INTENSITY LEVEL OF MEN’S COLLEGIATE BASKETBALL PLAYERS DURING SCRIMMAGE

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Abstract

PURPOSE: The purpose of this study was to evaluate the intensity level, expressed as a percentage of VO2max, that collegiate men basketball players performed during scrimmage.

METHODS: Five men (age 26.2 ± 1.1 yrs) of the UTA men’s basketball team volunteered to participate in this study. Each subject’s height, weight, resting heart rate (RHR), and blood pressure was measured for baseline measurements. Each subject performed a graded exercise test on the treadmill with increasing speed and elevation until exhaustion, using the Parvo metabolic cart to collect expired gases. During each test heart rate (HR) was recorded every minute and rate of perceived exertion (RPE) was recorded every three minutes. Values obtained from the metabolic cart included: Kcals, absolute maximal oxygen consumption (L/min), and relative maximal oxygen consumption (ml/kg/min). Results: Relative VO2max and Peak Vector Magnitude

Results (cont’d)

Graph 1: Comparison Between Relative VO2max And Peak Vector Magnitude

Graph 2: Comparison Between Relative VO2max And Average Peak Vector

Graph 3: Average And Peak HRmax Percentage During Scrimmage

Conclusions

The results of this study indicate that those who compete in competitive sports maintain a high level of intensity even during practice.

Table 1: Demographics and Max Testing Data

<table>
<thead>
<tr>
<th>Age (yrs)</th>
<th>Height (in.)</th>
<th>Weight (lbs)</th>
<th>Abs. VO2max (L/min)</th>
<th>Relative VO2max (ml/kg/min)</th>
<th>Kcals</th>
<th>Total Time (min)</th>
<th>Peak HR (bpm)</th>
<th>Average HR (bpm)</th>
<th>Peak Vector (accelerometer counts/min)</th>
<th>Average Vector (accelerometer counts/min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>20.2 ± 1.0</td>
<td>73.6 ± 2.9</td>
<td>186.2 ± 13.7</td>
<td>189.2 ± 5.0 bpm</td>
<td>50.2 ± 1.0 ml/kg/min</td>
<td>147.8 ± 7.2 kcals</td>
<td>254.2 ± 30.4</td>
<td>72.4 ± 5.6</td>
<td>41.6 ± 11.7</td>
<td>631.4 ± 1748.0</td>
<td>296.4 ± 460.3</td>
</tr>
</tbody>
</table>

Results

- Scrimmage
  - Each participant wore a HR monitor around the chest and an accelerometer on their waistband.
  - The subjects wore both for approximately fifty-four minutes to obtain the submaximal exercise data.
  - The subjects were able to play at an average of 74.8% HRmax, and, at times, reach peak heart rates that were 91% HRmax.

- Results
  - Maximal aerobic treadmill test:
    - Maximal heart rate (MHR): 189.2 ± 5.0 bpm
    - RPE M: 17.8 ± 0.8
    - Relative VO2max: 50.2 ± 1.0 ml/kg/min
    - Kcal at max: 147.8 ± 7.2 kcals
  - Scrimmage:
    - Average HR: 74.8% HRmax
    - Peak HR: 91% HRmax
    - Significant correlations were found between the average vector magnitude and relative VO2max (r=0.92) and also between the peak vector magnitude and relative VO2max (r=0.88).

Intake

- Maximum calorie intake (kcal)
  - Maximal calorie intake (kcal): 147.8 ± 7.2 kcals

Purpose

The purpose of this study was to evaluate the intensity level, expressed as a percentage of VO2max, that collegiate men basketball players performed during scrimmage.

Methods

- Five men of the UTA men’s basketball team volunteered to participate in this study.
- Maximal Aerobic Treadmill Test
  - Each participant’s resting heart rate (RHR) and blood pressure was measured for baseline measurements.
  - The treadmill speed and elevation were increased until exhaustion, using the Parvo metabolic cart to collect expired gases.
  - Heart rate (HR) was recorded every minute and rate of perceived exertion (RPE) was recorded every three minutes.
  - Values obtained from the metabolic cart included: Kcals, absolute maximal oxygen consumption (L/min), and relative maximal oxygen consumption (ml/kg/min).