Department of Nutrition and Dietetics, Harokopio University of Athens, Athens, Greece*

**Introduction:** As childhood obesity increases it also contributes to an increasing incidence of the metabolic syndrome (MS).

**Aim:** To record the prevalence of these adverse health conditions among prepubertal children in Greece.

**Results:** The prevalence of overweight and obesity was 31.3% and 11.4%, respectively. Regarding the clinical features of the MS, abdominal adiposity was recorded for 8.9% of the total sample. Furthermore, 2.6% of children were diagnosed with elevated serum triglycerides, 17.4% with low HDL-cholesterol, 8.8% with hypertension and 15% with increased plasma glucose levels. The prevalence of the MS was 5.8% in the total study population and 42.5% in the obese subjects.

**Conclusions:** The prevalence of overweight, obesity and MS reported by the present study are considerably high and comparable to those reported by similar recent studies conducted with children. Because the number of overweight children is increasing continuously, there is a vital need to develop appropriate screening and prevention strategies.

PP029

**PRESENTATION OF THE STAGES OF CHANGE THEORY APPLIED TO WEIGHT MANAGEMENT INTERVENTIONS****Kalliopi Selioti**<sup>1</sup>, Anastasia Argiropoulou<sup>1</sup>, Liza Varvogli<sup>2</sup>, Yannis Pylarinos<sup>3</sup>, Chrisanthi Vlachaki<sup>4</sup>, Nikolaos Mouzakis<sup>5</sup>*1. Department of Psychology, Panteion University of Social and Political Sciences, Athens, Greece**2. Department of Psychology, Panteion University of Social and Political Sciences, Athens, Greece**3. Department of Cardiology, Saint Savvas Anticancer Hospital, Athens, Greece**4. Department of Cardiology, Saint Savvas Anticancer Hospital, Athens, Greece*

**Introduction :** Treatment of overweight and obesity is difficult and requires long-term behavioural change. Psychosocial variables are recognised as playing an important role in weight management. These variables are incorporated in health behaviour models such as the Transtheoretical model or Stages of Change theory. According to this theory, a person's readiness to change can be assigned to one of five stages –precontemplation, contemplation, preparation, action and maintenance. In primary stages people are ambivalent about making change, though in more advanced ones they try to plan or maintain change. Successful behaviour modification depends on specific factors, like Processes of Change and Decisional Balance.

**Aim :** Apply the Stages of Change theory to weight control and evaluate if this theoretical approach can be an effective guide to the development of interventions that will improve the health of the public.

**Material :** Questionnaires: (1) Weight: Stages of Change, (2) Weight: Processes of Change, and (3) Weight: Decisional Balance.

**Results :** On the basis of preliminary findings (N=164), 10 of the 12 processes of change are verified, explaining 61.98% of the total variance. Self Reevaluation and Self Liberation emerge as the most helpful processes. In more advanced stages, people tend to perceive Advantages of weight control as more important than Disadvantages.

**Conclusions :** Weight management has complex etiological foundations, such as genetic, metabolic, neural, social and psychological influences. Variables like decisional balance and the activation of proper processes according to each stage can provide helpful information about someone's readiness to lose weight and have to be taken into consideration to effect change in behaviour.

PP030

**UNCOVERING THE FUTREX-6100XL PREDICTION EQUATION FOR THE PERCENT BODY FAT****Zacharias G Fthenakis**, Dimitra Balaska, Vassilis Zafiropulos*Department of Human Nutrition and Dietetics, Technological Educational Institute of Crete, Sitia Crete, Greece*

**Introduction.** FUTREX instruments measure the percent body fat (%BF) using the near infra red (NIR) interactance method. This method is based on the absorption of selective wavelengths of NIR light, as it travels from the skin through the biceps to the bone and back. The older model (FUTREX-5000) of those instruments uses two wavelengths (940 nm and 950 nm) and a known prediction equation for the %BF. On the other hand, the newest model FUTREX-6100XL uses four wavelengths (810nm, 932nm, 944nm and 976nm) and the form of the prediction equation is proprietary by the FUTREX company and not published anywhere.

**Aim.** Although the NIR interactance method is rapid, simple, easy, with high repeatability, while the subject does not have to undress, it suffers from accuracy in predicting the %BF values. In the present work we try to uncover the form of the FUTREX-6100XL prediction equation and to improve its predictions.

**Material.** The present study is based on measurements of the %BF with the FUTREX-6100XL instrument on a sample of approximately 100 individuals.

**Results.** It was found an expression for the FUTREX-6100XL prediction equation. The predictions of this expression are compared with the predictions of other equations used by other methods, like BIA and skinfolds and this comparison is presented.

**Conclusions.** Within our study the FUTREX-6100XL prediction equation has been uncovered. This gave us the opportunity to understand which terms of the equation affect the measurements and how this equation can be improved.



PP031

### NUTRITIONAL EDUCATIONAL PROGRAM

Laura Mihalace <sup>1</sup>, Delia Vatca <sup>2</sup>, Roxana Stefan <sup>2</sup>, Lidia Iuliana Graur <sup>1</sup>

<sup>1</sup> University Of Medicine And Pharmacie "Gr.T.Popa" Iasi, Romania

<sup>2</sup> Clinical Hospital "St.Spiridon", Iasi, Romania

We investigated and assessed the food consumption pattern of the adult population living in Iasi, Romania, and we identified excessive or inadequate food intake groups, particularly linked to obesity. Dietary habits were assessed by means of a quantitative food frequency questionnaire (Willett FFQ classifying the consumption frequency in 7 degree) The questionnaire was conducted for 186 men and 123 women aged 19-60 years (34,7 +/- 11,4 years), 197 nonobese (BMI < 24,9 kg/m<sup>2</sup>) and 102 obese subjects (BMI > 25,0 kg/m<sup>2</sup>). We recorded personal medical history, anthropometric data, blood pressure, fasting glycaemia, serum lipids. The conclusion was that rather high contribution of fat to daily intake, the low intake of fish and the relatively high percentage of people consuming less than the recommended amount of fruits and vegetables, suggest that the adult population eat too many calories and is at increased risk of developing obesity. We started a nutritional educational program. We took benefit from the methodology we validated last year on a pilot group of adult. This year we adapted it to teaching nutritional education based on energy density of foods. We discussed energy intake, well – balanced diets, some eating behaviour and gastrotechny. We created our educational materials. Offering motivation, clearly distinguishing between essential and details, schematic representations, use of frequent intense visual stimuli proved to be our best working instruments. The persons with preexisting knowledge supplementary challenged our teaching abilities as to correctly structure and homogenize the whole informational capital.

PP032

### THE EFFECT OF LIFESTYLE AND DRINKING HABITS ON THE HEALTH STATUS OF THE GREEK POPULATION

Maria Hassapidou <sup>1</sup>, Daphni Kaklamanou <sup>2</sup>, George Vlahavas <sup>1</sup>, Themis Kapantais <sup>2</sup>, Ioannis Kaklamanos <sup>2</sup>, Sousana K Papadopoulou <sup>1</sup>

<sup>1</sup> Department Of Nutrition And Dietetics, TEI, Thessaloniki, Greece

<sup>2</sup> Hellenic Medical Association For Obesity, Athens, Greece

**Aim** The aim of this study was to estimate the impact of lifestyle factors and drinking habits on health status.

**Methodology** The sample consisted of 17920 adult Greeks (8423 men and 9464 women). All subjects completed a questionnaire regarding their lifestyle (physical activity, profession, television watching, cigarette smoking and recreational activities), drinking habits and health status.

**Results** According to the results of this study, cholesterol levels were positively related with exercise and more specifically with walking and negatively with television watching, working longer hours at the office and smoking. According to the results of this study an increase of 1 hour walking per day decreases the possibility of high cholesterol levels by 9%. Levels of blood sugar were also positively influenced by exercise and negatively by television watching, and smoking. It was not influenced by working hours at the office and alcohol consumption. Furthermore the appearance of high blood pressure was also positively influenced by exercise, spending more time outside home and negatively by television watching and alcohol consumption, while it was not influenced by working longer hours and smoking. The results showed that 1 hour of high intensity exercise per day decreases the possibility of high blood pressure by 50%.

**Conclusion** In conclusion, health status was influenced by lifestyle factors and drinking habits, so better quality of life can be achieved by meliorating these factors.

PP033

**THE INDEX WAIST-TO-HEIGHT RATIO (WHtR) IN CHILDHOOD OBESITY: RESULTS FROM THE PANHELLENIC SURVEY**

Themistoklis Tzotzas, Efthymios Kapantais, **Myrto Kaklamanou**, Konstantinos Tziomalos, Maria Hassapidou, Ioannis Kaklamanos  
*Hellenic Medical Association for Obesity, Athens, Greece*

**Introduction:** Waist-to-height ratio (WHtR) has been recently proposed as a clinically helpful index to identify children with abdominal obesity(AO) and high cardiometabolic risk. It does not require percentile tables and may be applied to both sexes of all ages.

**Aim:** To examine correlations of WHtR with anthropometric and sociodemographic parameters and to estimate prevalence of AO in Greek children.

**Material:** Data from the Panhellenic Epidemiological Survey in 2003 were used. 3140 children aged 6-12 y (1589 m and 1551 f) were measured for BMI, WC and WHtR and examined by ethnicity (Greeks – foreigners) and residence (urban, semi-urban, rural). Obesity(OB) prevalence was calculated according to IOTF. AO was calculated using waist circumference(WC) according to curves provided for Chypriot children(Sava,ObesRes2001) and also using WHtR with a cut-off of 0.5(Maffeis,JPediatr2008).

**Results:** OB prevalence was 9.4% in boys and 6.4% in girls. WHtR was higher in boys than in girls ( $0.46\pm 0.05$  vs  $0.45\pm 0.05$ ,  $p=0.01$ ). In both genders, WHtR correlated strongly with BMI ( $r=0.65$ ) and WC ( $r=0.85$ ). Prevalence of WHtR>0.5 was higher in boys than in girls (25.6% vs 20%  $p<0.0001$ ) and identified far more children as AO compared with WC (WC (AO) 14.2% girls vs 12.5% boys). Only in boys, WHtR was influenced by the residence (semi-urban vs urban  $p=0.01$ ).

**Conclusions:** In our Greek population, Waist-to-Height Ratio identified about 1/4 of boys and 1/5 of girls as abdominally obese at high cardiometabolic risk. This index is simple and useful, however, it needs further validation.

PP034

**ENVIRONMENTAL DETERMINANTS OF OBESITY IN ADOLESCENTS**

**Dana-Teodora Anton**<sup>1</sup>, Dan Moraru<sup>1</sup>, Carmen Oltean<sup>1</sup>, Laura Bozomitu<sup>1</sup>, Maricel Burlacu<sup>1</sup>

*1. III-rd Clinic of Pediatrics – University of Medicine and Pharmacy Iasi, Romania*

**Introduction:** The increasing prevalence of obesity in adolescents suggests that environmental factors are promoting or exacerbating the problem.

**Aim:** to identify and modify environmental factors that promote obesity and to establish the role of the parents in the prevention of children's weight-related problems.

**Material:** The lot studied was formed from 64 adolescents diagnosed with different grades of obesity in the III-rd Clinic of Pediatrics Iasi-Romania between 1992-2007. At these patients we followed the risk factors for obesity.

**Results:** The next risk factors were present to our patients: increased birth weight – 15 cases (23,43%), high fat diets – 40 (62,50%), supersizing meals – 50 (78,12%), consume of a variety of energy dense foods – 50 (78,12%), unlimited access to food – 25 (39,06%), sedentary behaviour – 50 (78,12%), low mother's education level – 35 (54,68%), consume of the artificial milk rather than breast feeding in infancy – 48 (75%), parental fatness – 16 (25%). Our effective interventions included: comprehensive behavioral management, dietary and physical activity modifications. Some of 64 adolescents studied succeeded in modifying their habits: decreasing concentrated foods - 38 cases (59,37%), decreasing the consumption of sweetened drinks – 28 cases (43,75%) or of fast-food products – 25 cases (39,06%), decreasing the portions size – 25 cases (39,06%), improved of physical activity – 30 cases (46,86%). We have succeeded in parental involvement only in 35 cases (54,68%).

**Conclusions:** The current public health recommendations to lower dietary fat intake appear to be appropriate. The family involvement remains an essential component as part of obesity management. It is urgent to propose interventions taking account all environmental factors which could cause obesity.



PP035

### BREASTFEEDING DURATION IN NEW-BORN BABYS AND FUTURE OBESITY PREVALENCE IN CHILDHOOD

**Kyriazis A Ioannis**<sup>1</sup>, Periklis Bobolas<sup>2</sup>, Dimitrios Mendrinou<sup>2</sup>, Maria Balla<sup>1</sup>, Panagiota Panagopoulou<sup>1</sup>, Leonidas Bartzis<sup>2</sup>, Zacharoula Katsare<sup>2</sup>, Kaliopi Klimatsaki<sup>2</sup>, Athanasios Lalousis<sup>1</sup>, Ioannis Malios<sup>2</sup>, Konstantina Zafeiri<sup>2</sup>, Theodosios Kokolias<sup>2</sup>, Nikolaos Syrianos<sup>2</sup>, Edmond Deda<sup>1</sup>, Christiana Pavlidou<sup>1</sup>, Eleni Papavasiliou<sup>4</sup>, Nikolaos Katsilambros<sup>3</sup>

*1 Obesity Outpatient Clinic - Korinthos General Hospital, Korinthos Greece*

*2 Internal Medicine Dpt. Korinthos General Hospital, Korinthos, Greece*

*3 1st Propaedeutic Department of Internal Medicine, Laikon General Hospital, Athens University Medical School, Athens, Greece*

*4 Paediatric Dpt., Korinthos General Hospital, Korinthos, Greece*

**Introduction:** The prevalence of overweight and obesity increases worldwide. Early identification of overweight and obese children and hence the associated risk factors, is a major challenge in fighting the obesity epidemic.

**Aim:** To study the obesity indices in relation to breastfeeding (BF) in Greek Primary School Children (GPSC).

**Materials and Methods:** 1152 GPSC (578 boys and 574 girls, 6-12 years), from fourteen primary schools of Palaion Faliron Municipality, was surveyed. Parental questionnaires included children's BF history. Obesity was defined as a BMI equal to or greater than the age- and sex-specific cut-points proposed by the I.O.T.F.

**Results:** The prevalence of overweight was 22,6% and obesity 6,5% (Boys 8,1% - Girls 4,7% p=0.07). Obesity prevalence was reduced significantly as age increased (9,1% at age 6-9 to 3,1% at age 10-12, p<0,001) in both sexes. BF was high (81,7%) but seems to have no effect in children's obesity (8,8% vs. 5,4% vs. 8,1% in never, 1-6 and >6 months BF respectively, p=NS).

**Conclusions:** Our study demonstrates a high prevalence of overweight among GPSC especially in boys. BF seems to have no effect on the prevalence of childhood obesity.

### NUTRITIONAL AND OTHER RELATED FACTORS THAT LEAD TO OBESITY IN GREEK URBAN ELEMENTARY SCHOOL-CHILDREN

**Ioannis Kyriazis**<sup>1</sup>, Dimitrios Mendrinou<sup>2</sup>, Balla Maria<sup>1</sup>, Konstantinos Korovesis<sup>2</sup>, Periklis Bobolas<sup>2</sup>, Dimitrios Presvelos<sup>2</sup>, Zacharoula Katsare<sup>2</sup>, Leonidas Bartzis<sup>2</sup>, Ioannis Malios<sup>2</sup>, Theodosios Kokolias<sup>2</sup>, Athanasios Lalousis<sup>1</sup>, Edmond Deda<sup>1</sup>, Nikolaos Syrianos<sup>2</sup>, Christos Partheniou<sup>2</sup>

*1 Korinthos General Hospital, Obesity Outpatient Clinic, Korinthos, Greece*

*2 Korinthos General Hospital, Internal Medicine Dpt., Korinthos, Greece*

**Introduction:** Childhood obesity is among the most widespread medical problems in developed countries.

**Aim:** To estimate the prevalence of obesity as well as nutritional and other related factors that lead to obesity in Greek urban elementary school-children.

**Material:** The study included 2374 children (1206 males/1168 females)

**Results:** 22.8% were overweight and 8.4% obese. Boys were more obese than girls (9,2% vs 5,3%, p<0,05) but Central Obesity (CO) was equal in 2 sexes (36,6% vs 34,3%, p=0,48). Obesity reduced significantly as age increased (from 10,3% in age 6-9 to 3,3% in age 10-12, p<0,001), but not CO (33,5% in age 6-9, 33,7% in age 10-12, p=0,18). The significant reduction in prevalence of obesity was positively associated to the increase of the regular physical activity. On the other side, we noticed an increase in prevalence of overweight children (from 60.3% in age 6-9 to 68.6% in age 10-12, p<0.5).

The following dietary habits were positively correlated to obesity:

1. Refrain from breakfast (42.2% vs 33.5%, p<0.05)
2. Poor consumption of fruits and vegetables (35.6% vs 29.9%, p<0.05)
3. Soft drinks consumption (37.8% vs 28.9%, p<0.05)

The frequent consumption of fast food can also lead to overweight and obesity [never-seldom: 17.9% overweighted-6.2% obese vs ≥3/week: 24.2% overweighted-7.9% obese, (p<0.05)].

There is also a close connection between obesity and PC or TV activity [never: 27.3% overweighted-4.1% obese, 1 hour/day: 18.9% overweighted-7.8% obese, > 3 hours/day: 26.1% overweighted-8.6% obese, (p<0.01)]

**Conclusions:** We noticed an increase in prevalence of childhood obesity as well as a sex-dependent difference in all ages. Overall children with physical inactivity as well as frequent fast food consumption are at greater risk of obesity.

PP036

PP037

**THE CLINICAL CHARACTERISTIC OF OBESITY IN CHILDREN**

Boris Kaganov, Tatiana Strokova, Alexander Surkov, **Elena Pavlovskaya**, Andrey Zubovich, Elena Uvarova, Natalia Ageeva  
*Research Institute of Nutrition, Russian Academy of Medical Sciences, Moscow, Russia*

Obesity in children is one of the actual problems of modern public health services. Last decades showed worldwide growth of number of the patients, suffering by obesity, including children and adolescents.

**Aim:** Research of clinical and laboratory signs in children with obesity.

**Patients and methods:** We observed 50 children (16 boys and 34 girls) aged 5 - 17 (mean 12,1±0,4) years with body mass index >95th percentile for age and sex. All children have been hospitalized concerning obesity for the first time. All children were examined by clinical, laboratory and ultrasound methods. Body impedance analysis had been made in all children in the first days of stay in a hospital. Liver elastography was performed if necessary.

**Results:** Excess weight occurrence was marked in 6,1±0,7 years. The family anamnesis was characterized by adiposity at 30 (60 %) children, type 2 diabetes – at 19 (38 %), arterial hypertension – at 22 (44 %), thyroid diseases – at 10 (20 %), urinary and biliary stone disease – at 8 children (16 %).

The initial weight of children was 84,01±4,2 kg, height - 159,2±2,2 cm. At survey presence of striae in 20%, acanthosis nigricans in 4% of cases has been revealed. The examination revealed: hypothalamic syndrome at 19 (38%) children, metabolic syndrome at 6 (12%), cerebral syndrome – at 6 (12%), fatty liver – at 17 (34%), secondary changes in pancreas – at 35 (70%), arterial hypertension – at 15 (30%) of children. Body impedance analysis in all examined children revealed the increase of relative and absolute quantity of the fat mass, other parameters were normal.

Liver elastography was performed in 9 patients with fatty liver. Liver density in different parts of the right lobe was regular in 4 children, liver elasticity was 4,8 – 5,3 kPa, IQR 0,9 kPa, according to F0 stage of fibrosis by Metavir. In 5 children liver density was irregular, elasticity was 5,8 – 8,8 kPa, IQR 1,0 – 5,1 kPa, according to F1 stage of fibrosis in 2 and F2 stage in 3 children.

**Conclusion:** The most of children with obesity had early debut of disease, later reference for medical aid, complicated family history on metabolic and endocrine pathologies, high frequency of complications of obesity, especially fatty liver.

PP038

**EFFICIENCY OF NUTRITIONAL TREATMENT IN OBESE CHILDREN**

Boris Kaganov, Tatiana Strokova, **Alexander Surkov**, Elena Pavlovskaya, Andrey Zubovich, Elena Uvarova, Natalia Ageeva  
*Research Institute of Nutrition, Russian Academy of Medical Sciences, Moscow, Russia*

Decrease of a body weight in obese children demands the complex approach directed on correction of a life-style. The main component of the correction weight program is low-calorie nutritional treatment, for weight decrease and normalization of carbohydrate and lipid metabolism.

**Aim:** Research of dynamics of clinical and laboratory signs in obese children during nutritional treatment.

**Patients and methods:** We observed 50 children (16 boys and 34 girls) aged 5 - 17 (mean 12,1±0,4) years with body mass index >95th percentile for age and sex. All children have been hospitalized about obesity for the first time. All children were examined by clinical, laboratory and ultrasound methods. Duration of hospitalization was 20,6±0,4 days. The inpatient treatment program included special low-calorie low-fat diet (about 1800 kcal/day), physiotherapy and correction of complications of obesity.

**Results:** The mean weight of children in the day of admission was 84,01±4,2 kg, height - 159,2±2,2 cm. The mean body mass index was 31,9±1,07, that was more than 95th percentile for age and sex. Children complained of the increase appetite in 58%, thirst – in 18%, weakness and fatigue – in 32%, sweatiness – in 30%, disturbance of memory and attention – in 8%, headaches – in 48%, dizziness – in 14%, drowsiness – in 16%, dyspnoe – in 12%, increase of arterial pressure – in 30%, labile mood with tendency to depression – in 58%. The fast glycemia was 5,3±0,5 mmol/l, serum cholesterol – 4,7±0,2 mmol/l, triglycerides – 1,04±0,1 mmol/l.

The most of children showed marked decrease of a body weight during low-calorie low-fat diet. Inpatient weight reduction was 1,4 - 10,5% (mean 6,4±0,3%) from the initial level. Body impedance analysis revealed that decrease of body weight resulted from reduction of fat mass. Positive dynamics of body weight was accompanied by decrease of the most of subjective complaints, decrease of arterial pressure, improvement of carbohydrate and lipid metabolism (fast glycemia was 4,5±0,09 mmol/l, serum cholesterol – 3,6±0,2 mmol/l, triglycerides – 0,9±0,1 mmol/l).

**Conclusion:** nutritional treatment by low-calorie low-fat diet is an effective method of weight reduction in obese children, especially during inpatient stage for the fast decrease of body weight and improvement of metabolism.





