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Analyzing exercise training effect and its impact on cardiorespiratory and cardiovascular fitness.

J. Stat. Educ. 22, No. 2, 23 p., electronic only (2014).

Summary: This paper provides a statistical investigation of the impact of heart rate levels on training effect for a specific exercise regimen, including an analysis of post-exercise heart rate recovery. Results indicate optimum target values for both average and maximum heart rate during exercise in order to improve both cardiorespiratory and cardiovascular fitness levels. The statistical methods used in the analysis are typically covered in college level Statistics I & II courses, and various classroom implementation strategies are presented.

Classification: K75 K85 M65 D85

Keywords: stochastics; statistics; university teaching; mathematical applications; medicine; sport; training effect analysis; post-exercise heart rate analysis; post exercise heart rate recovery; real-life data; multiple regression; interaction model; matched-sample hypothesis testing

<http://ww2.amstat.org/publications/jse/v22n2/laumakis.pdf>