Hippocrates Was Right: Now What? Water As a Part of Healthy Aging

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Aging · Disease · Metabolism · Water recommendations

Abstract

Background: Aging is defined as the progressive organism change leading to debility, disease, and death [1]. We know that as we age, our risk increases for diseases such as diabetes, cancer, and chronic kidney disease, and many of our homeostatic processes change as well, such as cell signaling, metabolism, and proteostasis [2]. The data clearly show that water intake decreases with aging, especially after age 60 years [3]. However, the question becomes “Do we drink less because we age, or do we age because we drink less?” (Fig. 1). **Summary:** There are data to support both directions of this hypothesis. One example supporting that water intake decreases due to aging is that in older adults, the thirst response to hyperosmotic and hypovolemic stimuli is blunted in comparison to younger adults [4]. However, we are in-

creasingly gathering data to also support that low water intake can be a contributor to both disease and altered cellular processes, potentially accelerating aging related dysfunction. For example, in older adults, low water intake has been shown to be associated with working memory [5], blood glucose regulation [6], incidence of stroke [7], and falls [8] (i.e., dementia, diabetes, cardiovascular disease, and mobility). Additionally, processes such as metabolism [9], cell signaling [10], and muscle damage following exercise [11] have also been linked to hydration. Key messages are that it is clear that water intake changes as we age, primarily due to changes in thirst. However, what is our duty as hydrationists is to begin to evaluate both directions of the aging, dysfunction, and water intake relationship (Fig. 1). Just as we have begun to realize the influence as water as a nutrient, we can hopefully demonstrate how a simple intervention like drinking to recommendations can be a part of healthy aging for all.

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Fig. 1. Solid lines represent established causal relationships between different physiological states and behaviors. Dashed lines represent proposed, supported, but unproven relationships.

Conflict of Interest Statement

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