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**Transilvania
University
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**FACULTY OF PHYSICAL EDUCATION
AND MOUNTAIN SPORTS**



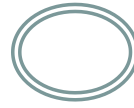
MENTAL SKILLS IN INDIVIDUAL SPORTS THAT USE OR NOT USE RACKET SPORTS

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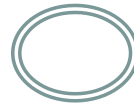


Introduction:

Coaches will try all the time to discover the best potential of their players in mental skills.

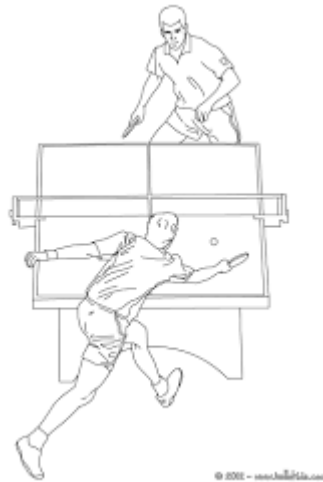
Athletes use spatial orientation and mental rotations to succeed in competition. (Lafont, 2007, Vickers, 2007)

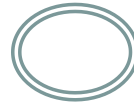
It is known that these skills are used in all sports, especially in racket sports, because of the ball (Crespo et al., 2006, 2007; Wei-Ta Chu & Wen Ho Tsai 2009)



The aim of the study

The aim of this study was to compare mental skills in individual sports that use or do not use rackets, using spatial orientation and mental rotation scales.





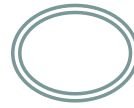
Methods:

Study design and procedure

The study was conducted on 28 athletes divided in 4 groups:

7 athletes from table tennis;
8 athletes from tennis game;
6 athletes from judo
7 athletes from fencing

with results in national and international competitions.



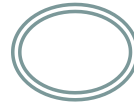
Methods:

All the players filled-in two questionnaire:

Spatial Orientation test from the CAS battery (Miclea et al., 2009) – it is a spatial orientation test, divided in 10 pictures. This test measures the ability of the players for analyzing an environment stimulus from one perspective and trying to share these information's from another perspective. Players are looking from different perspective, but only two are the right choice.

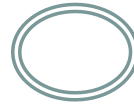
Mental Rotation test from the CAS battery (Miclea et al., 2009) – it is a mental rotation test, divided in 10 pictures with different number of cubs. This test measures the ability of the player to transform the representation of the images specially

The participants have been assessed during the competition season.



Descriptive statistics

Individual Sport	Number Elite Players – National Team	Mean Age (SD)
Table tennis	7	16.8 (1.09)
tennis	8	16.5 (.92)
Judo	6	17.4 (.56)
Fencing	7	17.4 (.66)



Instruments:

Orientare spațială

4.

The instrument consists of a small circular diagram at the top and four larger diagrams labeled a, b, c, and d. Each diagram shows a 2D projection of a 3D scene with various geometric shapes (cubes, spheres, triangles) on a plane. Diagrams a and b show a scene with a vertical axis and a horizontal axis, with an 'X' marking a specific point. Diagrams c and d show a scene with a vertical axis and a horizontal axis, with a circular arrow indicating a rotation around the vertical axis.

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Spatial Orientation

Imagini mintale - Transformări

1.

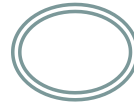
Diagram 1 shows a 3D L-shaped block on the left. To its right are four options labeled a, b, c, and d, each showing a different 3D orientation of the same L-shaped block.

2.

Diagram 2 shows a 3D T-shaped block on the left. To its right are four options labeled a, b, c, and d, each showing a different 3D orientation of the same T-shaped block.

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Mental Rotation



Results:

Table 1: Manova results between mental skills and racket sports .

