Beverage consumption habits amongst the Spanish population: association with total water and energy intake. Findings of the ANIBES study

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Introduction: Inadequate hydration is a public health issue that imposes a significant economic burden. In Spain, data on hydration status are scarce. There is a clear need for a national study that quantifies total water and beverage intake and explores associations between types of beverages consumed and energy intake.

Method: The ANIBES study is a national survey of diet and nutrition conducted in a representative sample of 2,285 healthy subjects aged 9 to 75 years in Spain. Food and beverage intakes were assessed using weighed food and beverages records by age and gender. Time and day of beverage consumption were also recorded.

Results: On average, total water intake (TWI) was 1.66 L (SD 673.03) for men and 1.58 L (SD 596.24) for women, below the EFSA recommended adequate intake. Mean total energy intake (EI) was 1810 Kcal/day (SD 504.4). The contribution to the total EI from beverages was 12%. Water was the beverage most consumed, followed by milk. Out of 8 different types of beverages, the variety score was positively correlated with TWI ($r = 0.39$); and with EI ($r = 0.23$), suggesting that beverage variety is an indicator of higher consumption of food and drinks. Multiple regression models showed that replacing 100 g of caloric beverages with 100 g non-caloric drinks was associated with a reduction in EI of 50 kcal, or 40 kcal if EI from food was unchanged. Using within-person data, each 100 g change in caloric beverages was associated with 43 kcal change in EI or 34 kcal if EI from food was constant.

Conclusions: The present study demonstrates that well-conducted national surveys such as the ANIBES study have the potential to yield rich contextual data that can be linked to health and nutrition policies. Although neither men nor women consumed sufficient amount of TWI when compared to the EFSA reference value, further work must be warranted to explore correlations with biological markers of hydration status by population sub-groups.

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Key words: total water intake, energy intake, beverages, Spain.

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