

## Influence of Age and Gender on Indoor Rowing Performance

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### ABSTRACT

Physiological functional capacity is important in determining one's ability to perform functional tasks and can be determined by studying peak exercise performance. Rowing is a unique sport requiring substantial muscle strength as well as high endurance capacity. Since it is a non-weight bearing activity, a number of older adults in general and older women in particular engage in this activity as they age. **PURPOSE:** To examine the relationship between aging, gender, and exercise task duration using indoor rowing performance records. **METHODS:** World records from indoor rowing events were analyzed and plotted against age (17-99 years of age) in both men and women. Rowing events included time trials in distance (e.g., 2000m race) and in time (e.g., 4 minutes race). To standardize these events, all of the performance data were converted to race speed prior to the data analyses. **RESULTS:** In both men and women, rowing performance declined linearly in all the duration events. The magnitudes of the age-related declines are mild to modest compared with other sporting events previously reported (e.g., running, weight lifting). For women, peak performance was observed in the 19-29 age group for 12 out of the 13 rowing events examined. For men, peak performance was recorded in the 30-39 age group for 8 out of 13 of the events, and in the remaining 5 events, the difference in performance times between the 19-29 and 30-39 age groups was less than 2%. When the data were expressed as a 50-yr decline in rowing performance from the 19-29 age group to the 70-79 age group, women had a greater decrease in performance in shorter sprinting events; however, as the events increased in distance requiring more endurance, the percent decline in performance were similar between men and women. **CONCLUSION:** The findings in this cross-sectional study indicate that physiological functional capacity as assessed by rowing performance declined linearly but mildly with advancing age, and the rate of age-associated decline is influenced greatly by gender and exercise task duration.