

PERFORMANCE REPORT
TABLE
VOLLEYBALL

After the table volleyball system of rules had been finalised, we conducted a comparative research to determine the similarities and differences between the two sports. Four professional volleyball players were involved. Although volleyball and table volleyball share similar movement patterns, we have expected different results in terms of physiological parameters.

The evaluation of the measurements was based upon the model above.

INTERNAL LOAD		EXTERNAL LOAD	
CARDIOVASCULAR	METABOLIC	LOCOMOTORIC	MECHANICAL
HEART RATE	MICROMETHOD (BLOOD DROP, SALIVA)	GPS (OUTDOOR) LPS (INDOOR)	MICRO-MOVEMENT ANALYSIS (IMA)
Pulse parameters (max, avg, AT)	Lactate	Distance covered (period, session)	Count, intensity, direction of accel and decel
Time spent in target zones	CK	Velocity (max, avg)	Count, intensity, direction of CoD*
Resting HRV	IGG	Time spent in velocity zones	Count, height of jumps

* Change of Direction

External load means the work done by the athlete (performance output).

The 2 types of external load are locomotive and mechanical load.

Locomotor parameters are measured with GPS tracking, which was not recorded in this case (there is no GPS signal indoor).

Given the size of the fields and the movement patterns of the examined sports, the intense micro-movements are dominant. This contains accelerations, decelerations and changes of direction (CoD).

Internal load is the response from the athlete's body to the external stress it is imposed to, like a training or a match. The main indicator of training adaptation is the external load, however, it is always advised to examine the performance output (external load) and the internal response to that work done together.

1. MECHANICAL PARAMETERS

Mechanical stress is more moderate in table volleyball than it is in volleyball. The intensity of changes of direction and the number of accelerations are both lower in table volleyball. There is also a difference in terms of jump count, which can be explained by the fact that in volleyball, jumps occur when players are serving, hitting, as well as when blocking, whereas blocking in table volleyball is irrelevant. The intensity of jumps (jumps per minute) was by far higher in volleyball. So altogether, the number and intensity of jumps are lower in table volleyball, since reaching a higher hitting point is not that much advantageous as it is in regular volleyball. The reason behind these differences is probably the different movement patterns of these sports. Jumping as a movement is present in table volleyball as well, but not as dominant as it is in volleyball.

2. RISK OF INJURY

Table volleyball consists of less vertical movement, therefore the risk of injury is lower. It is recommended for all ages and fitness levels, since the strain put on the joints is low.

3. CARDIOVASCULAR LOAD (HEART RATE)

Regarding cardiovascular stress, table volleyball is recommended because there are no long distances to cover, therefore the average heart rate and the overall heart rate exertion will be lower, so it can be performed for longer periods of time with less strain and lower risk of injuries. Jumps are mostly in the 0-20 cm band during table volleyball, and their number is also lower than in volleyball.

4. MICRO MOVEMENT INTENSITY

In terms of micro-movements, volleyball proved to be more intense. The differences in intensity, however, can be affected by the learning effect, that is the volleyball players did not have the table volleyball skillset on an autonomous level, therefore the physical parameters might differ from what they would look like during an all-out table volleyball game.

During our study, regarding accelerations, volleyball had 2,9 times more accelerations per minute than table volleyball. The same can be seen about decelerations. Change of direction intensity showed a 1,8 multiplier towards volleyball. For the micro-movements together, the intensity was 2,4 times more during volleyball. Jumps showed the most outstanding difference, there were 7,4 times more jumps per minute in volleyball. Jumping as a movement is present in table volleyball as well, but not as dominant as it is in volleyball.

5. RECOMMENDATIONS

Table volleyball is not only meant for professional volleyball players, but also a perfect auxiliary sport as well. It is ideal for amateur volleyball players, and as a recreation for those who like volleyball in general.

For professionals, it is ideal during the preparatory phase, where players can practice specific movement patterns, such as receiving and shooting with minimal strain on their joints, muscles, and cardiovascular system.

Table volleyball is highly recommended for younger ages. Its movement patterns are ideal for adolescents while learning volleyball skills as well. The size and height of the table volleyball table makes it easier to play the game and practice specific skillsets for untrained or younger athletes, which they could not perform on a regular volleyball pitch due to the height of the net. This causes an ideal learning curve and of course, more joy of success.