### TRENDS OF OVER WEIGHT AND OBESITY AMONG 14-18 YEARS OLD URBAN ADOLESCENT GIRLS IN AHVAZ SENIOR HIGH SCHOOLS 1997-2006

Shiva Faghieh<sup>1</sup>, Forough Azam Taleban<sup>2</sup>, Ali Reza Abadi<sup>3</sup>, Negin Ansari<sup>4</sup>, Ehsan Hejazi<sup>5</sup>

<sup>1</sup> Shahid Beheshti University Of Medical Sciences, Tehran, Iran

<sup>2</sup> Shahid Beheshti University Of Medical Sciences, Tehran, Iran

<sup>3</sup> Shahid Beheshti University Of Medical Sciences, Tehran, Iran

<sup>4</sup> Islamic Azad University, Tehran, Iran

<sup>5</sup> Jondishaour University Of Medical Sciences Tehran, Iran

**Objective:** Over the past century, most nutrition research and policy concerning the developing world focused on poverty and under nutrition. Now there is growing evidence of a major shift toward overweight and obesity in these societies.

**Aim:** The aim of this study was to assess changes in prevalence of obesity among 14-18 years old adolescent girls in Ahvaz between years 1997 and 2006.

**Methods:** Two cross-sectional studies were carried out separately. In 1997, 398 adolescent girls aged 14-18 year, and in 2006, 420 girls were selected from Ahvaz senior high schools, by stratified sampling. Socio-economic questionnaires were completed, weight and height were measured, and then BMI was calculated.

**Results:** Mean  $\pm$  SD of height (Cm), weight (kg), and BMI (kg/m<sup>2</sup>) were 159.82 $\pm$  5.55 vs. 159.77 $\pm$  15.69 ( $p = 0.95$ ), 52.17 $\pm$ 8.67 vs. 55.64  $\pm$ 13.66 ( $p < 0.001$ ), and 20.41 $\pm$ 3.18 vs. 21.57 $\pm$  3.94 ( $p < 0.001$ ) in 1997 and 2006 respectively. Comparison of obesity and over weight between years 1997 and 2006 show that it increased significantly ( $p < 0.001$ ). The odds ratio indicate that the prevalence of obesity and over weight approximately tripled between 1997 and 2006 ( $p < 0.001$ , OR= 2.87, 95%CI 1.83-4.49).

The data shows that there is a significant relation between BMI and food habits including number of meals ( $p < 0.001$ ) and missing the breakfast ( $p < 0.05$ ).

**Conclusion:** Results of this study are eloquent of the fact that prevalence of obesity is increasing among adolescent girl students in Ahvaz. Regarding the adverse effects of obesity, it is critical to encourage healthy eating patterns and increase physical activity among adolescent girls.

**Key words:** obesity, over weight, adolescent girls.

### THE EVALUATION OF THE PROGRESS IN OBESITY AMONG STUDENTS DURING THEIR COURSE FROM ELEMENTARY SCHOOL TO HIGHSCHOOL

Nina Papadopoulou<sup>1</sup>, Anastasia Zekeridou<sup>2</sup>, Athanasios Mousiolis<sup>3</sup>, Nikolaos Kamperidis<sup>4</sup>, Ioanna Sakoli<sup>5</sup>, Georgios Boskos<sup>6</sup>, Frideriki Lagra<sup>7</sup>, Persefoni Papadopoulou<sup>8</sup>

<sup>1</sup> Dietician, directress of Drama's General Hospital Food department

<sup>2</sup> General Hospital of Kavala, A Pathological clinic, Kavala, Greece

<sup>3</sup> General Hospital of Kavala, A Pathological clinic, Kavala, Greece

<sup>4</sup> General Hospital of Kavala, A Pathological clinic, Kavala, Greece

<sup>6</sup> Charocopio University, department of food and dietetics, Athens, Greece

<sup>7</sup> General Hospital of Kavala, A Pathological clinic, Kavala, Greece

<sup>8</sup> General Hospital of Kavala, A pathological clinic, Kavala, Greece

**Introduction:** In the field of taking preventive measures against childhood obesity, the nutrition department of Drama's general hospital organised this 4 years research with the intention to register a) body mass index difference between boys and girls as well as between students who lived in urban, rural or boonies b) body mass index increase from childhood to adolescence

**The main aim** of this research is to study and evaluate the phenomenon of the possible increase in obesity during childhood and adolescence.

**Method and material:** Students from Drama's elementary schools and highschools were used as a sample. The research was focused in two factors that correlate with obesity: nutrition and training.

Firstly, during the school year 2004-05, we registered the dietary habits and the physical activity in 1512 children 10-12 years old, who were students from 9 elementary schools in the region of Drama. After 4 years we took the same sample of children who were now highschool students. We reassessed their dietary habits and their physical activity.

**Results:** The comparative results of our study show that the percentage of children who were overweight or obese during their childhood is getting increased in their adolescence. In addition, overweight and obese children, had a significantly lower level of daily physical activity and their diet was proved to be rich in animal fats and proteins.

**Conclusions:** It is evident that the development of a program for a preventive action against obesity and its complications in childhood and adolescence is necessary.



PP041

**EATING HABITS AND ACTIVITY MODIFICATION AND THEIR EFFECTS ON CARDIOVASCULAR RISK FACTORS OF OVERWEIGHT CHILDREN**

Olga Filippou, **Maria Dolianiti**, Konstantina Karanasiou, Christianna Vliora, Maria Ziva-Petropoulou, Stavroula Papadakou-Lagogianni  
*Asclepeion Voulas General District Hospital. Pediatric Department, Athens, Greece*

**Aim:** To evaluate the effects of nutritional and physical activity interventions on BMI, BP and lipid profile among obese and overweight children of our area during a six-month programme.

**Material-Methods:** 170 overweight/obese children and adolescents (96 obese), aged 3.5-14 years old (mean age: 8.9 years  $\pm$  2.8) were included in this prospective observational study. On the first visit, anthropometric indexes, eating habits and physical activity patterns were recorded and lipid profile was determined from blood sample collected after a 12-hour overnight fast. Both dietary and physical activity instructions were given and subjects were followed up after the 6-month intervention.

**Results:** 58 subjects (34.1%) (29 obese) completed the 6-month follow-up examination while 32.7% of them detected a BMI reduction and 24.1% became normal weight. Children who reduced the weekly juice consumption demonstrated greater BMI reduction compared to those who did not ( $p=0.01$ ). Furthermore, subjects who consumed home-made meals instead of fast food snacks exhibited lower triglycerides (74.57mg/dl vs. 109mg/dl,  $p=0.006$ ) and higher HDL-C values (50 mg/dl vs. 42mg/dl,  $p=0.046$ ). Participants who reduced daily chips consumption had a marginally lower systolic blood pressure (SBP) ( $p=0.072$ ). Taking up exercise training (27/55) was associated with lower systolic blood pressure ( $p=0.026$ ) and higher HDL-C values (52.33 mg/dl vs. 45.38 mg/dl,  $p=0.011$ ). Finally, a decrease in the BMI percentiles among the children who increased weekly physical activity was detected, but this difference didn't reach statistical significance ( $p=0.062$ ).

**Conclusions:** A combined intervention for childhood obesity results in decreased BMI, SBP and improved lipid profile concentration.

PP042

**FOLLOW-UP EXAMINATION, AFTER A 6-MONTH INTERVENTION PROGRAMME, IN OBESE CHILDREN AND ADOLESCENTS**

Olga Filippou, **Maria Dolianiti**, Konstantina Karanasiou, Joulia Kazantzidou, Maria Ziva-Petropoulou, Stavroula Papadakou-Lagogianni  
*Asclepeion Voulas General District Hospital. Pediatric Department, Athens, Greece*

**Aim:** To evaluate the short-term effects of a 6-month, combined physical activity and nutrition education programme, on anthropometric measures and lipid profile among overweight and obese children of our area.

**Material-Methods:** This prospective observational research included 170 overweight/obese children and adolescents (96 obese), aged 3.5-14 years old (mean age: 8.9 years  $\pm$  2.8). At first visit, anthropometric indexes were recorded and lipid profile was determined from a fasting blood sample. Both dietary and physical activity instructions were given and subjects were followed up after the 6-month intervention.

**Results:** 58 subjects (34.1%)(29 obese) completed the 6-month follow-up examination. In 19/58 (32.7%) a BMI reduction was demonstrated. 5 obese children became overweight and 1 obese and 13 overweight children became normal weight. A statistically significant decrease in the BMI percentiles before and after the intervention was detected (from  $93.3 \pm 5.6$ , to  $88.05 \pm 11.8$ , mean decrease: - 5.241,  $p < 0.001$ ). 47 (27.64%) participated in the follow-up lipid examination. A significant decrease in serum T-C and LDL-C levels among the intervention participants was confirmed. A -10 mg/dl reduction in T-C values ( $p=0.009$ ) and a -9.9 mg/dl reduction in LDL-C values ( $p=0.007$ ) were indicated before and after the intervention, while HDL-C values increased marginally (mean increase +2.3 mg/dl,  $p=0.084$ ). Finally, 1 out of 3 children with elevated T-C levels and 1 out of 2 with elevated LDL-C levels, normalized their values during the follow-up examination.

**Conclusions:** Our results show the significant benefit of a short term intervention programme on BMI and body lipids concentrations.



### ASSESSMENT OF BODY MASS INDEX IN PRIMARY SCHOOL CHILDREN IN TEHRAN, LOCAL (ZONE2)

Mrs Mina Kaviani<sup>1</sup>, Dr Farideh Shishehbor<sup>2</sup>, Mrs Azadeh Aminpour<sup>3</sup>, Dr Ali Reza Abadi<sup>4</sup>, Mr Sohrab Farahmand<sup>5</sup>

1. National Nutrition & Food Technology Research Institute, Faculty of Nutrition Science & Food Technology, Shahid Beheshti University, M.C. Tehran, Iran

2. Nutrition Department, Para Medical Faculty, Ahwaz Jondi-Shapoor University of Medical Sciences, Ahwaz, Iran

3. Community Nutrition Department, Faculty of Nutrition Science & Food Technology, Shahid Beheshti University, M.C. Tehran, Iran

4. Social Medicine Department, Medical faculty, Shahid Beheshti University, M.C. Tehran, Iran

5. Primary School Department, Education Office Local (zone2), Tehran, Iran

**Introduction:** Child's nutrition status is one of the most important public health subjects that affect child's growth and health

**Aim:** This study was conducted to determine the body mass index (BMI) of primary school children in Tehran, 1385.

**Material:** In this cross-sectional study, 287 forth-grade primary school girls were randomly selected by multistage clustering sampling method from 9 local schools (zone 2), in Tehran. The weight and height were measured according to standards and BMI was calculated. The CDC2002 reference was used to assess BMI. Under weight, over weight and obesity were defined as  $BMI < 5^{th}$ ,  $5 \leq BMI < 95^{th}$ ,  $BMI \geq 95^{th}$ , respectively. Demographic data were collected. Data were analyzed with SPSS (ver11.5) software.

**Results:** The mean ( $\pm$ SD) BMI of subjects was  $18.29 \pm 3.37$ . The prevalence of underweight, overweight and obesity were 6%, 15.2% and 7.4% respectively. The results indicated higher prevalence than accepted (5, 10 & 5% respectively).

**Conclusion:** According to high prevalence of over weight, obesity and under weight, child's nutrition and health status must be attended as primary goal for nutrition and public health.

### OVERWEIGHT AND OBESITY IN CHILDREN UNDER 5 YEARS IN SOFIA

Lalka Rangelova, Stefka Petrova

National Center of Public Health Protection, Sofia, Bulgaria

**Introduction:** Overweight prevention in early childhood is an important to reduce risk for obesity in older age.

**Aim:** To determine prevalence of overweight and obesity in infants and young children in Sofia.

**Material:** A transversal survey on a representative sample from Sofia covering 636 children aged 0- 5 years was conducted in 2007. WHO methods and indices were used to measure the height and body weight and to assess children's nutritional status: height-for-age (HA), weight-for-age (WA), weight- for-height (WH), body mass index (BMI). The results were compared to adopted standards for physical development of Bulgaria n children.

**Results:** According to new WHO criteria (high WH) the prevalence of children aged 12-59 months with overweight is 5.3% and with obesity 1.0%; at risk for overweight are 15.6%. At risk for overweight are 11% of infants. An adequate assessment of overweight and obesity in this age group by Bulgarian standards cannot be made because the necessary criteria are not used.

Underweight (low WA) and stunting (low HA) prevalence in children is much greater according to Bulgarian standards compared to that assessed according to WHO criteria.

**Conclusions:** The anthropometric criteria applied in Bulgaria for growth and nutritional status assessment of children under 5 years do not comply with international recommendations. According WHO standards overweight and obesity prevalence in children is 6.3% but the rate of children at risk for overweight is substantial.

PP045

WITHDRAWN

PP046

**EFFECTIVENESS OF INTRAGASTRIC BALLOON TREATMENT IN OBESE ADOLESCENTS**Katerina Kotzampassi<sup>1</sup>, **Pyrros Papakostas**<sup>2</sup>, Sophia Penna<sup>2</sup>, Gergana Pyankova<sup>2</sup>, Thomai Karagiozoglou-Lampoudi<sup>2</sup><sup>1</sup> A' Surgery Dept, Aristotle University of Thessaloniki, AHEPA hospital, Thessaloniki, Greece<sup>2</sup> Clinical Nutrition Lab, Nutrition/Dietetics Dept, School of Food Technology and Nutrition, Technological Education Institution, Thessaloniki, Greece

**Introduction:** Morbid obesity has reached epidemic proportions not only in adults but also in children and adolescents. Intra-gastric balloon placement is a minimally invasive technique used to treat obesity.

**Aim:** The purpose of this study was to investigate the effects, during the six month period with an IB, on weight loss, body composition.

**Material:** Of 300 obese subjects treated with IB 14 adolescents (m=6/f=8), age  $18,5 \pm 2,5$  were studied prospectively. Mean baseline BMI  $39,78 \pm 5,81$  and %FM  $41,7 \pm 5,39$ . The data collected every month for the six month period was, BW, BMI, RMR (indirect calorimetry), %FM, %EWL, % of actual caloric intake (%ACI) (24h food recall). The number of follow-up visits was considered as a marker of compliance compared to those of adults.

**Results:** Mean $\pm$ SD BW, BMI, %FM, %ACI on baseline was (120,44 $\pm$ 26,38kg, 39,78 $\pm$ 5,81kg/m<sup>2</sup>, 41,7 $\pm$ 5,39, 139,46 $\pm$ 46,43), respectively. Mean $\pm$ SD BW, BMI, %FM, %EWL, %ACI on removal was (111,36 $\pm$ 25,56kg, 36,97 $\pm$ 6,39kg/m<sup>2</sup>, 38,38 $\pm$ 8,93, 18,89 $\pm$ 21,12, 94,77 $\pm$ 38,55), respectively. The mean number of follow-up visits was 2,43 $\pm$ 1,40. Difference between baseline and removal values for BW, DBMI, D%FM was not significant ( $p > 0,05$ ) where as for %ACI it was. Also there was no difference between those who conformed and those who did not.

**Conclusions:** Adolescents showed a non significant weight loss, even though they reduced their energy intake. Based on the number of follow-up visits they showed less compliance, which may explain the poor results.



**THE RELATION BETWEEN CALCIUM INTAKE AND BODY MASS INDEX AMONG 14-18 YEARS OLD URBAN ADOLESCENT GIRLS IN AHVAZ SENIOR HIGH SCHOOL**

Shiva Faghih<sup>1</sup>, Dr Shahriar Eghtesadi<sup>2</sup>

<sup>1</sup> Shahid Beheshti University Of Medical Sciences, Tehran, Iran

<sup>2</sup> Iran University Of Medical Sciences, Tehran, Iran

**Introduction:** Epidemiologic data suggest that people with high calcium intake have a lower prevalence of overweight and obesity. This study was designed to investigate whether there is any association between calcium intake and body mass index (BMI) of adolescent girls in ahvaz senior high schools.

**Methods:** This cross-sectional study was carried out on 398 healthy students who were 14 to 18 years old. Demographic questionnaires, a 24- hour food recall and 2 days food record were completed. Height and weight were measured, then BMI was calculated.

**Results:** Mean ± SD of height, weight, BMI, energy and calcium intake were 159.82± 5.55(Cm), 52.17±8.67 (kg), 20.41±3.18 (kg/m<sup>2</sup>), 1659.04±314.58 (kcal/d) and 385.36±138.95(mg/d) respectively. After adjustment for energy intake there was a negative correlation between BMI and calcium intake (p = 0.008, r = - 0.17).

**Conclusion:** Results of this study indicate that the prevalence of obesity among adolescent girls could be decreased by encouraging them to consume more dairy products.

**Key words:** calcium, body mass index, adolescent girls

**CHILDRENS' DRAWINGS AND FAMILY ATTITUDES IN CHILDHOOD OBESITY**

Sofia Bacharaki<sup>1</sup>, Anna Delasouda<sup>2</sup>, Maria Varthalitou<sup>3</sup>, Zoe Ousounidou<sup>2</sup>, Michalis Gedeon<sup>1</sup>

<sup>1</sup> General Hospital Of Syros, Greece

<sup>2</sup> Department of Health and Provision, Kyklades, Greece

<sup>3</sup> Centre for People with Disabilities, Kyklades, Greece

**Introduction** Children at first school years are not expected to acknowledge their weight problem. Simlutaneously their behavior is to be influenced and modelled by the parents' attitudes.

**Aim** To explore attitudes towards eating and food of parents of overweight/obese children. To have a glimpse of children's inner world through their drawings.

**Material** Based on Body Mass Index (BMI) from all 189 3rd grade children in Syros, 63 were found above normal (33,3%). 28 of these families agreed to participate. Control group for the drawings were 12 children of normal weight, same age, same sex distribution.

**Methodology** Parents: BMI measures, 3 Factor Eating Questionnaire (Disinhibition of Control, Hungry Behaviors, Cognitive Restraint of Eating) Child Eating Questionnaire (how they perceive their child's weight, ten attitudes towards eating patterns). Child: BMI, Draw - a - Human-Figure test (Emotional Indicators, Drawing Age).

**Results:** Two couples of parents of the 28 had normal weight. Mother's BMI was associated with the Factor Disinhibition of Control (p< .05) and father's with Hungry Behaviors (p< .01). Regarding attitudes most parents find difficult to regulate the child's eating and that will eat more if left unattended (20/28). The majority are very much concerned about future health problems but find the child within normal or slight more than normal weight after the age of 5 (21/28).

Children's Drawings		N	Mean	SD
Emotional Indicators (EI)	Overweight/Obese	28	2.43	2.08
	Normal Weight	12	0.83	1.19
Drawing Age (DA) (in months)	Overweight/Obese	27	113.93	26.92
	Normal weight	12	155.63	26.85

Controls had fewere EI and higher DA without reaching statistical significance. Conclusions Important food attitudes can be delivered through the family environment. Children at this age may show with projectve methods the repercursons of a problem that begins to be for life.

PP049

**BASIC CHARACTERISTICS OF THE FOOD INTAKE AND THE ANTHROPOMETRIC STATUS OF CHILDREN BETWEEN 3 TO 7 YEARS OLD, RAISED IN KINDERGARTENS IN SOFIA CITY****Donka Baykova**, Vesselka Duleva*Nacional Centre of Public Health Protecton, Sofia, Bulgaria*

**Introduction:** During the years of transition period to market economy, the socio-economical changes affected the organizations responsible for the children's nutrition in kindergartens, as well as the pattern of family nutrition, which combined reflected on the characteristics of the food intake and the anthropometric status of Bulgarian children.

**Aim:** The purpose of this study is to evaluate the food intake and the anthropometric status of children between 3 to 7 years old from the kindergartens in Sofia city.

**Material:** A transverse study of the food intake in 398 children (3-7 years old) has been conducted in kindergartens throughout Bulgaria. Nutrition in kindergartens is evaluated with calculation leaflets and portion size, and 24-h recall is organized with the parents in order to assess children's nutrition in the family. The anthropometric nutritional status is calculated with the height/weight ratio.

**Results:** The results have shown that the mean energy intake on a daily basis is 1750 kcal, which is accordant to recommendations. Proteins in daily food intake is also in accordance with the recommendations and comprises up to 12% of total energy, while more than 50% of protein is derived from animal sources. Fats are 38% of the daily food energy value in food intake of all children (which is above the recommendations – up to 35%). Carbohydrates are the source of 49% of the daily food energy (recommendations 50-65%). Several foods important for the child's organism have been found as insufficient. Thus, consummation of milk covers 62% of the recommended amount for this age group, while intake of fruits and vegetables – only 50%.

The anthropometric status assessed with the weight/height index has shown that the relative prevalence of underweight children is 1.4%, and for the overweight children it is - 6%.

**Conclusion:** The conclusion is that an appropriate interventional program has to be developed and applied as an adequate and economically effective method for nutrition optimization of the children in kindergartens.

PP050

**SURVEY ABOUT THE BODY MASS INDEX (BMI) AMONGST CHILDREN AND ADOLESCENTS IN GREECE. CONSEQUENT HEALTH PROBLEMS (POLYCENTRIC STUDY)**Stefanos Patiakas <sup>1,2</sup>, **Basiliki Tioli** <sup>1</sup>, Michalis Alexandridis <sup>1</sup>, Angeliki Triandafilopoulou <sup>2</sup>, Dimitris Kifonidis <sup>3</sup>, Sokratis Tsukis <sup>4</sup>, Konstantina Xatzi <sup>5</sup>, Stamatis Katsaris <sup>4</sup>*1General Hospital of Goumenissa, Goumenissa, Greece**2General Hospital of Kastoria, Kastoria, Greece**3General Hospital of Ptolemaida, Ptolemaida, Greece**4General Hospital of Rethymnon, Rethymnon, Greece**5Health Center of Farsala, Farsala, Greece*

**INTRODUCTION-AIM:** To study the frequency of obesity in children and adolescents in Greece as well as the ensued health problems.

**MATERIAL-METHOD:** In a sample of 562 children, 265 boys and 297 girls, aged 6-18 the physical build and the arterial pressure were measured. Their BMI was also measured whereas 218 of them had their blood tested after a 12-hour fast. The method we used was the chemiluminence at the biochemical analyser.

**RESULTS:** a) 38.8% of the children presented BMI>90st, b) 3.4% presented systolic hypertension, c) 23.2% presented artery pressure (depending on the age, sex and height), category High Normal, d) 4.6% presented diastolic hypertension, e) 20.8% of the children are in relation with the rate of the diastolic tension (depending on age, sex and height) in the category High Normal, f) 13.4% presented levels of triglycerides>100mg/dl, and finally, g) 28.1% have HDL-cholesterol < 40mg/dl.

