

HYDRATION & DIET

Maintaining water balance is linked with optimal physical and cognitive performance, therefore it should be a goal towards individual as well as public health and well being¹. Water balance is achieved when water intake (including water from all food and drink sources as well as metabolic water production) matches water loss². Thus, dietary and lifestyle choices must be in agreement with needs, which in turn fluctuate according to a variety of physiological and environmental factors.

Relying on thirst is not a safe mechanism for ensuring water balance because the body is already (mildly) dehydrated when signals for thirst occur³. It follows that one should take conscious and informed actions to develop a satisfactory hydration scheme for each day: understand approximate water needs, observe the level of water loss, recognise all water sources and choose accordingly.

Water loss consists mainly of excretion of water in urine, breath, faeces and sweat. These components are highly variable depending on the health status of the individual, physical activity levels and environmental conditions. In particular, water losses through urination and/or defecation may be higher in some diseases, while sweating may be higher in a physically active person and in hot climates. One must be aware of these factors; if present then action must be taken towards increasing water intake from various sources.

Water intake comes from many sources. It consists of, approximately 20% contribution from solid foods and 80% contribution from beverages (including drinking water)². A common misconception is that the stated adequate intake of water for an adult man or woman, 2.5 L/day or 2.0 L/day respectively, refers only to drinking water. This is not true; these 8 - 10 glasses include beverages and water contained in food as well². In other words in the estimation of adequate intake, water is treated as a dietary component being present in all foods and beverages rather than as a dietary item i.e. drinking water.

It is true, however, that most of our water intake (approximately 80%) comes from beverages and drinking water. It appears that for some people it is not easy to achieve optimal water intake when drinking



Maria Kapsokefalou

EHI Science Advisory Board member and
Associate Professor in Human Nutrition,
Department of Food Science and Technology,
Agricultural University of Athens.

water is the only beverage consumed; availability to a variety of beverages increases the chances of reaching optimal water intake. It is estimated, from data published on the drinking habits of different populations², that approximately 50% of our water intake comes from drinking water and 30% from other beverages, such as coffee, tea, soft drinks, milk, and fruit juice (the remaining 20% comes from solid foods). However, it must be realised that drinking patterns vary greatly: some people drink no plain water and some achieve extremely high intakes through consumption of soft drinks or alcoholic drinks. Beverages containing caffeine and alcohol may have diuretic effects, but, since these effects are generally mild and transient in nature, such beverages do contribute to total water intake^{2,4}.

All solid foods contain water; for example, the water content of most fruits and vegetables is 90-95%, rice and pasta 70% water, even crackers may contain 5% water. Soups, sauces, ice cream, and custards also contribute to water intake.

Adjusting eating and drinking habits to cover special water and nutrient needs may be required throughout the lifecycle or during specific lifestyle choices or conditions. Thus, pregnant women are advised to cover their increased water and nutrient needs from

a variety of drinking and eating sources. In disease, recommendations for drinking as well as eating habits may need to be changed, and medical advice should be sought and followed. For example, a person with a high fever, kidney disease, or diarrhoea has special water needs that must be addressed. Athletes or fitness enthusiasts, or individuals in hot weather conditions have increased water needs to compensate for sweating, sometimes as high as 8 L/day. These individuals must also replace concomitant losses of electrolytes to avoid hypo-osmolar disturbances². One strategy is to increase salt intake, but this may not be recommended for all individuals because a strong body of evidence has documented that in adults, as sodium intake decreases, blood pressure also decreases⁵.

In our families or in our social environment there may be individuals, such as infants, elderly and people with disabilities, who rely on caregivers to help them fulfil eating and drinking needs. These people are vulnerable to dehydration as well as to nutrient deficiencies that may have a synergistic effect on health problems. It is important that caregivers are attentive to the needs of these individuals and take appropriate actions to ensure that they receive adequate food and drink.

As demonstrated already, water intake depends on eating and drinking habits and dietary choices on a particular occasion. These may vary according to many factors such as taste preferences, weight concerns, food and drink availability, timing and convenience, lifestyle conditions, perception of product quality and safety, cultural differences and seasonality. In any case, dietary habits and choices must conform to dietary guidelines for healthy eating and drinking. A few comments may be made in this respect:

- The “total diet” approach to healthy eating⁶ suggests that all foods and beverages can fit within the pattern, if consumed in appropriate portion size and in moderation and combined with physical activity. Clearly, this does not legitimise unlimited consumption of foods and beverages with low nutrient density but suggests that it is overly simplistic to endorse “good foods and drinks” and condemn “bad foods and drinks”. Some beverages, particularly sugar sweetened drinks, have been viewed as significant contributors to energy intake⁷, but in this framework of thought, the concept of hydrating while balancing intake within energy needs is highlighted.

- In most cases, there is a healthier choice within a food or beverage group⁶. This may consist of a choice with higher content of beneficial nutrients (e.g. minerals or proteins), or beneficial non-nutrients (e.g. polyphenols or anthocyanins); or it may consist of choices with a low content of energy or nutrients that have been associated with chronic disease risks (e.g. saturated fat or alcohol). Thus, when choosing a hydration source, package labels or other sources of information, may be used in order to achieve healthy eating and drinking.

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2. EFSA, Scientific Opinion on Dietary Reference Values for water. EFSA Journal 8(3): 1459.

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