Impact of physical stress on salivary buffering capacity

Nakashima, Yu, author

Abstrak

Background: Saliva has many properties and the buffering capacity is important for the neutralization of oral fluids. It is unclear whether stressful conditions directly affect salivary buffering capacity, and we investigated the impact of physical stress on salivary buffering capacity.
Methods: Twelve participants were subjected to the physical stress of jogging and running. The salivary buffering capacity and flow rate of the participants were measured before and after exposure to stressful conditions. Salivary -amylase activity was measured as a quantitative index of stress.
Results: No change in buffering capacity was detected among each time point during the whole course under physically stressful conditions. Next, we examined the change in buffering capacity after jogging compared to baseline. Six participants showed an increase in buffering capacity (Group A), while the other six participants showed a decrease or no change (Group B) after jogging. Group B showed a decrease in flow rate and increases in -amylase activity and protein level after jogging, whereas Group A showed no changes in these properties.
Conclusions: The results suggest that salivary buffering capacity changes following exposure to physically stressful conditions, and that the changes are dependent on the stress susceptibility of individuals.