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With the participation of:

Spanish Nutrition and Food Sciences Academy (AEN)

Spanish Nutrition Society (SEN)

Spanish Society of Community Nutrition (SENC)

Spanish Foundation for Nutritional Research (FIN)

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Improvement of Health by Fitness, Nutrition and Exercise Research Group

PRESS RELEASE

Madrid, 7th February 2017

Published the research 'General and Abdominal Obesity Is Related to Physical Activity, Smoking and Sleeping Behaviours and Mediated by the Educational Level: Findings from the ANIBES Study in Spain'

The ANIBES Study analyzes the relationship between physical activity, smoking habits, and sleeping time with the risk of overweight and general and abdominal obesity

- **The results of this new study, published in the scientific journal PLoS ONE, show that, in Spain, being male and aged more than 40 years old is associated with an increased risk of overweight and general and abdominal obesity**

- **A lower risk of overweight and general and abdominal obesity is associated with factors such as a higher educational level and spending more than 150 min/week in vigorous-intensity physical activity**

- **Watching TV quite or very often is associated with increased risk of general and abdominal obesity, while sleeping 7 hours per day or more is associated with a lower risk of obesity (both general and abdominal)**

The scientific journal PLos ONE recently published the research 'General and Abdominal Obesity Is Related to Physical Activity, Smoking and Sleeping Behaviours and Mediated by the Educational Level: Findings from the ANIBES Study in Spain'. This research work adds new data to the scientific study about anthropometric data, macronutrients and micronutrients intake and their sources, as well as the level of physical activity and socioeconomic data of the population, which has been coordinated by the Spanish Nutrition Foundation (FEN).

The aim of the present new research work included in the ANIBES Study was to analyze the association of different socioeconomic and lifestyle factors, including physical activity, with the conditions of overweight, general and abdominal obesity in the Spanish adult population aged between 18 and 65 years.

"The results of this study show that, in Spain, being male and aged more than 40 years was associated with an increased risk of overweight and general and abdominal obesity",

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explains **Prof. Rosa Mª Ortega, PhD**, Director of the VALORNUT Research Group and Professor of Nutrition at the Complutense University of Madrid. "On the other hand, a higher educational level and spending more than 150 min/week in vigorous-intensity physical activity were associated with a lower risk of overweight and general and abdominal obesity".

Relevant differences according to sex

Suffering from overweight, and general obesity and abdominal obesity was significantly higher in the male population participating in the ANIBES Study. "While 40.5% of men were overweight, this figure accounted for 31.4% in women. Regarding general obesity, 22.7% of the male population suffered from it, compared to 17.3% of female population. Lastly, 64.7% of men had abdominal obesity, while only 52.5% of women had it", comments Prof. Rosa Mª Ortega.

In this sense, scientific literature has suggested that sex itself is a factor influencing body composition, as well as fat oxidation and mobilization, because sex hormones affect the amount and distribution of body fat. "Focusing in the ANIBES Study –continues commenting the author of this research study–, the increased risk to males of suffering from overweight or obesity may be due to the different patterns of physical activity or to different existing dietary habits of men and women".

Differences according to sociodemographic characteristics

This research work also considered for its analysis sociodemographic characteristics of the population such as educational level, occupation and income.

In this sense, "we were able to check that only university educational level was inversely associated with the risk of overweight and general and abdominal obesity", explains Prof. Rosa Mª Ortega. "Educational level can exert its influence on health and body weight since it is related to the knowledge about health and healthy lifestyles, including dietary habits and physical activity".

With regard to family income, "it is noteworthy that the fact of not answering the question of family income (23.6 %) was associated with a lower risk of suffering from abdominal obesity, so it could be possible that those people that did not declare their income belonged to the group of individuals with higher income and socioeconomic level", continues to remark the author of the study.

Habits and lifestyles

Physical activity is a key determinant of energy expenditure. "The multivariate regression analysis used for this study suggests that vigorous-intensity physical activity may have a greater effect on preventing overweight and obesity than physical activity of lower intensity", comments Prof. Ortega. "This study shows a reduction of overweight and general and abdominal obesity in the individuals who perform more than 150 min/week of vigorous-intensity physical activity, with no significant influence found in the activities of lower intensity".

On the other hand, findings from the ANIBES Study suggest that sleeping 7 h/day or more was associated with a lower risk of suffering from general and abdominal obesity, and the risk was even lower sleeping more than 8h/day. "The association between sleep

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and the development of obesity may be due to the fact that individuals with shorter sleep are most likely to stimulate appetite and have more opportunities to eat, as well as keeping an unhealthier lifestyle", points out Prof. Rosa Mª Ortega. "Similarly, higher frequency of watching television or doing sedentary activities was associated with a higher risk of general and abdominal obesity".

López-Sobaler AM, Rodríguez-Rodríguez E, Aranceta-Bartrina J, Gil A, González-Gross M, Serra-Majem Ll, Varela-Moreiras G, Ortega RM. General and abdominal Obesity is related to physical activity, smoking and sleeping behaviours and mediated by the educational level: Findings from the ANIBES Study in Spain. PLoS ONE, 2016;11(2):1-13; doi:10.1371/journal.pone.0169027.

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Scientific Committee of the ANIBES Study

- **Prof. Javier Aranceta-Bartrina MD, PhD**, Chairman of the Scientific Committee of the Spanish Society of Community Nutrition(SENC), Clinical Director of the Spanish Foundation for Nutritional Research (FIN) and Associate Professor of Community Nutrition at the University of Navarra
- **Prof. Ángel Gil PhD**, Chairman of the Iberoamerican Nutrition Foundation (FINUT), Director of the BioNitScientific Group and Professor of Biochemistry and Molecular Biology at the University of Granada
- **Prof. Marcela González-Gross PhD**, Vice President of the Spanish Nutrition Society (SEÑ), Head of the imFine Research Group and Professor of Sports Nutrition and Exercise Physiology at the Technical University of Madrid
- **Prof. Rosa Mª Ortega PhD**, Director of the VALORNUT Research Group and Professor of Nutrition at the Complutense University of Madrid
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- **Prof. Gregorio Varela-Moreiras PhD**, Chairman of the Spanish Nutrition Foundation (FEN), Director of the Nutrition and Food Sciences Research Group (CEUNUT) and Professor of Nutrition and Bromatologyat CEU San Pablo University of Madrid

Technical specifications of the ANIBES Study

Design: Representative sample of the resident population in Spain (excluding Ceuta and Melilla)
Total sample: Individuals aged between 18 and 64 years old who live in municipalities with more than 2,000 inhabitants
Universe: 37 million inhabitants
Final sample: 2,009 individuals aged between 9 and 75 years old. For this study the sample was of 1,665 individuals aged between 18 and 64 years old (2.23% error and 95% margin of confidence)
Random sample plus boost: 2,285 participants*

*Boost in the sample size was considered in order to obtain a correct representation

The final protocol of the ANIBES scientific study was previously approved by the Clinical Ethics Committee of the Autonomous Region of Madrid (Spain).

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