**CONCLUSIONS:** 1) It is clear that the metabolic syndrome -by the presence of three of its criteria- is a reality for a significant percentage of the children and adolescents of Greece. 2) A more and more frequent problem is child obesity and low HDL-cholesterol and high arterial pressure which are also rising to alarming rates.



### STUDY OF LIPID AND LIPOPROTEINS IN TEENAGERS (POLYCENTRIC STUDY)

Stefanos Patiakas <sup>1</sup>, Michalis Alexandridis <sup>1</sup>, Konstantina Xatzi <sup>2</sup>, Dimitris Kifonidis <sup>3</sup>, Evangelia Sourla <sup>1</sup>, Basiliki Tioli <sup>1</sup>

<sup>1</sup>General Hospital of Goumenissa, Goumenissa, Greece

<sup>2</sup>Health Center of Farsala, Farsala, Greece

<sup>3</sup>General Hospital of Ptolemaida, Ptolemaida, Greece

**Introduction-Aim:** To study the lipidemic profile of teenagers in the agricultural region's of West Macedonia and Central Greece.

**Material-Method:** We examined 98 blood serums of teenagers 12-17 years old, who were examined or hospitalized in the General Hospital's of Goumenissa and Ptolemaida, and also in Health Center of Farsala, for cholesterol values (total, HDL and LDL) and triglycerides (TG) values, with help of the Biochemical analyzer TARGA 3000 by Menarini.

**Results:** We found 5 teenagers with total cholesterol value >200 mg/dl (5, 1%), 2 with triglyceride value >120 mg/dl (2, 04%), 13 with HDL value <40 mg/dl (13, 3%), and 6 with LDL value >130 mg/dl (6, 1%).

**Conclusions:** Only the HDL values <40 mg/dl, showed a statistical significance between boys (9) and girls (4). Even though teenagers in agricultural regions present a higher degree of physical activity we should pay attention to the atheromatous factor because they begin asymptotically from childhood, with fatal results later. The lipid control from childhood could prevent many bad consequences of hyperlipoproteinemia. The information of parents about physical activity and healthy nutrition could play a crucial role.

### COMPARISON OF THE NUTRITIONAL HABITS OF STUDENTS AGED 7-12 BETWEEN EAST AND WEST REGIONS OF THESSALONIKI

Niki Katsiki, George Tzouveleakis, Christos Nanas, Apostolos Hatzitolios

Aristotle University of Thessaloniki, Thessaloniki, Greece

**Introduction-Aim:** The purpose of our study was to compare the eating patterns of students aged 7-12 between areas of Thessaloniki with higher (East) and lower (West) socioeconomic status.

**Material-Methods:** A specific questionnaire was distributed to 1272 students from East areas (Group A) and to 1430 students from West areas (Group B), aged 7-12 to be completed by their parents. We received valid answers from 1065(83,7%) students of Group A (570 boys and 495 girls) and from 1151(80,5%) of Group B (506 boys and 645 girls).

**Results:**

Eating habits	Group A (n=1065)	Group B (n=1151)	p
Two main meals	4,8%	3,3%	ns
Three main meals	95,2%	96,7%	ns
One secondary meal	44,5%	38,5%	<0,01
Two secondary meals	48,6%	54,3%	<0,01
Red meat	92,8%	87,7%	<0,001
White meat	95,6%	92%	<0,001
Fish	87,1%	87,3%	ns
Bread,pasta and rice	98,3%	97,3%	ns
Dairy products	98,8%	97%	<0,01
Eggs	83,1%	83,6%	ns
Salads, vegetables	46,1%	61,9%	<0,001
Delicatessen	75,3%	74,3%	ns
Juices	91,5%	93,7%	<0,05

**Conclusions:** Students from West areas consumed two secondary meals, juices, salads and vegetables at a higher proportion than students from East areas, whereas red and white meat and dairy products at a lower percentage. Our results showed that nutritional habits of students from West areas were more close to the traditional Mediterranean eating pattern, whereas nutrition of students from East areas was more influenced by the 'Western diet'. Furthermore, girls from both groups adopted a healthier diet compared to boys, with a higher proportion of breakfast, salads and vegetables' consumption.

PP053

WITHDRAWN

PP054

**OVERWEIGHT AND OBESITY IN PORTUGUESE PRESCHOOL CHILDREN: COMPARISON BETWEEN DIFFERENT DIAGNOSTIC CRITERIA****Ana Rito***Instituto Nacional de Saúde Doutor Ricardo Jorge IP, Lisboa, Portugal*

**Introduction:** As worldwide countries are trying to fight childhood obesity epidemic levels, the evaluation of child growth trajectories and intervention designed to improve child health are highly dependent on growth charts and diagnostic criteria used. Portugal presents one of the European highest prevalence of childhood obesity, yet national knowledge on pre-school children nutritional status is missing, although European policies stated that prevention programmes should start in early childhood years.

**Aims:** This study compares prevalence of obesity among Portuguese pre-school children using four different diagnostic criteria.

**Methods:** 1580 children, aged between 3 and 5 years old from all 73 private and public scholar institutions of Coimbra, were assessed in weight and stature and gender-specific prevalence of overweight and obesity was determined according to 4 diagnostic criteria.

**Results:** Using a z-score of weight/stature index  $>+2$  in relation to the median of NCHS (1977) of the 786 girls (49,7%) and 794 boys, we found 10,1% of girls and 7,9% of boys with overweight. Comparing BMI to CDC growth charts (2000) with cut-off point of P85-95 and  $> P95$ , 19,1% of girls and 15,9% of boys had risk of overweight and 15,3% of girls and 13,9% of boys were overweight respectively. The risk of being overweight in adulthood, using IOTF criteria, were higher in girls 18,2% than boys 12,44% and for cut off points for BMI in childhood and linked to adult cut off points of BMI  $> 30\text{kg}/\text{m}^2$  he found 6,2% of girls and 5,2% of boys. Using a z-score of BMI  $>+2$  in relation to the median of WHO (2006) there were 11,1% of girls and 10,2% boys.

**Conclusions:** Overweight affects children starting in one of the critical periods for its development which is pre-school age. The prevalence showed similar figures only with NCHS (1977) and WHO (2006) It reinforces that the reference used to define overweight is important since it provides different estimates and policy makers should be aware that a spurious drop in prevalence may appear if the IOTF reference is compared to other criteria.





### CORRELATIONS BETWEEN LIPID AND HORMONAL PROFILE FOR BREAST CANCER RISK

Cynthia Petrovanu<sup>1</sup>, Adorata Elena Coman<sup>1</sup>, Gabriel Murariu<sup>2</sup>, Rodica Petrovanu<sup>1</sup>

1. Ambulatory Care Department, Medical University "Gr. T. Popa", Iasi, Romania

2. family Medicine Practice, Iasi, Romania

**Introduction.** Several studies showed that body mass index (BMI) and sera sex hormone binding globulin (SHBG) are inversely correlated both in menopausal and premenopausal women; especially in premenopausal breast cancer patients SHBG level is decreased by hyperinsulinaemia, overweight/ obesity and body fat distribution, and, therefore, SHBG plasma level might be lower in metabolic syndrome patients. This condition is also characterized by decreased HDL-cholesterol. Low HDL-cholesterol and high BMI might be linked to breast cancer risk through hyperestrogenemia.

**Aim of the study.** To establish breast cancer risk in overweight/obese dislipidaemic patients by correlating plasma estradiol HDL -cholesterol and BMI.

**Material and method.** We studied a group of 110 patients divided in three subgroups – 30 patients who had just been diagnosed with breast cancer; 50 patients with breast dysplasia diagnosed by mammography and mammary echography; 30 patients with no modifications on mammography or breast echography. Height, weight, abdominal and hip perimeter have been measured. All have performed complete lipids profile as well as serum estradiol.

**Results.** Plasma estradiol values were higher in breast cancer and breast dysplasia patients than in control group patients. It was directly correlated to high BMI and high values of LDL/HDL ratio, which means a high risk metabolic state, especially in menopausal women.

**Conclusions.** Low HDL- cholesterol appears a breast cancer risk marker by its linkage to an unfavorable hormonal profile, especially in menopausal overweight/obese women.

**Key Words:** estradiol, menopause, obesity, HDL-cholesterol.

### OBESITY RELATED FTO GENE IN PATIENTS WITH RENAL FAILURE AND HEALTHY CONTROLS

Jaroslav A Hubacek<sup>1,2</sup>, Lada Kuthanová<sup>1</sup>, Silvie Bloudíčková<sup>1</sup>, Romana Bohuslavová<sup>1</sup>, Jan Pitha<sup>1,2</sup>, Ondrej Viklický<sup>1</sup>

1 Institute for Clinical and Experimental Medicine, Prague, Czech Republic

2 Cardiovascular Research Centre, Prague, Czech Republic

**Introduction:** Chronic renal failure (CRF) is a common disease with high mortality. One of the CRF risk factors is obesity. Recently, FTO gene (2-oxoglutarate-dependent nucleic acid demethylase) was detected, and his variants are associated with BMI in population samples.

**Aim:** The aim of the study was analyze common variant within FTO gene in patients with CRF (treated with haemodialysis) and in healthy controls.

**Material:** We have collected DNA samples from 1000 CRS patients. Three groups of healthy controls were included – post MONICA study (2559 individuals), HAPIEE study (6679 individuals) and 3PMFs study (890 individuals). BMI levels were known from 451 patients and from all controls. FTO SNP rs17817449 was analyzed using PCR-RFLP.

**Results:** The frequency of the GG homozygote's was significantly higher in the patients with CRF (22.8%) in comparison with all control groups – with the post-MONICA study (17.2%;  $P < 0.0005$ ), with the HAPIEE study (19.3%;  $P < 0.005$ ) and with the 3PMFs study (18.3%;  $P < 0.02$ ). The SNP was not associated with the duration of haemodialysis treatment or BMI development in CRF patients. FTO SNP rs17817449 was associated with BMI in control populations (although some sex-specific and menopausal status specific differences were observed) but it was not associated with BMI in CRF patients.

**Conclusion:** FTO GG genotype (rs17817449) is more common in CRF patients than in controls, but seems not to be risk factor for the CRF mortality. BMI was associated with FTO variant in the controls, but not in the patients.

PP057

**INSULIN SECRETION IS AFFECTED BY MEAL DURATION IN HEALTHY INDIVIDUALS**

**Kleopatra Alexiadou**, Alexander Kokkinos, Georgia Argyrakopoulou, Nicholas Tentolouris, Despoina Kyriaki, John Doupis, Ioanna Eleftheriadou, Vasiliki Argiana, Chryssi Koliaki, Nicholas Katsilambros

*First Department of Propaedeutic Medicine, Athens University Medical School, Laiko General Hospital, Athens, Greece*

**Introduction:** The role of meal duration on insulin secretion has scarcely been explored.

**Aim:** The present study assessed the differences in insulin response after the consumption of identical meals at different rates.

**Material:** Thirteen healthy male subjects (age: 31.3 ±3.7 years, BMI: 26.6 ±3.8 kg/m<sup>2</sup>) consumed the same standard meal (300 ml of ice-cream, 675 Kcal) in three sessions of different duration in random order and with an interval of about one week in between: In session A the meal was divided and consumed in 5 minutes and in sessions B and C in 30 and 60 minutes, respectively. Blood samples were taken before the meal and at 30, 60, 90, 120 and 150 minutes postprandially for the measurement of blood glucose and insulin. Overall response of glucose and insulin were calculated and expressed as area under the curve in each session (AUCA, AUCB, and AUCC respectively).

**Results:** Glucose AUCs did not differ between sessions. However, different insulin responses were observed. Specifically, insulin AUCB was significantly higher than insulin AUCC (114.6±68.1 vs 77.1 ±34.0 pmol/L, respectively, P=0.03), while the insulin AUCA tended to be higher than insulin AUCC (108.3 ±68.1 vs 77.1 ±34.0 pmol/L, respectively, P=0.07). There was no statistically significant difference between insulin AUCA and insulin AUCB.

**Conclusions:** The duration of meal consumption affects insulin secretion. Postprandial insulin response is more pronounced when a meal is consumed in a physiologically relevant time span (i.e. within 30 minutes), than when it is consumed either too fast or too slow.

PP058

**DIFFERENCES IN INTIMA MEDIA THICKNESS OF THE CAROTID ARTERIES INDUCED BY DIFFERENCES IN OBESITY STATUS, IN TYPE 2 DIABETIC PATIENTS**

**Ioannis A. Kyriazis**<sup>1</sup>, Dimitrios Mendrinou<sup>2</sup>, Dimitrios Mytas<sup>3</sup>, Maria Balla<sup>1</sup>, Konstantinos Korovesis<sup>2</sup>, Periklis Bobolas<sup>2</sup>, Anastasios Koutsovasilis<sup>1</sup>, Zacharoula Katsare<sup>2</sup>, Mazen Bader<sup>3</sup>, Athanasios Lalousis<sup>1</sup>, Ioannis Malios<sup>2</sup>, Apostolos Manias<sup>2</sup>, Theodosios Kokolias<sup>2</sup>, Nikolaos Syrianos<sup>2</sup>, Edmond Deda<sup>1</sup>, Konstantinos Barlas<sup>2</sup>, Christos Partheniou<sup>2</sup>

*1 Obesity Outpatient Clinic, Korinthos General Hospital, Korinthos Greece*

*2 Internal Medicine Dpt. Korinthos General Hospital, Korinthos, Greece*

*3 Cardiology Dpt., Korinthos General Hospital, Korinthos Greece*

**Introduction:** An increase in the common carotid artery intima-media thickness(CCA-IMT) is generally considered an early marker of atherosclerosis.

**Aim:** To assess IMT in type 2 diabetic patients (T2DP) and to identify the possible relationships with obesity and disease markers (HbA1c, duration of diabetes).

**Material:** Ultrasonographie at both CCAs was performed in 36 T2DP (21men/15women-age: 61,17+1,422 BMI:30,350+ 0,7153, Waist:103,750+1,9389, T2DM duration: 10,171+1,4422, HbA1c:7,221+0,2790, IMT-mean:1,011+0,0412).

**Results:** 20 T2DP were overweight and 12 obese. 19 had Sex Specific Central Obesity(SSCO) and 8 were at low risk according to waist/hip ratio, 10 at moderate risk and 18 at high risk. Results observed in the relationship of CCA-IMT with BMI are given in Table 1. SSCO showed a trend for higher CCA-IMT values(p=0.06). Results observed in the relationship of CCA-IMT with risk groups according to waist/hip ratio are given in Table 2. Also prolonged duration of diabetes and bad disease control, were positively related with CCA-IMT measurements (p<0.05).

Table 1.	IMT-mean	p value
Normal	0,775+0,0500	p<0.01
Overweight	0,995+0,2605	
Obese	1,117+0,2082	
Table 2.	IMT-mean	p value
Low	0,894+0,1611 sem	p<0.01
Moderate	1,138+0,3204 sem	
High	1,150+0,2074 sem	

\*All values are given as mean ± SD

**Conclusions:** BMI and Waist/Hip ratio increase, were significantly correlated with IMT thickening. This suggests that a history of obesity may be an important risk factor for carotid atherosclerosis and the development of macroangiopathy in T2DP.



### IMPACT OF OBESITY ON BLOOD PRESSURE CONTROL AND ANTIHYPERTENSIVE TREATMENT IN TYPE 2 DIABETIC PATIENTS

**Ioannis A. Kyriazis**<sup>1</sup>, Dimitrios Mendrinou<sup>2</sup>, Maria Balla<sup>1</sup>, Konstantinos Korovesis<sup>2</sup>, Periklis Bobolas<sup>2</sup>, Anastasios Giolis<sup>2</sup>, Zacharoula Katsare<sup>2</sup>, Kaliopi Klimatsaki<sup>2</sup>, Athanasios Lalousis<sup>1</sup>, Ioannis Malios<sup>2</sup>, Konstantina Zafeiri<sup>2</sup>, Theodosios Kokolias<sup>2</sup>, Nikolaos Syrianos<sup>2</sup>, Edmond Deda<sup>1</sup>, Lambrini Georgali<sup>2</sup>, Christos Partheniou<sup>2</sup>.

*Obesity Outpatient Clinic - Korinthos General Hospital, Korinthos Greece1.*

*Internal Medicine Dpt. Korinthos General Hospital, Korinthos, Greece2.*

**Introduction:** Obesity is strongly associated to type 2 diabetes mellitus (T2DM). Hypertension often coexists among these patients and requires an individualized treatment.

**Aim:** To evaluate the choice of pharmacologic agents in order to treat obese – hypertensive type 2 diabetic patients (T2DP).

**Materials:** In all 813 T2DP, HbA1c, BMI, waist circumference (WC), waist/hip ratio (W/H), the presence or not of hypertension and its regulation, the category and the number of hypertensive regimens were registered.

**Results:** Out of 813 T2DP (447 women, 366 men), 63.9% (group A) were known hypertensive (67.4% had good blood pressure control based on JNC VII 2003 criteria), whereas 36.1% normotensive (group B). Between the m, there was no significant difference regarding HbA1c ( $7.07 \pm 1.38$  vs  $7.27 \pm 1.42$ ,  $p=0.856$ ), BMI ( $29.26 \pm 4.97$  vs  $28.94 \pm 5.94$ ,  $p=0.490$ ) and W/H ( $0.97 \pm 0.55$  vs  $0.93 \pm 0.10$ ,  $p=0.282$ ). On the other hand, we noticed significant differences in age ( $66.82 \pm 10.04$  vs  $63.05 \pm 12.13$ ,  $p < 0.0001$ ), WC ( $103.45 \pm 12.97$  vs  $101.20 \pm 13.030$ ,  $p=0.020$ ) and the presence of cardiovascular complications (33.7% vs 66.3%,  $p=0.013$ ). Of the hypertensive participants, 39.2% were receiving ACE-I, 19.6% ARBs, 20.7%  $\beta$ -blockers, 19.8% Diuretics, 20.2% Calcium Antagonists, 3.2%  $\alpha$ -blockers and 65.8% required  $\geq 2$  antihypertensive drugs.

Good control of blood pressure was mainly achieved by the use of ACE-I ( $p=0.009$ ), ARBs ( $p=0.030$ ), diuretics ( $p=0.006$ ) or combination of these ( $p=0.032$ ).

**Conclusion:** Hypertension coexistence in obese T2DP seems to be positively related with WC and age. Blood pressure control on this target group, can be achieved by the combination of diuretics with ACE-I or ARBs, while obesity reduction remains the big claim.

### ULTRASOUND MEASUREMENTS OF INTRAABDOMINAL FAT DEPOSITS

**Edita Stokić**, Biljana Srdić

*Department of Endocrinology, Medical Faculty, Novi Sad, Serbia*

Intraabdominal fat mass plays a critical role in the pathogenesis of metabolic comorbidities of obesity. The gold standard for measuring regional fat is computed tomography or magnetic resonance imaging, which are obviously limited because of equipment, costs, and radiation exposure. Ultrasound measurements of intraabdominal fat deposits are more accurate than measurement of waist circumference and are simpler and less expensive than computed tomography or magnetic resonance imaging. We examined a group of 87 obese persons ( $37.34 \pm 8$ , 95 years, BMI:  $37.93 \pm 7.25$  kg/m<sup>2</sup>). The amount of subcutaneous and abdominal adipose tissue was measured anthropometrically (waist circumference, sagittal abdominal diameter) and ultrasonographically. A venous blood sample was taken to measure total cholesterol, HDL-cholesterol, triglycerides, glucose and insulinemia. Intraabdominal fat mass measured by ultrasound showed a correlation with a higher number of cardiovascular risk factors than waist or sagittal abdominal diameter (HDL-cholesterol:  $r=0.295$ ,  $p < 0.001$ , glycemia:  $r=0.308$ ,  $p < 0.001$ , HOMA-IR:  $0.237$ ,  $p < 0.05$ ). Our results show that the associations between intraabdominal fat and metabolic risk factors for cardiovascular disease are more pronounced with ultrasound measurements than with anthropometric measurements (waist circumference and sagittal abdominal diameter) and are independent of BMI with ultrasound measurements.

PP061

**SAGITTAL ABDOMINAL DIAMETER AS A MARKER OF INSULIN RESISTANCE**

Edita Stokić, Biljana Srdić, Dragana Tomić-Naglić

Department of Endocrinology, Medical Faculty, Novi Sad, Serbia

The amount of intraabdominal adipose tissue correlates with the potentially "atherogenic" metabolic disturbances associated with obesity. Supine sagittal abdominal diameter, as a simple anthropometric measure, has been found to be closely related to the amount of visceral adipose tissue. The aim of our study was to evaluate the relationship between sagittal abdominal diameter (SAD) and other indicators of body fat distribution with cardiovascular risk factors in obese persons. We examined a group of 87 obese persons (37.34 +/- 8, 95 years, BMI: 37.93 +/- 7.25 kg/m<sup>2</sup>). Anthropometric measurements (SAD, body mass index, waist circumference and waist-to-hip) and cardiovascular risk factors (insulin, glucose, insulin resistance (HOMA-IR), and blood pressure and serum lipids) were assessed. SAD showed stronger correlations to all measured metabolic variables, including insulin resistance measured by HOMA (r: 0,256, p<0,001), than BMI, waist and WHR. In multiple regression analyses SAD was the only independent anthropometric predictor of insulin resistance (p < 0.001).

Our results show that sagittal abdominal diameter could be a clinically useful marker of metabolic risk factors, especially insulin resistance in a group of obese persons.

PP062

**CORRELATION OF OBESITY AND METABOLIC SYNDROME TO PLASMA HOMOCYSTEINE LEVELS**Alexandra Sianni<sup>1</sup>, Asimina Ganotopoulou<sup>2</sup>, Neratzoula Karagianni<sup>1</sup>, Katerina Kosma<sup>1</sup>, Dimitrios Vasilopoulos<sup>1</sup><sup>1</sup> Dromokaitio Psychiatric Hospital of Athens, Athens, Greece<sup>2</sup> General Hospital of Piraeus Izaneio, Athens, Greece

**Introduction:** Homocysteine is an amino acid that is produced from the human body with the chemical conversion of the amino acid of methionine. Normal plasma levels of homocysteine range between 5-15 μmol /lt, whereas levels over 15 μmol /lt indicate hyperhomocysteinemia.

**Subjects –Methods:** In total 168 patients with metabolic syndrome MS were included in the study. All were inpatients of the Psychiatric Hospital of Athens, fulfilled the NCEP- ATP III criteria for MS and were followed up for a period of 6 months. Patients with a diagnosis of congenital hyperhomocysteinemia were excluded from the study. Subjects were divided in two groups, according to their BMI.

