
SESSION 5

Chairs: Carmen Pérez-Rodrigo, PhD. Spanish Society of Community Nutrition (SENC). Bilbao. Spain.
Claudio Maffeis. Head of the Unit of Clinical Nutrition and Obesity of the Regional Centre for Juvenile Diabetes.
University of Verona. Verona. Italy.

Hydration guidelines for fractionation of liquid intake in hot environments: report of Latin America

Jennifer Bernal, PhD. Professor of Nutrition. Food Sciences and Nutrition Center. Simon Bolivar University.
Caracas. Venezuela.

Introduction: Total water intake is the sum of the liquid provided by water and all types of fluids, beverages and foods that contain it. It is assumed to represent around 80 % of total intake by humans, including 20 % from foods (EFSA). Water intake is mostly achieved through fluids like water, juices, energetic drinks, caffeinated drinks, soft drinks or soups. The needs of water intake vary depending on characteristics such as gender, life span, physical activity, geography, weather conditions, and others. Considering the life cycle, our first fluid intake, as suggested by the World Health Organization, should be breast milk. If the healthy newborn is well hydrated it can self-regulate the human milk intake. After the first six months of age and until 2 years old, other liquids and foods different from breast milk are responsible of the hydration and nutrition of the infant. Then, breastfeeding is displaced by other fluids, that may change across life cycle.

In hot weather a thirsty infant may want to breastfeed more frequently but for shorter periods. Extra fluids are normally not required if the child is breastfed whenever he needs and this may be more often than usual. In this way he is getting more low-fat breast milk and so is satisfying his thirst. In hot conditions, mothers should assure their own water intake is adequate (Australian Breastfeeding Association). With growth, self-regulation of fluids becomes more complex and is not necessarily satisfied optimally.

South America climate is variable, including wet and hot areas. In the Amazon basic temperatures vary from 21.1 °C - 32.2 °C while in the Andes it is cold during the whole year. According to the U.S. Environmental Science Services Administration the highest temperature registered in South America was from Argentina of 48.9 °C. These hot temperatures affect the temperature regulation of the body, increasing the amount of water and fluids needed to satisfy the requirements of the population. Children and older people are most at risk of being dehydrated.

Methods: A systematic review from the official web pages of the Ministries of Health, Institutes of Nutrition, Institutes of Public Health of each country, and pages like those from FAO from 20 Latin American countries, ranging from Mexico to Chile, were visited. The languages used for the search were Spanish, Portuguese and English. The key words were: hydration guidelines + the name of the country, reference values of water and fluids, nutritional needs of water and fluids and food guidelines. We selected the official guideline of each country, and searched for differences across life cycle, gender and characteristics of the weather.

Results: Although 15 of the 20 Latin American countries had food guidelines for their populations, only 9 countries (Bolivia, Brazil, Chile, Costa Rica, El Salvador, Honduras, Mexico, Nicaragua, and Paraguay) suggested as a general recommendation drinking 6 to 8 glasses of water a day. Venezuela recommended drinking liquids, without indications as to the quantity and frequency of intake, while Ecuador and Peru had no detailed food guideline. In the icons used to promote in the consumers to think, select and eat a healthy and varied meal, the presence of water and liquids is scarce. The most frequent liquid present in these icons were the milk and yogurt. A reference to water is present in a few icons such as in Argentina. Only Colombia recommended increasing the intake of fluids in hot environments, without any advice regarding to quantity or fractioning of consumption. Each country had their own reference values for water and other liquids adapted to their cultural characteristics, geographic and weather conditions. Mexico and Venezuela supported their water and fluids reference intakes as recommended by the Institute of Medicine of United States of America.

Conclusions: To our knowledge in Latin American countries, hydration guidelines for fractionation of liquid intake in hot environments do not exist. These countries have no official recommendations for water and fluids intakes. This may be due to different climates ranging from tropical areas with few variations of temperatures, to dramatic changes in climate across a year in the south. The food guidelines usually include a message related with water

consumption, but this message was not clear or specific to age, gender, quantity and/or frequency. Latin America and the Caribbean will face a challenge that will affect their optimal fluid intake. Estimates predict a rise of 4 °C in temperature for the next years, according to the study “Turning down the Heat” from World Bank. Another challenge is the need of surveying populations in the Latin American region to assess the intake patterns of different types of fluids (water and all other beverages) across gender and the life cycle. This requires developing the water and fluids intake references for the Latin American population for different climatic conditions.

Key words: *water, hydration, food, latin american countries*

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