

## Analysis of the new 3x3 competition in basketball

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### Introduction

One of the most interesting proposals in the sports scientific field is to analyze the impact that competition make on athletes. So, it's necessary to interpret the parameters analyzed to draw practical conclusions. Although the literature analyzed show multitude of data about the characteristics of the effort in basketball, little is known about the demands of the new 3x3 competition. Therefore, it is required to study if it causes the same kind of demands and thus can be trained under the same methodology or, in contrast, if it is a totally different sport. For all the above, the aim of this study is to describe the physical and physiological profile of basketball players through a registration system and by monitoring physical activity and movement in real time in official 3x3 matches.

### Methods

The research was carried out with 4 teams of the regional selection of Extremadura at 2016 3x3 U18 Spanish Championship (2 male and 2 female teams). Each team had 4 players, for a total of 16 players and played 3 matches, for a total of 12 matches. Two types of variables were analyzed: internal load variables (Average, Maximum and Relative Heart Rate) and kinematic variables (Impacts, Steps and Jumps per minute). In addition, real playing time was registered to evaluate more realistically the different variables. Each player was equipped with a Heart Rate band (Garmin®) and a system for registration and monitoring of physical activity and movement in real time (Wimu®). The software used for these analyzes was Quiko®.

### Results

The average length of a match was 17.49 minutes. Yet in this sport at least 3 matches were played per day, for a total of 52.47 minutes. Breaks were carried out between games. As for the physiological variables, Average Heart Rate was 173.42 bpm, Maximum was 193.72 and Relative was 89.5% of the Maximum. In the case of kinematic variables a mean of 31.48 impacts (1.79 impacts / min), 705.81 steps (42.15 steps / min) and a total of 31.81 jumps (1.85 jumps / min) were obtained per game.

### Discussion & Conclusion

The 3x3 competition has been described. In contrast to traditional 5x5 basketball, 3x3 competition doesn't induce fluctuations in heart rate and also, causes more impacts and jumps per minute. For a future adaptation to the training, it is important to note that, due to the fact that at least 3 matches are played. Because of this, the total number of impacts would be an average of 94.44, 2117.43 steps and 95.43 jumps. Individual differences among players, gender, matches and equipment should be considered. The results of this study allow coaches to hold relevant information that should be considered in this "new" sport such as: shorter but more intense training sessions, 2 or 3 sessions with longer breaks, or training tasks with active breaks. Moreover, training should be focused on some issues: constant heart rate, training in small courts and to increase number of impacts and jumps.

### References

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