

## PRESS RELEASE

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The scientific journal *Nutrients* publishes the study 'Intake and Dietary Food Sources of Fibre in Spain: Differences with Regard to the Prevalence of Excess Body Weight and Abdominal Obesity in Adults of the ANIBES Study'

### The ANIBES Study analyzes intake and dietary food sources of fibre with regard to body weight and abdominal obesity in adults

- The study demonstrates an insufficient fibre intake among the Spanish adult population, being grains and flours the main dietary sources of fibre, followed by vegetables, fruits and pulses
- Mean fibre intake was  $12.5 \pm 5.66$  g/day in the whole sample of the study, standing far below the adequate intake established by the European Food Safety Authority (EFSA) of 25 g/day
- Participants who had normal weight had a significantly higher fibre intake than those who were overweight or obese

The scientific journal [Nutrients](#) has recently published the report 'Intake and Dietary Food Sources of Fibre in Spain: Differences with Regard to the Prevalence of Excess Body Weight and Abdominal Obesity in Adults of the [ANIBES Study](#)'. This new research work, coordinated by the [Spanish Nutrition Foundation](#) (FEN) is focused on the analysis of the relation between the fibre intake throughout the different moments of the day, its food sources and the problematic of excess body weight and abdominal obesity in a representative sample of Spanish adults aged between 18 and 64 years.

Mean fibre intake was  $12.5 \pm 5.66$  g/day in the whole sample of the study, standing far below the adequate intake established by the [European Food Safety Authority](#) (EFSA) of 25 g/day. In the whole sample, mean fibre intake was significantly higher in those subjects who had normal weight (13.4 g/day), without abdominal obesity (13.5 g/day) and without excess body weight and/or abdominal obesity (13.5 g/day). On the contrary, this intake was lower in those individuals who were overweight (12.3 g/day), with general

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obesity (11.8 g/day), with abdominal obesity (12.0 g/day), or those with excess body weight and/or abdominal obesity (12.2 g/day).

“The present study demonstrates an insufficient fibre intake among the Spanish adult population, being grains and flours the main dietary sources of fibre, followed by vegetables, fruits and pulses”, explains **Prof. Rosa M<sup>a</sup> Ortega**, Director of the VALORNUT Research Group and Professor of Nutrition at the Complutense University of Madrid.

### Key moments of fibre intake

Regarding moments of intake, both lunch and dinner were the two moments of the day that contributed the highest proportion of fibre intake (75.8% in the whole sample). Moreover, “the analysis of the daily fibre intake depending on the different meals throughout the day, revealed that nearly half came from lunch (47.4%) and almost a third from dinner (28.3%) in the whole sample”, points out the author of the study. “It is noteworthy the fact that the amount of fibre from breakfast was too low (13.0% in the whole sample) where food groups like cereals and fruits should be included.

Furthermore, the pattern of fibre intake from the different meals of the day differs according to sex. According to Prof. Rosa M<sup>a</sup> Ortega, “the proportion of fibre from breakfast and afternoon snacks was higher in women and was only higher in men from dinner. This is probably due to the differences in the food choices made by the subjects at each meal of the day. A better contribution of fibre from breakfast or afternoon snack could help to reduce appetite and food intake at subsequent meals. Increasing the intake of foods rich in fibre, especially from some of the daily meals, could help to improve health and weight control of the population.”

On the other hand, this new scientific work of the ANIBES study gathers that the main food sources of fibre in the whole sample were grains and flours (39.1%), vegetables (24.1%), fruits (16.6%), pulses (9.2%), ready-to-eat-meals (4.5%), sauces and condiments (2.1%), appetizers (1.5%), sugars and sweets (0.6%), non-alcoholic beverages (0.4%), milk and dairy products (0.3%), and supplements and meal replacements (0.1%).

### Fibre intake according to BMI and waist to height ratio (WHtR)

Keeping in mind the Body Mass Index (BMI), “participants with normal weight had a significantly higher intake of fibre than those with overweight or obesity, taking into account sex, and after adjusting for physical activity”, indicates Prof. Rosa M<sup>a</sup> Ortega. “However, the differences on fibre intake adjusted by the energy intake only were observed in the male sex, where men with normal weight had a greater intake than those who had overweight or obesity”.

Specifically, “it was found that the percentage of fibre that comes from the afternoon snack was higher in individuals with normal weight than those with overweight or obesity, while the fibre from dinner was higher in individuals who had obesity than those who had overweight. This difference could be related to the fact that a higher fibre content may favour a reduced appetite which, in turn, can help to take in less amount of food at subsequent meals, in this case during dinner, thus balancing the daily energy intake. On the other hand, this also could be explained due to an afternoon snack that contains a higher amount of fibre by including healthier foods with a lower content of energy or fat”, she added.

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When the data were analyzed according to the presence or absence of abdominal obesity using the waist to height ratio, it was found that the intake of fibre in the whole sample was higher in those subjects without abdominal obesity. "In this manner, it is shown that the fibre intake adjusted by physical activity may help to avoid the appearance of abdominal obesity", highlighted Prof. Rosa M<sup>a</sup> Ortega.

"In this sense, we can confirm that it has been observed an association between the fibre intake and excess body weight and abdominal obesity in the whole sample", concludes the leading researcher of this study. "Although further studies are needed, it is advisable to increase the intake of foods rich in fibre in order to prevent diseases related with an insufficient intake and to help achieve a better control of the body weight".

González-Rodríguez L, Perea JM, Aranceta-Bartrina J, Gil A, González-Gross M, Serra-Majem LI, Varela-Moreiras G, Ortega RM. Intake and Dietary Food Sources of Fibre in Spain: Differences with Regard to the Prevalence of Excess Body Weight and Abdominal Obesity in Adults of the ANIBES Study. *Nutrients*, 2017;9(4):326; doi:10.3390/nu9040326.

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## Scientific Committee

- **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 Professor of Community Nutrition at the University of Navarra
- **Prof. Ángel Gil PhD**, Chairman of the Iberoamerican Nutrition Foundation (FINUT), Director of the BioNit Scientific 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 M<sup>a</sup> Ortega, PhD**, Director of the VALORNUT Research Group and Professor of Nutrition at the Complutense University of Madrid
- **Prof. Lluís Serra-Majem, MD, PhD**, Chairman of the Spanish Foundation for Nutritional Research (FIN), Chairman of the Spanish Nutrition and Food Sciences Academy (AEN), and Professor of Preventive Medicine and Public Health at the University of Las Palmas de Gran Canaria
- **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 Bromatology at CEU San Pablo University of Madrid

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## Technical specifications of the ANIBES Study

**Design:** Representative sample of the resident population in Spain (excluding Ceuta and Melilla)

**Total sample:** Individuals aged between 9 and 75 years old who live in municipalities with more than 2,000 inhabitants

**Sample for this study:** Individuals aged between 18 and 64 years old (n=1,655)

**Universe:** 37 million inhabitants

**Final sample:** 2,009 individuals (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).

For more information:  
FEN – ANIBES Press Office

Teresa del Pozo  
Tel. 91 590 14 37 | 661 672 019  
[tdelpozo@torresycarrera.com](mailto:tdelpozo@torresycarrera.com)

