

# DROP JUMP TRAINING IN AMATEURS SOCCER PLAYERS

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It is a quiet long time that the physical preparation is having a very important role in the soccer play and in this, the strength has an absolute importance. In fact in the “modern” play the number of sprints (10-15 metres) performed by the players during a match grew up on the average at about 195 (Cometti,1995) and the actions in a match are now defined as “explosive”.

The sudden direction changes emphasize the so called pliometric contraction system (double cycle eccentric-concentric) that, not randomly, in the last years causes the interest of many researchers. The most important training method for the growth of this quality is certainly the shock method devised and developed by Prof. Verchoshanskij, that favours the increase of the maximal strength, of the explosive strength, and of the initial strength, and favours also the increase of the reactive capacity of the athlete’s neuromuscular apparatus. This forced intensification of the working style of the organism represents a so strong training stimulus that in the modern literature it is mainly recommended to athletes of high qualification.

The goal of our study is to demonstrate that the shock method can be executed also by lower qualification athletes, provided that it stiffly respects the application protocol based on the principle of progressiveness and modulation of the load of training.

The subjects considered for the experimentation are 14 soccer amateur players (1<sup>st</sup> regional italian category) aged from 22 to 33 years. The subjects have been requested to perform initially a set of tests on a piezoelectric cells rug to evaluate the explosive-elastic and reactive strength of the lower limbs (CMJ, and stiffness). By the stratification of the entry tests, two homogeneous working groups have been defined: the first group carried on a drop jump work for 4 weeks with modulated loads (step height between 40-60cm;work volume between 3x6 and 2x3x10 drop jump). The second group carried on a program of exercises to increase the explosive-elastic strength (1\4 of SJ) for the same period. At the end of the program the two groups have been retested, and the results have been statistically analysed.

	TEST-RETEST experimental group		TEST-RETEST controllo group	
	CMJ (cm)	Stiffness (W)	CMJ (cm)	Stiffness (W)
mean test	37,34	43,41	38,01	41,63
mean retest	41,91	53,07	38,90	47,76
Diff.	4,57	9,66	0,89	6,13
Diff. %	0,12	0,22	0,02	0,15

We can appreciate in the tables the average % increase reached by the two groups. The significance of those increases have been calculated with One-Factor Anova. In the experimental group significant increases have been pointed out both in the CMJ test ( $p < 0.05$ ) and in the stiffness test ( $p < 0.02$ ), while there haven’t been significant increases in the control group after the training. The difference between the trainings has been verified with Two-Factor Anova with replication and don’t resulted significant in the CMJ ( $p = 0.079$ ) but highly significant in the Stiffness ( $p < 0.01$ ).

The results of our study confirm that the dropjump, if correctly modulated, can be an excellent method to increase the reactive-elastic strength also in the lower qualification athletes.

## REFERENCES

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