

## THE PENALTY KICK IN FOOTBALL: FAST OR SLOW, HOW TO DECIDE?

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### **Introduction**

It is commonly accepted that the penalty kick relies on luck. It is then easy to admit that players (striker and goalkeeper) need to be fast to be successful. However, previous studies showed that there are time relations between both players that must be taken into account. Players need to be aware of the opponent's actions (stimulus) in order to react (Vicente et al., 2009). The aim of this study was to analyze if the stimulus velocity in the penalty kick influenced the time that it will take to respond it.

### **Methods**

We've used a software (MeSiR1.1) designed to measure the relation between the velocity of the stimulus and the time to respond it. The test was based on a stimulus, a goalkeeper that moved from the center of the goal to each side at different velocities (4, 2 and 1 meter per seconds) randomly. The players (69 university football players) had to press a correspondent letter in the keyboard (previously known – N for right and B for left) for 15 trials. Each test data was automatically collected by the software which provided the response time to each stimulus velocity.

### **Results & Discussion**

From the 1035 trials performed, the results showed that for the fastest stimulus the average response time was 267 milliseconds; for the 2 meter per second velocity players took in average 315 milliseconds to respond, and for the slowest stimulus the average time to respond was 324 milliseconds. The results showed that the stimulus velocity influenced the response time. As the stimulus was faster or slower, the response was also faster or slower respectively.

### **Conclusion**

We can assume that more than being fast in this situation, players need to understand the opponent's actions possibilities. Ecological studies that we are still carrying out tend to corroborate that in a penalty kick situation players should be trained to relate with the opponent being aware that they can influence his actions and his response time.

### **References**

1. Vicente, A. et al. (2009). European College of Sport Science, Oslo.