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Validity of Fitness Watches for Cadence Measurement in Collegiate Runners

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Providing feedback on running mechanics is commonly used as a method to reduce the risk of injury and restore running etiquette post injury. Acquiring accurate running cadence data (steps per minute) while training outside of laboratory setting is a challenge. While fitness watches may be useful in providing real-time data to coaches, athletes, and clinicians, the validity and reliability of these devices are limited. **PURPOSE**: The purpose of this study was to identify the reliability and validity of cadence measurements obtained from fitness watches. **METHODS**: A convenience sample of sixteen (16) NCAA Division I track and field runners participated. Participants were video recorded running on a treadmill while wearing a fitness watch (Garmin, Ltd). Data from the watches were downloaded and compared to manual counts of cadence obtained from watching the video recordings. Reliability and validity of the fitness watch compared to the standard (video analysis), which was determined through intra-class correlation coefficient ($ICC_{3,1}$). **RESULTS**: Average watch cadence was 175.2 ± 8.58 steps per minute. Average video cadence was 174.1 ± 8.22 steps per minute. The $ICC_{(3,1)}$ value for the watch was 0.95 ($p < 0.001$). **CONCLUSION**: Commercial fitness watches provide a valid and reliable measure of running cadence in collegiate runners.