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Hydration Perceptions, Hydration Practices and Reaction Times of Fighter and Helicopter Pilots

Military operations can be conducted over extended periods of time in varying environments. Pilots also have to overcome vibration, noise, and accelerations. PURPOSE: The purpose of this study is to describe hydration perceptions and practices, perceived stresses, and reaction times of pilots before and after a training flight. METHODS: 14 male pilots (Mean ±SD: 40 ± 6 y, 93 ± 10 Kg) provided subjective and objective data regarding their hydration perceptions and practices. Urine specific gravity (Usg) was used to quantify hydration status. Auditory reaction times were used as a measure of performance RESULTS: There was no change in mean Usg, (Pre 1.014 ±0.009, Post 1.014 ±0.007). Subjective thirst increased among the pilots (Pre 2.45 ±1.33, Post 3.41 ±0.82). Mean reaction time slowed (Pre 0.190 ±0.027 s, Post 0.198 ±0.031 s). The relationship between Usg and reaction time was poor (post R = 0.07). CONCLUSIONS: Differences in reaction time could be explained by flight length and aircraft. Helicopter pilots reported a greater pre to post flight change in mental fatigue which could explain their slowed reaction time. Pilots could be better hydrated at the start of missions.