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Original Article

Does anticipatory sweating occur prior to fluid consumption?

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Abstract: The purpose of this study was to examine if anticipatory sweating occurs prior to fluid consumption in dehydrated subjects. It was hypothesized that there would first be an anticipatory response to the sight of water, and then, with drinking, a second response caused by mechanical stimulation of oropharyngeal nerves. Dehydrated subjects (n=19) sat in a heat chamber for 30 minutes. At minute 15, a resistance hygrometer capsule was attached and sweat rate was measured every 3 seconds. At minute 35:00, a researcher entered the room with previously measured water (2 ml/kg euhydrated body weight). At minute 35:30, the subject was allowed to drink. Data collection continued for 5 minutes post consumption. As expected, 16 of the 19 subjects responded to oropharyngeal stimuli with increased sweat rate. However, the new finding was that a majority (12 of 19) also showed an anticipatory sweating response prior to fluid consumption. Subjects were divided into 4 groups based on the magnitude of the sweating response. Strong responders' (n=4) anticipatory response accounted for 50% or more of the total change in sweat rate. Moderate responders' (n=4) anticipatory response accounted for 20%-49%. Weak responders' (n=4) anticipatory response accounted for 6-20%. Finally, non-responders (n=7) showed no anticipatory response. Although previously noted anecdotally in the literature, the current study is the first to demonstrate that measurable anticipatory sweating occurs prior to fluid intake in dehydrated subjects in a significant percentage of the population. Such data suggests that cerebral input, like oropharyngeal stimulation, can temporarily remove the dehydration-induced inhibition of sweating. (IJPPP1201003).

Keywords: Dehydration, sweating, oropharyngeal stimulation, fluid intake, anticipatory response

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