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**Title:** Effects of moderate aerobic exercise training in acute and late phase of lung infection induced by streptococcus pneumoniae

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**Body:** Despite of use of aggressive antibiotics and support, the fatality rate associated with Streptococcus pneumonia (SP) remained higher. Moderate aerobic exercise training (AE) have been somewhat recognise as responsible for increase resistance to infection even if mechanism involved remain unclear. Our aim is to evaluate if AE prior to SP infection alter the inflammatory profile and lung mechanics in an acute and late phase of the infection. 56 BALB/C mice were divided in 8 groups: sedentary (S); exercise training (T); Streptococcus pneumonia (SP); Streptococcus pneumonia+exercise training (TP). Animals were submitted to AE during 4wk (5x/wk/1h). 72hs after last session, animals received nasal drop of SP and 12hs (acute phase) or 10days (late phase) after instillation, they were anesthetized and euthanized to evaluate respiratory mechanics and inflammatory profile. At acute phase, we found an increase in resistance and elastance of respiratory system in SP group as well as number of total cells, characterized by neutrophils, lymphocytes and macrophages in bronchoalveolar lavage (BAL) and polymorphonuclear cells in lung parenchyma compared to others. AE were effective in reduce these parameters in TP group. At late phase, we did not find differences in lung mechanics. We found an increase in number of total cells in BAL and polymorphonuclear cells in lung parenchyma in SP group compared to others. Although AE were effective to reduce these parameters in TP group, in BAL it to reduces only macrophages. In conclusion, AE were effective in reduce the inflammatory process of infection even of profile of this process were changed. Supported by FAPESP, LIMHC-FMUSP.