



## INCREASE OF THE SPEED OF JUDO THROWING TECHNIQUES USING A SPECIFIC CONTRAST METHOD

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### Introduction:

The analysis of judo competitions and of other wrestling sports, put in evidence the growing importance of the rapidity of the techniques' performance, to excel in these sports. For this reason a experimentation has been started to value the effects of a specific method of contrast training that, using the principle of Verchoshanskij' stimulation, should increase the rapidity of judo throws performance.

The contrast method we used, devised by R. Villani, is based on the connection of two specific exercises for judo: *Butsukari-geiko* for the specific training of the dynamic-maximal strength, and the *Nagekomi* (throwings) for the explosive strength specific training.

### Materials and Methods :

The experimentation involved 22 judokas (13 males, 9 females) juniors and seniors of regional and national agonistic level. At the beginning the subjects had to do a specific test: *TEP test* (R. Villani 1999, 2001) (Fig. 1) giving a precise measurement of the real time of the throw, with the evaluation of the entry time (*Split*) and of the throwing time (*Time*).

During the analysis of the initial test, the subjects were divided into two working groups, homogeneous and stratified: experimental group and control group. The two groups had to follow a 5 weeks training program (with modulation of the load) that was different only for the specific exercises:

- the experimental group trained with the method of contrast already described [(3/4x2x(3/4 butsukari-1throwing)], performed at the maximal intensity with a complete rest between each repetition.
- the control group trained with the traditional Uchikomi with the lifting (3/4x8/10) performed at the maximal intensity with a complete rest only between the series. At the end of the 5 microcycles, the subjects had to execute again the TEP test (retest). The results follow.

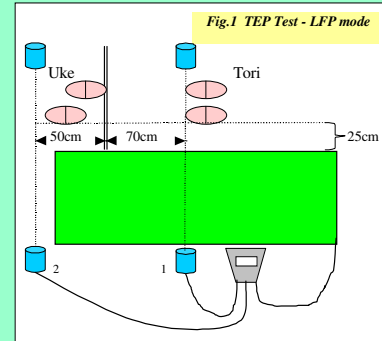


Fig. 1-2: Specific contrast method



Experimental training for speed increase (3 training-day on week)

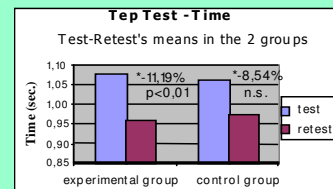
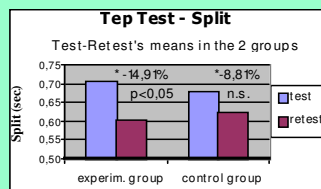
microcycle	experimental group	control group	Tot. Reps	Recovery	Intensity
1°	3 x [ 2 x (3 butsukari + 1 nage-komi) ]	3 x 8 uchi-komi with lifting	24	complete	high
2°	4 x [ 2 x (4 butsukari + 1 nage-komi) ]	4 x 10 uchi-komi with lifting	40	complete	high
3°	4 x [ 2 x (4 butsukari + 1 nage-komi) ]	4 x 10 uchi-komi with lifting	40	complete	max
4°	4 x [ 2 x (3 butsukari + 1 nage-komi) ]	4 x 8 uchi-komi with lifting	32	complete	max
5°	3 x [ 2 x (3 butsukari + 1 nage-komi) ]	3 x 8 uchi-komi with lifting	24	complete	max

### Results:

As we can see, in each group, there is a % increase of the mean rapidity, but this increase, analysed with one-factor Anova appeared to be significant only in the experimental group (Split  $p < 0,05$ ; Time  $p < 0,01$ ). The cross comparison between the two groups has been realised with two-factor Anova with replication, and it showed a significant difference in the increase of the experimental group respect to the control group in the split ( $p < 0,05$ ) and more in the time. ( $p < 0,01$ ).

Experimental Gr.	TEST SPLIT	RETEST SPLIT	TEST TIME	RETEST TIME
Media	0,71	0,6	1,08	0,96
Ds	0,13	0,08	0,11	0,07
Max	0,98	0,7	1,2	1,06
Min	0,45	0,45	0,88	0,84
Diff. %	-14,91%		-11,19%	
One-factor Anova	P < 0,05		P < 0,01	

Control Gr.	TEST SPLIT	RETEST SPLIT	TEST TIME	RETEST TIME
Media	0,68	0,62	1,06	0,97
Ds	0,1	0,13	0,11	0,07
Max	0,8	0,8	1,22	1,1
Min	0,5	0,38	0,88	0,81
Diff. %	-8,81%		-8,54%	
One-factor Anova	n.s.		n.s.	



### Conclusions:

On the basis of all we explained we can say that the *method of a specific contrast training* of R. Villani can be considered an interesting system to increase the rapid performance of judo throws.

Moreover, the *Tep Test*, whose reliability has been demonstrated in previous studies (Villani R. 1999, 2001), showed a good sensibility at the variations provoked by the training, so it could be considered a valid instrument to evaluate the specific rapidity of judo and of the other wrestling sports.

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