

Physical fitness indices for data with non-normal distribution

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Abstract

At present, there are only few tools on the evaluation of group physical fitness. Hung proposed physical fitness indices based on the process capability indices (PCI) to assess physical fitness level. PCI are appropriate indices for the data with normal distribution, but have been shown to be inappropriate for evaluation with non-normal distribution. Based on this limitation, we extending non-normal distribution method of PCI to physical fitness indices to cover cases where the distribution may not be normal distribution. In the paper, we present a case study to illustrate how the non-normal physical fitness indices applied to actual data collected from physical fitness test.

Keywords: physical fitness indices, non-normal fitness indices, process capability indices, normal distribution, non-normal distribution,

1. Introduction

Due to the insufficient exercise and the degeneration of body function, a health crisis that people have to face is hypokinetic diseases. The lack of exercise may lead to physical illness, which not only costs much medical

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