Group A consisted of 90(54%) patients, 58 men(64%) and women 32 (36%) with BMI<25kg/m<sup>2</sup>. Group B was comprised of 78(46%) patients, 28 (36%) men and 50(64%) women, diagnosed with MS and BMI >25kg/ m<sup>2</sup>. During the six month follow up period, plasma levels of homocysteine were monitored 2-4 times monthly and in the same laboratory.

**Results:****Group A: Patients with BMI<25kg/ m<sup>2</sup>**

Homocysteine levels	Patients N=90	Women N=58	Men N=32
5-15mmol /lt	66	42	24
>15 mmol /lt	24	16	32

**Group B: Patients with BMI>25kg/ m<sup>2</sup>**

Homocysteine levels	Patients N=78	Women N=50	Men N=28
5-15mmol /lt	22	18	4
>15 mmol /lt	56	32	24

**Conclusions:** Homocysteine levels were recorded high in patients with diagnosed MS. The observed increase was recorded even higher when MS and BMI >25kg/ m<sup>2</sup> coexisted, a fact that is suggested to be linked with obesity or insulin resistance or both.



### EXPERIENCE FROM THE USE OF RIMONABANT IN PATIENTS WITH CARDIOMETABOLIC RISK FACTORS

**Eleni Paschalidou**, Ioannis Efthimiadis, Vassiliki Milioni, Maria Vlachopoulou, Apostolos Efthimiadis

*Atherosclerosis Outpatient Clinic, 2nd Department of Internal Medicine, Hippocraton General Hospital, Medical School, Aristotle's University of Thessaloniki, Thessaloniki, Greece.*

**Introduction:** Rimonabant (a cannabinoid receptor-1 blocker) is a novel and potent agent for the management of central obesity in patients with cardio-metabolic risk factors.

**Aim:** to evaluate the effect of rimonabant on body weight, lipidemic profile and CRP levels in patients with central obesity and cardiometabolic risk factors.

**Material:** we followed 45 patients (30 women, 15 men) aged  $46,4 \pm 12,6$  years, with central obesity (waist circumference:  $105 \pm 5$  cm, BMI:  $30 \pm 2$  Kg/m<sup>2</sup>, body weight:  $98,5 \pm 8$  Kg) and cardiometabolic risk factors. 23 had hyperlipidemia, 28 had arterial hypertension and 31 were smokers.

**Method:** Detailed medical history was obtained, body fat measuring, clinical examination and ECG was performed. At first visit all patients received hypocaloric diet (-500 Kcal/day) and rimonabant 20 mg/day was administered for 6 months. Before and after treatment with rimonabant serum levels of glucose, cholesterol, triglycerides, HDL-C, LDL-C, SGOT, SGPT, CRP were determined by the standard methods. Patients receiving antidepressants were excluded from this study.

**Results:** at the end of the study, body weight decreased by 18,2% ( $p < 0,001$ ), waist circumference, by 11,4% ( $p < 0,01$ ), BMI was  $25 \pm 1,8$  Kg/m<sup>2</sup>. Lipidemic profile was statistically improved, (triglycerides decreased by 16,8%, and HDL-C increased by 9,8%)  $p < 0,001$ . Systolic blood pressure decreased by 12% and CRP levels also decreased by 35,8% ( $p < 0,001$ ). Patients' compliance was excellent and no adverse events were referred.

**Conclusions:** rimonabant besides body weight loss can also cause improvement of lipidemic profile and blood pressure and significant decrease of CRP levels. It was also found that improves the mental state of the patients

### PULSE WAVE VELOCITY IN OBESE AND NON-OBESE PATIENTS WITH TYPE 2 DIABETES MELLITUS

**Ioanna Eleftheriadou**, Pinelopi Grigoropoulou, Nicholas Tentolouris, Evanthia Diakoumopoulou, Stavros Liatis, Alexander Kokkinos, Michael Bourlakis, Maria Matsaggoura, Vasileios Ntalamagkas, Despoina Perrea, Nicholas Katsilambros

*First Department of Propaedeutic Medicine, Athens University Medical School, Laiko General Hospital, Athens, Greece*

**Introduction:** Increased pulse wave velocity (PWV) of the carotid-femoral (cf) arteries reflects arterial stiffness and is an important predictor of cardiovascular events. Patients with type 2 diabetes mellitus (T2DM) have increased values of PWV.

**Aim:** Since little information exists regarding the relationship between obesity and arterial stiffness in patients with T2DM, we examined the association between PWV and obesity in subjects with T2DM.

**Material:** Fifty patients with T2DM (mean age:  $63,6 \pm 7,7$  years; duration of diabetes  $11,3 \pm 10,3$  years) were examined. Obesity was defined as body mass index (BMI)  $\geq 30$  kg/m<sup>2</sup> (21 obese and 29 non-obese patients). All patients underwent clinical and biochemical evaluation. Arterial stiffness was assessed by measurement of PWV at the carotid-femoral (cfPWV) and carotid-radial (crPWV) segments.

**Results:** cfPWV and crPWV values did not differ between obese and non-obese subjects (10.1 m/sec and 7.3 m/sec vs 11.4 m/sec and 6.8 m/sec,  $p=0.14$  and  $p=0.32$ , respectively). Univariate linear regression analysis showed that cfPWV was positively associated with age ( $p < 0.001$ ), systolic arterial pressure ( $p < 0.001$ ) and glucose ( $p=0.016$ ), and negatively with BMI ( $p=0.026$ ). No significant relationships were found with sex, diabetes duration, plasma lipids, albumin excretion rate and smoking status. Multivariate analysis, after adjustment for sex, BMI, systolic blood pressure, fasting blood glucose, HBA1c and albumin excretion rate, demonstrated that only age was associated significantly with cfPWV ( $p=0.003$ ).

**Conclusions:** Obese patients with T2DM do not differ from non-obese diabetic subjects in terms of PWV. The presence of diabetes offsets the importance of obesity as a risk factor for early atherosclerosis.

PP065

**NUTRITIONAL ASSESSMENT WITH 24-HOUR RECALLS AND BIOCHEMICAL PARAMETERS IN A COHORT OF HEMODIALYSIS PATIENTS IN A SINGLE RENAL UNIT**

Despoina Daskalaki, Dimitra Kioussi, Helen Bolanaki, Nikos Tzenakis, Aris Paraskevopoulos

*Mediterranean Holiday Dialysis Center, Kalassa-Gazi, Heraklion-Crete, Greece***Introduction:** International studies show that malnutrition is a major cause of morbidity and mortality in dialysis patients worldwide.**Aim:** Nutritional assessment of dialysis patients with 24-hour dietary recalls, anthropometric and biochemical measurements.**Material:** 36 patients (29 men, 7 women), aged 25-85, were enrolled in the study. In each patient a 24-hour recall was taken every week for a period of two months (a total of 288 recalls). Anthropometric measurements (dry weight, height, mid-arm circumference and skinfold measurements-triceps, biceps, subscapular, suprailiac) were estimated. By the above measurements body mass index, ideal body weight (IBW), percentage IBW and percentage of body fat, were calculated. Biochemical measurements were taken every month, before, during and at the end of the study.**Results:** From the dietary methods appeared that most patients did not covered their energy needs, although the greatest percentage of patients were overweight (69,4%). Also, 58% of them did not covered their protein needs which is in contrast with the serum albumin. It was also observed increased consumption of dietary fat (38% and 39% of energy needs for men and women respectively). The daily intake of carbohydrates appeared lower than recommended (45% and 46% of energy needs for men and women respectively). Increased BMI ( $28 \pm 5$  for men and  $27 \pm 5,7$  for women) and increased dry weight compared with the IBW (52,8% of all patients were overweight) was observed from the anthropometric measurements.**Conclusions:** The patients that were studied appeared to be in good nutritional status since their protein and energy intake was sufficient in such degree that they covered the increased losses of dialysis.

PP066

**THE ROLE OF FRESH FRUIT AND VEGETABLES CONSUMPTION WITH REGARDS TO GENETIC PREDISPOSITION FOR OBESITY PHENOTYPE**Krassimira Aleksandrova, Maria Radanova, Yoana Kiselova, **Diana Ivanova***Nutrigenomics Center, Medical University Varna, Bulgaria***Introduction:** Bulgarian population is known to be at high risk of cardio-vascular diseases (CVD) and with high obesity prevalence. Unhealthy diet and genetic predisposition are major CVD risk determinants related to obesity. The protective role of diet rich in fruits and vegetables is well established but not studied with respect to genetic factors (FTO, fat mass and obesity associated gene) in Bulgaria.**Aim:** We aimed to examine the patterns of fruit and vegetables intake in overweight Bulgarians and to determine the role of unfavourable diet with regards to genetic predisposition (FTO dbSNP rs9939609 carriers) in obese subjects.**Material:** 530 adults, aged 40 – 75 years (BMI  $29 \pm 11$ ) were randomly selected. Food frequency questionnaire was applied to measure usual food intake. Consequently, FTO gene variants were determined in a subsample of 60 people.**Results:** A pronounced seasonality of fresh fruit and vegetables consumption is observed. 75% of all subjects do not consume any fresh vegetables in winter compared to 5 % in summer. Fresh fruits are consumed every day by 15 % of the subjects in winter, while by 65 % in summer. Men, rural and obese subjects prove to have the most unfavourable diet. Diet poor in fruits and vegetables have dominating role for obesity phenotype rather than genetic predisposition.**Conclusions:** The results underline the presence of seasonal variations in fresh fruit and vegetables consumption in overweight Bulgarians at high CVD risk. Future large-scale studies are needed to study in detail the specifics of the gene-nutrient interactions.





PP067

### THE VARIATION OF OBESITY IN STUDENTS AND WORKING

Octavian Sabin Alexe<sup>1</sup>, Corneliu Neamtu<sup>1</sup>, Ion Mircea Ene<sup>2</sup>

<sup>1</sup> University Of Medicine And Pharmacy "Gr.T. Popa" Iasi Romania,

<sup>2</sup> University "Dunarea de Jos" Galati, Faculty of Physical Education and Sport, Galati, Romania

**Introduction.** Obesity represents an abnormal accumulation of fat in the human body, and as far as its evaluation, the direct measurements are difficult to apply on a large scale, which led to the elaboration of some indirect estimates, such as the Body Index and the Abdominal Perimeter.

The factors involved in the apparition of obesity are of genetic, psycho-socio-cultural nature and sometimes connected affections, factors that determine intimate changes at alimentary diet and metabolic level, resulting in an energetic unbalance, (the energetic contribution exceeds the consumption of daily energy). The humoral factors that are involved in the apparition of obesity are: the opioid system, insulin, leptene, neuropeptides, or the neuro-transmitters secreted at hypothalamus level, conditioned reflexes generated by the digestive tract, etc.

The complications that derive from obesity are very serious, taking into account their morbidity: hyperglycemia type 2, high blood pressure, gravel, dislipidemia, ischaemic cardiomyopathy, peripheral circulatory disfunctions, cancer, sleeping apnea, and the decrease of effort capacity are just a part of the diseases that can be encountered at obese and overweight persons.

That's why it is very important to have an obesity efficient management which identifies in time the causes that can lead to obesity, as well as all the morbidities. In this respect we have tried to evaluate and analyze the evolution of the BI from student to active adult level, in the county of Galati.

**Objectives:** the evaluation of the evolution of obesity's prevalence from student years up until employment in the county of Galati, and the implications and analysis regarding health and economical influences that derive from the results.

**Methods:** the method of questionnaire and tests regarding the IM, CE (Capacity of Effort), antropometric data on a sample of 137 students to 337 adults.

**Results:** the prevalence of obesity has a concerning ascending trend which induces a vertiginous growth of the costs for medical services and a diminution of work productivity associated with the risk factors of obesity.

**Conclusion:** the transition from student to employed adult status generates a multitude of changes in everyone's behavior (social, economical, professional, personal). This change despite lots of advantages brings along a series of high risks: the diminishing of physical activity and the change of the alimentary diet lead to gain weight, the decreasing of the effort capacity with negative consequences upon the health condition. That's why it is necessary to implement a local, national and international strategy, in order to avert the exacerbation of this phenomenon.

**Material:** Body Indexes have been performed as well as Abdominal Perimeter, IAF and Ruffier test, on a sample of 138 students and 337 adults, which showed the following results:

- The incidence of the overweight persons from the active adults group is of 28 % and the obese persons of 30 %

PP068

### WEIGHT LOSS INDUCED BY BARIATRIC SURGERY IMPROVES HEART RATE VARIABILITY AND BAROREFLEX SENSITIVITY

Georgia Argyrakopoulou<sup>1</sup>, Othon Michail<sup>2</sup>, Kleopatra Alexiadou<sup>1</sup>, Alexander Kokkinos<sup>1</sup>, Nicholas Tentolouris<sup>1</sup>, Ioanna Eleftheriadou<sup>1</sup>, Konstantinos Makrilakis<sup>1</sup>, Petros Thomakos<sup>1</sup>, John Doupis<sup>1</sup>, Theodoras Diamantis<sup>2</sup>, Nicholas Katsilambros<sup>1</sup>

<sup>1</sup> First Department of Propaedeutic Medicine, Laiko General Hospital, Athens University Medical School, Athens, Greece

<sup>2</sup> First Department of Surgery, Laiko General Hospital, Athens University Medical School, Athens, Greece

**Introduction:** Autonomic nervous system dysfunction is frequently an accompanying feature of morbid obesity.

**Aim:** To evaluate whether weight loss induced by bariatric surgery leads to improvements of autonomic nervous function in morbidly obese patients, as expressed by indices of baroreflex sensitivity and heart rate variability.

**Material:** Fourteen morbidly obese patients (BMI= 49.2 ± 6.3 Kg/m<sup>2</sup>, age=35.4 ± 8.8) underwent either Roux-en-Y gastric bypass (n=7) or sleeve gastrectomy (n=7). Baroreflex sensitivity (BRS) was assessed at rest for 20 minutes with the Barocor® device, which records spontaneous changes in blood pressure and heart rate, while heart rate variability (HRV) was measured at rest for 5 minutes [Power of High Frequency (PHF), Power of Low Frequency (PLF) and Total Power (TP)]. All measurements were made preoperatively and 1 and 3 months after surgery.

**Results:** All patients experienced significant weight loss (BMI at 1 month= 43.9 ± 5.6, at 3 months= 40.3 ± 5.5, at 6 months 37.0 ± 4.6 Kg/m<sup>2</sup>, P<0.001). Neither BRS nor HRV displayed significant improvement 1 month postoperatively. However, at 3 months BRS improved significantly (radial 3 months= 19.9 [9.4-27.1] vs radial preop= 7.5 [6.5-10.1] msec/mmHg [P=0.004], central 3 months= 13.3 [7.8-23.5] vs central preop= 6.2 [5.8-8.2] msec/mmHg [P=0.003]). Additionally, PLF and TP had also significantly improved 3 months postoperatively (median values [interquartile range]: PLF 3 months= 712.1 [274.5-849.6] vs PLF preop= 170.6 [107.4-492.1] ms<sup>2</sup> [P=0.04], TP 3 months= 1540.2 [586.7-1974.4] vs TP preop= 457.1 [246.3-718.0] ms<sup>2</sup> [P=0.05]).

**Conclusions:** Autonomic nervous system function, as assessed by both baroreflex sensitivity as well as heart rate variability improves significantly after weight loss induced by bariatric surgery in morbidly obese patients.



PP069

**EFFECT OF FISH OIL SUPPLEMENT & WEIGHT LOSS DIET ON DEPRESSION IN OBESE WOMEN****Khalili, Masoudeh**<sup>1</sup>, karimi, Halimeh, Golestan, Banafsheh*1 Shaheed Beheshti University of Medical Science & Health Services, Nutrition school Scientific member, Tehran, Iran.*

**Aim:** regarding the controversial reports about the effect of omega-3 fatty acids consumption on depression, this study was carried out on obese women referring to Nutrition Clinic of food and nutrition institute in Tehran during the years 2006-2007.

**Materials and Methods:** The study was a "randomized control clinical trial" and the number of samples was 40 healthy 18-45 years non-menopausal obese women in nutrition clinics in Tehran. The samples in case and control group were selected by their body mass Index (BMI more than 30) and their depression test result (10-30) mild and moderate depression. The samples were divided in to two groups, case and control by blocked randomization and had been matched by their general characteristics (age, literacy, job, marital status and number of children). There were two questionnaires (general and Beck's depression inventory) and a 24 hours recall. Both of the two groups had been on weight loss diet (1200-1500) Kcal diet, and the experimental group received 3grams of fish oil which contain ed lgrams DHA, EPA fatty acids, for 8 weeks. At the end of intervention there were 15 people in case group and 17 people in control group. Statistical analysis was done by independent t-test, X2, Mann - Whitney test and Wilcoxon test.

**Results:** The results showed that the group which used fish oil supplement (case groups) at the end of intervention duration had a better mood and significant decline in their depression in comparison to the other group (control group) (P= 0.037). But fish oil supplement had no effect on their weight loss and the difference between the average of weight loss in two groups was non significant.

**Conclusion:** Fish oil supplement can moderate depression in obese women who are on a low cal. Diet.

**Keywords:** Fish oil, co -3 fatty acids, depression, weight loss

PP070

**METABOLIC DISTURBANCES RELATED TO INSULIN RESISTANCE BY HOMEOSTASIS MODEL ASSESMENT IN OBESE AND OVERWEIGHT WOMEN N****Taner Bayraktaroglu**<sup>1</sup>, Faruk Kutluturk<sup>2</sup>, Adil Dogan Azezli<sup>2</sup>, Yusuf Orhan<sup>2</sup>*1Division of Endocrinology and Metabolism, Zonguldak Karaelmas University Faculty of Medicine, Zonguldak, Turkey,**2Division of Endocrinology and Metabolism, Istanbul University Istanbul Faculty of Medicine, Istanbul, Turkey*

**Introduction and aim:** In this study metabolic disturbances related to insulin resistance by homeostasis model assesment (HOMA) in overweight and obese women were examined.

**Methods:** The study population consisted of 2810 women with body mass index above 25 kg/m2. They were grouped according to median HOMA value which was 2.44. Demographic and antropometric characteristics, blood glucose, insulin and lipid concentrations, and the indices of insulin resistance and inflammation were determined and compared between these groups.

**Results:** There were 1404 (49.96%) subjects in the lower HOMA group ( $\leq 2.44$ ) and 1406 (50.01%) subjects in higher HOMA group ( $\geq 2.45$ ). Mean weight, body mass index (BMI), body fat mass, waist circumferences, abdominal fat mass, systolic and diastolic blood pressure, pulse pressure, fasting glucose, fasting insulin, non-HDL cholesterol, triglycerides, uric acid and high sensitive C-reactive protein levels, leukocyte counts and eritrocyte sedimentation rates were significantly higher in the group with higher HOMA values compared to the lower group ( $p < 0.05$ ). Mean HDL-cholesterol levels were decreased in subjects with higher HOMA. Mean age, height, total cholesterol and LDL-cholesterol were not different between groups ( $p > 0.05$ ).

**Conclusions:** Age and sex matched obese or overweight women with lower HOMA values have lower cardiometabolic risk markers than women having higher HOMA values. However, total cholesterol and LDL-cholesterol levels were not different between the two groups.



### FAT DISTRIBUTIONS AND CARDIOMETABOLIC RISK MARKERS RELATED TO INSULIN RESISTANCE IN OBESE WOMEN WITH NORMAL LEVELS OF FASTING BLOOD GLUCOSE

Taner Bayraktaroglu<sup>1</sup>, Faruk Kutluturk<sup>2</sup>, Adil Dogan Azezi<sup>2</sup>, Yusuf Orhan<sup>2</sup>

<sup>1</sup> Division of Endocrinology and Metabolism, Zonguldak Karaelmas University Faculty of Medicine, Zonguldak, Turkey

<sup>2</sup> Division of Endocrinology and Metabolism, Istanbul University Istanbul Faculty of Medicine, Istanbul, Turkey

**Introduction and aims:** This study was carried out to evaluate body fat distributions and cardiometabolic risk markers in obese women with normal levels of fasting blood glucose (FBG).

**Materials and methods:** Selected 3764 obese women who had normal levels of FBG (<100 mg/dl) were enrolled into the study. Subjects were grouped according to mean FBG (88 mg/dl): group I having FBG ≤ 87 mg/dl and group II having FBG ≥ 88 mg/dl. Body compositions (body mass index, abdominal fat mass), resting blood pressure, plasma lipoprotein levels, glucose homeostasis and related parameters were analysed in both groups.

**Results:** 2113 subjects (56.1 %) had FBG ≥ 88 mg/dl. Following are the comparisons between group I and group II respectively: mean age (36.6±11.6 years vs 39.4±11.9 years), body mass index (34.8±6.5 kg/m<sup>2</sup> vs 35.4±6.6 kg/m<sup>2</sup>), body fat mass (34.3±14.8 kg vs 35.4±15.1 kg), waist circumferences (97.9±13.1 cm vs 98.8±12.7 cm), systolic (123.8±21.6 mmHg vs 128.2±22.6 mmHg) and diastolic blood pressures (79.9±13.2 mmHg vs 82.2±13.6 mmHg), fasting glucose (81.8±4.8 mg/dl vs 93.3±3.41 mg/dl), insulin levels (11.2±8.1 mU/l vs 13.1±10.9 mU/l), HOMA values (2.26±1.64 vs 3.02±2.49), total cholesterol (196±40.1 mg/dl vs 204±41.4 mg/dl), LDL-cholesterol (122±34.6 mg/dl vs 128±37.4 mg/dl), triglycerides (124±79.5 mg/dl vs 142±104 mg/dl). All results except mean abdominal fat mass and HDL-cholesterol were significantly different between the two groups (p<0.05).

**Conclusion:** These findings suggest that obese women with normal fasting glucose may have a metabolic disorder: upper-normal glucose levels may predispose to type 2 diabetes. Lower-normal range glucose levels seem to provide better metabolic features.

### FATTY ACID AMIDE HYDROLASE (FAAH) PRO129THR POLYMORPHISM AND HIGH CONSUMPTION OF SWEET FOOD PRODUCTS

Dimitrios Papazoglou, **Odysseas Kaitozis**, Pantelis Papatheanasiou, Theodoros Papadopoulos, Nikolaos Papanas, Konstantinos Papatheodorou, Emmanouil Restas, Efstratios Maltezos

Second Department of Internal Medicine, Democritus University of Thrace, University Hospital of Alexandroupolis, Alexandroupoli, Greece

**Introduction:** It is possible that there might be a genetic basis for food preferences. Fatty acid amide hydrolase (FAAH) is an enzyme that catalyses the endogenous cannabinoids which modulate the reinforcing effect of sweet foods.

