

## **Occurrence of Injuries in Runners Using Heart-Rate Zone Based Training Load**

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### **ABSTRACT**

Endurance athletes on both the recreational as well as higher competitive levels have regular access to tools that allow them to measure intensity of exercise. These tools may be beneficial in limiting injuries due to overtraining. **PURPOSE:** The purpose of this study is to identify the effects of heart-rate zone (HRZ) training in relation to the occurrence of injuries in recreational endurance runners that participate in events 5 kilometers or longer. **METHODS:** This study consists of data collected from 204 survey respondents; 2 respondents were removed due to being minors. The average age of participants was 40-44 with a range of 18-79 years old. This includes 148 females, 51 males, and 2 who declined to respond. The average experience of participation in events 5 kilometers or longer was 15-19 years. Participants completed a 19-question survey consisting of which 5 were Likert style, 4 yes or no, and 6 others. The remaining 4 were select all that apply. The survey was set that it would immediately be concluded if the participant selected 'Under 18' for age (Q1) or that they did not participate in running events of 5 kilometers or longer (Q4). **RESULTS:** Statistical analysis was performed using t-tests as well as ANOVA with SPSS software. Descriptive statistics were completed using the aid of the STAT IQ provided by Qualtrics. 53.8% of participants stated that they track their heart rate during training at least half of the time. However, only 12.7% utilize HRZ as an indicator of training intensity. Runners who selected HRZ most often trained in zone 3 which is 70-80% of maximal heart rate (MHR) which corresponded to 38.5% of this population. 84.6% of participants who indicated utilizing HRZ suffered an injury while training. Their rate of injury is not statistically significant when compared to those who did not indicate HRZ as a measure of training intensity as represented by  $p=0.791$ . Common injuries include strain, tendinitis, and other as reported by participants. Participants who suffered injury were equally likely to seek treatment by a medical professional regardless if they used HRZ or not as indicated by  $p=1$ . **CONCLUSION:** There was little statistical significance to indicate a likelihood of training related injuries in participants who utilize HRZ markers as a training tool when compared with those who do not. Further studies in controlled performance training could show a more reliable data set.