

# Psychophysiological and neurophysiological characteristics of enforced distance learning within the biochemistry course

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## Abstract

The main goal of the presented work is to evaluate the psychophysiological and neurophysiological processes of students of enforced distance learning within the biochemistry course of different (80 and 60 minutes) duration. The research was conducted due to the outbreak of COVID-19 during a period of sudden transition from a traditional format to the distance-learning one. After the 80-minute lesson, in contrast to the 60-minute lesson, 19-21-year-old students showed a decrease in attention concentration, cognitive processes, and mental performance. Enforced distance learning lasting 80 minutes was accompanied not only by cognitive load but also by stress-induced changes in learners. Physiological changes caused by mental load were assessed by recording the electrocardiogram (ECG) using the biofeedback method (mathematical analysis of heart rate variability). The processes of activation of the sympathetic mechanisms of the central nervous system and the changes in the heart rhythm, as well as the heart rate variability balance, caused by them, indicated the tension in the students' bodies. The stability of psychophysiological and neurophysiological processes in emergency situations during an 80-minute biochemistry class requires a high level of stress from students.

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