**Aim:** To explore a potential relationship of a functional variant (Pro129Thr) of FAAH with choice of sweet food in a group of obese adults.

**Material:** A total of 30 obese subjects were included in the study. Fifteen of them consumed frequently (more than 3 times per day) at least one of 5 sweet foods (chocolate, candy, ice cream, sweet desserts, and sweet pastry). Fifteen age-, sex- and BMI - matched subjects who did not report any special preference or consumption of sweet food used as controls. Polymorphism was analyzed using PCR-RFLP.

**Results:** Minor allele frequency was much higher in the study group (23.3%, 1 homozygote and 5 heterozygotes) than the controls (13.3%, 4 heterozygotes) but the difference was not statistically significant (p=0.61, Yates' corrected  $\chi^2$ , OR: 1.75, 95% CI: 0.48 - 6.20). **Conclusion:** In this pilot study we failed to show any significant association between the Pro129Thr variant of the FAAH gene and sweet consumption in Greek obese individuals. The small number of subjects and the relatively arbitrary criterion for high sweet consumption are limitations of our study. Further work examining more participants and other polymorphisms of the endocannabinoid system genes is needed and may help to individualise the approach of treating obesity.

PP073

**RELATIONSHIP OF THYROID FUNCTION WITH BODY MASS INDEX AND ADIPONECTIN IN EUTHYROID MORBIDLY OBESE INDIVIDUALS**

Dimitrios Papazoglou<sup>1</sup>, **Spyridon Kokkinos**<sup>1</sup>, Theodoros Papadopoulos<sup>1</sup>, Nikolaos Papanas<sup>1</sup>, Pantelis Papathanasiou<sup>1</sup>, Konstantinos Papatheodorou<sup>1</sup>, Odysseas Kaitozis<sup>1</sup>, Theodora Gioka<sup>2</sup>, Georgia Kampouromiti<sup>2</sup>, Efstratios Maltezos<sup>1</sup>

1. Second Department of Internal Medicine, Democritus University of Thrace, University Hospital of Alexandroupolis, Alexandroupoli, Greece

2. Laboratory of Biochemistry, University Hospital of Alexandroupolis, Alexandroupoli, Greece

**Introduction:** A relationship between thyroid hormones and adipose tissue metabolism in humans has been suggested. Specifically, a relationship between thyroid hormones, Body Mass Index (BMI) and adiponectin levels has been described in obese women.

**Aim:** We investigated the potential relationship between thyroid function, BMI and adiponectin levels in morbidly obese individuals.

**Material:** Seventy-three morbidly obese individuals (20 males - 53 females, mean age: 43.2±12.9, mean BMI:46.7±5.9) were studied. Basic anthropometric and biochemical parameters were collected. Levels of TSH, free thyroxine (FT4) and plasma adiponectin were measured.

**Results:** There was a positive correlation between TSH and BMI ( $r=0.25$ ,  $p=0.32$ ) but a negative one between TSH and Fat Free Mass ( $r=-0.23$ ,  $p=0.5$ ). Adiponectin levels were positively correlated with FT4 ( $r=0.3$ ,  $p=0.01$ ) and negatively, but not significantly, with TSH ( $r=-0.2$ ,  $p=0.08$ ). The latter correlations were both statistically significant in women but not in men.

**Conclusions:** Our data show that, although thyroid function was normal in the studied morbidly obese population, TSH and BMI were positively related. TSH seems to be positively related to the degree of obesity and could represent a marker of altered energy balance in severely obese individuals. Thyroid hormones might influence circulating levels of adiponectin in morbidly obese women. This correlation however is possibly influenced by the BMI, although no association between adiponectin levels and BMI or FFM was found. The lack of statistical significance for the male participants may be due to their small number.

PP074

**A PROSPECTIVE STUDY IN 100 OBESE PATIENTS TREATED WITH INTRAGASTRIC BALLOON**

Katerina Kotzampassi<sup>1</sup>, **Pyrros Papakostas**<sup>2</sup>, Sophia Penna<sup>2</sup>, Gergana Pyankova<sup>2</sup>, Thomai Karagiozoglou-Lampoudi<sup>2</sup>

1. A' Surgery Dept, Aristotle University of Thessaloniki, AHEPA hospital, Thessaloniki, Greece

2. Clinical Nutrition Lab, Nutrition/Dietetics Dept, School of Food Technology and Nutrition, Technological Education Institution, Thessaloniki, Greece

**Introduction:** One minimally invasive technique attempting to cope with morbid obesity is the placement of an intragastric balloon (IB) for a six month period.

**Aim:** The purpose of this study was to investigate the effects of IB, on weight loss, body composition and resting metabolic rate (RMR).

**Material:** This is a prospective study of 100 obese subjects (m=22, f=78), mean baseline BMI 42.43±7.01. The data collected every month for the six month period was, BW, BMI, RMR (indirect calorimetry), %FM, %EWL, % of actual caloric intake (%ACI) (24h food recall). Subgroups: (a1)30<bBMI<50 (a2)bBMI>50, (b1)%ACI<65 (b2)%ACI>65, (c1)%EWL<20 (c2)20<%EWL<50 (c3)%EWL>50. The number of follow-up visits was considered as a marker of compliance (poor2-3v, good 4-6v, excellent>6v), mean follow-up visits 5,24±1,66.

**Results:**

	WEIGHT	BMI	%FM	RMR	%EWL	%ACI
PLACEMENT VISIT	120,32 ± 22,81	42,43 ± 7,01	46,50 ± 6,58	1782,40 ± 405,38		126,19 ± 58,26
REMOVAL VISIT	100,42 ± 21,80	35,39 ± 6,50	41,16 ± 7,22	1571,60 ± 338,27	37,50 ± 20,59	72,38 ± 37,71
p =	0,000	0,000	0,000	0,000		0,000

A positive correlation for DRMR, DBW ( $p=0,023$ ), DBMI ( $p=0,032$ ), D%ACI ( $p<0,05$ ) in the overall sample and in subgroup (c3), was found. There was significant difference in DBW, DBMI, D%FM, DRMR between 2-3v/>6v.

**Conclusions:** The positive correlation of DRMR with DBW, DBMI, D%EC reveals a direct relation of the decrease in RMR, weight loss and decrease in caloric intake. Also compliance plays an important role.



### BODY FATNESS AND PLASMA HOMOCYSTEINE IN VEGETARIAN PREMENOPAUSAL WOMEN ARE NOT ASSOCIATED

Zvonimir Satalic<sup>1</sup>, Lea Sokolic<sup>2</sup>, Vesna Zizic<sup>3</sup>, Irena Colic Baric<sup>1</sup>

1. Faculty of Food Technology and Biotechnology, Zagreb, Croatia

2. Vuk Vrhovac University Clinic, Zagreb, Croatia

3. Children's Hospital Zagreb, Zagreb, Croatia

**Introduction** Elevated plasma homocysteine (Hcy) as well as obesity, especially abdominal, increase the risk for developing cardiovascular diseases. Vegetarians usually have lower body weight and follow protective plant-based diet, but due to inadequate vitamin B12 intake can have increased Hcy.

**Aim** To determine correlation between plasma Hcy and measures of body fatness: body mass index (BMI), waist to hip ratio (WHR) and percentage of body fat (% BF).

**Subjects and methods** Vegetarian women (n=81, 7 vegans and 64 lacto-ovo-vegetarians), mean age 33 years (range 20-49 years) participated in the study. Abbott AxSYM system was used for measuring plasma Hcy and % BF was measured with Omron BF 300. BMI and WHR were calculated from the measured parameters.

**Results** Hcy level over 10 and 15  $\mu\text{mol/L}$  had 35.8 and 2.5 % subjects, respectively. Seven point four percent of subjects were underweight (BMI < 18.5 kg/m<sup>2</sup>) and 14.8 % were overweight (BMI > 25). Pearson's correlation between plasma Hcy and anthropometric parameters was not significant and ANOVA showed no differences in plasma Hcy among quartiles for BMI, % BF and WHR.

**Conclusion** In premenopausal vegetarian women plasma Hcy and measures of body fatness were not associated.

### OBESITY AND SLEEP APNEA SYNDROME

Emmanuel Vlachogiannis, Euphimia Daskalopoulou, Soultana Goutkidou, Katherine Vasiliou, Elena Nanousi

Sleep Unit and Clinical Laboratory of Atherosclerosis, Internal Medicine, St Paul General Hospital, Thessaloniki, Greece

**Introduction.** Obesity is a major risk factor for metabolic syndrome and atherosclerosis. Obstructive sleep apnea syndrome (OSAS) is associated with metabolic syndrome and atherosclerosis.

**Aim.** The aim of this study was to estimate the prevalence of obesity in patients with SAS

**Material.** The prevalence of obesity was studied in 888 patients with OSAS, in 227 patients with upper airway resistance syndrome (UARS). and in 95 controls. BMI was classified as normal, overweight, obesity class I, obesity class II and obesity class III according to WHO criteria. Waist circumference was estimated according to WHO classification.

**Results.** Patients with OSAS had significantly higher mean levels of BMI,  $p < 0.000$ , waist circumference,  $p < 0.000$  and waist to hip ratio,  $p < 0.000$  than the patients with UARS or the controls. Patients with UARS. had significantly higher mean levels of BMI,  $p < 0.009$  than the controls, without difference in waist circumference. Patients with OSAS had significantly higher prevalence ( $p < 0.001$ ) of obesity class II and III than patients with UARS. or controls. Also, significantly lower ( $p < 0.001$ ) was the prevalence of normal BMI and overweight in patients with OSAS than the other groups. Obesity class I was in the same incidence in all groups.

**Conclusions.** According to these results, patients with OSAS had significantly higher levels of BMI and visceral obesity than patients with UARS or controls.

PP077

**OBESITY MANAGEMENT WITH RIMOANABANT. ONE-YEAR FOLLOW UP**

**Katherine Vasiliou**, Soultana Goutkidou, Elena Nanousi, Euphimia Daskalopoulou, Emmanuel Vlachogiannis  
*Clinical Laboratory of Atherosclerosis, Internal Medicine, St Paul General Hospital, Thessaloniki, Greece*

**Introduction.** Obesity is associated with metabolic syndrome and atherosclerosis.

**Aim.** The aim of this study was to estimate the results of diet or pharmacological approach after one year follow up.

**Material.** Eighty-one obese patients were included in this study. BMI, waist circumference and waist to hip ratio was estimated on three, six, nine and twelve months. 21 of the participants were managed with diet (group A) and 60 were pharmacologically approached via the administration of rimonabant (group B).

**Results.** The two groups had the same age and BMI, waist circumference and waist to hip ratio. After twelve months a significantly higher reduction,  $p < 0.000$ , of BMI was observed in group B. Waist circumference reduction was significantly higher in group B after three ( $p < 0.023$ ) and twelve months ( $p < 0.000$ ). The changes in waist to hip ratio were non statistically significant.

**Conclusion.** After twelve months, treatment with rimonabant had significantly better results than diet alone.

PP078

**THE CHANGE OF THE METABOLIC PROFILE AMONG OBESE PERSONS AFTER LOSING WEIGHT**

Frideriki Lagra, **Nikolaos Kamperidis**, Athanasios Mousiolis, Kosmas Stergiou, Stefanos Papantoniou, Xenofon Krokidis, Persefoni Papadopoulou  
*General District Hospital Of Kavala, Kavala, Greece*

**Material:** The study comprised 4 groups (a, b, c, d) of 190 persons (mean age of 36 years). Group a comprised 32 individuals (19 women, 13 men) of normal weight, (BMI < 25). Group b comprised 48 overweight individuals (33 women, 15 men) ( $25 < \text{BMI} < 30$ ). Group c comprised 68 obese individuals (40 women, 28 men, BMI > 30). Group d comprised 42 obese or overweight individuals (28 women, 14 men) who were re-examined 3 years after recruitment and after having a weight loss of at least 10%.

**Results:** Weight gain is accompanied by an increase in triglycerides and a decrease in HDL in all groups, while weight loss enhances these parameters but not achieving statistical significance. Uric acid level is not significantly differentiated between the 4 groups, but shows a significant difference when results are distributed and compared according to sex. If we define a sub-group including individuals with a BMI > 40 (22 persons) and compare it with Group a, a statistically significant difference in fasting glucose levels and HbA1c arises. These parameters have been ameliorated after weight loss.

**Conclusions:** Increase in body weight deranges the physiological metabolism, while weight loss tends to bring the triglycerides, fasting glucose and HbA1c, back to the normal levels. Also, metabolic disturbances that normally arise in older people arise in younger ages when obesity is present.



### COMPARATIVE STUDY OF THE EFFECT OF THYROXIN IN THE LIPIDEMIC PROFILE OF PATIENTS WHO SUFFER FROM BRONCHOCELE AND HAVE NORMAL THYROID FUNCTION (POLYCENTRIC STUDY)

Stefanos Patiakas<sup>1,4</sup>, **Helias Giovanopoulos**<sup>2</sup>, Sokratis Tsukis<sup>2</sup>, Ioannis Xoursalas<sup>3</sup>, Iliopoulou Sotiria<sup>4</sup>, Stamatis Katsaris<sup>2</sup>, Stauridou Thomai<sup>5</sup>

1 General Hospital of Goumenissa, Goumenissa, Greece

2 General Hospital of Rethymnon, Rethymnon, Greece

3 Cardiology of the city of Korinthos, Korinthos, Greece

4 General Hospital of Karpenisi, Karpenisi, Greece

5 Endocrinology of the city of Kastoria, Kastoria, Greece

**INTRODUCTION - AIM:** To study the influence of thyroxin into the rates of the lipids of the serum of people with bronchocele, who have normal thyroid function.

**MATERIAL - METHOD:** Whole cholesterol, triglycerides, Lpa, HDL and LDL-cholesterol, as well as whole and free fractions of thyroid hormones and TSH were detected in the serum, before and after three months from the beginning of the thyroxin treatment. The results were compared with those of the 15 healthy women of similar age (average rate 49.5 years) who were the control team.

**RESULTS:** Among the patients under thyroxin treatment the average rate of Lpa from 18.6%+22.7 before the therapy, decreased by 14.9+/-18.5 during the 1st trimester. On the contrary, the rates of triglycerides and of the whole cholesterol did not change significantly. However, those of HDL and LDL cholesterol manifested after the treatment a slight tendency to decrease (respectively  $p=0,062$  και  $p=0,067$ ) while the TSH, as it was natural, decreased by 1,9+/-1,05 IU/ml to 0,23+/-0,55 IU/ml ( $p<0,001$ ). Finally, no statistically significant change was detected in any of the above parameters.

**CONCLUSIONS:** It is therefore concluded that the prescription of thyroxin to women with bronchocele: 1)Affects the levels of Lpa, reducing it statistically significantly. However, 2)It does not seem to affect the rest of the lipid parameters, apart from a slight tendency of decrease in HDL and LDL cholesterol.

### COMPARATIVE EVALUATION OF TRIGLYCERIDES RATES AND $\gamma$ -GT IN THE BLOOD SERUM OF PATIENTS WITH METABOLIC SYNDROME (POLYCENTRIC STUDY)

Stefanos Patiakas<sup>1,2</sup>, Charalambos Charalambous<sup>2</sup>, **Stamatis Katsaris**<sup>3</sup>, Ioannis Hoursalas<sup>4</sup>, Sokratis Tsukis<sup>3</sup>, Helias Giovanopoulos<sup>3</sup>

1 General Hospital of Goumenissa, Goumenissa, Greece

2 Internal Medicine clinic of the Psychiatric Hospital of Thessaloniki, Thessaloniki, Greece

3 General Hospital of Rethymnon, Rethymnon, Greece

4 Cardiology of city of Korinthos, Korinthos, Greece

**INTRODUCTION - AIM:** To study the triglyceride rates in connection with those of  $\gamma$ -GT in the blood serum of patients with Metabolic Syndrome (MS).

**MATERIAL - METHOD:** The cases of 108 patients with MS were studied. The diagnosis was based on I.D.F. criteria, according to which, a waist perimeter of >94cm is required for men and >80cm for women, as well as two of the following criteria: a)levels of fast sugar of serum >100mg/dl, b)HDL<40mg/dl for the men and <50mg/dl for the women, c) triglycerides >150mg/dl and d)arterial pressure >135/80. After a 12-hour fast their triglycerides and  $\gamma$ -GT were checked in the blood serum in a biochemical analyst with the help of photometric method, while the statistic analysis of the results was conducted by means of the SPSS package, by applying the non-parametric correlation.

**RESULTS:** It is proven that the rates of triglycerides in the blood serum had a statistically significant place in connection with those of  $\gamma$ -GT, as the co-efficient of their parametric correlation  $r$  was 0.217 ( $p<0.01$ ).

**CONCLUSIONS:** The suspicion that the lipid degeneration of the liver, which very often accompanies hypertriglyceridemia, causes an increase in  $\gamma$ -Gt is indeed affirmed by our study.

PP081

**RESEARCH OF DISLIPIDEMIA IN PATIENT'S WITH RECENTLY DIAGNOSED ARTERIAL HYPERTASION (POLYCENTRIC STUDY)**Stefanos Patiakas<sup>1,2,3</sup>, Charalambos Charalambous<sup>2</sup>, **Alexios Sabidis**<sup>3</sup>, Michalis Alexandridis<sup>1</sup>, Konstantina Xatzi<sup>4</sup>, Basiliki Tioli<sup>1</sup>

1 General Hospital of Goumenissa, Goumenissa, Greece

2 Internal Medicine clinic of the Psychiatric Hospital of Thessaloniki, Thessaloniki, Greece

3 General Hospital of Kastoria, Kastoria, Greece

4 Health Center of Farsala, Farsala, Greece

**Aim:** To investigate the degree of coexistence of dislipidemia in patients with newly diagnosed arterial hypertension without therapeutical treatment, since these 2 diseases are independent risk factors for cardiovascular diseases.

**Material-Method:** We studied 86 patients (34 men and 52 women) with mean age 52, 7+/- 5, 1 years of age with recently (<6 months) diagnosed arterial hypertension. We studied their lipidemic-biochemical profile and compared it with that of 52 healthy people (control group) with compatible age, sex and BMI (Body Mass Index). The tests took place after 12 hours of fasting. As for the statistical analysis we used the  $\chi^2$  test.

**Results:**

PARAMETERS	PATIENTS WITH HYPERTENSION	CONTROL GROUP	P
Systolic AH (mmHg)	149+/- 11	121+/- 13	<0,001
Diastolic AH (mmHg)	95+/-7	78+/-9	<0,001
Total Chol(mg/dl)	243+/-26	202+/-19	<0,001
HDL-C hol(mg/dl)	38,5+/-9	46,9+/-8	<0,005
LDL-Chol(mg/dl)	167+/-28	139+/-23	<0,005
Triglycerides(mg/dl)	171+/-38	107+/-28	<0,001

**Conclusions:** The hypertensive patients show a statistically significant elevation of Total cholesterol, LDL-cholesterol and Triglyceride values while the HDL-cholesterol value is significantly lower. The athyrogenetic factors are obviously present even in the 1st degree of Arterial Hypertension, as in insuline resistance and the Metabolic Syndrome.

PP082

**SURVEY ABOUT THE CONNECTION BETWEEN HYPERCHOLESTEROLEMIA AND INCREASED RATES OF GLUCOSE IN THE SERUM. (POLYCENTRIC STUDY)**Stefanos Patiakas<sup>1,2,4</sup>, Charalambos Charalambous<sup>2</sup>, **Sokratis Tsukis**<sup>3</sup>, Stamatis Katsaris<sup>3</sup>, Kiriaki Akritopoulou<sup>1</sup>, Dimitris Oplopiadis<sup>4</sup>

1 General Hospital of Goumenissa, Goumenissa, Greece

2 Internal Medicine clinic of the Psychiatric Hospital of Thessaloniki, Thessaloniki, Greece

3 General Hospital of Rethymnon, Rethymnon, Greece

4 General Hospital of Kastoria, Kastoria, Greece

**INTRODUCTION - AIM:** To investigate any connection between increased rates of whole cholesterol and LDL cholesterol, in people who had simultaneous increase of glucose in the serum.

**MATERIAL - METHOD:** 465 patients were examined (228 men and 237 women) 65.4+/-14.7 years on average, who manifested whole cholesterol >200mg/dl and LDL cholesterol >150mg/dl. Their sugar rates were also estimated, after a 12-hour fast, by a biochemical analyst.

**RESULTS:** Out of 465 patients with hypercholesterolemia, 129 persons (52 men and 77 women), that is 27.74%, had simultaneously high rates of glucose (>110mg/dl).

**CONCLUSIONS:** 1) It is proven that high hypercholesterolemia combined with high LDL cholesterol, is likely to be related to diabetes. 2) It is therefore imperative a timely diagnosis and the right treatment and regulation of diabetes so as to avoid secondary conditions of hypercholesterolemia. 3) Finally, it is worth mentioning that while the in the percentages of both high whole cholesterol and LDL, the rates between men and women are almost the same, when these ones are combined with the increase of glucose, a clear superiority of women is self-evident.





### LIPIDAIC PROFIL OF DIABETES MELLITUS TYPE II PATIENT'S (POLYCENTRIC STUDY)

Stefanos Patiakas<sup>1,2,3</sup>, Charalambos Charalambous<sup>2</sup>, **Konstantina Xatzi**<sup>3</sup>, Alexios Sabidis<sup>3</sup>, Michalis Alexandridis<sup>1</sup>, Konstantina Xatzi<sup>4</sup>, Basiliki Tioli<sup>1</sup>

1 General Hospital of Goumenissa, Goumenissa, Greece

2 Internal Medicine clinic of the Psychiatric Hospital of Thessaloniki, Thessaloniki, Greece

3 Health Center of Farsala, Farsala, Greece

4 General Hospital of Kastoria, Kastoria, Greece

**Introduction - Aim:** To estimate the lipidaimic profile of Diabetes Mellitus type II patients, according to ADA recommendations.

**Material-Method:** Instrument of our study was 148 Diabetes Mellitus type II Dyslipidaimic patients (83 men and 65 women with average age 65.8 years), who were under therapy with statines. From the study there were excluded patient's who also had vessels disease and hypothyreoidism or were alcoholic too. Most of them (109 persons) were having history of hypertension, while their regulation of diabetes mellitus wasn't particularly satisfying (average of HbA1c 8.4 mg/dl).

**Results:** Increased LDL-cholesterol >100 mg/dl was found in 121 patients (81.7%), LDL-cholesterol between 130 and 200 mg/ml in 87 patients (58.8%), HDL-cholesterol <40 mg/dl in 71 patients (48%), while total cholesterol>200 mg/dl was found in 95 patients (64.2%) and tryglicerides >150mg/dl in 44 patients (29.7%).

