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Title: The individual does not feel an air hunger during the control apparatus of mechanical ventilation of his lungs

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Body: The purpose of the research is to compare sensations on the chemical stimuli in natural breathing (NB) and in voluntary-controlled mechanical lungs ventilation (vcMLV). The individual controls the mechanical ventilation device by a certain movement of his hand and deliberately chooses the speed of air flow into his lungs, the respiratory volume and the rhythm of mechanical ventilation. 9 healthy adult males performed Read CO₂ rebreathing tests. The inspiratory pneumotachogram and the capnogram were registered. Sensation of an air hunger was rated on three point original scale at each 30 seconds. During rebreathing tests, the ventilation of lungs was increased proportionally to the growth PETCO₂. The tests were terminated when PETCO₂ achieved 54±4 Torr. In NB conditions, the ventilation was 35±6 l/min. During vcMLV, the ventilation was higher (P<0.05), and reached 56±12 l/min. Any individual has not reported on occurrence of sensation of an air hunger either in natural breathing or in conditions of controlled mechanical ventilation. Purposeful self-controlled of mechanical lungs ventilation allows, as expected, to functionally divide the voluntary and the automatic efferent outputs; under these conditions, the integrity of afferentation in the respiratory system seems to be preserved. These results may be grounds for the assumption that an adult individual's implementation of the regulation of respiratory movements is the same way as other voluntary movements, such as cycling or maintaining a vertical posture.