

Keep Calm and Age Well? Age-related vulnerability to acute and cumulative stress exposure.

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Elderly individuals are hypothesised to be more vulnerable to the effects of acute stress due to reduced coping resources and an inability to control their hormonal stress response. Recent evidence indicates that this vulnerability also emerges on a behavioural level, leading to reduced memory performance among elderly participants encountering a stressor. Similarly, cumulative life stress has been implicated as a factor accelerating cognitive decline with advancing years. In my talk, I will present four experiments summarising work into the way acute and cumulative stress impact on age-related cognitive decline. Experiments 1 and 2 investigated behavioural and electrophysiological age-differences manifesting after exposure to an acutely stressful situation. Results found no stress-related impact on elderly's memory performance, however increased levels of anxiety during acute stress encounter led to a reduction of early perceptual EEG markers which was more pronounced in elderly relative to young individuals. Experiments 3 and 4 explored the effects of cumulative stress on behavioural and electrophysiological age-differences. In a spatial memory task and an inhibitory control paradigm, heightened levels of cumulative stress produced behavioural impairments exclusive to the elderly participant sample, which coincided with changes in oscillatory frequencies linked to the successful execution of both tasks. Combined, findings highlight that both acute and cumulative stress affect ageing cognition in domains of perception, spatial memory and inhibition. However, the relationship between age and acute stress seems more complex than originally assumed, affecting early perceptual processes rather than exerting a direct effect on memory.