**Conclusions:** It was proved that 81.7% of diabetes mellitus type II patients had LDL>100 mg/dl and 48% of them HDL<40 mg/dl. Consequently, these patients were spotted beyond their therapeutic goals and had not satisfactorily regulated their lipidaimic profile. This seemed to be the cause of really bad dietary habits, of lack of efficient physical exercise and of bad regulation of blood glucose. Therefore it is a demand in order to avoid the progress of the DM in vessels disease, a more frequent surveillance of these patients, a more strict observance of the therapeutic goals and more intense information given relative to subjects of healthy nutrition and the right way of living.

### DIABETES KNOWLEDGE TEST IN PATIENTS WITH TYPE 1 AND TYPE 2 DIABETES MELLITUS

**Vasiliki Bougioukli**<sup>1</sup>, Maria-Asimina Gerama<sup>1</sup>, Kyriakos Kazakos<sup>2</sup>, Ioanna Xrisanthakopoulou, Maria G.Grammatikopoulou<sup>1</sup>, Maria Tsigga<sup>1</sup>

1. Department of Human Nutrition & Dietetics, Alexander Technological Educational Institute, Thessaloniki, Greece

2. Department of Nursing, Alexander Technological Educational Institute, Thessaloniki, Greece

**INTRODUCTION:** Research has demonstrated that knowledge about medications, diet, exercise, home glucose monitoring, foot care, and treatment modifications is necessary to effectively selfmanage diabetes (Coates & Boore, 1996). In Greece, although the prevalence is growing (Melidonis et al., 2006), diabetes knowledge has not yet been estimated.

**AIM:** The aim of the present cross-sectional study was to assess diabetes knowledge in Geek diabetes patients.

**MATERIAL:** A 23 questions test (Fitzgerald et al., 1998) was administered in 100 diabetes patients, recruited from 2 diabetological private practice medical offices in Thessaloniki. Inclusion criteria included being >18 years old and being mentally healthy. Body weight and stature of participants was recorded from an experienced dietician and body mass index (BMI) was calculated.

**RESULTS:** Patients with T1DM scored significantly better compared to the T2DM patients (70.9±9.5% and 55.4±14.9% respectively, p≤0.001). When patients were categorized as of normal body weight (BMI<25kg/m<sup>2</sup>) or overweight (BMI≥25kg/m<sup>2</sup>) accordingly to BMI, participants of normal body weight demonstrated a better diabetes knowledge compared to the overweight ones (70.1±9.0% and 56.9±15.2% respectively, p≤0.005). No differences were observed in the test score between sexes. Diabetes knowledge was not correlated to age or BMI of participants.

**CONCLUSION:** The low test scores, especially in the T2DM and overweight participants, are indicative of the need for educating patients with diabetes in Greece.

Fitzgerald JT, Funnell MM, Hess GE, Barr PA, Anderson RM, Hiss RG, Davis WK. (1998) The reliability and validity of a brief diabetes knowledge test. *Diabetes Care* 21, 706-10.

Coates VE, Boore JRP. (1996) Knowledge and diabetes self-management. *Patient Educ Couns* 29:99-108.

Melidonis A, Tournis S, Kompoti MG, Lentzas I, Roussou V, Iraklianos S, Michail I, Mariolis A. (2006) Increased prevalence of diabetes mellitus in a rural Greek population. *Rural and Remote Health* 6, 534.

PP085

**BODY MASS INDEX INFLUENCE ON LEFT VENTRICULAR MASS AND SYSTOLIC AND DIASTOLIC FUNCTION**

Ivan Majercak, Gabriel Valocik, Peter Mitro

Faculty Of Medicine Of P. J. Safarik University, Safarik, Slovakia

**Introduction** This study has been undertaken to assess the relation of various degrees of body mass index to echocardiographic parameters.

**Patients and methods:** Study evaluated 260 consecutive clinical echocardiographic findings. Echocardiography was performed and echocardiographic measurements were obtained. In patients without wall motion abnormalities ejection fraction (EF) was assessed semiquantitatively and in patients with wall motion abnormalities using modified biplane Simpson's rule. Left atrial volume (LAV) and its indexed value, LV diastolic filling, combined systolic and diastolic performance, the so called Tei index was measured, left ventricular mass (LVM) was calculated using the formula of Devereux et al. and was indexed to body surface area. Patients were divided into groups with normal systolic function (EF >50%) and systolic dysfunction (EF <50%). Another groups were classified according to different forms of diastolic dysfunction: impaired relaxation, pseudonormal filling, and restrictive physiology. In addition, we analysed two subgroups of patients with impaired relaxation, one with preserved systolic function and other with systolic dysfunction. Subjects were classified on the basis of their BMIs as normal (18.5 to <25 kg/m<sup>2</sup>), overweight (>25 and <30 kg/m<sup>2</sup>), obese (>30 and <35 kg/m<sup>2</sup>), or severely obese (>35 kg/m<sup>2</sup>).

**Results:** In multiple regression analysis in the whole group of patients there was significant relation of BMI to LVM (p <0.0001), LVMI (p <0.0001), fractional shortening (FS) (p=0.01), and transmitral A wave (0.0003). There was no relation of BMI to other echocardiographic parameters: LAV (p=0.3), LAVI (p=0.2), EF (p=0.7), Tei index (p=0.4), E wave (p=0.7), E-wave deceleration time (p=0.7), E/A ratio (p=0.7).

**Conclusions:** This study was designed to identify any associations between left ventricular function and obesity. Our analysis showed that in subgroups of patients classified according to systolic and diastolic function or dysfunction, increasing BMI was associated mainly with LVM. Our study supports works that obesity is related to left ventricular mass, unlike the findings in previous reports we did not find any relation between obesity and diastolic function or dysfunction. Possible explanation of this fact can be the discrepancy between BMI and body fat mass, but this need further study.

PP086

**LIFE STYLE CHANGES IMPACT ON SEXUAL LIFE IN MALES WITH METABOLIC SYNDROM (METS)**Dana Bucuras<sup>1</sup>, Otilia Marginean<sup>1</sup>, Viorel Bucuras<sup>1</sup>, Corina Hogeia<sup>2</sup><sup>1</sup> University Of Medicine And Pharmacy, Timisoara, Romania<sup>2</sup> Diabetes Day Care center, County Hospital No 1, Timisoara, Romania

**Introduction:** Metabolic syndrome is associated with a high incidence of sexual dysfunction (erectile dysfunction) and also late onset hypogonadism.

**Objective:** This study is trying to evaluate the impact of weight loss of sexual function and severity/incidence of hypogonadism in obese man with MeTS.

**Material and Method:** Since January 2007, we evaluated 78 obese men that came in our office for a weight loss program. From the total of 70 subjects who agreed to follow the protocol, 59 met the criteria (NCEP-ATPIII) for diagnosis of MeTS, and 48 completed the follow-up period of minimum 10 month. We evaluated the patients by means of: interview, daily food journal (for a period of 2 weeks before starting the weight loss recommendations), FSFI Questionnaire, waist to hip ration, metabolic profile (HDL-C, LDL-C, Tg, uric acid, TGP, TGO, gliceamia, HbA1c), hormonal assays: TSH, morning plasmatic cortisol, SHBG, Morning total testosterone, and also we evaluated the body composition with scanning the bioelectric impedance of the whole body (Tanita BC-418). Also we evaluated PSA, Hg and Ht levels.

We used SPSS 11.0 for statistical evaluation.

**RESULTS:** The mean age was 42,3 ± 8,6 years, and the general health factors were: smoking (35/48), hypertension (45/48), sedentary -less than one hour active exercise/week (41/48), glucose intolerance or diabetes mellitus type II (38/48), alcohol abuse (18/48). All patients started a weight loss program, weight adjusted water intake, active exercise three times per week. After 6 month of weight reduction, a minimum period of 4 month of weight maintenance followed.

Secondary to the weight loss, we observed the following changes: increase in total and free testosterone, a decrease in SHBG, decrease of ED (severity and prevalence). There was a positive, direct correlation between TotalTestosteron levels and IIEF score, and also between fTestosteron and severity of ED.

**Conclusion:** life style changes have benefic effects on sexual life in men with Mets.



**THE INCIDENCE OF ENDOCRINE DISTURBANCES IN OBESE CHILDREN OF SOUTH WEST OF ROMANIA**

**Otilia Marginean**<sup>1</sup>, Ioan Simedrea<sup>1</sup>, Marilena Lesovici<sup>2</sup>, Dana Bucuras<sup>1</sup>, Marcovici Tamara<sup>1</sup>, Dima Mirabela<sup>1</sup>

*1 University of Medicine and Pharmacy „Victor Babes” Timisoara, Romania*

*2 Clinical Children Hospital „Louis Turcanu” Timisoara, Romania*

**Background :**The adult obesity is associated with endocrine metabolic and mecanical complications but in children obesity the endocrine disturbances are not well known.

**Matherial and method:** Between 2003-2007 we have studied 15 330 children atmetted in the Ist Padiatric Clinical Children Hospital „Louis Turcanu”Timisoara, by mesurement of the antropomeric criterias (body weight, height, abdominal folder), BMI, follow- up of the , metabolic and endocrine complicatios (hiperin-suinemia, dislipidemia, HOMA index- insulinoresistance, hipercotisoemia, early adrenarche, hyperprolactinemia, sex hormon binding protein-SHBG).

**Results:** From 15 330 children we have found 9136 obeses (56,69%), 5164 girls and 3972 boys. A 623 of them were infants.The majority of them got obesity by high calories, intake only 16 had genetic obesity. We have found insulinoresistance in 46% of the teenager obeses and 38% had low level of SHBG. In 39 cases we have found early adrenarche. In 4 cases diabetic mellitus tipe 2; the mecanical complications were in all children. All teenager patients have depression, isolation and low performance in school.

**Conclusions:**

1. The incidence of endocrine disturbances in obeses children in relative height.
2. The magnitude of this are in direct relationship with the degree of obesity and age.
3. In the last years the incidence of children obesity rised dramatically in our region .

**UCP2 I/D POLYMORPHISM AND METABOLIC SYNDROME TRAITS IN OBESE INDIVIDUALS**

**Konstantinos Papatheodorou**<sup>1</sup>, Dimitrios Papazoglou<sup>1</sup>, Nikolaos Papanas<sup>1</sup>, Theodoros Papadopoulos<sup>1</sup>, Pantelis Papatheanasiou<sup>1</sup>, Odysseas Kaitozis<sup>1</sup>, Spyridon Kokkinos<sup>1</sup>, Theodora Gioka<sup>2</sup>, Georgia Kampouromiti<sup>2</sup>, Efstratios Maltezos<sup>1</sup>

*1. Second Department of Internal Medicine, Democritus University of Thrace, University Hospital of Alexandroupolis, Alexandroupoli, Greece*

*2. Laboratory of Biochemistry, University Hospital of Alexandroupolis, Alexandroupoli, Greece*

**Introduction:** The uncoupling proteins (UCPs) are a family of proteins that uncouple respiration leading to generation of heat and increased energy expendi-ture. Contradictory data indicate that allelic variants in their coding genes might be associated with components of the metabolic syndrome.

**Aim:** To assess the potential impact of the 45 base-pair insertion/deletion (I/D) polymorphism in the 3'-untraslated region of exon 8 of the UCP2 gene on features of the metabolic syndrome in obese subjects.

**Material:** Two hundred and forty-one obese patients (age: 42.9 ± 14.2 yr, BMI): 42.2 ± 8.3 kg/m2) with various features of the metabolic syndrome were geno-typed for the 45 base-pair insertion/deletion (I/D) polymorphism of the UCP2 gene.

**Results:** Number of obese patients with various features of the metabolic syndrome, genotype frequencies and minor (I) allele frequencies are shown on the following table:

	Glucose>110mg/dl	HDL<40(m) or 50(f) and/or Triglycerides>150mg/dl	Blood Pressure>	
130/85 mmHg	Total			
n	58	80	103	241
D/D	28	40	55	123
I/D	22	34	40	96
I/I	8	6	8	22
MAFs	32.7%	28.7%	27.2%	29.0%
p	0.56 (OR:1.1, 95%CI 0.75-1.70)	0.95 (OR: 0.99, 95%CI: 0.67-1.44)	0.71 (OR: 0.93, 95%CI: 0.66-1.32)	

**Conclusion:** No significant association was found between the polymorphism studied and the components of the metabolic syndrome that characterise the obese phenotype. These results, in accordance with similar findings previously obtained in other ethnic groups, suggest that the I/D allelic variant of the UCP2 may not have a direct role in the pathogenesis and development of metabolic consequences of obesity.

PP089

**PERIPHERAL DIABETIC NEUROPATHY IS NOT ASSOCIATED WITH MARKERS OF OBESITY IN MALE PATIENTS WITH TYPE 2 DIABETES**

**Christodoulos Monastiriotis**, Nikolaos Papanas, Konstantinos Papatheodorou, Dimitrios Papazoglou, Stamatia Kotsiou, Efstratios Maltezos  
*Outpatient Clinic of the Diabetic Foot at the Second Department of Internal Medicine, Democritus University of Thrace, Greece*

**Introduction:** Evidence for the association between diabetic neuropathy and obesity is inconclusive.

**Aim:** The aim of the present study was to investigate the potential association between markers of obesity and peripheral diabetic neuropathy in male patients with type 2 diabetes.

**Material:** The study included 60 male type 2 diabetic patients, divided in two groups. Group A comprised 30 patients (mean age 58.9±6.6 years, mean diabetes duration 7±4 years, mean HbA1c 7.4±1.2%) with peripheral diabetic neuropathy. Group B included 30 patients (mean age 55.6±8.7 years, mean diabetes duration 6.6±3.3 years, mean HbA1c 6.9±1.1%) without neuropathy. Exclusion criteria were as follows: chronic renal or liver failure, thyroid disease, active foot ulcer, other cause of neuropathy. Peripheral diabetic neuropathy was diagnosed by clinical examination using the Diabetic Neuropathy Index (DNI), as suggested by the University of Michigan. In all patients, BMI, WHR and %body fat were measured.

**Results:** BMI did not differ significantly ( $p=0.6$ ) between groups A (32.3±1.5 kg/m<sup>2</sup>) and B (30.9±1.9 kg/m<sup>2</sup>). There was also no difference in WHR (group A: 1.1±0.1, group B: 1.04±0.1,  $p=0.7$ ) and %body fat (group A: 33.5±6.5%, group B: 30.9±7.3%,  $p=0.45$ ) between the two groups.

**Conclusions:** These results suggest that there is no association between markers of obesity and peripheral diabetic neuropathy in male patients with type 2 diabetes.

PP090

**DIFFERENT TYPE OF VISFATIN RESPONSE DURING ORAL GLUCOSE TOLERANCE TEST IN OBESE WOMEN**

**Prof Dragan Micic**<sup>1</sup>, Asist Prof Mirjana Sumarac-Dumanovic<sup>1</sup>, Prof Jagoda Jorga<sup>2</sup>, Prof Aleksandra Kendereski<sup>1</sup>, Dr Goran Cvijovic<sup>1</sup>, Dr Danica Stamenkovic-Pejkovic<sup>1</sup>, Dr Svetlana Zoric<sup>1</sup>

<sup>1</sup> Institute For Endocrinology, Diabetes And Diseases Of Metabolism, Belgrade, Serbia

<sup>2</sup> Institute of Hygiene, Belgrade, Serbia

**Introduction** Insulin-mimetic actions of visfatin may be part of the feedback regulation of glucose homeostasis, so we hypothesized that plasma glucose or insulin may have effect on visfatin levels in humans.

**Aim** The aim of our study was to investigate the plasma glucose, insulin and visfatin levels during oral glucose tolerance test (OGTT) in 22 obese women (age:36.7±1.8yrs; BMI 34.7±0.6kg/m<sup>2</sup>).

**Material** Plasma visfatin (EIA Phoenix, ng/ml), insulin (RIA Inep, mU/l) and glucose (glucosio-oxidase, mmol/l) were measured in basal state, while visfatin and insulin were measured at the peak glucose level OGTT. Insulin sensitivity (Mindex: mg/kgBW/min, 2h euglycemic hyperinsulinemic clamp).

**Results** Basal glucose was 4.78±0.10 and peak glucose during OGTT was 8.20±0.42 ( $p<0.05$ ). There were no differences in visfatin between basal sample and at the peak glucose (72.2±3.3vs.79.4±7.5,  $p>0.05$ ). Basal insulin was 16.5±1.2 and at the peak glucose level 97.8±13.0 ( $p<0.05$ ). After analysis of the individual data we found that 7 obese women (GroupA) had significant decrease in visfatin level during OGTT (44.7±3.7vs.36.9±8.2,  $p<0.05$ ) and 15 women (GroupB) had significant increase in visfatin during OGTT (69.85±4.49vs.99.6±2.9,  $p<0.05$ ). There were no significant difference between Group A and B in BMI (34.8±1.1vs.34.6±0.8), age (36.0±4.6 vs. 37.1±1.8), basal glucose (4.9±0.3vs.4.7±0.1), basal insulin (14.7±1.8vs.17.4±1.6), peak glucose (8.9±1.1vs.7.8±0.36), insulin levels at peak glucose (80.5±20.78 vs.105.9±16.4) neither in insulin sensitivity (5.5±0.8vs.4.8±0.6).

**Conclusions** Our data demonstrate existence of two type of visfatin response during OGTT in obese women. It is still not clear which influence determines different type of visfatin response during OGTT and further studies are necessary.



PP091

### FAMILY HISTORY OF DIABETES AND PERSONAL HISTORY OF CHILDHOOD OBESITY ARE PREDICTIVE FACTORS FOR METABOLIC COMPLICATIONS IN ADULT OBESE PATIENTS

Carmen Barbu <sup>1,2</sup>, Anca Sirbu <sup>1,2</sup>, **Aura Diana Reghina** <sup>1,2</sup>, Georgiana Dobri <sup>2</sup>, Suzana Florea <sup>2</sup>, Simona Fica <sup>1,2</sup>

1. University of Medicine and Pharmacy Carol Davila Bucharest, Romania

2. Elias Hospital, Department of Endocrinology, Diabetes and Metabolic Diseases, Bucharest, Romania

**The aim** of our study was to investigate the importance of parameters such as family history of obesity and diabetes, personal history of childhood obesity and of the smoker status, as risk factors for developing metabolic complications, in a group of obese patients

**Patients and methods.** We evaluated 102 consecutively admitted patients (66 F, 36 M age range 21 – 67 years), with BMI >30 kg/m<sup>2</sup>. Clinical (body mass index - BMI, waist circumference) and biological data (fasting serum glucose, insulin, insulin resistance assessed by homeostasis model assessment-HOMA, total, HDL and LDL cholesterol and tryglicerides) were recorded. Abdominal ultrasound was performed in all patients for right liver lobe diameter determination and personal and family history were recorded

**Results.** Patients with family history of type 2 diabetes mellitus had higher HOMA levels ( $7.2 \pm 5.3$  vs  $5.0 \pm 3.6$ ,  $p < 0.05$ ) and higher waist circumferences ( $124.4 \pm 20.8$  vs  $110.2 \pm 25.5$ ,  $p < 0.05$ ) despite non-significant differences in BMI. They also had higher right liver lobe diameters ( $174.2 \pm 28.4$  vs  $164.0 \pm 29.3$ ). There were no differences observed between patients with and those without family history of obesity. A history of childhood obesity correlates with higher waist circumferences, higher tryglicerides and cholesterol levels. The same atherogenic lipid profile was observed in smokers.

**Conclusions.** Family history of diabetes, personal history of childhood obesity and smoker status are risk factors for higher waist circumference and right liver diameter (markers of visceral adiposity), insulin resistance and an atherogenic lipid profile, in obese patients. This suggests the importance of a meticulous history taken in every obese patient.

PP092

### RED WINE: A NATURAL MEDICINE AGAINST OBESITY

**Fanny Bakaliou**

King's College London, London, United Kingdom

**Introduction:** Moderate consumption of red wine may help preventing the development and may help treating obesity. The key compound is resveratrol naturally found in grapes.

**Aim:** To prove that resveratrol protects against obesity and the effect of age.

**Materials:** Scientists from Ulm University in Germany used a strain of human fat cell precursors, known as preadipocytes, which in the body go on to develop into mature fat cells. They used resveratrol to feed these cells and examine their development. Additionally, researchers of Stony Brook University, fed two groups of mice a diet in which 60% of calories came from fat. One of the groups was also fed a high dose of resveratrol (24mg/kg body weight, a dose far larger than a human can get from drinking wine).

**Results:** According to the first scientific team, resveratrol prevented the pre fat cell from increasing in the number and being converted into mature fat cells. It also hindered fat storage. Results of the second scientific team showed that resveratrol did not stop the mice from putting on weight and growing as tubby as the other group of mice, however they lived longer and more active lives despite eating high fat diet. Resveratrol is mimicking the effect of calorie restriction diet which is known to enlarge the lifespan of many animals, probably human as well.

**Conclusion:** Resveratrol has anti-obesity properties by exerting its effect directly on the fat cells. Thus, resveratrol may help to prevent the development of obesity or might be suited to treating obesity. More studies are needed in order to estimate the dose of resveratrol that is effective but not harmful for human.

PP093

**ASSOCIATION BETWEEN SERUM 25-HYDROXYVITAMIN D LEVELS AND BODY COMPOSITION INDICES IN POSTMENOPAUSAL WOMEN: THE POSTMENOPAUSAL HEALTH STUDY**

George Moschonis, **Konstantinos Koutsikas**, Anna Nikolaidou, Sofia Tanagra, Ioanna Petraki, Stallo Papoutsou, Anthi Naoumi, Sofia Kostea, Yannis Manios  
*Department of Nutrition & Dietetics, Harokopio University of Athens, Athens, Greece*

**Introduction:** Increasing evidence report associations between serum 25-hydroxyvitamin D (25-OHD) levels and measures of adiposity and muscle mass.

**Aim:** To examine the association between dual-energy X-ray absorptiometry (DXA) measurements of body fat and muscle mass with serum 25-OHD levels in postmenopausal women, after controlling for several covariates.

**Methods:** Serum 25-OHD, intact parathyroid hormone (PTH), insulin-like growth factor-I levels (IGF-I), DXA measurements of fat and fat free mass, anthropometric and handgrip strength measurements, dietary intake estimations, ultraviolet B (UV-B) radiation exposure and physical activity levels were collected from 112 healthy postmenopausal women ( $60.3 \pm 5.0$  y; BMI  $29.5 \pm 4.8$  kg/m<sup>2</sup>).

