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Questionnaire design to facilitate water and beverage intake data collection in research studies


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Design of a beverage visual guide to facilitate data collection in research studies

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Introduction: Quantification of water and beverage intake is an emerging topic in nutritional sciences. Different sizes in glasses, cups, bottles and cans have been observed, which contributes to the difficulty in data collection.

Objective: To design a visual beverage guide in order to facilitate data collection in nutritional studies.

Method: Pictures were taken with a Nikon Coolpix S2800 Digital Camera from 20MP at one of the largest food retailers in Spain, in different cafeterias in the city of Madrid and our laboratory. Different types, brands and sizes of drinks, like water, coffee, beer and wine were photographed, allowing the identification and recognition of that amount in different glasses and cups, to estimate any amount of ingested fluid.

Results: A total of 43 photographs were taken. The guide was divided into two parts. In the first part, volumes of liquids are presented in different glasses and cups available. In the second part, different sizes of bottles, cans, etc., are presented. Most of bottles and cans have the amount of fluid in the back of the pack, which makes fluid amount identification more difficult.

Conclusions: A specific beverage visual guide has been developed to facilitate data collection, in order to avoid under and over-reporting in nutritional surveys.

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Key words: beverages, nutrition, visual guide, hydration.

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Does seasonality affect fluid intake?

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Introduction: The proportion of elderly population is increasing globally; however, there are few studies on fluid intake in older adults and specifically on beverage intake throughout the seasons.

Objective: To evaluate the effects of changes on fluid intake according to the four seasons in Spanish elderly people.

Method: Twenty-eight Spanish subjects aged over 55 years (60.7% females) performed a longitudinal study during one year. Subjects completed in each season a 24-hour dietary recall. Fluid intake was calculated using the DIALfood composition computer program (AlcIngeniería, S.L.). Also, physical fitness status was evaluated performing two strength tests and subjects were divided into 2 fitness groups (fit and unfit). Data was analyzed using one-way repeated measures.

Results: Beverage intake was higher in summer than in winter (p=0.001), spring (p=0.008) and autumn (p=0.005). Water was the fluid most consumed in all seasons. Seasonal variation was highest for soft, diet drinks and beer. An interaction effect of sex, age, and fitness status was not observed (p>0.05).

Conclusions: Seasonality has an influence on fluid intake and should be considered when analyzing drinking behavior and water and beverage intake in research studies.

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Key words: hydration, fluid, seasonality, physical fitness, elderly.

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Questionnaire design to facilitate water and beverage intake data collection in research studies

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Introduction: The difficulty to quantify water and beverage intakes well established in the literature, and consequently, under and over-reporting exists in nutrition surveys.

Objective: To design a specific questionnaire in order to obtain reliable data on water and beverage intake and drinking patterns in adults.

Method: A hydration questionnaire was created by the Research Group based on food-frequency and eating habits questionnaires published in the literature, taking into account the modern beverage market.
**Results:** The questionnaire consists of three different parts. The first part includes questions about the different type of fluids consumed one day before the questionnaire is carried out. The second part records the fluid intake during a normal week of each beverage type. The beverages included are: water, juices, soft drinks, diet drinks, milk, milk drinks, coffee, tea or infusions, sport drinks, beer, wine and distilled drinks. The third part includes 20 questions about current drinking habits and changes occurred in the last 30 years, especially in regard to drinking habits before, during and after doing sport.

**Conclusions:** A specific questionnaire has been developed both paper-based and online to facilitate data collection on water and beverage intake to improve scientific accurateness.

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Key words: beverages, nutrition, questionnaires, fluid, drinking.

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**Evaluation of the Corporal Composition of Professional Acrobatic Parachutists with Bioelectrical Impedance and Anthropometry**

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**Introduction:** The Parachute Acrobatic Patrol of the Air Force (PAPEA) is an international elite team in this sport. The environmental conditions in which they do their work: 3-4 daily jumps from 2300-11000 feet, the speed of their bodies during the free fall, the abrupt changes of altitude, and also temperature and atmospheric pressure can produce modifications in their bodily composition and level of hydration.

**Objective:** To assess the body fat measurement by anthropometric equations and bioelectrical impedance methods of PAPEA.

**Method:** Cross sectional study where 9 members of the masculine team of the PAPEA have participated: men aged 34.4±4.36 years; experience 3,944.4±2,780.8 jumps and 8.6±5.6 years in the team. Device OMRON BF 306 has been used to quantify fat mass. Body fat percentage have been calculated anthropometrically from the formula of Yuhasz, after the measurement of skinfold of biceps, triceps, subscapular and suprailliac regions.

**Results:** The average values of weight, height and BMI are 77.18±7.45kg, 1.73.56±6.73cm and 25.61±1.92Kg/m² respectively. The percentage of body fat average with bioelectrical impedance is 20.49±3.93%. Anthropometrically, the percentage of fat is 12.49±2.88%. The average of the relation between both percentages is 0.61±0.1. Its coefficient of correlation is r=0.7325.

**Conclusions:** The values of both measurements are different but with a relation among them. The differences could be due to the non-evaluation of the muscular mass or because of t the level of hydration.

Key words: parachuting, body composition, electrical bio-impedance, anthropology, body fat.

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**Importance of dairy consumption on the total water intake in young Mexicans**

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**Introduction:** Total dietary water intake includes plain water and other beverages such as juices, milk and moisture in food, and it was established to ensure an adequate hydration. The type and amounts of water and beverages varied by age, gender, race/ethnicity, physical activity, health and socioeconomic status as well as environmental factors such as temperature and humidity.

**Objective:** To analyze the dairy intake as a source of water among young Mexicans according to weight status.

**Method:** A cross-sectional study including adolescents was conducted in Mexico City; anthropometric measurements were assessed. A 24 h recall was obtained and analyzed with the Food Processor Software. Body mass index (BMI) and was calculated and subjects were classified as overweight /obese (OW-O) according to CDC percentiles.

**Results:** 424 adolescents were evaluated; the average age was 12±1.9 years old, 50.4% of the sample were boys. 43.4% was classified as OW-O. The daily intake of water, including foods, was 1263.1±656 ml with a higher consumption in those with a normal weight compared with OW-O (1,555±605.2 vs 891.4 ± 468.7 ml, respectively; p<0.05). Meanwhile the average intake of whole milk was 1.5±0.65 for normal weight vs 1.1±0.59 servings/day in OW-O; p=0.493). Also sugar added milk consumption was similar in both groups (normal: 1.2±0.461 vs OW-O:1.0±0.63 serving/day; p=0.123)

**Conclusion:** A low water consumption was reported in this population. In young Mexicans, milk is the third...