

Fluid Intake Habits of Spanish Children and Adolescents: An Update of the Liq.In7 Survey

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Keywords

Hydration habits · Spanish youths · Liq.In7 survey · Beverages intake

Abstract

Introduction: Insufficient and unhealthy total fluid intake (TFI), especially in early stages of life, may have negative health impact [1]. Understanding how fluid consumption may differ throughout the day or as a function of location could help drive policy initiatives to encourage healthier drinking habits, especially in young population groups, so this study assesses current patterns of fluid consumption in children and adolescents in Spain, including drinking occasions and locations and to compare TFI with the adequate intake of water from fluids recommended by the European Food Safety Authority (EFSA) [2]. **Methods:** Our analyses were based on a Spanish cross-sectional study assessing TFI from all sources of fluid consumption according to occasions of the day and location, using a validated liquid intake 7-day record (Liq.In7), details of which can be found elsewhere [3]. Data collection occurred in spring 2018. A sample of 146 (63% boys) children (4–9 years old) and adolescents (10–17 years old) was included (Table 1). Parents reported such in-

formation in case children were younger than 16 years. The header categories of fluid consumption were water, milk and derivatives, hot beverages, sugar-sweetened beverages (SSBs), fruit juices, artificial non-nutritive sweetened beverages, alcoholic beverages, and others. Regarding occasions, the analyzed categories were main meals (breakfast, lunch, and dinner), snacks (mid-morning, mid-afternoon, after-dinner) and outside meals. Considered occasions were home, school/university/work, and other. **Results:** A high proportion of children and adolescents did not meet EFSA-derived reference values for fluid intake (73% and 72%, respectively) (Fig. 1). Forty percent of children and around 50% of adolescents consumed at least one serving of SSB per day, while about 20% consumed only one or less serving of water per day. Consumption during main meals was most important for both children and adolescents (representing 50% and 54% of TFI, respectively) and was mainly driven by water (62%). The consumption at home in children (70% of TFI) was made of water (47%). In the same way, at school, water was contributing to half of the intake. However, adolescent girls at school drink more SSB (41%) than water (34%), being the highest consumed fluid. At other locations, adolescent boys also drink more SSBs (51%) than either water (29%) or milk and derivatives (10%). **Conclusion:** Drinking habits of Span-

ish young populations are far away from current recommendations because a low fluid intake, specifically water, and a high proportion of SSB consumption in children and adolescents. Interventions that assure achieving EFSA TFI recom-

mendations are of special importance for children and adolescents, with, according our results, a special focus in male adolescents.

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Table 1. General overview of the sample

	4–9 years	10–17 years
Sample size, <i>N</i> (%)	65 (45)	81 (55)
Females	27 (42)	27 (33)
Males	38 (58)	54 (67)

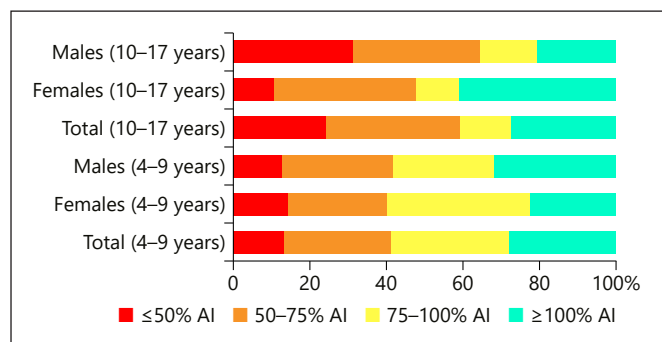


Fig. 1. Percentage (%) of participants according to their adherence to the EFSA AI recommendations for water from fluids. EFSA, European Food Safety Authority; AI, adequate intake.

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Statement of Ethics

No Ethical Committee was required. Individuals who agreed to participate in the study received detailed information about the survey's objectives (expectations, confidentiality rules, etc.). Following these additional information and the principles of informed consent, parents or the caregivers were asked for their approval to participate. Moreover, for children and adolescents under the age of 16 years, a single parent was responsible for completion of the questionnaires. The participants or their parents could fill in the questionnaire up to 48 h from the actual time of drinking.

Conflict of Interest Statement

Clementine Morin is a full-time employee of Danone Research. Maria Luisa Miguel Berges reports no conflicts of interest, while Luis A. Moreno is a member of the Scientific Committee of Danone Institute (Spain) and received consultancy fees from Danone Waters Spain. Iris Iglesia-Altaba has received fees from Danone Research for the lecture at the conference.

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Data Availability Statement

The datasets used in the current study are available from the corresponding author on reasonable request.

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