WHAT IS THE WORK-LOAD DURING TRAINING SESSIONS IN RUGBY UNION?

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Introduction

There is a great interest in coaches and fitness trainers to define the physical demands of training, in order to optimize the training process, to evaluate the players' performance and provide suitable recovery time and nutrition. The determination of training load can be particularly challenging in Rugby Union, a team sport played by 15 players of highly variable build, that is characterized by short, high intensity efforts (struggle, impacts, sprinting) and longer, low intensity activities (standing still, walking, jogging).

Our study aimed at applying a heart rate based approach to measure absolute and relative workloads in two typologies of training, typically used in rugby union: team session (TS) and unit training (UT).

Methods

15 forwards (FW) and 15 backs (BK) from Venezia Mestre Rugby (elite Italian senior championship) undertook one incremental test to exhaustion on the treadmill to determine individual VO_{2max}, heart rate (HR) at max and HR/VO_2 relationship. Furthermore, within the following month, HR was continuously monitored during 12 training sessions (6 TS and 6 UT).

For each training session, we determined absolute ($Kcal*kg^{-1}*min^{-1}$) and relative intensity (%HRmax, $\%VO_{2max}$,). Mean and standard deviation were calculated in FW and BK for TS and UT sessions and compared by t test ($p< 0.05$).

Results & Discussion

The athletes were 24±3 years old, a 12±3 years playing experience and a VO_{2max} of 47±5 $ml*kg^{-1}*min^{-1}$. FW and BK weight and height were: 108±8 and 92±12 Kg; 187±1 and 181±1 cm respectively. Workload data are reported in the table.

	Team session training (TS)				Unit training (UT)			
	min	$\%HR_{max}$	$\%VO_{2max}$	$Kcal*kg^{-1}*min^{-1}$	min	$\%HR_{max}$	$\%VO_{2max}$	$Kcal*kg^{-1}*min^{-1}$
FW	59±12	72±8	58±12	0.13±0.03	73±7§	67±6§	52±11§	0.12± 0.03§
BK	59±12	74±6*	59±9	0.14±0.02*	71±7§	73±4*	58±8*	0.14± 0.02*

* and § indicate, respectively, a significant difference *vs* FW and *vs* TS.

Conclusion

Our study successfully determined absolute and relative workload during specific training sessions in rugby union players. For BK, absolute and relative workload was similar for the two training modes and higher compared to FW. For FW, TS was performed at a higher absolute and relative intensity compared to UT.

In this group of senior players of a national level, the overall workload of both TS and UT was within the moderate intensity domain.