	Type III Sum of Squares	df	F	Sig.	Effect size
Spatial Orientation	10.698	1	1.84	.175	.04
Mental Rotation	18.238	3	4.543	.025	.11

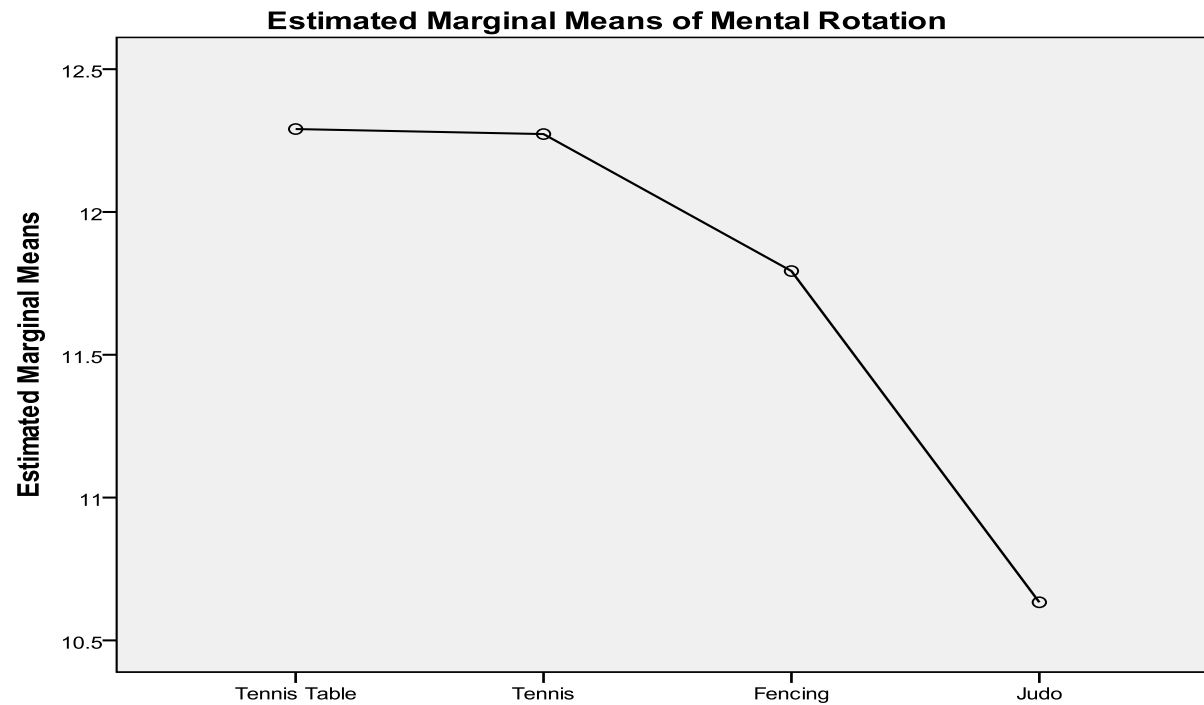
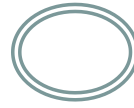


Figure. 1 The differences between racket sports and contact sports measuring mental rotation



Discussion and conclusions / expected outcome

Athletes from racket sports are able to recognize the ball effect from the opponent.

Mental rotations score can help coaches to understand that athletes can differ in spatial skills and to develop special training for this.

There were no differences between racket sports and contact sports in spatial orientation score.

The meaning of this result needs further study.

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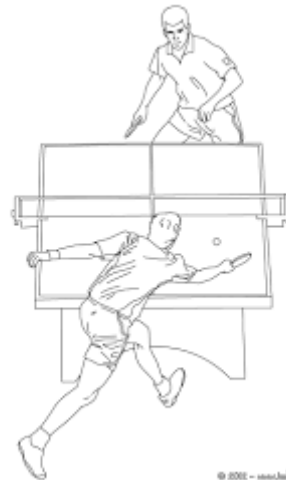
The sample size of 28 players is a limitation of the study.



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Thank you!
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Fencing