

# Abstract

**Title:** Vital capacity in adolescent artistic gymnasts

**Objectives:** The objective of this study was to estimate the influence of gymnastics training on the forced vital capacity (FVC) in young gymnasts compared to their untrained peers.

**Methods:** The study included children aged 6 to 10 years. Basic anthropometry, spirometry using a portable spirometer, and the number of training hours per week were investigated. Children were gathered from three occasions: during a sport event series for children called Sport'áček, at the Christmas competition in Vršovice, and in the sports club SK Hradčany.

**Results:** 287 children (167 girls and 120 boys; six to ten years old) participated in the study. FVC was lower in all gymnasts compared to untrained children of the same gender, but these results were not statistically significant. According to the generalized linear model adjusted for age and height, boys who trained <4 hours had odds to have worse FVC than their untrained peers; however, this was also not statistically significant.

**Keywords:** Spirometer, FVC