Resisting Arrest: Analysis of Different Prone Body Positions on Time to Stand and Engage

Krissy Sanchez
Graduate Student, Department of Kinesiology
Mentor: Dr. Robert Lockie

An isolated police officer executing an arrest can be placed in a dangerous situation should the detainee become non-compliant. Further research is needed to ascertain the position that a detainee can be placed in that takes the longest time for them to rise. PURPOSE: Determine differences between participants’ time from four prone positions to a standing athletic position, preparing the participant to engage or run from the officer. METHODS: 24 college-aged participants were recruited for this study; 9 participants were female and 15 were male. The following prone positions were examined in one session: prone-position with hands hidden under the chest (PHC); prone-position with arms perpendicular to the torso and palms facing up (PPU); prone-position with arms perpendicular to the torso, palms facing up, with ankles crossed on the ground (PPUAC); and prone-position with arms perpendicular to the torso, palms facing up, with ankles crossed but elevated toward the lower back (PACKB). Positions order was randomized. Participants were instructed to rise to an athletic stance from each position as quickly as possible, recorded by a video camera. Time was calculated via a frame-by-frame analysis using motion-analysis software. A 2 (sex) x 4 (position) repeated-measures ANOVA with Bonferroni post-hoc calculated between-position differences. RESULTS: There was a significant interaction for position ($p=.003$) but not sex ($p=.415$). The PACKB position was significantly slower than the PHC and PPUAC positions ($p\leq0.045$) and had the slowest time to reach a standing position (~2.041 s). CONCLUSION: Previous data has indicated the average time for an officer to draw their weapon is 1.5s. In this study participants were able to rise from the four position variations to an athletic stance in ~2s or less. As reaction time could influence an officer’s safety, the PPUAC position seems to require to most time for a detainee to stand-and-engage.