**Results:** At a bivariate level serum 25-OHD levels were inversely associated with regional and total body fat mass ( $P < 0.05$ ), while positive associations were observed with regional and total body fat free mass ( $P < 0.05$ ). After controlling for age, serum PTH, IGF-I levels, UV-B radiation exposure and physical activity levels most of the associations observed at a bivariate level between serum 25-OHD levels and body composition indices remained significant.

**Conclusions:** There seems to be an independent inverse association between serum 25-OHD levels and DXA measurements of total body and regional fat mass in healthy overweight postmenopausal women. It may be essential to consider body composition when providing recommendation for vitamin D in postmenopausal women.

PP094

**IRON STATUS IN PREPUBERTAL CHILDREN WITH OBESITY, INSULIN RESISTANCE AND METABOLIC SYNDROME. THE PROGRESS STUDY**

George Moschonis, Aikaterini Skenderi, Vasiliki Dede, Aikaterini-Eustathia Kyriakou, Alexandra Koumpitski, Paraskvi-Eirini Siatitsa, Maria Kantilafti, Aikaterini Siopi, Aliko-Eleni Farmaki, Sofia Tanagra, Yannis Manios  
*Department of Nutrition and Dietetics, Harokopio University of Athens, Athens, Greece*

**Introduction:** Recent literature indicates that obesity is associated with hypoferrremia (low serum iron).

**Aim:** To examine iron status in prepubertal children with obesity, insulin resistance (IR) and metabolic syndrome (MS).

**Materials and methods:** We examined a representative sample of 870 primary schoolchildren aged 9-13 years old participating in the "Prediabetes, Obesity and Growth Epidemiological Study in Schoolchildren" (The PROGRESS study). The collected data included anthropometric (weight, height, waist circumference), biochemical (fasting plasma glucose and serum insulin, iron and ferritin levels) and dietary indices. The IOTF references were used for the definition of overweight and obesity. Insulin and glucose were used to estimate IR (HOMA-IR). MS was diagnosed using the new International Diabetes Foundation definition.

**Results:** Obese subjects were found to have significantly higher levels of serum ferritin than non-obese ones ( $p=0.003$ ). Similarly significantly higher levels of serum ferritin were observed for subjects with central obesity (ie, waist circumference  $>90$ th age and sex-specific percentile) ( $p=0.001$ ) and MS ( $p<0.001$ ) compared to their healthy counterparts. Furthermore, subjects with IR were found to have significantly lower levels of serum iron levels ( $p=0.031$ ) and of dietary iron intake compared to healthy subjects.

**Conclusions:** In prepubertal children IR was associated with hypoferrremia, which is probably explained by decreased dietary iron intake. Furthermore, obesity, central adiposity and MS were associated with higher levels of iron stores (serum ferritin), probably explained by the low-grade inflammation induced in these metabolic conditions





## EVALUATION OF THE NUTRITIONAL STATUS AND ITS RELATIONSHIP WITH THE METABOLIC DISEASES

Dana Simu<sup>1</sup>, Adrian Copcea<sup>1</sup>, Madalina Indrie<sup>1</sup>, Ilinca Lenta<sup>1</sup>, Tudor Simu<sup>2</sup>

<sup>1</sup>Clinical Center for Diabetes, Nutrition and Metabolic Diseases, Cluj-Napoca, Romania

<sup>2</sup>"Iuliu Hatieganu" University of Medicine and Pharmacy, Cluj-Napoca, Romania

**Introduction:** The evaluation of the nutritional status consists in the assessment of the degree in which the physiological nutritional needs are satisfied or overleaped. Imbalances in different nutrient intakes, involved in the occurrence of frequent metabolic diseases such as obesity, dyslipidemia, metabolic syndrome and type 2 diabetes, can be detected using this method.

**Material and methods:** We performed the evaluation of nutritional status on a group of 90 patients (mean age 31.8; 61 females) which presented for metabolic abnormalities. The evaluation consisted in anamnesis, anthropometrical measurements, clinical examination, laboratory determinations and nutritional assessment. We estimated the intake of macro- and micronutrients in each case (using an application software developed by us in this purpose), studied the food intake pattern and evaluated its relationship with nutrition recommendations (ADA 2005), and the associated pathology.

**Results:** Within the group, the average BMI was 27.9 kg/m<sup>2</sup>. Metabolic syndrome was found in 58.8% and impaired lipid profiles in 84.4% of the cases. The average daily energy intake was 2534 kcal in males and 1925 kcal in females. The average structure was: 16% protein, 43% fat (75% from animal sources), 41% carbohydrate. In only 3% of the cases we reported a nutritional pattern consistent with the actual nutritional recommendations for micro- and macro-nutrients.

**Conclusions:** The overall evaluation of the nutritional status revealed a discordance between the nutrient intake and the actual nutritional recommendations in the group. The method could be used for a better implementation of medical nutrition therapy for metabolic diseases.

## STUDY ON THE IMPACT OF NUTRITIONAL SUPPLEMENTS ON THE LOSS OF BODY WEIGHT (BW), FAT MASS (FM), TOTAL BODY WATER (TBW) AND BODY CELLULAR MASS (BCM) IN OBESE PATIENTS

Eleni-Stamatina Georgila<sup>1</sup>, Fragiskos Gonidakis<sup>2</sup>, Konstantina Zadelis<sup>3</sup>, Argiro Dara<sup>1</sup>, Panagiotis Spiropoulos<sup>1</sup>, Stamatina Gatzoni<sup>3</sup>, Ioannis Papadopoulos<sup>4</sup>, Theodoros Valamatopoulos<sup>2</sup>, Themistoklis Vlachos<sup>2</sup>, Konstantinos Fenekos<sup>1</sup>

<sup>1</sup> "Korgialenio-Mpenakio, Greek Red Cross" Hospital. Endocrinology And Metabolism, Athens, Greece

<sup>2</sup> University Of Athens, Medical School, 1st Psychiatric Department, Aiginio Hospital Athens, Greece

<sup>3</sup> "Ippokratio" General Hospital Of Athens, Athens, Greece

<sup>4</sup> "Social Security Institution". 2nd Hospital Of Thessaloniki, Thessaloniki, Greece

**Introduction:** There are reports in the literature that imply that nutritional supplements combined with low caloric diets can be useful in weight reduction as they provide the nutritional substances that are not sufficiently in taken.

**Aim:** The study of the effectiveness of the nutritional supplements on BW and FM loss as well as their effect on TBW, BCM after 12 weeks of administration.

**Material:** One hundred and one obese patients with Body Mass Index (BMI) ranging from 30 to 46. 48 of them were female (mean age: 42 years) and 53 were male (mean age: 40 years).

**Methodology:** All participants followed a low caloric daily dietary program consisting of one meal (650-950 kcal) and two nutritional supplements (Basic-Premium, Prevent), (404-416 kcal). They were followed every 15 days for a period of 12 weeks. During each follow up session they were subjected to qualitative and quantitative bioelectrical body analysis (BIA).

**Results:**

	LOSS BW (%)	LOSS FM (%)	LOSS BCM (%)	LOSS TBW (%)
male	9,9	22,8	1,9	3,4
female	9	19,3	0,7	0

All participants completed the program without adverse reactions.

**Conclusion:** The use of dietary supplements resulted in BW reduction, significant FM loss and marginal reduction in BCM and TBW. Since FM loss was over 5%, which is the cut off point for significant reduction in the danger of somatic diseases attributed to obesity, our results have considerable clinical value.



PP097

**MORBIDITY IN FIRST DEGREE RELATIVES OF YOUNG OBESE RECRUITS**Dafni Koumoutsea<sup>1</sup>, Stavroula Papaikononou<sup>1</sup>, Ioannis Karydis<sup>3</sup>, Marios Dilanas<sup>1</sup>, Panagiotis Zagarellos<sup>1</sup>, Ioannis Megas<sup>1</sup>, Antonios Xatzioannidis<sup>2</sup><sup>1</sup> First Internal Medicine Department And Division Of Endocrinology 401 General Military Hospital Of Athens, Athens, Greece<sup>2</sup> Division Of Endocrinology 417 Veteran Affairs Hospital, Athens, Department Of Nutrition And Dietetics, Athens, Greece<sup>3</sup> Xarokopeion University Of Athens, Athens, Greece

**AIM:** Morbid conditions (mainly cardiovascular diseases) of first degree relatives constitute risk factors in a given study population. We decided to study the frequency of common causes of morbidity (mainly cardiovascular) in first degree relatives of obese young recruits as compared to corresponding causes of morbidity in first degree relatives of young recruits with normal weight.

**MATERIALS AND METHODS:** First degree relatives of 40 young obese recruits (with normal fasting blood glucose and lipid) with a mean age of 22.3 years were compared with equal number of first degree relatives of 40 healthy, non obese, recruits of similar age.

First degree relatives (parents, siblings) of young recruits were examined as outpatients to identify obesity, hypertension, diabetes mellitus, dyslipidemia and thyroid disease. Complete patient history included smoking habits as well as presence of coronary heart disease and stroke in age younger than 55 years.

**RESULTS:**

	MORBID CONDITIONS IN FIRST DEGREE RELATIVES	
	OBESE RECRUITS	NON OBESE RECRUITS
OBESITY	55%(22)	27,5%(11)
HYPERTENSION	22,5%(9)	7,5%(3)
DYSLIPIDEMIA	42,5%(17)	10%(4)
DIABETES	10%(4)	0%(0)
THYROID DISEASE	17,5%(7)	%(2)
CORONARY HEART DISEASE	2,5%(1)	0%(0)
STRIKE	0%(0)	0%(0)
SMOKING	52,5%(21)	67,5%(27)

**CONCLUSIONS:** Obese young recruits have increased frequency of obesity in their first degree relatives. Moreover, first degree relatives of obese recruits have higher frequency of hypertension, dyslipidemia, diabetes mellitus and thyroid disease compared to first degree relatives of non-obese recruits. Above multiple morbid conditions in first degree relatives are risk factor (primary cardiovascular) for the obese young recruits.

PP098

**PREALBUMIN AS A NUTRITIONAL MARKER IN RENAL TRANSPLANT PATIENTS**Stavroula Chrysostomou<sup>1</sup>, Charalambos Stathakis<sup>2</sup>, Athina Gompou<sup>2</sup>, Georgios Patsias<sup>3</sup>, Despoina Perrea<sup>4</sup><sup>1</sup> National And Kapodistrian University Of Athens, Athens, Greece<sup>2</sup> Division Of Nephrology, Laikon General Hospital, Athens, Greece<sup>3</sup> Larnaka General Hospital, Larnaka, Cyprus<sup>4</sup> Laboratory For Experimental Surgery And Surgical Research "Christeas Hall", University Of Athens, Athens, Greece

**Introduction:** Although prealbumin is known as a sensitive nutritional marker in patients with chronic renal disease, virtually there are no studies for prealbumin in renal transplant patients. Therefore, incidence of both, malnutrition and obesity, have been mentioned in these patients.

**Aim:** Determination of prealbumin and comparisons with other nutritional, anthropometric markers and clinical data in renal transplant patients.

**Material:** 154 renal transplant patients participated in this study. Renal transplant patients were divided into 3 groups, based on the year of transplantation (1st year, 1st-2nd year, 3rd-10th year). The definition of malnutrition was based on Kidney Disease Outcomes Quality Initiative (K/DOQI) for biochemical markers and on WHO Consultation on Obesity for anthropometric markers.

**RESULTS:** Prealbumin levels indicate severe malnutrition in renal transplant patients (6.79±23.02mg/dl) whereas albumin levels are normal based on K/DOQI (4.29±0.46g/dl). Cholesterol and creatinine levels are slightly high compared with normal values (216.63±48mg/dl, 1.6mg/dl, respectively). Prealbumin levels were significantly positive correlated with albumin (r=0.202, p=0.015). Furthermore, prealbumin levels were significantly higher in the 1-2nd transplant group compared with the 1st year transplant group (p=0.027). Furthermore, immunosuppressive treatment (cyclosporine and prograf) and the type of the kidney donor (cadaver-living, related-unrelated) did not have any significant association with prealbumin levels.

**CONCLUSIONS:** Prealbumin is a more sensitive marker of nutritional status compared with serum albumin. Albumin and other anthropometric markers indicate normal nutritional status. However, prealbumin is an independent nutritional marker and its level appears to be very low in patients with renal transplantation, especially in the 1st year transplant patients.



### ORLISTAT INCREASES THE ANTIOXIDANT POTENTIAL IN OBESE WOMEN: A PROSPECTIVE CONTROLLED STUDY

**Maria Bougoulia**, Kostas Tziomalos, Gerasimos E. Krassas

*Department of Endocrinology, Diabetes and Metabolism, Panagia General Hospital Thessaloniki, Greece*

**Objective:** The aim of this study was to determine the effect of orlistat and hypocaloric diet on oxidative stress and inflammation markers in healthy obese women before and after weight loss and compare the results with obese individuals who lost weight only with low-calorie diet.

**Design:** Thirty six premenopausal obese women were included in the study and assigned into two groups: group A (n=26) included women who received orlistat (xenical, ROCHE; 120 mg t.d.s.) combined with a low-calorie diet, and group B (n=10) included women who were only on low-calorie diet. A control group C (n=10) with normal weight was also investigated. Anthropometric parameters, such as body weight, body mass index (BMI), waist circumference were recorded. Insulin, insulin resistance, high sensitive C-reactive protein (hsCRP), peroxy radicals (D-ROM) and antioxidant potential (BAP) were determined before and after 4 months intervention period.

**Results:** Group A demonstrated a significant decrease in low density lipoprotein, hsCRP, D-ROM and BAP after weight loss, while group B showed no such reduction with the exception of D-ROM, which decreased but in much lower degree.

**Conclusion:** The administration of orlistat has a beneficial effect on inflammation markers, oxidative stress and antioxidant potential. The reduction of oxidative stress and inflammation after weight loss could possibly be translated into reduction of cardiovascular risk in obese individuals.

PP099

### LEVELS TNF-A, L-1, IL-6 IN PATIENTS WITH METABOLIC SYNDROME

Tatyana Sentsova, Olga Grigorian, Zaynudin Zaynudinov

*Institute Of Nutrition Academy Of Medical Science, Moscow, Russia*

**Background:** Obesity is one of the key clinical symptoms of metabolic syndrome. It is characterized by system inflammation reaction and production of various mediators.

**Aim:** Survey of TNF- $\alpha$ , IL-1 and IL-6 levels in patients with metabolic syndrome

**Objective and methods:** 62 patients with metabolic syndrome were surveyed at age from 35 to 62 years. There were 42 females and 20 males. 12 patients (19,3%) had 1 degree obesity, 25 patients (45,35%) had 2 degree obesity and 25 patients (45,35%) had 3 degree obesity. Levels TNF- $\alpha$ , IL-1 and IL-6 in blood serum were examined by immune ferment method (ELISA) using Biosource International test system (USA).

**Result:** Increase in TNF- $\alpha$ , IL-1 and IL-6 levels was established with patients diagnosed with metabolic syndrome who had 2 and 3 degree obesity (10,21 $\pm$ 0,1pg/ml, 8,6 $\pm$  0,8pg/ml, 46,5  $\pm$  0,4pg/m, 28,6  $\pm$ 0,2pg/ml, 32,6  $\pm$  0,4pg/ml, 96,4  $\pm$  0,9pg/ml ps 3,0  $\pm$  1,13pg/ml, 4,1  $\pm$ 0,34pg/ml, 32,3  $\pm$  0,4pg/ml control group – healthy people).

Patients with 1 degree obesity had results which are not different from those of healthy people (4,6 $\pm$  0,4pg/ml, 6,2  $\pm$ 0,6pg/ml, 36,3  $\pm$ 0,3pg/ml).

**Conclusion:** The results assume secretion of inflammation cytokines by adenocytes in patients with metabolic syndrome.

PP100

PP101

**MENTAL DISORDERS IN WOMENS WITH OBESITY**

Olga Grigorian, Oleg Gladishev, Zaynudin Zaynudinov , Kamilla Gapparova , Gulia Chekhonina  
*Institute of Nutrition of Russian Academy of Medical Science, Moscow, Russia*

**Objective:** To describe some features of obese patients (womens) that treated in our Clinic.

**Method:** 104 obese patients (mean age: 41,6 years; B.M.I.: 43,1) were interviewed. The following tests were administered: MMPI, SF-36 Health Status Survey, MFFT, EFT. We evaluated the following variables: depression symptoms, pessimistic, impulsivity and control, behavior according social norms, frustration tolerance, role in interpersonal relationships, kind of bonds, ego strength or ego weakness.

**Results:** depression: 52,7%; pessimistic: 78%; impulsivity: 40,6%; behavior according social norms: 85,1%; low frustration tolerance: 27,1%; passive role in interpersonal relationships: 56,7%; dependent bond: 43,2%; ego weakness: 84,0%.

**Conclusion:** Obesity is a chronic disease with a high clinical and psychiatric comorbidity. Long-term treatments in women with obesity may cause and/or intensify mental disorders. In our investigation, depression symptoms stand out and patients show characteristics of ego weakness, emotions constriction, dependence on bonds and a non-appropriate performance to self resources. It would be necessary in future researches, into its knowledge.

PP102

**EFFICACY OF WEIGHT LOSS PROGRAMS ON OVERWEIGHT AND OBESE GREEK ADULTS**

Sousana K. Papadopoulou, Athanasios Petrakis, Maria Hassapidou  
*Department of Nutrition and Dietetics, TEI Thessaloniki, Thessaloniki, Greece*

**Aim** The aim of this study was to estimate the efficacy of weight loss programs on overweight and obese Greek adults

**Methodology** The participants were 3153 subjects (23% men and 77% women), who were under dietician surveillance, in order to loose body weight.

**Results** Triple percentage of women compared to men made an effort to loose weight. Men showed significantly higher values in height ( $1.77 \pm 0.06$ m) and initial body weight ( $107.72 \pm 18.97$ Kg) and BMI ( $34.15 \pm 5.28$ Kg/m<sup>2</sup>), and lower in body fat ( $34.02 \pm 6.76$ %) compared to women with respective values ( $1.64 \pm 0.06$ m,  $78.88 \pm 16.12$ Kg,  $29.49 \pm 6.04$ Kg/m<sup>2</sup>,  $36.94 \pm 8.05$ %),  $p < 0.001$ . After weight loss programs of  $3.71 \pm 2.77$  months for men and  $4.33 \pm 5.14$  months for women, there were still significant differences between sexes,  $p < 0.001$  (weight:  $97.12 \pm 17.47$ Kg for men and  $72.93 \pm 15.21$  for women, BMI:  $30.78 \pm 4.98$ Kg/m<sup>2</sup> for men and  $27.20 \pm 5.41$ Kg/m<sup>2</sup> for women, body fat:  $29.39 \pm 7.16$ % for men and  $33.20 \pm 8.27$ % for women). Differences between first and second measurements were, also, higher for men than women. Thus, weight loss was  $10.85 \pm 7.07$ Kg for men and  $5.83 \pm 7.31$ Kg for women, fat loss was  $4.58 \pm 4.56$ % for men and  $3.43 \pm 4.69$ % for women,  $p < 0.001$ . Finally rhythm of weight loss was higher for men  $0.94 \pm 0.55$ Kg/w compared to women  $0.54 \pm 0.61$ Kg/w,  $p < 0.001$ .

**Conclusion** Triple percentage of women than men visited a dietician office in their effort to loose weight. Men showed better results in their weight control effort not only in body weight but also in body fat. Nutrition intervention programs are essential for prevention and treatment of obesity.

