

授与機関名 順天堂大学

学位記番号 ス乙第 10 号

## Relationships Between Field Tests of Power and Athletic Performance in Track and Field Athletes Specializing in Power Events

(陸上競技パワー系種目選手の競技パフォーマンスとフィールドテストの関連性について)

青木 和浩 (あおき かずひろ)

博士 (スポーツ健康科学)

### Abstract

We investigated the relationships between power event scores and power/strength tests using the International Association of Athletics Federations (IAAF) scoring table. We sought to identify tests suitable for evaluating the performance of athletes specialized in power events involving different techniques (jumping, sprinting, and throwing). Seventy-four male university-level track and field athletes participated in this study. The season's best score for each subject at the time of testing was used as a marker for that subject's athletic performance, and was converted to a unified score using the IAAF scoring table. The field tests used in this study showed good validity and were easy to perform on the coaching ground. The tests were standing long jump, standing triple jump, standing quintuple jump, medicine ball throwing (backward and forward), leg extension power, anaerobic power, and maximum clean lift. Multiple comparisons among each block were done using one-way analysis of variance with Tukey's method. Athletic performance was converted to IAAF scores, and Pearson's product-moment correlation coefficients between IAAF scores and field test scores were calculated. Standing triple jump ( $r=0.40$ ), standing quintuple jump ( $r=0.49$ ), and backward medicine ball throwing ( $r=0.35$ ) were positively correlated with IAAF scores in sprinters ( $p<0.05$ ), while forward medicine ball throwing ( $r=0.48$ ), backward medicine ball throwing ( $r=0.54$ ), and clean lift ( $r=0.55$ ) were associated with IAAF scores in throwers ( $p<0.05$ ). Standing long jump ( $r=0.29$ ), standing triple jump ( $r=0.43$ ), standing quintuple jump ( $r=0.51$ ), and anaerobic power ( $r=0.35$ ) were positively correlated with IAAF scores in all athletes ( $p<0.05$ ). Our results demonstrated that standing triple jump and standing quintuple jump were effective indicators of performance in power events in university-level athletes.