# AUTHORS INDEX







**A**

Abadi A . . . . .	PP039, PP043
Adamkova V . . . . .	PP012
Agapakis D . . . . .	PP023
Ageeva N . . . . .	PP037, PP038
Akritopoulou K . . . . .	PP082
Al-Daghri N . . . . .	OP10
Al-Disi D . . . . .	OP10
Al-Othman A . . . . .	OP10
Al-Saif M . . . . .	OP10
Aleksandrova K . . . . .	PP026, PP066
Alexandridis M . . . . .	PP022, PP050, PP051, PP081, PP083
Alexe O . . . . .	PP067
Alexiadou K . . . . .	OP12, PP010, PP057, PP068
Alves A . . . . .	OP18
Amini F . . . . .	OP17
Aminpour A . . . . .	PP043
Andrioti E . . . . .	OP15
Androulidaki A . . . . .	OP09
Ansari N . . . . .	PP039
Anton D . . . . .	PP034
Apostolou A . . . . .	PP014
Argiana V . . . . .	PP057
Argiropoulou A . . . . .	PP029
Argyrakopoulou G . . . . .	PP010, PP057, PP068
Argyropoulou D . . . . .	PP027
Armitage C . . . . .	OP05
Athanasiadou N . . . . .	OP04
Azezli A . . . . .	PP070, PP071

**B**

Bacharaki S . . . . .	PP016, PP048
Bader M . . . . .	PP058
Baikova D . . . . .	PP017, PP019, PP020, PP049
Bakaliou F . . . . .	PP092
Balaska D . . . . .	OP15, PP030
Balla I . . . . .	OP12
Balla M . . . . .	PP035, PP036, PP058, PP059
Baltatzi M . . . . .	PP023
Barbu C . . . . .	PP091
Barlas K . . . . .	PP058
Barros M . . . . .	OP18
Bartzis L . . . . .	PP035, PP036
Bayraktaroglu T . . . . .	PP070, PP071
Bejtja G . . . . .	OP01
Bellou E . . . . .	PP021
Bloudickova S . . . . .	PP056
Bobolas P . . . . .	PP035, PP036, PP058, PP059
Bohuslavova R . . . . .	PP056
Bolanaki H . . . . .	PP065
Boskos G . . . . .	PP040
Bougioukli V . . . . .	PP084
Bougoulia M . . . . .	OP07, PP099
Bourlakis M . . . . .	PP064
Bozomitu L . . . . .	PP034

Bucuras D . . . . .	PP086, PP087
Bucuras V . . . . .	PP086
Burlacu M . . . . .	PP034

**C**

Carola L . . . . .	OP18
Charalambous C . . . . .	PP022, PP080, PP081, PP082, PP083
Chekhonina G . . . . .	PP101
Chrysostomou S . . . . .	PP098
Chystouli V . . . . .	PP003
Colic Baric I . . . . .	PP075
Coman A . . . . .	PP004, PP055
Copcea A . . . . .	PP095
Cunha S . . . . .	OP18
Cvijovic G . . . . .	OP08, PP090

**D**

Dara A . . . . .	PP096
Daskalaki D . . . . .	PP065
Daskalopoulou E . . . . .	PP076, PP077
Deda E . . . . .	PP035, PP036, PP058, PP059
Dede V . . . . .	OP06, PP027, PP028, PP094
Delasouda A . . . . .	PP016, PP048
Diakomopoulou E . . . . .	OP12, PP064
Diamantis T . . . . .	PP068
Dilanas M . . . . .	PP097
Dima M . . . . .	PP087
Dimitropoulakis P . . . . .	OP15
Dobri G . . . . .	PP091
Dolianiti M . . . . .	PP041, PP042
Doupis J . . . . .	PP057, PP068
Douvis S . . . . .	PP005
Duleva V . . . . .	PP017, PP019, PP049
Dumas A . . . . .	OP07

**E**

Efthimiadis A . . . . .	PP063
Efthimiadis I . . . . .	PP063
Egtesadi S . . . . .	PP001, PP047
Eleftheriadou I . . . . .	OP12, PP010, PP057, PP064, PP068
Ene I . . . . .	PP067

**F**

Fadavi G . . . . .	OP02
Faghah S . . . . .	PP039, PP047
Farahmand S . . . . .	PP043
Farajian P . . . . .	PP021
Farmaki A . . . . .	PP028, PP053, PP094
Fenekos K . . . . .	PP096
Fica S . . . . .	PP091
Filippou O . . . . .	PP041, PP042
Florea S . . . . .	PP091
Fragkiadakis G . . . . .	OP15
Fthenakis Z . . . . .	OP15, PP030

Furerraj T . . . . .	OP01
----------------------	------

**G**

Gakni D . . . . .	PP028
Ganotopoulou A . . . . .	PP002, PP007, PP008, PP062
Gapparova K . . . . .	PP101
Gatzoni S . . . . .	PP096
Gedeon M . . . . .	PP016, PP048
Georgali L . . . . .	PP059
Georgila E . . . . .	PP096
Gerama M . . . . .	PP084
Giakoumaki I . . . . .	OP15
Gioka T . . . . .	PP073, PP088
Giolis A . . . . .	PP059
Giovanopoulos H . . . . .	PP022, PP079, PP080
Gladishev O . . . . .	PP101
Golestan B . . . . .	PP069
Gompou A . . . . .	PP098
Gonidakis F . . . . .	PP096
Goutkidou S . . . . .	PP076, PP077
Grammatikaki E . . . . .	OP06, PP027, PP028
Grammatikopoulou M . . . . .	PP084
Graur L . . . . .	PP031
Grigorian O . . . . .	PP100, PP101
Grigoropoulou P . . . . .	OP12, PP010, PP064

**H**

Haghani H . . . . .	PP001
Hassan Eftekhari M . . . . .	PP001
Hassapidou M . . . . .	OP03, OP04, OP14, PP032, PP033, PP102
Hatzitolios A . . . . .	PP023, PP052
Hejazi E . . . . .	PP039
Hogea C . . . . .	PP086
Hoursalas I . . . . .	PP079, PP080
Hubacek J . . . . .	PP012, PP025, PP056
Husi G . . . . .	OP01

**I**

Iatridi V . . . . .	PP015
Iliopoulou S . . . . .	PP079
Indrie M . . . . .	PP095
Ivanova D . . . . .	PP066

**J**

Jordanov B . . . . .	PP019
Jorga J . . . . .	OP08, PP090

**K**

Kaganov B . . . . .	PP037, PP038
Kaitozis O . . . . .	PP072, PP073, PP088
Kaklamanos I . . . . .	OP03, OP14, PP032, PP033
Kaklamanou D . . . . .	OP05, PP032
Kaklamanou M . . . . .	OP03, OP05, OP014, PP033

Kakouraki D. . . . . PP009  
 Kallianioti K. . . . . PP027, PP028  
 Kamperidis N. . . . . PP040, PP078  
 Kampouromiti G. . . . . PP073, PP088  
 Kantilafti M. . . . . PP027, PP028, PP053,  
 . . . . . PP094  
 Kapantais E. . . . . OP03, OP14, PP032,  
 . . . . . PP033  
 Karagianni N. . . . . PP002, PP007, PP008,  
 . . . . . PP062  
 Karagiozoglou-Lampoudi T. . . . . PP014, PP046, PP074  
 Karanasiou K. . . . . PP041, PP042  
 Karfopoulou E. . . . . PP015  
 Karimi H. . . . . PP069  
 Karimitri A. . . . . OP11  
 Karlafti H. . . . . PP023  
 Karydis I. . . . . PP097  
 Katsare Z. . . . . PP035, PP036, PP058,  
 . . . . . PP059  
 Katsaris S. . . . . PP022, PP050, PP079,  
 . . . . . PP080, PP082  
 Katsarou X. . . . . PP015  
 Katsiki N. . . . . PP023, PP052  
 Katsilambros N. . . . . OP12, PP010, PP035,  
 . . . . . PP057, PP064, PP068  
 Kaviani M. . . . . PP043  
 Kazakos K. . . . . PP084  
 Kazantzidou J. . . . . PP042  
 Kendereski A. . . . . OP08, PP090  
 Khalili M. . . . . PP069  
 Khanam L. . . . . OP10  
 Khosh Niyyat M. . . . . OP17  
 Kifonidis D. . . . . PP050, PP051  
 Kiousi D. . . . . PP065  
 Kiselova Y. . . . . PP066  
 Klimatsaki K. . . . . PP035, PP059  
 Kokkinos A. . . . . PP010, PP057, PP064,  
 . . . . . PP068  
 Kokkinos S. . . . . PP073, PP088  
 Kokolias T. . . . . PP035, PP036, PP058,  
 . . . . . PP059  
 Koliaki C. . . . . PP057  
 Kolovou I. . . . . PP010  
 Komninou S. . . . . PP015  
 Kondaki A. . . . . PP053  
 Konstantoudakis E. . . . . PP010  
 Kooshesh M. . . . . PP001  
 Korovesis K. . . . . PP036, PP058, PP059  
 Kosma A. . . . . PP002  
 Kosma K. . . . . PP007, PP008, PP062  
 Kostea S. . . . . OP06, PP093  
 Kotsiou S. . . . . PP089  
 Kotzampassi K. . . . . PP046, PP074  
 Koulouri A. . . . . PP003  
 Koumoutsea D. . . . . PP097  
 Koumpitski A. . . . . PP027, PP053, PP094  
 Koutsikas K. . . . . PP093  
 Koutsovasilis A. . . . . PP058  
 Kralova Lesna I. . . . . PP012, PP025  
 Krassas G. . . . . OP07, PP099  
 Kravchenko V. . . . . PP006  
 Krokidis X. . . . . PP078

Kuthanova L. . . . . PP056  
 Kutluturk F. . . . . PP070, PP071  
 Kvezerele-Kopadze A. . . . . PP024  
 Kyriaki D. . . . . PP057  
 Kyriakopoulos K. . . . . OP12  
 Kyriakou A. . . . . OP06, PP027, PP028,  
 . . . . . PP094  
 Kyriazis I. . . . . PP035, PP036, PP058,  
 . . . . . PP059

## L

Lagra F. . . . . PP040, PP078  
 Lalousis A. . . . . PP035, PP036, PP058,  
 . . . . . PP059  
 Lanska V. . . . . PP012  
 Laskos E. . . . . PP002, PP007  
 Lena O. . . . . OP01  
 Lenta I. . . . . PP095  
 Lesovici M. . . . . PP087  
 Liatis S. . . . . OP12, PP064  
 Liatsos K. . . . . PP002, PP007, PP008  
 Lomax M. . . . . OP11

## M

Majercak I. . . . . PP085  
 Makrilakis K. . . . . PP010, PP068  
 Malios I. . . . . PP035, PP036, PP058,  
 . . . . . PP059  
 Maltezos E. . . . . PP072, PP073, PP088,  
 . . . . . PP089  
 Manias A. . . . . PP058  
 Manios Y. . . . . OP06, PP015, PP027,  
 . . . . . PP028, PP053, PP093, PP094  
 Marcovici T. . . . . PP087  
 Mardani M. . . . . OP17  
 Marginean O. . . . . PP086, PP087  
 Margiola P. . . . . PP028  
 Margioris A. . . . . OP09  
 Markaki A. . . . . OP15, PP009  
 Matsagoura M. . . . . PP064  
 Matsatsinis N. . . . . PP014  
 Mavrogianni X. . . . . PP015  
 Megas I. . . . . PP097  
 Mendrinos D. . . . . PP035, PP036, PP058,  
 . . . . . PP059  
 Michail O. . . . . PP068  
 Micic D. . . . . OP08, PP090  
 Mihalache L. . . . . PP031  
 Milenkovic K. . . . . PP018  
 Milioni V. . . . . PP063  
 Mitro P. . . . . PP085  
 Mitsikaris D. . . . . PP022  
 Mohammadi F. . . . . OP02  
 Mohammadi M. . . . . OP02  
 Monastiriotis C. . . . . PP089  
 Moraiti I. . . . . PP005  
 Moraru D. . . . . PP034  
 Moschonis G. . . . . OP06, PP027, PP028,  
 . . . . . PP053, PP093, PP094  
 Mousiolis A. . . . . PP040, PP078

Mouzakis N. . . . . PP029  
 Murariu G. . . . . PP004, PP055  
 Mytas D. . . . . PP058

## N

Nanas C. . . . . PP052  
 Nanousi E. . . . . PP076, PP077  
 Naoumi A. . . . . OP06, PP053, PP093  
 Nazari H. . . . . PP017  
 Neamtu C. . . . . PP067  
 Nikolaidou A. . . . . PP093  
 Novkovic M. . . . . PP018  
 Ntalamagkas V. . . . . PP064

## O

Oltean C. . . . . PP034  
 Omidvar N. . . . . PP013  
 Oplopiadis D. . . . . PP082  
 Orhan Y. . . . . PP070, PP071  
 Ousunidou Z. . . . . PP016, PP048

## P

Panagiotakos D. . . . . PP005  
 Panagopoulou P. . . . . PP035  
 Panagoulas G. . . . . OP12  
 Papadakou-Lagogianni S. . . . . PP041, PP042  
 Papadimitriou K. . . . . OP04  
 Papadopoulos I. . . . . PP096  
 Papadopoulos T. . . . . PP072, PP073, PP088  
 Papadopoulos F. . . . . OP07  
 Papadopoulos N. . . . . PP040  
 Papadopoulos P. . . . . PP040, PP078  
 Papadopoulos S. . . . . OP03, PP032, PP102  
 Papakostas P. . . . . PP046, PP074  
 Papalazarou A. . . . . PP021  
 Papanas N. . . . . PP072, PP073, PP088,  
 . . . . . PP089  
 Papantoniou S. . . . . PP078  
 Papaioikonomou S. . . . . PP097  
 Papatathanasiou P. . . . . PP072, PP073, PP088  
 Papatheodorou K. . . . . PP072, PP073, PP088,  
 . . . . . PP089  
 Papavasiliou E. . . . . PP035  
 Papazoglou D. . . . . PP072, PP073, PP088,  
 . . . . . PP089  
 Papoutsou S. . . . . PP093  
 Paraskevopoulos A. . . . . PP065  
 Partheniou C. . . . . PP036, PP058, PP059  
 Paschalidou E. . . . . PP063  
 Patiakas S. . . . . PP022, PP050, PP051,  
 . . . . . PP079, PP080, PP081,  
 . . . . . PP082, PP083  
 Patsias G. . . . . PP098  
 Pavlidou C. . . . . PP035  
 Pavlovskaya E. . . . . PP037, PP038  
 Penna S. . . . . PP046, PP074  
 Perrea D. . . . . OP12, PP064, PP098  
 Petraki I. . . . . PP093  
 Petrakis A. . . . . PP102





Petrova S . . . . . PP044  
 Petrovanu C . . . . . PP004, PP055  
 Petrovanu R . . . . . PP004, PP055  
 Pirogianni V . . . . . PP021  
 Pitha J . . . . . PP056  
 Polovina S . . . . . PP018  
 Pontikides N . . . . . OP07  
 Presvelos D . . . . . PP036  
 Pyankova G . . . . . PP046, PP074  
 Pylarinos Y . . . . . PP029

**R**

Radanova M . . . . . PP066  
 Rangelova L . . . . . PP044  
 Rashidkhani B . . . . . PP013  
 Reghina A . . . . . PP091  
 Restas E . . . . . PP072  
 Rezazdeh Sarabi A . . . . . PP013  
 Ribeiro J . . . . . OP18  
 Risvas G . . . . . PP021  
 Rito A . . . . . PP054

**S**

Sabico S . . . . . OP10  
 Sabidis A . . . . . PP081, PP083  
 Sakoli I . . . . . PP040  
 Saraf Z . . . . . PP001  
 Satalic Z . . . . . PP075  
 Savopoulos C . . . . . PP023  
 Savvidou A . . . . . PP014  
 Selioti K . . . . . PP029  
 Sentsova T . . . . . PP100  
 Shahamfar J . . . . . PP011  
 Shahamfar M . . . . . PP011  
 Shishehbor F . . . . . PP043  
 Sianni A . . . . . PP002, PP007, PP008,  
 . . . . . PP062  
 Siatitsa P . . . . . PP027, PP053, PP094  
 Sidossis L . . . . . PP005  
 Simadrea I . . . . . PP087  
 Simu D . . . . . PP095  
 Simu T . . . . . PP095  
 Siopi A . . . . . PP027, PP053, PP094  
 Siradze L . . . . . PP024  
 Sirbu A . . . . . PP091  
 Skenderi A . . . . . PP027, PP028, PP094  
 Sokolic L . . . . . PP075  
 Sourla E . . . . . PP051  
 Spiropoulos P . . . . . PP096  
 Srdic B . . . . . PP060, PP061  
 Stamenkovic-Pejkovic D . . . . . OP08, PP090  
 Stathakis C . . . . . PP098  
 Stavridou T . . . . . PP079  
 Stefan R . . . . . PP031  
 Stergiou K . . . . . PP078  
 Stokic E . . . . . PP060, PP061  
 Strokova T . . . . . PP037, PP038  
 Suchanek P . . . . . PP012, PP025  
 Sumarac-Dumanovic M . . . . . OP08, PP090  
 Surkov A . . . . . PP037, PP038

Syrianos N . . . . . PP035, PP036, PP058,  
 . . . . . PP059

**T**

Taleban F . . . . . PP039  
 Tambalis K . . . . . PP005  
 Tanagra S . . . . . OP06, PP053, PP093,  
 . . . . . PP094  
 Tananakina N . . . . . PP006  
 Tentolouris N . . . . . OP12, PP010, PP057,  
 . . . . . PP064, PP068  
 Thomakos P . . . . . PP068  
 Tioli B . . . . . PP050, PP051, PP081,  
 . . . . . PP083  
 Tkachuk L . . . . . PP006  
 Tomic-Nlicag D . . . . . PP061  
 Toti F . . . . . OP01  
 Toulabi T . . . . . OP17  
 Triandafilopoulou A . . . . . PP050  
 Tsatsanis C . . . . . OP09  
 Tsigga M . . . . . PP084  
 Tsukis S . . . . . PP022, PP050, PP079,  
 . . . . . PP080, PP082  
 Tucic K . . . . . PP018  
 Tzenakis N . . . . . PP065  
 Tzeranaki E . . . . . PP003  
 Tziomalos K . . . . . OP07, OP14, PP033,  
 . . . . . PP099  
 Tzotzas T . . . . . OP14, PP033  
 Tzouveleakis G . . . . . PP052

**U**

Udrea O . . . . . OP13  
 Uvarova E . . . . . PP037, PP038

**V**

Valamatopoulos T . . . . . PP096  
 Valente C . . . . . OP18  
 Valocik G . . . . . PP085  
 Vandrou A . . . . . OP06, PP027, PP028  
 Varthalitou M . . . . . PP016, PP048  
 Varvogli L . . . . . PP029  
 Vasiliou K . . . . . PP076, PP077  
 Vasilopoulos D . . . . . PP002, PP007, PP008,  
 . . . . . PP062  
 Vatca D . . . . . PP031  
 Veleminsky M . . . . . PP012  
 Viklicky O . . . . . PP056  
 Vlachaki C . . . . . PP029  
 Vlachogiannis E . . . . . PP076, PP077  
 Vlachopoulou M . . . . . PP063  
 Vlachos T . . . . . PP096  
 Vlahavas G . . . . . OP03, PP032  
 Vliora C . . . . . PP041

**X**

Xatzi K . . . . . PP050, PP051, PP081,  
 . . . . . PP083  
 Xatziioannidis A . . . . . PP097  
 Xrisanthakopoulou I . . . . . PP084

**Y**

Yannakoulia M . . . . . PP021  
 Ylli A . . . . . OP01

**Z**

Zacharioudaki V . . . . . OP09  
 Zadeli K . . . . . PP096  
 Zafeiri K . . . . . PP035, PP059  
 Zafropoulos V . . . . . OP15, PP030  
 Zagarelos P . . . . . PP097  
 Zaynudinov Z . . . . . PP100, PP101  
 Zekeridou A . . . . . PP040  
 Zimmelova P . . . . . PP012  
 Ziva-Petropoulou M . . . . . PP041, PP042  
 Zizic V . . . . . PP075  
 Zoric S . . . . . OP08, PP090  
 Zubovich A . . . . . PP037, PP038

## ACKNOWLEDGEMENTS

The Organising Committee and the Executive Board of the 8th Macedonian Congress on Nutrition and Dietetics and of the 3rd Balkan Congress on Obesity would like to thank the following companies for their fruitful cooperation and valuable contribution to the organisation of the congresses.

### GOLD SPONSORS

Abbott Laboratories (Hellas)  
SANOFI AVENTIS

### THEMATIC SPONSORS

Coca-Cola Hellas  
NESTLÉ Whole Grain Cereals  
PREVENT HELLAS

### SPONSORS

ARISTIDES DASKALOPOULOS FOUNDATION  
D&D Eurodiet Hellas  
ELAIS - UNILEVER HELLAS S.A.  
PHARMASERVE - LILLY S.A.C.I.  
Roche Hellas S.A.

### SUPPORTERS

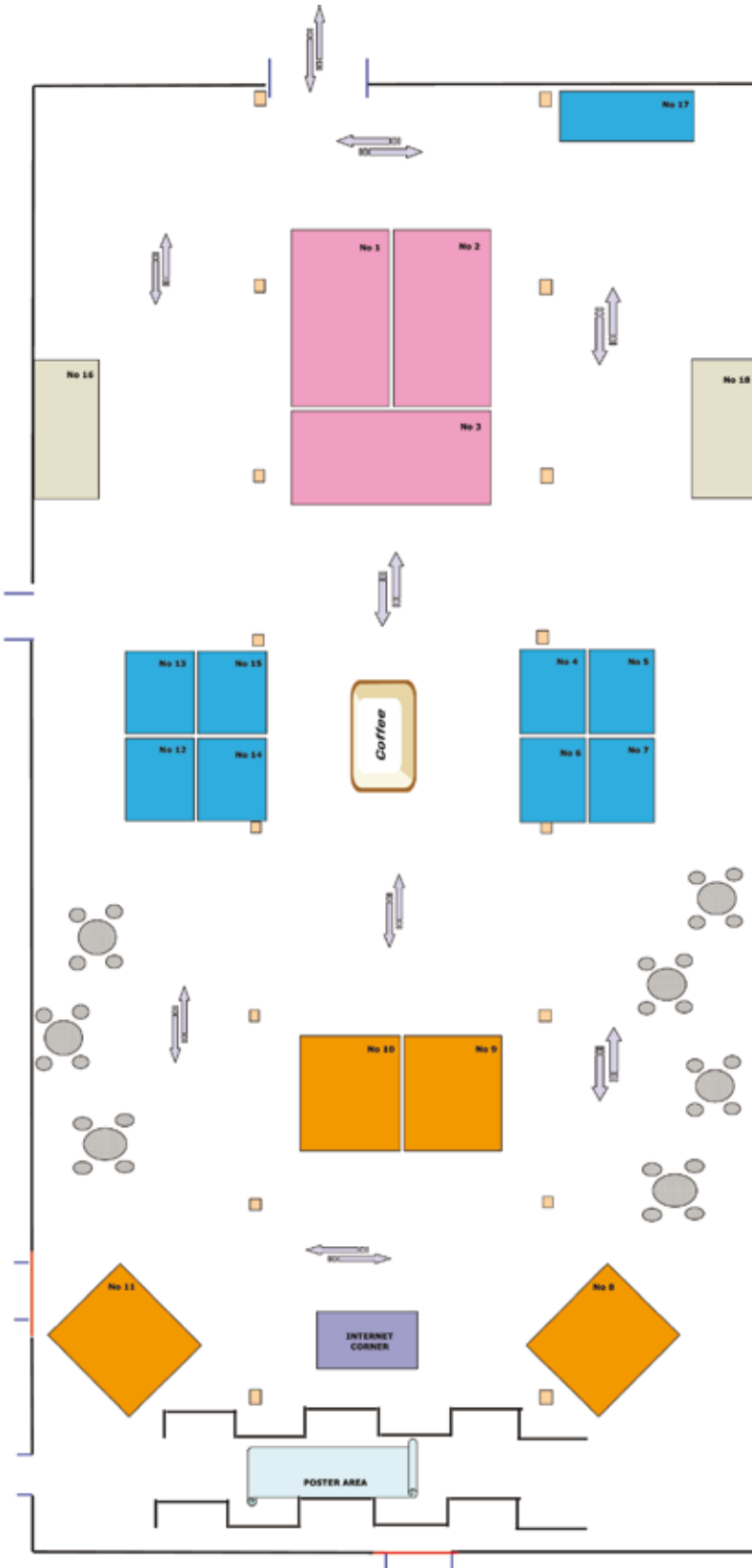
ERGOGENIC  
LAMDA MEDICAL S.A.

### OTHER CONTRIBUTORS

Biomedicine S.A.  
E.J. PAPADOPOULOS / Biscuits and Food Products Manufacturing Company  
ErmisPLIROFORIKI  
FAGE S.A.  
Nature Publishing Group  
ORACON S.A.  
SCIENCE TECHNOLOGIES  
SERINTH  
Vivartia S.A.



## EXHIBITION PLAN



## EXHIBITORS

- No 1: SANOFI AVENTIS
- No 2: PREVENT HELLAS
- No 3: Abbott Laboratories (Hellas)
- No 4: ELAIS - UNILEVER HELLAS S.A.
- No 5: Future Congresses
- No 6: D&D Eurodiet Hellas
- No 7: Vivartia S.A.
- No 8: SCIENCE TECHNOLOGIES
- No 9: Coca-Cola Hellas
- No 10: NESTLÉ Whole Grain Cereals
- No 11: SERINTH
- No 12: ORACON S.A.
- No 13: ERGOGENIC
- No 14: PHARMASERVE - LILLY S.A.C.I.
- No 15: Roche Hellas S.A.
- No 16: FAGE S.A.
- No 17: ErmisPLIROFORIKI
- No 18: Hellenic Medical Association for Obesity